

THE BRITISH PHYSICS OLYMPIAD TRUST

England & Wales · Charity number 1146064

Details

Other names BPHO

Status Registered

Legal form Trust

Registered 2012-02-23

Register [View on the Charity Commission register](#)

Contact

Address British Physics Olympiad c/o Physics Outreach
University of Oxford
Denys Wilkinson Building
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OX1 3RH

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Website <https://www.bpho.org.uk>

Activities

Objects: THE TRUSTEES SHALL HOLD THE CAPITAL AND INCOME OF THE TRUST FUND UPON TRUST TO APPLY THE INCOME, AND ALL OR SUCH PART OR PARTS OF THE CAPITAL, AT SUCH TIMES, AND IN SUCH MANNER, AS THE TRUSTEES MAY IN THEIR DISCRETION THINK FIT TO ADVANCE THE EDUCATION AND ENGAGEMENT OF STUDENTS IN THE SUBJECT OF PHYSICS IN SUCH WAYS AS THE TRUSTEES SEE FIT, INCLUDING: A) THE ORGANISATION OF ANNUAL COMPETITIONS, AND B) THE SUPPORT OF A TEAM TO REPRESENT BRITAIN AT THE INTERNATIONAL PHYSICS OLYMPIAD

Activities: The BPhO provides competitive physics problems and competition exam papers within schools. It runs twelve key competitions over four age groups (Yr10 - Yr13), providing resources to stretch able school physics students, part of a process to select and train two teams to represent the UK at the International Physics Olympiad and at the International Olympiad on Astronomy & Astrophysics each year.

Classification

- **How:** Provides Services, Provides Advocacy/advice/information
- **What:** Education/training
- **Who:** Children/young People, Other Defined Groups

Geography

- Throughout England And Wales

Finances

Period end	Income	Expenditure	Assets	Employees
2025-08-31	£275,823	£357,164	-	-
2024-08-31	£302,847	£231,679	-	-
2023-08-31	£235,431	£112,489	-	-
2022-08-31	£178,588	£67,057	-	-
2021-08-31	£124,015	£42,025	-	-
2020-08-31	£96,552	£101,828	-	-

Trustees

Name	Role	Appointed
ROBIN WILLIAM MINTO HUGHES	Chair	2012-01-30
DR SIAN HAYLEY EVA TEDALDI		2012-01-30
Dr ANSON CHEE HANN CHEUNG		2012-01-30
Dr Gareth John Conduit		2026-04-30

THE BRITISH PHYSICS OLYMPIAD TRUST

England & Wales - Charity number 1146064

Accounts

Charity registration number: 1146064

The British Physics Olympiad Trust

Annual Report and Financial Statements

for the Year Ended 31 August 2025

The British Physics Olympiad Trust

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The British Physics Olympiad Trust
Legal and Administration Information

Registered charity name	The British Physics Olympiad Trust (also known as BPhO)
Charity registration number	1146064
Registered office	The British Physics Olympiad Trust Department of Physics University of Oxford Denys Wilkinson Building Oxford OX1 3RH
Trustees	Dr Anson Cheung Mr Robin Hughes Dr Sian Tedaldi
Website	www.BPhO.org.uk
Independent examiner	Wenn Townsend Chartered Accountants 30 St Giles Oxford OX1 3LE

The British Physics Olympiad Trust

Trustees' Report

The trustees present the annual report together with the financial statements of the charity for the year ended 31 August 2025.

The registered charity name is The British Physics Olympiad Trust. Throughout this report it is also known as BPhO. Information for this charity can be found on the website: www.BPhO.org.uk.

Reference and administration details

The Charity name is The British Physics Olympiad Trust, and is also known as BPhO. The Charity has the registered number 1146064, and its principal address is:

The British Physics Olympiad Trust
Department of Physics
University of Oxford
Denys Wilkinson Building
Oxford
OX1 3RH

Trustees and officers

The trustees and officers serving during the year and since the year end were as follows:

Trustees:

Dr Anson Cheung

Dr Sian Tedaldi

Mr Robin Hughes

The British Physics Olympiad Trust

Trustees' Report (continued)

Structure, governance and management

The charity is governed by a Trust Deed dated 11 January 2012. Trustees are appointed or reappointed at meetings of the Trustees. The organisation has a Child Protection Policy and a Data Protection Policy in place, and DBS checks are carried out on Trustees and on volunteers who interact with young people.

The British Physics Olympiad operates with the support of the Outreach Office of the Physics Department at the University of Oxford (Oxford Physics). One of the Trustees, Dr Sian Tedaldi, is based within the Outreach Office and, in her professional role at Oxford, oversees the BPhO's outreach activities and manages the BPhO Administrator. The BPhO Administrator is an employee of the University of Oxford and supports the day-to-day running of the BPhO, devoting a proportion of their time to the administration of BPhO competitions and events.

Academic training, paper setting, and the delivery of educational activities are managed and carried out by a committed group of around 30–40 volunteers, primarily teachers (including some retired) and university students. Postgraduate students are employed on casual contracts as competition markers to manage the substantial volume of Round 1 scripts from UK and international participants. This blended model of volunteer expertise and targeted staffing enables the BPhO to deliver a high-quality, wide-reaching programme.

Charitable objects and main activities undertaken

The objects of the Charity are the advancement of education and engagement of students in physics, including:

- The organisation of annual physics competitions in schools and colleges
- The selection and support of teams to represent the UK at the International Physics Olympiad and the International Olympiad on Astronomy and Astrophysics
- Encouraging the study of physics among students in Years 7–13, and recognising and rewarding excellence in young physicists

There are five distinct strategic activities that underpin the running and development of the organisation. Each area is explored further in this report.

1. Competition papers

- a) Setting high-quality competition problems and papers
- b) Ensuring consistency of standard, difficulty, and content
- c) Implementing robust review and quality-assurance processes
- d) Celebrating student success at an annual BPhO Awards Day

The British Physics Olympiad Trust

Trustees' Report (continued)

2. *Selection and training*

- a) Organising annual training camps to select and prepare UK teams for international competition
- b) Providing mentoring and academic resources for team members and reserves
- c) Supporting and accompanying teams to the International Physics Olympiad, the International Olympiad on Astronomy and Astrophysics, and the European Physics Olympiad, as appropriate

3. *Widening engagement*

- a) Promoting BPhO competitions and resources to teachers and students
- b) Developing new materials and resources to support physics teaching
- c) Engaging underrepresented groups in physics
- d) Running workshops and events to develop skills and enthusiasm for advanced physics content outside formal training

4. *Operations and infrastructure*

- a) Developing and maintaining effective operational and administrative systems
- b) Coordinating volunteer contributions of time, expertise, and equipment
- c) Managing financial and logistical processes to support competitions, training, and events
- d) Maintaining effective safeguarding, welfare, and risk-management systems across all BPhO activities.

5. *Sustainability and expansion*

- a) Maintaining and developing relationships with sponsors and supporters
- b) Building partnerships with organisations that enhance the BPhO's reach and impact
- c) Engaging former International Olympiad students to contribute as mentors, volunteers, or ambassadors
- d) Planning for the long-term sustainability and future development of BPhO activities

The British Physics Olympiad Trust

Trustees' Report (continued)

Background

Problem solving is central to the BPhO's mission, helping students build confidence, resilience, and independence when working with challenging material. Competitions, workshops and problem-solving events support both teachers and students in recognising that physics is demanding for everyone, while also highlighting the significant rewards of sustained engagement.

The BPhO promotes good practice in teaching extension and enrichment material, ensuring that students from all backgrounds can access high-quality opportunities beyond the classroom. By sharing resources and expertise developed over many years, the BPhO strengthens teaching provision and helps students develop the advanced skills needed for further study. As a national network linking teachers and schools, BPhO maintains regular contact throughout the year to support participation and the exchange of ideas. The skills developed through BPhO activities benefit students personally and contribute to the wider economic need for future physicists, engineers and scientific leaders.

Competition papers

The BPhO sets 13 competition papers each year, ensuring consistency, appropriate difficulty, and strong academic value. Information about all our papers can be found on the BPhO website. Individual reports containing detailed breakdowns of the paper results are also produced and made available to participating teachers.

These papers offer three levels of engagement, as outlined below, together with participation figures for the 2023/24 academic year.

- **Participate (33,850 students)**

Online, multiple-choice quizzes designed to spark interest in physics problem-solving, offering many easy questions alongside a few more challenging ones. There are five papers for ages 11–17 years, including the online *Junior and Intermediate Physics Challenge* papers and the online *Junior Astro Challenge*.

- **Challenge (22,000 students)**

Papers that foster deeper interest and understanding in problem-solving, requiring mathematical techniques and designed to stretch the most capable students. There are four papers for ages 14–18 years, including the *Senior Physics Challenge* and the *Astro Challenge*.

The participation figures reported for these papers represent a conservative estimate based on the number of schools ordering papers and submitting results for grading. We are aware that a significant number of schools use BPhO competition papers without submitting marks for grading before the deadline. While there is no reliable method of quantifying this additional participation, our understanding, based on correspondence and ongoing communication with schools, is that the actual level of engagement is higher than the figures reported.

The British Physics Olympiad Trust

Trustees' Report (continued)

- **Compete and select (4,070 students)**

Our most advanced papers, such as *BPhO Round 1*, identify and reward the best problem-solvers in UK schools and are used to select the UK teams for international competitions. There are two qualifying *Round 1* papers for Physics and Astronomy, with subsequent *Round 2* papers, for ages 17–18 years.

In addition, the *Experimental Project* (154 students) and the *Computational Physics Challenge* (130 entries and 1,200 students engaging online) develop students' practical and analytical skills.

A major focus of the 2024/25 year was the development and implementation of BPhO Round 0. Continued growth in participation in BPhO Round 1, with entries reaching approximately 3,800 students, had made the volume of scripts increasingly difficult to mark within the required timescales. The design, testing, administration, and launch of Round 0 therefore required a significant investment of time and volunteer effort throughout the year. Launched in October 2025, Round 0 was developed as an accessible selection paper that broadens participation while ensuring that Round 1 remains sustainable to administer and mark. This initiative represents an important step in supporting the long-term growth and sustainability of the competition.

Selection and training

Two teams of five students are selected to represent the UK in the international Olympiad competitions for both Physics and Astronomy through a five-day Easter residential held at the University of Oxford. The event supports motivated students in developing advanced problem-solving and analytical skills. Further training is provided through a programme of mentoring that includes both in-person and online activities.

The 2025 International Physics Olympiad was held in Paris in July. The five British participants were very successful, returning with two Silver medals and three Bronze medals. The 2025 International Olympiad on Astronomy and Astrophysics was held in Mumbai in August. The UK team achieved an exceptional result, returning with four Gold medals and one Silver medal.

These competitions provide participants with unique opportunities to engage with talented young scientists from around the world, develop their problem-solving and communication skills, and represent the United Kingdom on the international stage. Participation often has a lasting impact on students' academic development, confidence, and future aspirations in physics and related disciplines.

We have continued to involve a growing number of former Olympiad participants in the delivery of training activities across both the physics and astronomy programmes. Their recent experience of the competitions provides current students with valuable peer support and mentoring, while also helping to broaden the pool of volunteers involved in BPhO activities and strengthen the long-term sustainability of the organisation.

The British Physics Olympiad Trust

Trustees' Report (continued)

Widening engagement

The BPhO programme of enrichment activities continued to support students and teachers across the UK during 2024/25. During the year, we delivered two dedicated outreach events reaching 84 young people; the Year 10 Physics Taster Day and the Year 12 Physics Masterclass at St John's College, Oxford.

Working closely with the University of Oxford, we select students using widening participation criteria such as FSM eligibility, POLAR4 data, gender, and ethnicity, helping to ensure that students from underrepresented groups are able to access these opportunities.

Teachers play a critical role in widening engagement and supporting students to develop their interest in physics. During the year, we delivered four events for teachers, providing opportunities to develop subject knowledge, problem-solving skills, and confidence in preparing students for BPhO competitions. Demand for these activities remains strong. In particular, our teacher event in Oxford attracted 57 participants from different schools, demonstrating continued enthusiasm for high-quality physics enrichment and professional development opportunities.

We continue to provide a wide range of freely available resources to support teachers and students, including past papers and accompanying materials. The BPhO Round 1 question bank, developed and piloted in the previous year, remains available to teachers, allowing problems to be searched by topic and used flexibly in the classroom. Our online BPhO Round 1 training materials continue to be particularly popular, providing students with accessible support as they prepare for the competition. The first video in the Round 1 training series released during the reporting year has been viewed more than 3,600 times, demonstrating the strong demand for accessible competition preparation resources. The annual BPhO lecture is also published online to reach a wider audience.

BPhO remains committed to widening participation, particularly through increasing engagement with state-funded schools and supporting a broader range of students to access enrichment and competition opportunities. We will continue to work with teachers, schools, universities, and other partners to ensure that talented young physicists from all backgrounds are able to engage with advanced physics and fulfil their potential.

The British Physics Olympiad Trust

Trustees' Report (continued)

Operations and infrastructure

The online competition and marking platforms introduced in recent years continue to support the efficient delivery of BPhO activities. The competition platform enables the issuing of competition papers and the delivery of online challenges, while the marking platform supports the distribution of scripts and collection of marks. Together, these systems provide a scalable digital infrastructure capable of supporting continued growth in participation.

Funding from G-Research continues to support dedicated payroll and accounting services, strengthening administrative capacity and helping to ensure the effective operation of the charity. As participation across competitions, training activities, and outreach programmes continues to grow, these systems and services remain essential to the effective administration of BPhO activities.

Alongside these operational activities, the BPhO continues to maintain and review its safeguarding and risk-management procedures to support the safe delivery of competitions, training camps, events, mentoring activities, and international participation.

Sustainability and expansion

The operational and digital infrastructure described above continues to provide a strong foundation for the delivery and future development of BPhO activities. Ongoing support from G-Research remains central to the charity's work, enabling the continued delivery of competitions, training programmes, outreach activities, and the British Astronomy and Astrophysics Olympiad.

Income from overseas purchases of BPhO competition papers, Round 1 entry fees, and international partnerships continues to make an important contribution to programme delivery and financial sustainability. In particular, the charity's long-standing collaboration with an educational organisation in China remains a significant source of support for core activities. Work is ongoing to secure additional partnership opportunities to support the long-term sustainability and growth of the charity's activities.

The charity maintains unrestricted reserves equivalent to approximately two to three years of operating costs. These reserves are held in interest-bearing accounts to provide financial stability, meet unexpected expenditure, and support future development where appropriate. The combination of sponsorship, competition income, international partnerships, and prudent financial management places the charity in a strong position to continue delivering and developing its activities without reliance on reserves.

The trustees continue to review the skills and experience represented on the Board. The charity is currently progressing the appointment of Dr Gareth Conduit as a trustee. His experience and expertise would further strengthen the Board and support the charity's continued development, governance, and long-term sustaina

The British Physics Olympiad Trust

Trustees' Report (continued)

Evaluation and impact

As part of BPhO's ongoing commitment to evaluation and continuous improvement, work commenced during the year to establish an annual stakeholder survey. With the support of independent evaluator Laura Thomas, the first survey was launched during the first term of the 2025/26 academic year. Although completed after the reporting period covered by this Trustees' Annual Report, the survey gathered feedback from teachers (N = 142) on their experiences of BPhO activities over a number of years, including activities delivered during the reporting period. A summary of the BPhO Annual Teacher Survey is presented in Appendix A.

The survey forms part of a wider programme of evaluation and learning. Follow-up focus groups and further analysis are planned to explore emerging themes in greater depth and to better understand the impact of BPhO activities on students, teachers, and schools. Together, this work will contribute to a comprehensive evaluation report and support the continued development and improvement of the charity's activities.

The evaluation explored the following themes:

- Teacher motivations for participating in BPhO activities.
- The benefits of participation for students, teachers and schools.
- Approaches used by schools to engage students with BPhO activities.
- Barriers and challenges affecting participation.
- Emerging themes to inform future programme development and evaluation.

In addition to gathering feedback on BPhO activities more broadly, the survey included a detailed evaluation of the newly introduced Round 0 competition. As Round 0 was launched after the reporting period covered by this Trustees' Annual Report, the findings from that evaluation will be reported and discussed in the 2025/26 Annual Report.

The British Physics Olympiad Trust

Trustees' Report (continued)

Summary of Findings

Strong teacher support and satisfaction

- Teachers identified stretching and challenging high-attaining students as the primary reason for participating in BPhO activities.
- Participation was widely regarded as an effective way to provide enrichment beyond the curriculum and to develop students' problem-solving skills.
- More than 90% of respondents indicated that they intended to participate in BPhO activities again.

Benefits for students

Teachers reported that participation helps students develop problem-solving ability, confidence, resilience and independent learning skills.

- Respondents identified exposure to physics beyond the curriculum and the opportunity to apply knowledge in unfamiliar contexts as key benefits for students.
- Teachers also reported that participation can support students' aspirations towards further study and careers in physics and related disciplines.

Benefits for teachers and schools

- Teachers valued access to high-quality physics problems and resources, many of which could also be incorporated into classroom teaching and enrichment activities.
- Respondents reported that BPhO activities help raise the profile of physics within schools, strengthen enrichment provision, and provide opportunities to celebrate student achievement.
- Teachers also reported that participation can encourage progression into further physics study and support aspirations towards higher education.

The British Physics Olympiad Trust

Trustees' Report (continued)

Challenges and opportunities for improvement

- The most commonly reported barriers related to teacher workload, timetable pressures, and finding time within an already crowded curriculum.
- Teachers also highlighted challenges associated with competition administration, scheduling, and access to suitable facilities for participation.
- Respondents identified a number of practical improvements that could further support participation, including clearer timelines, continued development of online systems and resources, and ongoing review of barriers to engagement.

Overall, the survey indicated that teachers regard the British Physics Olympiad as a highly valued programme of enrichment and challenge, reporting positive benefits for students, teachers and schools across the UK. The findings from the survey will be explored further through planned focus groups and additional analysis, contributing to a broader evaluation report and helping to inform the future development of BPhO activities. The survey also provided early feedback on new initiatives introduced after the reporting period, which will be considered as part of future evaluation and review.

Appendix A

British Physics Olympiad Annual Teacher Survey - Summary Findings,

Laura Thomas (Ondata Research)

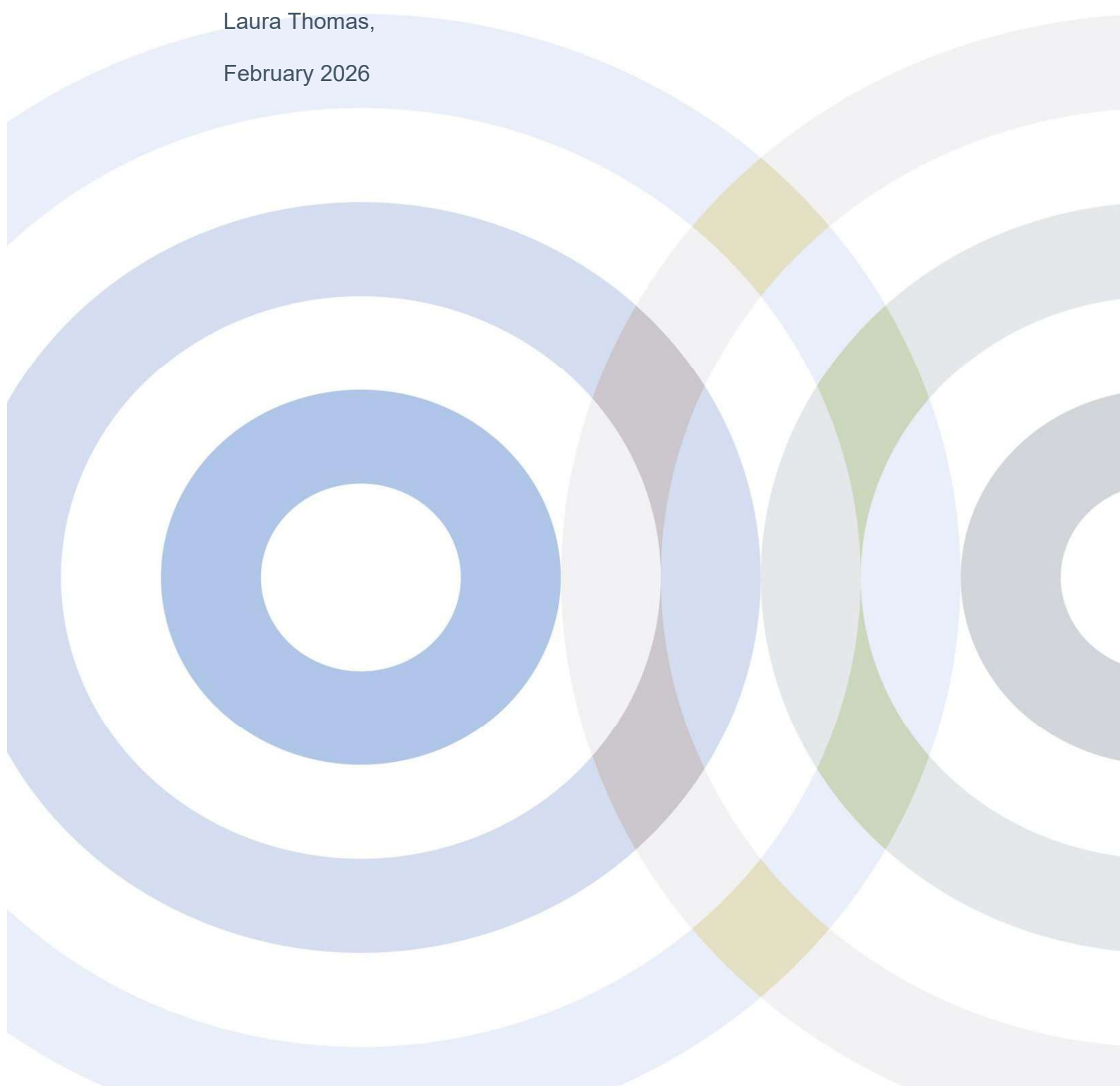


Ondata Research

Summary Findings from the British Physics Olympiad Annual Teacher Survey 2025/2026

Laura Thomas,

February 2026



1. Introduction

This report summarises the findings from the Annual Teacher Survey which was disseminated to British Physics Olympiad (BPhO) schools at the end of 2025. The survey closed at the end of January 2026 with one hundred and forty two responses. The respondents were asked to indicate how long they had been taking part in the British Physics Olympiad and Table 1 below shows the distribution.

	n	%
1-2 years	29	20.4%
3-5 years	34	23.9%
6-10 years	26	18.3%
10+ years	53	37.3%
	142	

Table 1. Responses to the question: “How many years have you been taking part in the British Physics Olympiad?”

There were three sections to the survey. One had a set of questions about their experiences of BPhO competitions as a whole, the second focussed on the Year 7/8 competition and the third section looked at their experiences of the newly introduced Round 0.

Out of the 142 overall responses, 129 respondents answered questions about Round 0 and 25 respondents answered questions about the Year 7/8 competition.

At the end of the survey, teachers were able to share their e-mail addresses if they were happy to be contacted for a follow-up discussion. 55 teachers provided their contact details for a follow-up. It is proposed that a series of focus groups takes place in March.

Based on my experience of evaluating other, similar programmes, this is a fantastic response rate, especially the proportion of respondents who are willing to have a follow up conversation.

The report goes on to provide a summary of general findings (section 2), feedback on Round 0 (section 3), feedback on Year 7/8 challenges (section 4). It concludes with a summary of the next steps (section 5). The survey questions themselves can be found in Appendix A.

2. Summary of general findings

2.1 Motivation to get involved

To begin with we review the responses to the question “**What motivated you to get involved in The British Physics Olympiad?**” Teachers were able to provide a text response and these were then categorised into themes. Some responses indicated more than one reason and each part of the responses were categorised into the relevant theme. Table 2 shows the broad range of motivations of why teachers chose to get involved.

The three most common reasons were: to challenge or stretch their highest attaining students, to provide an opportunity for physics-related extra-curricular activities and because there has been student interest. The Table is ordered from most common response to least.

	n	%
Challenge/stretch highest attaining students	30	32.6%
Opportunity for physics-related extra-curricular activities	11	12.0%
Student request/enthusiasm/interest	10	10.9%
Opportunity for students to develop problem solving skills	7	7.6%
Positive experience for students to participate in and have sense of achievement	7	7.6%
Experience for university applications and CVs.	7	7.6%
BPhO provides opportunity for students to experience ‘real physics’	5	5.4%
Problem solving would help with PAT/ESAT/interview preparation	3	3.3%
Opportunity to raise aspirations of pupils	3	3.3%
Teacher enjoyed taking part as a student	3	3.3%
BPhO seen as prestigious.	2	2.2%
Established practice at the school/college	2	2.2%
Wanted to develop teaching practice by incorporating different styles of questions into teaching	1	1.1%
Encourage uptake of physics amongst female students	1	1.1%
	92	

Table 2. What motivated you to get involved in The British Physics Olympiad?

Some of these points are illustrated through this selection of quotes from teachers. Each quote is followed in brackets by an indication of the number of years a teacher has been involved with the British Physics Olympiad.

- “The awards hold a lot of prestige, which the student, parents and school respect, and looks good on applications too.” Teacher (participating in BPhO for 3-5 years).
- “It’s an excellent opportunity to engage with Physics beyond the curriculum.” Teacher (participating in BPhO for 3-5 years).
- “It gives the students a chance to apply their knowledge and problem solving outside of the school curriculum, gives a good challenge.” Teacher (participating in BPhO for 3-5 years).

2.2 Recent changes

The next question looks at the changes that have occurred in recent years and was targeted at those who had more than 5 years' of experience with the British Physics Olympiad. Table 3 shows the categories that the responses have been grouped into in terms of what positive changes there have been.

In general, the move to online competitions, the use of the online platform and introduction of Round 0 have had the most impact but there are a broad range of changes which have been well received. One aspect which was a common response, was the continued high standard of the questions.

	n	%
Introduction of R0 positively received, especially as a way to speed up selection process but also widen participation	25	36.8%
Online platform makes it easy to participate in competitions	21	30.9%
Introduction of multiple choice and online competitions	18	26.5%
Extension of competitions to younger years very positive	12	17.6%
Standard of questions continues to be high, considered to be consistently challenging and interesting for teachers and students	7	10.3%
Communication from BPhO and website have improved	4	5.9%
Introduction of webinars and online competitions has opened up involvement to more students	2	2.9%
More past papers to work with and mark schemes have improved and are easier to follow	2	2.9%
Generally easier to enter and manage, including entries and payments. Like being able to choose paper entries or online entries.	1	1.5%
Introduction of BAAO	1	1.5%
	68	

Table 3. The British Physics Olympiad has grown over last few years. How does your current experience with the British Physics Olympiad compare to when you first got involved? What developments have stood out along the way?

Within the responses there were also some challenges and barriers identified and these have been combined with the answers to a specific question on this in a later section (2.5).

2.3 Engaging students with the British Physics Olympiad

This sub-section reviews the categorised responses to the question, **“How do you engage your students with British Physics Olympiad? We’re keen to understand how you promote the competitions with your students and the support available to them. Do they work independently or are there clubs or peer support available? Please give us as much detail as possible about your BPhO related activities in school”**. The responses to this question varied in scope, therefore we are not highlighting what the most common answers are, instead we are comparing similar categories of response.

- The most common way in which teachers are engaging their students is via a lunch time or after school club (n=71). However, there are also a high proportion of schools/colleges who do not, or are unable to, provide direct support for students and therefore they prepare independently (n=50). A significant number of schools noted that their whole year groups participate (n=12).
- Teacher support was often available on request (n=11) and teachers noted that their students would attend the BPhO webinars/online sessions (n=9). Some schools commented that their students took part in competitions without any preparation (n=7).
- It is also quite common for competitions to be promoted to a whole year group and then available as an opt-in activity (n=18) rather than teachers selecting students to participate (n=7).
- When it comes to normal classroom time, there were many instances where teachers would use past papers in lessons, often as extension work, e.g. as stretch problems or as homework (n=14).

2.4 Benefits to participating

This section moves onto examine the extensive responses received to the question: **“What are the benefits of participation to you, your students and your school?”** These areas are looked at in turn.

Benefits to teachers

Teachers have noted that engaging with BPhO is something they enjoy doing. They enjoy supporting their students and having the opportunity to push the most able students. They also appreciate having access to interesting and high quality questions and problems. This allows them to show their students the breadth of physics and in different and new contexts and also provides an opportunity to discuss physics beyond the curriculum. The experience also improves their own problem solving skills:

“I sit many of the papers whilst invigilating, which is good for me to be put under time-pressure. I generally go through the papers more slowly before I look at the solutions. This has improved my problem-solving over the years. I am working through the Round 1 papers as a way of developing my skills now that I have answered all the Isaac Physics Challenge questions (apart from the 25 or so that I haven't been able to work out !!).” Teacher (10+ years)

Teachers are also able to incorporate the resources into their own teaching practice.

Benefits to students

Teachers felt that students got the most out of participating. Commonly this was felt to relate to their skills development, including:

- Physics-related knowledge and skills
- Problem solving skills
- Teamworking skills as they work with like-minded peers to discuss physics problems
- Encouraging deeper conceptual understanding and mathematical reasoning
- For students who don't have regular sessions with teachers, working to prepare for the challenges allows them to develop their independent working skills

Teachers have observed that students also build confidence and resilience around physics, improving their ability to tackle difficult questions at A-level:

“We have noticed an improved in problem solving and willingness to tackle less familiar problems from those who participate.” Teacher (1-2 years)

“Students develop their problem-solving in a time-pressured unsupported environment during the papers, which helps them experience challenges in a known environment and encourage them to be resilient.” Teacher (10+ years)

Students apply physics concepts in unfamiliar contexts “strengthening their ability to think critically rather than rely on recall” Teacher (3-5 years)

Students “learn not to be daunted by unfamiliar questions, but instead to think through possible routes to a solution” Teacher (10+ years)

Students get a sense of pride, accomplishment and achievement from participating and this can motivate and inspire them to continue in physics-related study. This experience can also help them to get a sense of what physics at university might be like and if it is for them. Participation can raise their aspirations and offers opportunity to prepare for university applications and interviews outside of classes.

“Helps some students realise that they are probably equipped to take Physics at A level and others realise that they are better at physics than they may think, based on their topic assessments (which might require different skills).” Teacher (10+ years)

Participating in BPhO has been something students have enjoyed doing and they particularly like the competition aspect. The certificate provides recognition of their success in a prestigious national competition and can support university applications and demonstrate students’ interest in physics. Validation from national competition can be very motivating for students.

Benefits to schools/colleges

The most common benefit cited by teachers was that participation in BPhO raises profile of physics in the school.

“It raises the importance and significance of physics. Biology and chemistry have medicine to give them credibility.” Teacher (6-10 years)

When student successes are shared this can boost interest and enthusiasm for physics. Schools enjoy being able to celebrate and showcase their talented physics students. There is also an acknowledgement that participation can support improved attainment and uptake of physics and is an excellent opportunity to stretch the most able:

“There has been an increase in appreciation of Physics as a stand-alone subject at KS3 and 4. A number of students have engaged with the Olympiad materials at KS5 to ensure better preparation. This all works to increase attainment in Physics” Teacher (6-10 years)

“I think that the opportunity to tackle interesting problems (beyond the scope of GCSE or A-level) is a key factor in them choosing to pursue physics and related subjects further.” Teacher (6-10 years)

For some schools there is an expectation that there will be a programme of extra-curricular activities available and BPhO helps to meet this need by giving a boost to a school/college’s enrichment programme. The opportunity to be part of a national competition is also a draw for students and their families. High ability students have an expectation that these sorts of opportunities are available to them and offering BPhO can help to attract students to a sixth form. Participation shows parents that the school/college is committed to supporting students beyond A-levels and this can provide support for helping with university entrance and interviews.

“The school gets to show they can challenge students. I get to read some interesting physics problems (love the one with tossing a book whilst on a train ride even if it’s not the hardest). The students get to challenge themselves and see if they are as good as they think they are, especially those that find GCSE physics easy, or at least better than their friends. A few students are looking for an escape that they can get lost in as well.” Teacher (3-5 years)

BPhO also provides opportunities to engage with physics at different ages.

“Students who achieve Top Gold in Round 1 (up to this year's changes at least) have met with a high level of success in their UCAS applications, which sends the message down the school that this is something worth working towards.” Teacher (10+ years)

“We have a lot of students who are very keen on STEM and want to do more and extend their knowledge and this allows them to do it at all stages of school.” Teacher (3-5 years)

2.5 Challenges and barriers

This section discusses the responses to the question, **“What are the challenges or barriers to participation?”** along with some responses to the question about recent changes.

The most common issue is related to time. It was more likely that participation in BPhO would be outside of normal class time due to the lack of space in the curriculum. Teachers already have a high workload and therefore minimum time available to them to support their students in preparing for BPhO or limited time in administering the competitions. As we saw earlier, a large proportion of schools do not provide any specific sessions for their students. Teachers are not given additional admin time by their schools to support BPhO.

“There is a lot more administration involved these days with so many competitions. It has been hard to keep up with the various iterations of handing in the Round 1 papers over the years. It was definitely easiest when we put them in an envelope and posted them off!” Teacher (10+ years)

In terms of logistics, there is often a major challenge in relation to finding a suitable time and space for the students to sit papers, especially when teachers need to ensure there are enough computers or tablets for the online competitions. Some schools/colleges aren’t able to take part in all of the competitions they want to because of lack of available time and access to venues. Having to sit a paper on a specific date can be a challenge in terms of finding a suitable location and getting students out of classes. Having some flexibility would make a big difference to schools.

Teachers observed that students can find the level of questions too hard and this can be off-putting to them, especially if they score low on one competition. More generally, some students lack confidence and/or have a fear of failure and the idea of the competition can feel intimidating to them. In some schools, leadership tend to want a focus on bringing up the attainment of borderline students rather than there being a focus on pushing the able students.

In terms of the timeline for the competitions, some teachers felt there was a long wait for results, which can be a challenge. Also there were several comments about the timing of the rounds and that for some the dates mean that it is too late for some to include on their UCAS applications. For A-level students this can also be a busy time of the year as they have a challenging workload and the commitment required for BPhO can be off putting. Many students will prioritise the university application preparation. In general, the content and timing is oriented strongly towards English curriculum which can make it very challenging for Scottish pupils.

There were also some observations that the website and e-mail documentation can feel complex, especially the website information relating to the competitions. Teachers often find this difficult to follow and some have suggested a table of competitions in date order to help them navigate. It has been observed that the website can be out of date or be updated shortly before competitions run making it difficult to plan ahead.

The cost associated with participation was not a common barrier but was mentioned as a significant aspect for some. This was often linked to the numbers qualifying for Round 1 this year following Round 0. See the discussion in the later section for more detail on this.

There were a small number of individual comments to highlight.

- One teacher said they had a feeling that the competition is aimed more at grammar or private schools but with no clear explanation as to why they feel this way.
- Moving to credit card payment from invoice has added bureaucracy.
- Staff are often working part-time limiting their school's participation even further.

2.6 Other comments

When asked about future participation, 122 respondents (91.7%) would participate again with 10 (7.5%) saying not sure and 1 person (0.8%) saying no. The reasons for those responding not sure or no was down to the timing of rounds, lack of rewards for round 0 (discussed in more detail in the following section), cost and the difficulty level of the questions being too challenging for their students.

At the conclusion of the survey respondents were able to add their own additional comments and there were many who expressed their appreciation for the efforts that go into running the competitions.

"I would like to thank the Oxford BPhO team for all their efforts in running the competition, communication is efficient and I enjoy giving students the opportunity to challenge themselves beyond the A Level curriculum. The work behind the scenes must be immense but it's always a pleasure to run". Teacher (3-5 years)

"Thank you for continuing to maintain and provide this very valued resource and set of challenges. The students who take part take a huge amount from it." Teacher (10+ years)

3. Round 0 Feedback

This section looks at the 129 responses to the Round 0 related questions. Round 0 has been received very positively. The introduction of Round 0 has achieved its goal, it has reduced the entries into Round 1, it has reduced teacher workload and it has also more generally widened participation.

3.1 Benefits and successes

Teachers were asked to sum up both theirs and their students' experiences of Round 0 and if they enjoyed the paper. The text responses were categorised into the following:

	Yes, students enjoyed the paper	Challenging/difficult experience	Mixed experience	Negative experience	
n	66	36	9	5	116
%	56.9%	31.0%	7.8%	4.3%	

Table 4. Teacher and student feedback on their experiences of Round 0

Teachers felt that it had been an enjoyable experience for students.

“There seemed to be a nice buzz after the paper with students wanting to discuss answers etc.”
Teacher (6-10 years)

When responding that the experience was challenging or difficult, this was not necessarily seen as a negative. This was often a positive reinforcement of them seeing the British Physics Olympiad as something that does stretch their students. Some teachers reported a mixed experience, with them observing that the students with more confidence and more preparation had a better experience over those who had gone into it unprepared. A small number reported a negative experience and this was for a mix of reasons, including a lack of students progressing into Round 1 when the school or college would normally have multiple entrants. There was also an aspect of lack of enjoyment due to the level of difficulty.

“Not sure 'enjoy' is the correct word. For some with less confidence and ability it can reinforce the idea that they can't do physics (which is why I make it entirely optional). Most of the students who have a go get something out of the Challenge. My worry is that it will put some students off Physics if they feel that it's too difficult, but I don't have any evidence for that!” (Teacher 6-10 years)

However, I would caution that it's up to the teachers' professional judgement of how best to support a student who may feel that the challenge is too difficult. Although another teacher commented on Round 0 that it was “Better than Round 1 at not putting students off.” Teacher (1-2 years).

Teachers were explicitly asked whether they had seen similar numbers compared to previous years. Responses were categorised and are summarised in Table 5.

First time	Similar	Less	More	
14	48	9	52	123
11.4%	39.0%	7.3%	42.3%	

Table 5. Have you seen similar numbers of participation compared with previous years or has this changed?

For those who had less students than normal this seemed to be related to the timing of the Round 0 and that it had to take place on a set day and this was felt to be set a quite short notice. In a small number of instances, the lack of certificate or Gold/Silver/Bronze reward put off some others from wanting to take part. There were some other comments about the name of the competition, Round 0, being an issue and off-putting for students.

For some state schools who have had more success than expected this has increased the entry costs they are liable for. For example, one school had more take part in Round 0 which was an expected cost. More then qualified for Round 1 when previously the school budgeted for a number of additional paid for spaces above the 4 free ones and this is an issue. These schools may have to revisit their approach due to cost.

For those with large increases in participation, they felt Round 0 as a multiple choice question paper made it much less intimidating. One teacher commented that they would go back to selecting students as they felt Round 0 was a negative experience for those who lacked confidence.

Some schools were already running their own qualifying round and this has replaced this. This was also a good opportunity for students to practice multiple choice questions and this will help with exam preparation. In terms of the level of the paper, the majority thought the level was suitable and accessible for their whole cohort with the expected students making it through and in others it was thought to be too difficult with no students progressing into Round 1 or students they hadn't expected making it through. In terms of numbers of entries, teachers were more comfortable having more students participate because "It seemed lower stakes and commitment from the students". Teacher (1-2 years)

"I have liked to change to having a round zero this year for the Olympiad, it has encouraged a wider range of participation and some surprising outcomes with who did/didn't get through. I prefer it to the Y13 challenge which I think is better suited to problem solving discussion (weaker students found it much less accessible than round 0)" Teacher (6-10 years)

"Fantastic. Really differentiated between students and made organising the R1 far easier in terms of pupil numbers and finding a venue within school." Teacher (10+ years)

Teachers have reported that Round 0 has been very straightforward to administer, although there were issues with the expectation of individually scanned PDF files for each student rather than a batch scan to one PDF file. There also seemed to be a lot of confusion amongst the students of how to fill out their names on the answer sheet. Teachers now know what to expect when it comes to the collation of entries so are reasonably happy going into next year. However, in terms of the portal for submission, teachers would have appreciated some kind of confirmation that they had successfully uploaded the files as this wasn't clear. Many teachers are thinking ahead to next year to help prepare students for Round 0.

3.2 Challenges and barriers

In terms of challenges and barriers relating to the introduction of Round 0 there were four main areas of feedback:

1. The timeline being revealed at short notice and there being limited time between Round 0 and Round 1 with several schools reporting they missed deadlines for entry to Round 1 due to half term. It was also felt that there was limited time available to prepare for the Round 0 style questions and then that those who progressed into Round 1 also did not have much time to prepare. Some students had already been preparing for Round 1 type questions for a year and were then faced with a different question style. One commenter said that it would be even easier to organise if the testing time was reduced for 50 minutes as opposed to one hour as this would allow it more easily to fit in a lesson block. Teachers recognise that this is the first year there will likely be more support and resources for preparing for the next time Round 0 runs. Teachers also asked for the paper to be on any day other than a Friday. There were also several comments about renaming the rounds as Round 0 was seen by some to be a negative.
2. Lack of awards or certificates to recognise achievement in Round 0. One of the motivations for participating is to reward the success of their physics students and to raise the profile of physics in the school/college. Without an award this was felt to diminish this aspect and also perhaps put some students off from participating altogether.

“Format (MCQs) is fine but I thought questions were too hard or barrier to Round 1 was set too high. In the old system we used to get circa 3 golds, 3-4 silver, 7-10 bronze. This year we only got 3 students into round 1. This would be fine if there were certificates for round 0, but there aren't.”
Teacher (6-10 years)

One school commented that in previous years they would have taken up the full 4 free places for Round 1 but no one qualified this year and there were not any awards when previously they would have had a range of Bronze, Silver and Gold. The teacher is concerned that “the lack of reward will make students even less willing to give it a go in future” as it also means that they aren't able to list a BPhO award as an achievement in their UCAS applications.

3. There was feedback that some entrants into Round 0 were disadvantaged because some of the topics (e.g. capacitors) are not taught until much later in the course. There were also comments about the timeline of Round 0 and Round 1 more generally as there are clashes with UCAS applications and associated activities.

“Students that want to participate have not been exposed to much of the content in the competition when BPhO Round 0 / Round 1 occurs. Both Year 12 and Year 13 students need to self-study or work in peer groups to learn content ahead of their physics course plan. This requires additional support from myself, the physics teacher.” Teacher (3-5 years)

4. There was also some concern about students progressing into Round 1 due to lucky guesses. Several teachers felt that there were some students who progressed that they wouldn't have expected to and others who they felt should have gone through but missed qualification. Some suggested that negative marking for wrong answers could help with this. In some instances schools had many more progress into Round 1 than expected, increasing the cost. In others, schools had no one go through when in previous years they would have taken up several spaces and staff and students were disappointed with this result. Also some concern about the different style of questions from Round 0 to Round 1 and that some teachers felt that some students who didn't go through would have been more successful with the Round 1 question style.

“Round 0 was good - but ended with 30 of my students taking round 1, with cost the department a fortune. Previously I only 'selected' the top 5 to take round 1. We are a state school, so get some free papers, but this was a cost not budgeted for and we will have to think hard about whether we do it again.” Teacher (10+ years)

One teacher expressed concern about the proportion of state schools progressing into Round 1 compared with previous levels of participation and this would certainly be something to monitor.

5. Year 7/8 Challenge Feedback

There were 25 respondents answering questions about their involvement in the Year 7/8 challenges. All of the respondents to this section of the survey said they would participate in the Year 7/8 challenges again. It seemed to be fairly common for teachers who used the challenge to run it for their whole year group in class time (n=11) but also for a significant proportion to make it optional (n=9).

“Brilliant engagement, exciting students about Physics as a subject and an opportunity to solve some complex questions which they do not always have during their lessons taught by non-specialists” Teacher (6-10 years)

“It is great to promote Physics at an early age to our students and for them to achieve early success.” Teacher (10+ years)

Overall the introduction of the online competitions for younger years has enabled them to increase participation amongst students and encouraged them to consider participating in the other competitions as they get older. Some schools have established multi-year participation.

“The inclusion of online multiple choice papers has been very positive. It allows me to engage many more students and persuade more of them to take the written papers.” Teacher (10+ years)

“High participation with the on-line competitions and greater participation with the paper based competitions because more students are aware of the competitions and are motivated to take part.” Teacher (6-10 years)

“I really enjoy that the challenge has expanded to include every year group (except the Y9s!). Many of my students have moved through the challenges (Y10, Y11 and now Y12) as they progressed through their educational journey and look forward to the following year!” Teacher (6-10 years)

One teacher has requested a team challenge for Year 9s to ensure full coverage of all the different year groups.

The following Table summarises the reasons why teachers have been involved in running the Year 7/8 challenge. As before, the text responses have been categorised and some responses could be counted across multiple categories. In general, the motivations mirror those for the British Physics Olympiad in general although at this stage, the promotion of physics and engagement with physics outside of the curriculum is more important than providing an opportunity to challenge high achieving students.

Item	n	%
Promote physics	10	28.6%
Opportunity to engage pupils in problem solving and physics outside of the curriculum	9	25.7%
Opportunity to achieve in a national competition	7	20.0%
Fun activity	4	11.4%
Challenge high achieving students	3	8.6%
Develop confidence in physics	2	5.7%
	35	

Table 6. Reasons for engaging with Y7/8 challenge

There were a number of benefits to the Year 7/8 competition:

- Encouraged students to engage in physics outside of their classroom lessons
 “the competition significantly contributed to a more positive attitude towards challenging problems by presenting physics in an accessible format, which demonstrably boosted student interest, particularly amongst female participants, and encouraged future engagement with the subject.” Teacher (3-5 years)
- Encouraged deeper conceptual understanding and mathematical reasoning
- Starts students’ competition journey and hopefully their positive experience encourages them to participate in the future
- Competition element helps to motivate the students, certificates particularly motivating
- Raised the profile of physics and encouraged them to take an interest
- Hoping that this competition in younger years will result in higher uptake of challenges in later years.
- Provides further context about physics they are learning in the classroom.
- Positive impact on problem solving skills:
 “Improvements in the physics-related sections of the end-of-year exams were noticeably stronger than in the biology and chemistry components. This suggests that the activity had a positive impact, effectively acting as an additional opportunity for revision and structured problem-solving practice, while also supporting students’ confidence and engagement with physics.” Teacher (3-5 years)

Teachers felt that the multiple choice style was particularly suitable for this age group.

“there were high level of engagement from both Year 7 and 8 students, and we were effectively able to identify several highly motivated and talented young physicists” Teacher (3-5 years)

“the questions were interesting and the students enjoyed the challenge.” Teacher (1-2 years)

There were some challenges running the competition such as getting students to give up their lunchtime to take part and that in some cases printing and writing the certificates was time-consuming especially when whole cohorts are taking part.

6. Next steps

There has been excellent engagement with the survey and teachers have clearly put time and effort into answering the questions with detail allowing an insight into their experiences. A set of four focus groups are proposed for March 2026. One for those participating in Year 7/8 challenges and the other three will cover general questions. A set of questions for each type of focus group have been made available alongside this report for review and comment.

Once the focus groups have been run, the final format of reporting will be agreed with British Physics Olympiad Colleagues.

Appendix A: Survey questions

1. How many years have you been taking part in the British Physics Olympiad?
2. Which types of competition paper have your students participated in? (tick all that apply)
3. What motivated you to get involved in The British Physics Olympiad?
4. The British Physics Olympiad has grown over last few years. How does your current experience with the British Physics Olympiad compare to when you first got involved? What developments have stood out along the way?
5. How do you engage your students with British Physics Olympiad? We're keen to understand how you promote the competitions with your students and the support available to them. Do they work independently or are there clubs or peer support available? Please give us as much detail as possible about your BPhO related activities in school.
6. What are the benefits of participation to you, your students and your school?
7. What are the challenges or barriers to participation?
8. Have your students taken part in our newest competitions? (tick all that apply)
9. Why did you decide to run the Year 7/8 Physics Challenge Online? What were you hoping to get out of it?
10. Were your expectations met?
11. How was it promoted to your students? Was it incorporated into lessons or as an option as part of a club?
12. What were the benefits of having this competition for Year 7/8?
13. What were the challenges of running the competition?
14. Do you think there was any impact or contribution to students' attitudes towards problem solving or their level of interest in physics?
15. Would you participate again?
16. Please explain.
17. What are your impressions of the format of the paper? Was this suitable?
18. In terms of the process of marking and collating the multiple choice mark sheets for BPhO, were there any challenges or issues?
19. Following the introduction of Round 0 has your approach to preparing for Round 1 changed or stayed the same? Please tell us about what you have been doing in school to support students' participation.
20. Round 0 has been used as a way of selecting a number of students to progress into Round 1 but BPhO are also aiming to encourage more students to participate. Have you seen similar numbers of participation compared with previous years or has this changed?
21. Are there other barriers to participation you would like to share with us?

22. How would you sum up you and your students' experiences of Round 0? Did students enjoy the paper?

23. Would you participate again?

24. Please explain.

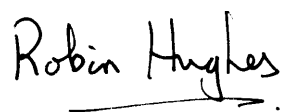
25. Are there any other comments or suggestions about the BPhO competitions you would like to share?

26. We would like to undertake some further discussions with teachers on their experiences via a thirty minute online interview. If this is something you'd be interested in doing please enter your e-mail address below.

The British Physics Olympiad Trust

Trustees' Report (continued)

The annual report was approved by the trustees of the charity on 30 June 2026. and signed on its behalf by:

A handwritten signature in black ink that reads "Robin Hughes". The signature is written in a cursive style with a horizontal line underneath the name.

Mr Robin Hughes
Chairman and trustee

The British Physics Olympiad Trust

Statement of Trustees' Responsibilities

The trustees are responsible for preparing the trustees' report and the financial statements in accordance with the United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice) and applicable law and regulations.

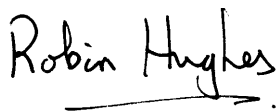
The law applicable to charities requires the trustees to prepare financial statements for each financial year which give a true and fair view of the state of affairs of the charity and of the incoming resources and application of resources of the charity for that period. In preparing these financial statements, the trustees are required to:

- select suitable accounting policies and then apply them consistently;
- observe the methods and principles in the Charities SORP;
- make judgements and estimates that are reasonable and prudent;
- state whether applicable accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the charity will continue in business.

The trustees are responsible for keeping proper accounting records that disclose with reasonable accuracy at any time the financial position of the charity and enable them to ensure that the financial statements comply with the Charities Act 2011, the Charities (Accounts and Reports) Regulations 2008, and the provisions of the constitution. The trustees are also responsible for safeguarding the assets of the charity and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The trustees are responsible for the maintenance and integrity of the corporate and financial information included on the charitable company's website. Legislation governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Approved by the trustees of the charity on 30 June 2026 and signed on its behalf by:

A handwritten signature in black ink that reads "Robin Hughes". The signature is written in a cursive style with a horizontal line underneath the name.

Mr Robin Hughes
Chairman and trustee

The British Physics Olympiad Trust

Independent Examiner's Report to the trustees of The British Physics Olympiad Trust

I report to the trustees on my examination of the accounts of The British Physics Olympiad Trust for the year ended 31 August 2025.

Responsibilities and basis of report

As the charity trustees of The British Physics Olympiad Trust you are responsible for the preparation of the accounts in accordance with the requirements of the Charities Act 2011 ('the Act').

I report in respect of my examination of the The British Physics Olympiad Trust's accounts carried out under section 145 of the 2011 Act and in carrying out my examination I have followed all the applicable Directions given by the Charity Commission under section 145(5)(b) of the Act.

Independent examiner's statement

Since The British Physics Olympiad Trust's gross income exceeded £250,000 your examiner must be a member of a body listed in section 145 of the 2011 Act. I confirm that I am qualified to undertake the examination because I am a member of , which is one of the listed bodies.

I have completed my examination. I confirm that no material matters have come to my attention in connection with the examination giving me cause to believe that in any material respect:

1. accounting records were not kept in respect of The British Physics Olympiad Trust as required by section 130 of the Act; or
2. the accounts do not accord with those records; or
3. the accounts do not comply with the accounting requirements concerning the form and content of accounts set out in the Charities (Accounts and Reports) Regulations 2008 other than any requirement that the accounts give a 'true and fair view' which is not a matter considered as part of an independent examination.

I have no concerns and have come across no other matters in connection with the examination to which attention should be drawn in this report in order to enable a proper understanding of the accounts to be reached.

.....
Ajay Bahl FCA
Wenn Townsend Chartered Accountants

30 St Giles'
Oxford
OX1 3LE

30 June 2026

The British Physics Olympiad Trust

Statement of Financial Activities for the Year Ended 31 August 2025

	Note	Unrestricted funds £	Total 2025 £
Income and Endowments from:			
Other trading activities	2	269,811	269,811
Investment income	3	6,012	6,012
Total income		<u>275,823</u>	<u>275,823</u>
Expenditure on:			
Raising funds		(108,771)	(108,771)
Charitable activities	4	(248,393)	(248,393)
Total expenditure		<u>(357,164)</u>	<u>(357,164)</u>
Net income		<u>(81,341)</u>	<u>(81,341)</u>
Net movement in funds		(81,341)	(81,341)
Reconciliation of funds			
Total funds brought forward		425,739	425,739
		<u>344,398</u>	<u>344,398</u>
Total funds carried forward	12		

	Note	Unrestricted funds £	Total 2024 £
Income and Endowments from:			
Other trading activities	2	296,616	296,616
Investment income	3	6,231	6,231
Total income		<u>302,847</u>	<u>302,847</u>
Expenditure on:			
Raising funds		(89,925)	(89,925)
Charitable activities	4	(141,754)	(141,754)
Total expenditure		<u>(231,679)</u>	<u>(231,679)</u>
Net income		<u>71,168</u>	<u>71,168</u>
Net movement in funds		71,168	71,168
Reconciliation of funds			
Total funds brought forward		<u>354,571</u>	<u>354,571</u>
Total funds carried forward	12	<u>425,739</u>	<u>425,739</u>

The British Physics Olympiad Trust

Statement of Financial Activities for the Year Ended 31 August 2025 (continued)

All of the charity's activities derive from continuing operations during the above two periods.

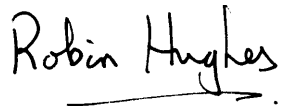
The funds breakdown is shown in note 12.

The British Physics Olympiad Trust

(Registration number: 1146064)
Balance Sheet as at 31 August 2025

	Note	2025 £	2024 £
Current assets			
Debtors	8	-	35,000
Cash at bank and in hand	9	362,103	421,289
		<u>362,103</u>	
			456,289
Creditors: Amounts falling due within one year	10	<u>(17,705)</u>	<u>(30,550)</u>
Net assets		<u>344,398</u>	<u>425,739</u>
Funds of the charity:			
Unrestricted income funds			
Unrestricted funds		<u>344,398</u>	<u>425,739</u>
Total funds	12	<u>344,398</u>	<u>425,739</u>

The financial statements on pages 14 to 22 were approved by the trustees, and authorised for issue on 30th June 2026 and signed on their behalf by:



Mr Robin Hughes
Chairman and trustee

The British Physics Olympiad Trust

Notes to the Financial Statements for the Year Ended 31 August 2025

1 Accounting policies

Statement of compliance

The financial statements have been prepared in accordance with the second edition of the Charities Statement of Recommended Practice issued in October 2019, the Financial Reporting Standard applicable in the United Kingdom and Republic of Ireland (FRS 102) and the Charities Act 2011.

Basis of preparation

The British Physics Olympiad Trust meets the definition of a public benefit entity under FRS 102. The accounts (financial statements) have been prepared under the historical cost convention with items recognised at cost or transaction value unless otherwise stated in the relevant note(s) to these accounts.

Going concern

The trustees consider that there are no material uncertainties about the charity's ability to continue as a going concern.

Changes in accounting policy

The previous years accounts were prepared using the receipts and payments basis. As the revenue threshold for the receipts and payments basis has been surpassed, the accounts for this year have been prepared on an accruals basis.

Income and endowments

All income is recognised once the charity has entitlement to the income, it is probable that the income will be received and the amount of income receivable can be measured reliably.

Interest on funds held on deposit is included when receivable and the amount can be reliably measured by the charity; this is normally upon notification of the interest paid or payable by the bank or deposit taking institution.

Expenditure

All expenditure is recognised once there is a legal or constructive obligation to that expenditure, it is probable settlement is required and the amount can be measured reliably. All costs are allocated to the applicable expenditure heading that aggregate similar costs to that category. Where costs cannot be directly attributed to particular headings they have been allocated on a basis consistent with the use of resources, with central staff costs allocated on the basis of time spent, and depreciation charges allocated on the portion of the asset's use. Other support costs are allocated based on the spread of staff costs.

Governance costs

These include the costs attributable to the charity's compliance with constitutional and statutory requirements, including audit, strategic management and trustees meetings and reimbursed expenses.

The British Physics Olympiad Trust

Notes to the Financial Statements for the Year Ended 31 August 2025 (continued)

Taxation

The charity is considered to pass the tests set out in Paragraph 1 Schedule 6 of the Finance Act 2010 and therefore it meets the definition of a charitable company for UK corporation tax purposes. Accordingly, the charity is potentially exempt from taxation in respect of income or capital gains received within categories covered by Chapter 3 Part 11 of the Corporation Tax Act 2010 or Section 256 of the Taxation of Chargeable Gains Act 1992, to the extent that such income or gains are applied exclusively to charitable purposes.

Trade debtors

Trade debtors are amounts due from customers for services performed in the ordinary course of business.

Trade debtors are recognised initially at the transaction price. They are subsequently measured at amortised cost using the effective interest method, less provision for impairment. A provision for the impairment of trade debtors is established when there is objective evidence that the charity will not be able to collect all amounts due according to the original terms of the receivables.

Cash and cash equivalents

Cash and cash equivalents comprise cash on hand and call deposits, and other short-term highly liquid investments that are readily convertible to a known amount of cash and are subject to an insignificant risk of change in value.

Trade creditors

Trade creditors are obligations to pay for goods or services that have been acquired in the ordinary course of business from suppliers. Accounts payable are classified as current liabilities if the creditor does not have an unconditional right, at the end of the reporting period, to defer settlement of the creditor for at least twelve months after the reporting date. If there is an unconditional right to defer settlement for at least twelve months after the reporting date, they are presented as non-current liabilities.

Trade Creditors are recognised initially at the transaction price and subsequently measured at amortised cost using the effective interest method.

Fund structure

Unrestricted income funds are general funds that are available for use at the trustees discretion in furtherance of the objectives of the charity.

The British Physics Olympiad Trust

Notes to the Financial Statements for the Year Ended 31 August 2025 (continued)

2 Income from other trading activities

	Unrestricted funds General £	Total funds £
Events income;		
Other events income	269,811	269,811
Total for 2025	269,811	269,811
Total for 2024	296,616	296,616

3 Investment income

	Unrestricted funds General £	Total funds £
Interest receivable and similar income;		
Interest receivable on bank deposits	6,012	6,012
Total for 2025	6,012	6,012
Total for 2024	6,231	6,231

4 Expenditure on charitable activities

	Unrestricted funds General £	Total funds £
	Note	
Governance costs	248,393	248,393
Total for 2025	248,393	248,393
Total for 2024	141,754	141,754

The British Physics Olympiad Trust

Notes to the Financial Statements for the Year Ended 31 August 2025 (continued)

5 Analysis of governance and support costs

Governance costs

	Unrestricted funds General £	Total funds £
Other staff costs	10,305	10,305
Other fees paid to examiner	3,967	3,967
Legal and professional fees	22,811	22,811
Marketing and publicity	1,770	1,770
Other governance costs	209,540	209,540
Total for 2025	248,393	248,393
Total for 2024	141,754	141,754

6 Staff costs

The aggregate payroll costs were as follows:

	2025 £	2024 £
Staff costs during the year were:		
Wages and salaries (raising funds)	108,771	89,925
Other staff costs	10,305	6,804
	119,076	96,729

The monthly average number of persons (including senior management / leadership team) employed by the charity during the year expressed as full time equivalents was as follows:

	2025 No	2024 No
Employee Average	22	21

No employee received emoluments of more than £60,000 during the year

The British Physics Olympiad Trust

Notes to the Financial Statements for the Year Ended 31 August 2025 (continued)

7 Taxation

The charity is a registered charity and is therefore exempt from taxation.

8 Debtors

	2025	2024
	£	£
Trade Debtors	-	35,000

9 Cash and cash equivalents

	2025	2024
	£	£
Cash at bank	362,103	421,289

10 Creditors: amounts falling due within one year

	2025	2024
	£	£
Trade creditors	14,270	13,543
Other taxation and social security	185	3,195
Other creditors	-	12,048
Accruals	3,250	1,764
	17,705	30,550

11 Pension and other schemes

Defined contribution pension scheme

The charity operates a defined contribution pension scheme. The pension cost charge for the year represents contributions payable by the charity to the scheme and amounted to £Nil (2024 - £Nil).

The British Physics Olympiad Trust

Notes to the Financial Statements for the Year Ended 31 August 2025 (continued)

12 Funds

	Balance at 1 September 2024 £	Incoming resources £	Resources expended £	Balance at 31 August 2025 £
Unrestricted funds				
General	425,739	275,823	(357,164)	344,398

	Balance at 1 September 2023 £	Incoming resources £	Resources expended £	Balance at 31 August 2024 £
Unrestricted funds				
General	354,571	302,847	(231,679)	425,739

13 Analysis of net assets between funds

	Unrestricted funds General £	Total funds at 31 August 2025 £
Current assets	362,103	362,103
Current liabilities	(17,705)	(17,705)
Total net assets	344,398	344,398

	Unrestricted funds General £	Total funds at 31 August 2024 £
Current assets	456,289	456,289
Current liabilities	(30,550)	(30,550)
Total net assets	425,739	425,739

The British Physics Olympiad Trust

Statement of Financial Activities by fund for the Year Ended 31 August 2025

	Total Unrestricted Funds 2025 £	Total Unrestricted Funds 2024 £
Income and Endowments from:		
Other trading activities	269,811	296,616
Investment income	6,012	6,231
Total income	<u>275,823</u>	<u>302,847</u>
Expenditure on:		
Raising funds	(108,771)	(89,925)
Charitable activities	(248,393)	(141,754)
Total expenditure	<u>(357,164)</u>	<u>(231,679)</u>
Net income	<u>(81,341)</u>	<u>71,168</u>
Net movement in funds	(81,341)	71,168
Reconciliation of funds		
Total funds brought forward	<u>425,739</u>	<u>354,571</u>
Total funds carried forward	<u>344,398</u>	<u>425,739</u>

The British Physics Olympiad Trust

Detailed Statement of Financial Activities for the Year Ended 31 August 2025

	Total 2025 £	Total 2024 £
Income and Endowments from:		
Other trading activities (analysed below)	269,811	296,616
Investment income (analysed below)	6,012	6,231
Total income	<u>275,823</u>	<u>302,847</u>
Expenditure on:		
Raising funds (analysed below)	(108,771)	(89,925)
Charitable activities (analysed below)	(248,393)	(141,754)
Total expenditure	<u>(357,164)</u>	<u>(231,679)</u>
Net income	<u>(81,341)</u>	71,168
Net movement in funds	(81,341)	71,168
Reconciliation of funds		
Total funds brought forward	<u>425,739</u>	354,571
Total funds carried forward	<u>344,398</u>	<u>425,739</u>

The British Physics Olympiad Trust

Detailed Statement of Financial Activities for the Year Ended 31 August 2025 (continued)

	Total 2025 £	Total 2024 £
<i>Other trading activities</i>		
Exhibitions	269,811	296,616
	<u>269,811</u>	<u>296,616</u>
<i>Investment income</i>		
Interest on cash deposits	6,012	6,231
	<u>6,012</u>	<u>6,231</u>
<i>Raising funds</i>		
Wages and salaries	(108,771)	(89,925)
	<u>(108,771)</u>	<u>(89,925)</u>
<i>Charitable activities</i>		
Volunteer expenses	(10,305)	(6,804)
Insurance	(2,052)	(1,918)
Registration fees	-	(1,931)
Office expenses	(1,523)	(380)
Computer software and maintenance costs	(12,939)	(4,403)
Printing, postage and stationery	(1,180)	(1,968)
Presentations	(27,134)	(22,106)
Trade subscriptions	(8,071)	(10,048)
Travel and subsistence	(65,376)	(64,428)
Accommodation	(20,313)	(16,668)
Advertising	(1,770)	(1,422)
Accountancy and bookkeeping fees	(13,211)	(7,400)
Independent examination fees	(3,967)	
Legal and professional fees	(9,600)	(1,638)
Bank charges	(903)	(640)
Events and competitions	(20,641)	
Other expenses	(49,408)	
	<u>(248,393)</u>	<u>(141,754)</u>

THE BRITISH PHYSICS OLYMPIAD TRUST

England & Wales - Charity number 1146064

Accounts

Charity registration number: 1146064

The British Physics Olympiad Trust

Annual Report and Financial Statements

for the Year Ended 31 August 2024

The British Physics Olympiad Trust

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The British Physics Olympiad Trust

Reference and Administrative Details

Chairman

Mr Robin Hughes

Trustees

Dr Anson Cheung

Dr Sian Tedaldi

Mr Robin Hughes

Charity Registration Number

1146064

Principal Office

The British Physics Olympiad Trust
Department of Physics
University of Oxford, Denys Wilkinson Building
Oxford
OX1 3RH

Independent Examiner

Ajay Bahl FCA
Wenn Townsend Chartered Accountants
30 St Giles'
Oxford
OX1 3LE

The British Physics Olympiad Trust

Trustees' Report

The trustees present the annual report together with the financial statements of the charity for the year ended 31 August 2024.

The registered charity name is The British Physics Olympiad Trust throughout this report it is also known as BPhO. Information for this charity can be found on the website: www.BPhO.org.uk.

Reference and administration details

The Charity name is The British Physics Olympiad Trust, and is also known as BPhO. The Charity has the registered number 1146064, and its principal address is:

The British Physics Olympiad Trust
Department of Physics
University of Oxford
Denys Wilkinson Building
Oxford
OX1 3RH

Trustees and officers

The trustees and officers serving during the year and since the year end were as follows:

Trustees:

Dr Anson Cheung

Dr Sian Tedaldi

Mr Robin Hughes

Chairman:

Mr Robin Hughes

The British Physics Olympiad Trust

Trustees' Report (continued)

Structure, governance and management

The charity is governed by a Trust Deed dated 11 January 2012. Trustees are appointed or reappointed at meetings of the Trustees. The organisation has a Child Protection Policy and a Data Protection Policy in place, and DBS checks are carried out on Trustees and on volunteers who interact with young people.

The British Physics Olympiad operates with the support of the Outreach Office of the Physics Department at the University of Oxford (Oxford Physics). One of the Trustees, Dr Sian Tedaldi, is based within the Outreach Office and, in her professional role at Oxford, oversees the BPhO's outreach activities and manages the BPhO Administrator. The BPhO Administrator is an employee of the University of Oxford and supports the day-to-day running of the BPhO, devoting a proportion of their time to the administration of BPhO competitions and events.

Academic training, paper setting, and the delivery of educational activities are managed and carried out by a committed group of around 30-40 volunteers, primarily teachers (including some retired) and university students. Postgraduate students are employed on casual contracts as competition markers to manage the substantial volume of Round 1 scripts from UK and international participants. This blended model of volunteer expertise and targeted staffing enables the BPhO to deliver a high-quality, wide-reaching programme.

Charitable objects and main activities undertaken

The objects of the Charity are the advancement of education and engagement of students in physics, including:

- The organisation of annual physics competitions in schools and colleges
- The selection and support of teams to represent the UK at the International Physics Olympiad and the International Olympiad on Astronomy and Astrophysics
- Encouraging the study of physics among students in Years 7-13, and recognising and rewarding excellence in young physicists

There are five distinct strategic activities that underpin the running and development of the organisation. Each area is explored further in this report.

1. Competition papers

- (a) Setting high-quality competition problems and papers
- (b) Ensuring consistency of standard, difficulty, and content
- (c) Implementing robust review and quality-assurance processes
- (d) Celebrating student success at an annual BPhO Awards Day

The British Physics Olympiad Trust

Trustees' Report (continued)

2. Selection and training

- (a) Organising annual training camps to select and prepare UK teams for international competition
- (b) Developing new materials and resources to support physics teaching
- (c) Supporting and accompanying teams to the International Physics Olympiad, the International Olympiad on Astronomy and Astrophysics, and the European Physics Olympiad, as appropriate

3. Widening engagement

- (a) Promoting BPhO competitions and resources to teachers and students
- (b) Developing new materials and resources to support physics teaching
- (c) Engaging underrepresented groups in physics
- (d) Running workshops and events to develop skills and enthusiasm for advanced physics content outside formal training

4. Operations and infrastructure

- (a) Developing and maintaining effective operational and administrative systems
- (b) Coordinating volunteer contributions of time, expertise, and equipment
- (c) Managing financial and logistical processes to support competitions, training, and events

5. Sustainability and expansion

- (a) Maintaining and developing relationships with sponsors and supporters
- (b) Building partnerships with organisations that enhance the BPhO's reach and impact
- (c) Engaging former International Olympiad students to contribute as mentors, volunteers, or ambassadors
- (d) Planning for the long-term sustainability and future development of BPhO activities

The British Physics Olympiad Trust

Trustees' Report (continued)

Background

Problem solving is central to the BPhO's mission, helping students build confidence, resilience, and independence when working with challenging material. Competitions, workshops and problem-solving events support both teachers and students in recognising that physics is demanding for everyone, while also highlighting the significant rewards of sustained engagement.

The BPhO promotes good practice in teaching extension and enrichment material, ensuring that students from all backgrounds can access high-quality opportunities beyond the classroom. By sharing resources and expertise developed over many years, BPhO strengthens teaching provision and helps students develop the advanced skills needed for further study. As a national network linking teachers and schools, BPhO maintains regular contact throughout the year to support participation and the exchange of ideas. The skills developed through BPhO activities benefit students personally and contribute to the wider economic need for future physicists, engineers and scientific leaders.

Competition papers

The BPhO set 13 competition papers each year, ensuring consistency, appropriate difficulty, and strong academic value. Information about all our papers can be found on the BPhO website. Individual reports containing detailed breakdowns of the paper results are also produced and made available to participating teachers.

These papers offer three levels of engagement, as outlined below, together with participation figures for the 2023/24 academic year.

- **Participate (31,100 students)**

Online, multiple-choice quizzes designed to spark interest in physics problem-solving, offering many easy questions alongside a few more challenging ones. There are five papers for ages 11-17 years, including the online Junior and Intermediate Physics Challenge papers and the online Junior Astro Challenge.

- **Challenge (18,000 students)**

Papers that foster deeper interest and understanding in problem-solving, requiring mathematical techniques and designed to stretch the most capable students. There are four papers for ages 14-18 years, including the Senior Physics Challenge and the Astro Challenge.

- **Compete and select (3,350 students)**

Our most advanced papers, such as BPhO Round 1, identify and reward the best problem-solvers in UK schools and are used to select the UK teams for international competitions. There are two qualifying Round 1 papers for Physics and Astronomy, with subsequent Round 2 papers, for ages 17-18 years.

The British Physics Olympiad Trust

Trustees' Report (continued)

In addition, the Experimental Project (250 students) and the Computational Physics Challenge (110 entries and 1,200 students engaging online) develop students' practical and analytical skills. Participation numbers continue to rise on average, with a marked increase in BPhO Round 1, which saw a 17% rise compared with the previous year.

New this year we introduced the online (Y7/8) Physics Challenge for Year 7 students. Fifty-one UK schools entered 3,581 students, with 44% girls. The paper encouraged participation and aimed to show ideas and a way of viewing the world through the lens of physics.

Selection and training

We selected two teams of five students to represent the UK in the international Olympiad competitions for both Physics and Astronomy through a five-day Easter residential held at the University of Oxford. The event supports motivated students in developing advanced problem-solving and analytical skills. Further training is provided through a programme of mentoring that includes both in-person and online activities.

This year, the Physics team did not attend the International Physics Olympiad, which was due to take place in Iran, due to safety considerations. The team instead competed in the European Physics Olympiad, travelling to Kutaisi, Georgia, where they achieved strong results.

Widening engagement

Our programme of enrichment activities continues to expand. In 2023/24, we delivered four events for young people, including the Year 10 Physics Taster Day and the Year 12 Physics Masterclass at St John's College. Working closely with the University of Oxford, we select students using widening participation criteria such as FSM eligibility, POLAR4 data, gender, and ethnicity, ensuring that students from underrepresented groups are prioritised.

To support teachers, who play a critical role in widening engagement, we delivered three events for teachers during the year. These sessions help ensure teachers from all schools can confidently deliver physics problem-solving and prepare students for our challenges. In addition, we continue to expand the resources available to them: we provide nine past papers and resources, and this year we have developed and piloted an online BPhO Round 1 question bank, allowing teachers to search for problems by physics theme and use them flexibly in the classroom. The annual BPhO lecture is published online to reach a wider audience.

Evidence from independent evaluation undertaken during the year indicates that these widening engagement activities are effective in increasing students' confidence, enjoyment, and engagement with physics, with further detail provided in the Evaluation and Impact section of this report.

BPhO will continue to focus on widening participation, particularly by increasing engagement among state-funded schools and supporting a broader range of students to access enrichment and competition opportunities. We aim to increase teacher involvement in training camps and international events, offering more educators the opportunity to see first-hand the levels that highly motivated students can achieve. This professional insight helps strengthen support for advanced learners across the wider school network.

The British Physics Olympiad Trust

Trustees' Report (continued)

Operations and infrastructure

Ongoing support from BPhO's sponsor, G-Research, has enabled targeted improvements to competition administration and marking processes. Investment in a new online competition platform has modernised the issuing of competition papers and enabled the delivery of online challenges. A new marking platform has improved the distribution of papers and the collection of marks, providing a scalable digital infrastructure as participation increases. Funding also supports dedicated payroll and accounting services, improving overall office capacity. Further improvements to data management systems will streamline the processing of entries and reduce administrative workload, enabling staff to focus more time on programme enhancement.

Sustainability and expansion

The operational and digital infrastructure described above provides a strong foundation for the continued development and expansion of the BPhO's activities. Ongoing support from G-Research has been central to strengthening delivery and enabling the organisation to develop new approaches and broaden its outreach programme. In addition, G-Research's support sustains the British Astronomy and Astrophysics Olympiad, a major component of the BPhO's enrichment offer. Work is ongoing to secure further sponsorship from the space and technology sector to support its long-term future. Income from overseas purchases of BPhO competition papers and from Round 1 entries also contributes to the costs of marking and programme delivery, supporting the financial sustainability of core activities.

The charity maintains unrestricted reserves equivalent to two to three years of running costs, held in an interest-earning account to provide financial stability, meet unexpected expenditure, and support future development. While increased outreach and training activity will entail additional costs, the combination of sponsorship, competition income, and a strong revenue stream from overseas partners, particularly the collaboration with an educational organisation in China, provides a solid basis for continued expansion without drawing on reserves.

To support our continued growth and governance, BPhO is also seeking to recruit additional trustees with expertise across business, finance and charitable leadership.

The British Physics Olympiad Trust

Trustees' Report (continued)

Evaluation and impact

In 2023, an independent evaluator, Laura Thomas, was commissioned to undertake a comprehensive review of BPhO's activities and impact. She has extensive experience working with learned societies, charities, universities, and science centres to support robust evaluation of educational programmes.

The evaluation focused on the following key themes:

1. Increased levels of participation in BPhO.
2. Increased confidence and enjoyment for students taking part in BPhO activities.
3. Skills development for students.
4. Professional learning and support for teachers.
5. Barriers to engagement with BPhO.
6. Student experiences of the selection process and training for the national competitions.
7. Effect of participation in BPhO on attitudes and intentions in relation to physics-related study and careers.

An evaluation framework was developed around these themes, with a set of tools made available for BPhO to use in ongoing monitoring and review.

Summary of Findings

- **Wide national reach:**
 - BPhO activities attract significant participation across the UK.
 - Registration data shows potential to expand further in specific regions and among underrepresented groups.
- **Benefits for students:**
 - Increased confidence in problem-solving and greater interest in physics.
 - Development of independent learning, time-management, and resilience when handling unfamiliar problems.
 - Helps prepare students for university-level study, especially those already planning physics-related degrees.
 - Encourages exploration of physics beyond the school curriculum.

The British Physics Olympiad Trust

Trustees' Report (continued)

- **Benefits for teachers:**
 - Enhanced confidence and skill in tackling complex physics problems alongside their students.
 - Positive spillover into classroom teaching beyond the competitions.
 - Access to workshops and events creates a supportive professional community.
 - Teachers, especially newcomers, value the guidance offered, despite workload challenges being an ongoing barrier.
- **Inclusivity and monitoring:**
 - Current participation reflects national patterns in fee-paying vs. non-fee-paying schools and aligns with gender trends in A-level Physics.
 - Further analysis and ongoing monitoring of participation by geography, school type, socioeconomic indicators (IMD), and gender will help BPhO identify and better support under-represented groups and areas with lower engagement.
- **Opportunities for improvement:**
 - Further scope to strengthen advice and guidance for both teachers and students.
 - Overall, BPhO activities remain effective and impactful across the UK.

A full report (see Appendix A) summarises the evidence supporting these findings and provides recommendations for areas where further exploration and development would be beneficial.

A complementary Impact Report (see Appendix B) presents headline findings from the evaluation alongside participation and outcomes data from the 2023-24 period. This outward-facing, accessible report highlights the reach and achievements from BPhO activities during the year, providing a clear picture of the programme's impact on students and teachers

The British Physics Olympiad Trust

Trustees' Report (continued)

Appendix A

British Physics Olympiad Evaluation report, Laura Thomas (Ondata Research), December 2024

Appendix B

BPhO Impact Report



Ondata Research

British Physics Olympiad Evaluation report

Laura Thomas

December 2024

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About the author

Laura Thomas has significant experience supporting organisations such as learned societies, charities, universities and science centres in gaining an in-depth understanding of the impact of their programmes and activities. Following a first degree in Astrophysics, Laura's career was in physics outreach and public engagement before she moved into the social sciences. After completing her MRes in Educational Research she has progressed on to part-time PhD research into teacher professional learning and retention at the University of Stirling. This is carried out alongside her work leading Ondata Research.

1. Introduction and Methodology

The British Physics Olympiad (BPhO) is a charitable organisation offering a range of physics and astronomy problem solving challenges and competitions. In addition to setting and marking papers for thousands of students in hundreds of schools annually, BPhO also selects and trains team members to participate in international physics and astronomy competitions. A series of events and activities for students and teachers are also offered over the course of the year to help people prepare for participating. The challenges and competitions set by BPhO reflect the content of the curricula in the UK but there are international participants who are typically in schools offering English qualifications. The core set of BPhO trustees is supported by a group of dedicated volunteers who make significant contributions to the successful running of the competitions and challenges. Comprehensive reporting is undertaken by the trustees with publicly available annual reports detailing the operational activities of the charity. The intention is not to repeat information collated in these reports, however there will be references to previous reports to provide context.

As part of their ongoing operations, BPhO began discussions with Ondata in 2023 to look at a range of aspects of the challenges and competitions. The following themes were identified by BPhO as being of interest as part of the evaluation. An evaluation framework was developed based on these themes with a set of tools being made available to BPhO to use. The evaluation themes are:

1. Increased levels of participation in BPhO.
2. Increased confidence and enjoyment for students taking part in BPhO activities.
3. Skills development for students.
4. Professional learning and support for teachers.
5. Barriers to engagement with BPhO.
6. Student experiences of the selection process and training for the national competitions.
7. Effect of participation in BPhO on attitudes and intentions in relation to physics-related study and careers.

This report summarises the evidence base available in support of these themes and makes recommendations where there are opportunities to explore these aspects further.

A broad range of both quantitative and qualitative data has been analysed and forms the basis for reporting. The data available is summarised in Table 1 below.

Method/data	Purpose
Registrations data from 2022 and 2023. Selected participation data. • Provided by BPhO	To provide an overview of the levels of sign up and participation for each competition and allow a review to be made of geographical spread across the UK and splits between fee-paying and non-fee-paying schools.
Teacher focus group (June 2024) • Data collection by Ondata	To gain insight into how the competitions are run in schools, discuss the effects of participation on students and teachers and identify any barriers to engagement.
Student focus group (June 2024) • Data collection by Ondata	To discuss impact of participation on students and better understand their experiences of the selection process and training for national competitions.
Post-event student survey for those attending Y10 Taster Day (June 2023) • Survey tool provided by Ondata	To gain insight into impact of event on students.
Post-event teacher survey for those attending a Y10 Taster Day (June 2023) and a teacher problem solving workshop in London (June 2024) • Survey tool provided by Ondata	To gather feedback on the impact of the event on teachers as a professional learning opportunity and as preparation for supporting students to take part in the challenges.
Post-challenge teacher feedback (available for SPC Online 2024 and Physics Challenge 2023) • Provided by BPhO	To gather information on the teachers' experiences of running the competitions in schools.
Competition participation reports • Provided by BPhO	Multiple reports written by the trustees on the individual competitions were made available in order to provide information on the levels of participation and engagement from schools and students.

Table 1. Summary of evaluation methods and data available for analysis

In terms of data analysis, a significant amount of time was spent on the registration and participation data. The registration data covered multiple years of entries into more than 10 competitions per year. Data provided included school name, address and whether the school was fee-paying or non-fee-paying. The data was then cleaned and categorised in terms of UK regions and nations (NUTS 1) and then for the English non-fee paying schools, postcode data was used to identify the indices of multiple deprivation (IMD) for the location of the school. A summary of this analysis can be found in the first discussion section. Descriptive statistics were used in general for the quantitative data and reflexive thematic analysis¹ was used to

¹ Braun, V., Clarke, V. (2019) Reflecting on reflexive thematic analysis, *Qualitative Research in Sport, Exercise and Health*. 11:4, 589-597

review the qualitative data, with coding being drawn from the evaluation themes summarised earlier in this section.

All of the data collection activities were guided by BERA's ethical guidelines². The student focus group was held online and the teacher focus group was in person. Participants in the focus groups provided consent and had the opportunity to withdraw that consent. In section 4.1 where the case study is discussed, non-gendered pseudonyms have been used for the students taking part to help identify the thread of comments from the individuals in the discussion. For the student focus group a member of the BPhO team was in attendance for safeguarding purposes. Transcripts were generated using an AI software tool with the text being checked for accuracy by Ondata.

The following section provides an overview of the participation in BPhO competitions looking at the geographical spread and the demographics of the location of English non-fee paying schools. English Indices of Multiple Deprivation (IMD) have been used as a way of looking at the demographics of the participants. However, it should be noted that whilst a school may be located in an area of high deprivation that does not mean every single student in the school is experiencing deprivation. Similarly with those in schools where there is low deprivation locally does not mean all students are not experiencing deprivation. The proportions for England have been focussed on due to the higher number of non-fee paying schools. The measures of deprivation vary between the four nations so they are not directly comparable. In the report we have grouped the schools into quintiles, where quintile 1 indicates those schools with postcodes in the 20% most deprived areas and quintile 5 signifies the 20% least deprived areas.

² British Educational Research Association (BERA) (2024) *Ethical Guidelines for Educational Research*, fifth edition, London. Available: <https://www.bera.ac.uk/publication/ethical-guidelines-for-educational-research-fifth-edition-2024-online>

2. Levels of participation in BPhO

To get a sense of the levels of participation in the BPhO activities, this section examines registration and participation data from all competitions in 2023. The competitions and challenges covered by the 2023 data include:

Competition (Overview/purpose ³)	UK schools	Proportion
Junior Astro Challenge (online) 2023 (Quiz-style questions on astronomy and the night sky. To be completed online in the form of two 25-minute supervised sessions in school).	59	2.1%
BAAO Astro Challenge 2023 (1 hour paper to be sat and marked in schools covering a range of physics and astronomy topics. Made up of 10 multiple choice questions, two shorter questions and the choice of one of two longer questions).	115	4.1%
BAAO Competition 2023 (Students and schools invited by BPhO to participate in this, keeping it a smaller component of the challenges for now).	6	0.2%
Junior Physics Challenge 2023 (Year10) (Aim is to encourage students' interest in physics. Two online tests, each with 30 questions to be completed within 25 minutes, linked to GCSE topics but extend into general areas of physics).	266	9.4%
Intermediate Physics Challenge 2023 (Year 11) (Paper-based problem solving 1 hour paper to be completed and marked in school).	336	11.9%
Intermediate Physics Challenge Online 2023 (Year 11) (Quiz-style multiple choice questions on a range of physics topics to be completed online. Made up of two 30 minute sets of questions).	176	6.2%
Senior Physics Challenge 2023 (Year 12) (1 hour problem solving paper sat on a single day in schools and marked by the school).	575	20.4%
Senior Physics Challenge Online 2023 (Year 12) (Online multiple choice questions made up of two rounds of 30-minute sets of questions, supervised by teachers)	278	9.9%
Physics Challenge 2023 (Year 13) (Often used as a selection paper by schools for BPhO Round 1 with questions linked to curriculum topics but in a style different to those students would experience in their exam diet).	434	15.4%
BPhO Round 1 Nov 2023 (First round of team selection for the International Physics Olympiad)	458	16.2%
Experimental Project Competition 2023/24 (Two entries per school focussed on high quality investigations, marked by BPhO).	118	4.2%
	2821	

Table 2. Number of UK school registrations by competition in 2023

³ BPhO (2023) Trustees annual report. Available [here](#).

The BPhO round 2 schools are not listed here as this is where around 120 students from 50 schools are invited to participate in the next round of team selection based on their results for round 1.

There are other STEM-related programmes in the UK with similar participation numbers but BPhO has a very distinct offer for secondary school physics students. There are other subject-specific competitions, for example maths-focussed competitions are led by the UK Mathematics Trust, which has over 700,000 entries annually across all of their competitions⁴. Chemistry competitions are co-ordinated by the Royal Society of Chemistry and in 2023 they reported over 11,000 participants in the round 1 of their Chemistry Olympiad⁵. Unfortunately there is limited data available on national participation in larger scale STEM competitions and challenges beyond the initial entry numbers.

⁴ UK Mathematics Trust (nd) *Impact*. Available [here](#).

⁵ Van Wyck (2023) *The 2023 Chemistry Olympiad round one results*. Available [here](#).

Looking elsewhere, the British Science Association commissioned a study to look at gaps in STEM engagement provision and inequity across the UK in terms of a number of different factors which may be of interest to BPhO⁶. However, this study did not provide programme level examples of geographical spread. In terms of getting a sense of the geographical spread of participation in some other programmes, data is available for the British Science Association's CREST awards published via their 2021/2022 Impact report showing the location of participating schools. Please note that whilst this programme reported over 50,000 participants this includes both primary and secondary pupils however it is interesting to consider their geographical spread alongside that of BPhO's in Table 3 in order to get a sense check in terms of the type of reach these programmes are having. There are broadly similar patterns of participation across England between the two programmes with clearer differences between Northern Ireland, Wales and Scotland.

Regions/Nation	BPhO Challenges and Competitions 2023	BSA CREST Awards 2021/2022⁷
East Midlands	5.5%	7%
East of England	12.0%	10%
London	19.4%	15%
North East	1.7%	1%
North West	6.9%	10%
Northern Ireland	0.9%	2%
Scotland	3.0%	5%
South East	19.4%	21%
South West	8.3%	5%
Wales	2.7%	7%
West Midlands	9.5%	12%
Yorkshire and The Humber	5.1%	5%

Table 3. Comparing participation in UK-wide programmes

⁶ London Economics (2022) Mapping and analysis of science engagement and inequity in the UK. Available [here](#).

⁷ BSA (2023) CREST Awards Impact Report 2021/2022. Available [here](#).

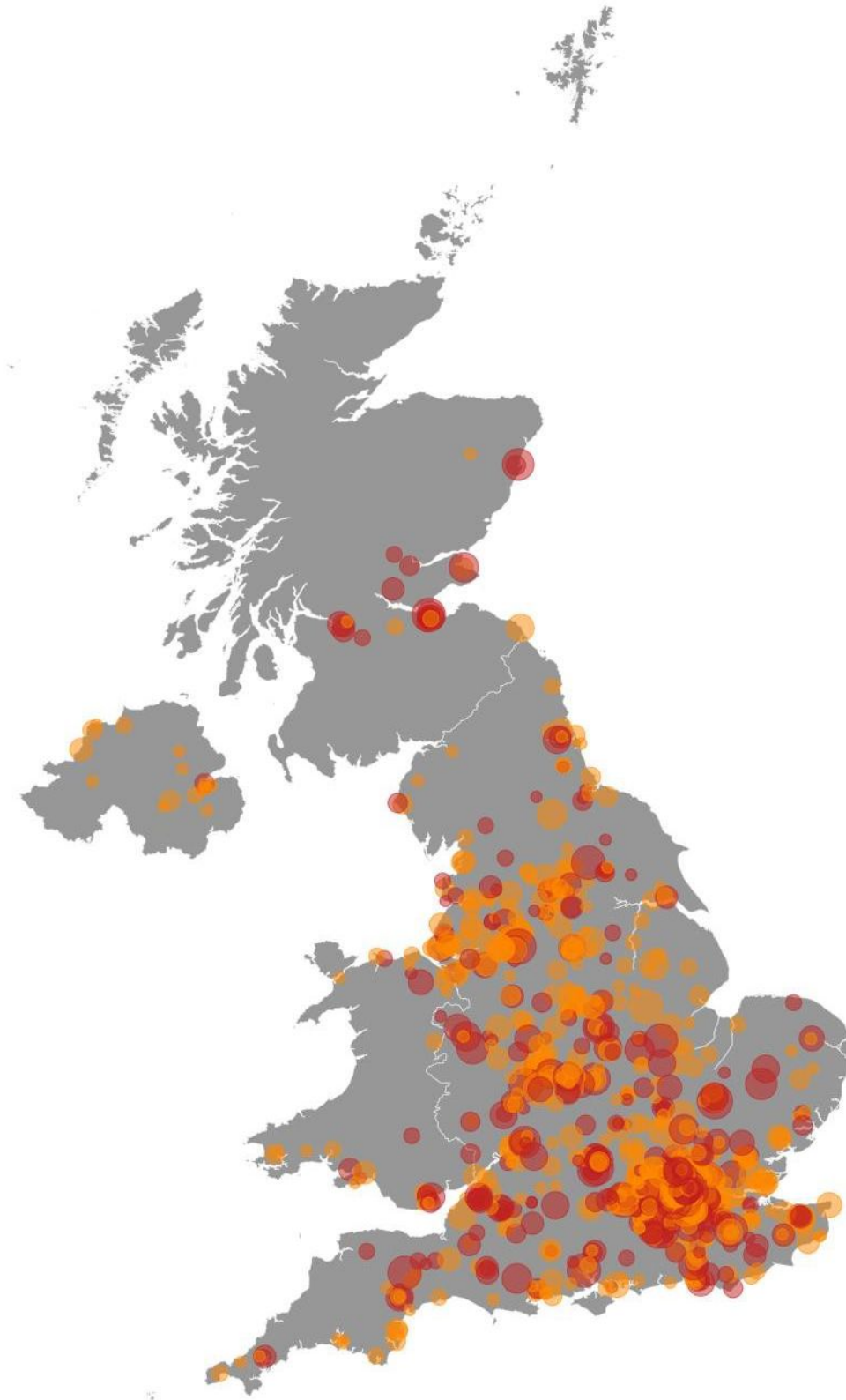
Figure 1 on the following page summarises participation from **all schools across all BPhO competitions** listed in Table 2. The red circles are fee-paying schools and yellow non-fee-paying. The larger the circle, the more competitions the school entered in 2023. The second figure shows London in more detail. Looking across the data more generally for the whole of the UK in 2023, in the registrations data the average competitions entered per school was 2.8 with the median being 2. However, for fee-paying schools this average was closer to 3.5 and for non-fee-paying schools it was 2.4.

Some points to note when looking at the spread of participating schools for 2023:

- Participating schools in Scotland tend to be fee-paying instead of non-fee paying. This may be because these schools often offer GCSE/A-level alongside Scottish qualifications.
- Within Scotland the participating schools are located in central Scotland or areas where higher populations are found, such as Aberdeen.
- Similarly in Wales, participating schools are focussed on the south coast close to the larger population centres of Swansea and Cardiff and in the north close to Bangor and Wrexham areas. However, there is a more even mix of fee-paying and non-fee paying schools in Wales.
- Continuing this trend, schools in Northern Ireland are clustered near or in Belfast and Londonderry. The majority of schools in Northern Ireland are non-fee paying.
- Across England we can see very good geographical coverage. There are of course some areas where participation could be further encouraged (especially outside of larger urban areas, as is this case in the other nations of the UK) but it is clear that BPhO is widely used across the secondary physics sector.

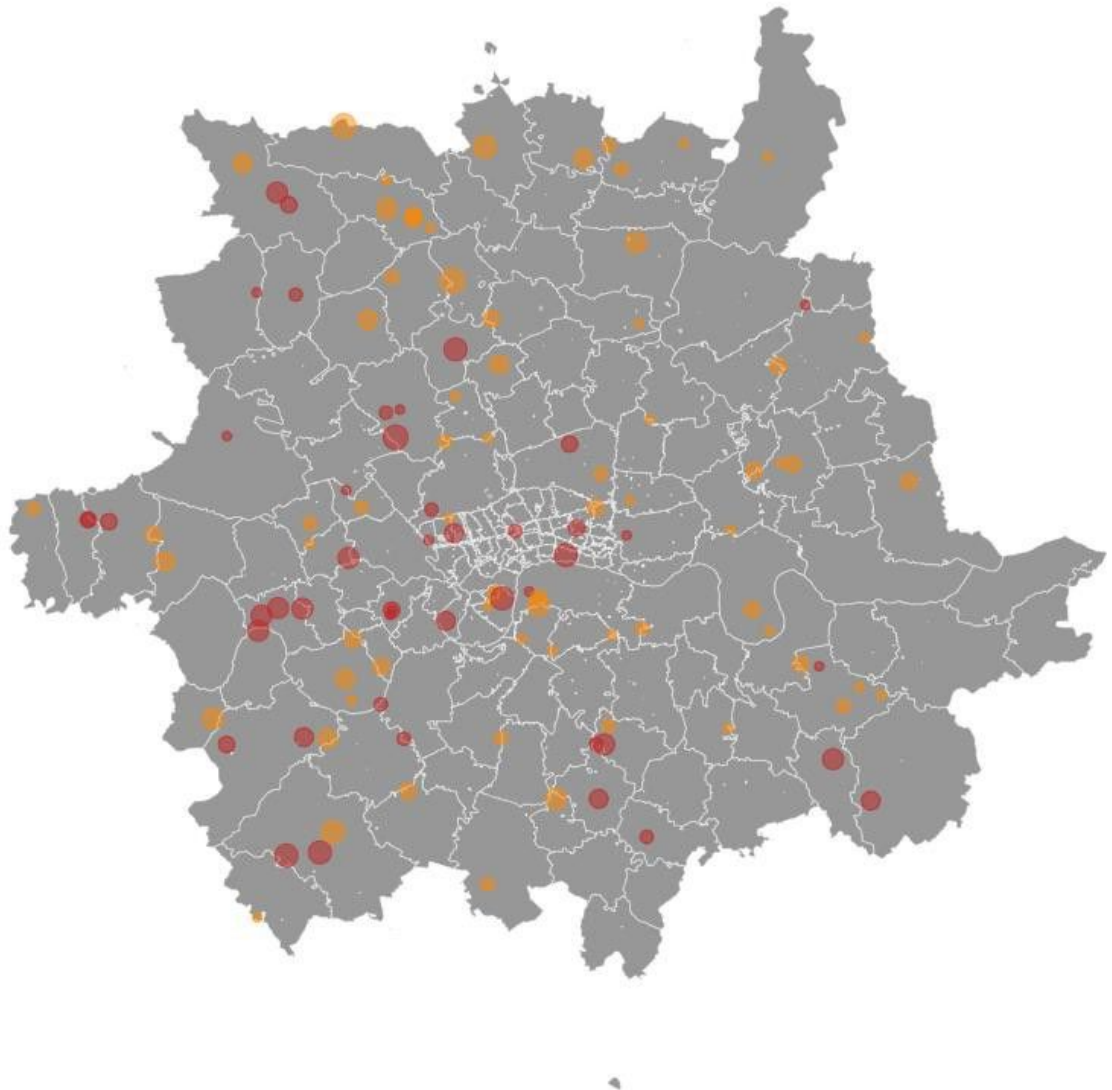
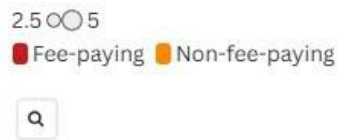
0.5 1

■ Fee-paying ■ Non-fee-paying



Source: Office for National Statistics

Figure 1. UK entries to all competitions in 2023



Source: ONS and Royal Mail via Mark Longair's blog

Figure 2. London entries to all competitions in 2023

- In terms of spread of participation across London, there are some boroughs where there are gaps, for example in the east and north east, but again as with general participation across England, BPhO is well represented.

As outlined in the introduction and methodology, the Indices of Multiple Deprivation (IMD) were identified using the school's postcode. For the 2023 competitions, over half were from the 40% least deprived areas with just over 25% from the 40% most deprived areas (see Table 4). This data was sorted so that schools only appeared once in the data despite entering more than one competition.

English IMD Quintiles	n schools	% schools
1	65	11.1%
2	90	15.4%
3	122	20.9%
4	123	21.1%
5	183	31.4%
	583	

Table 4. IMD for English non-fee paying schools

This split between quintiles could be used by BPhO to help monitor and benchmark participation and this could be used to help target schools in areas of deprivation with the goal of achieving equitable participation across the different quintiles. Again, due to lack of published data it is difficult to directly benchmark against other schemes. However, based on my professional experience evaluating a range of STEM engagement programmes, the distribution where there is higher participation amongst the 40% least deprived areas is common.

Some STEM engagement programmes use IMD to help them target audiences who would benefit. For example, STFC aim to work with what they have described as 'Wonder audiences'. These are from the 40% most deprived areas of the UK (quintiles 1 and 2) aged 8-14. These groups were chosen by STFC as evidence shows that they have less access to STEM engagement initiatives⁸.

Following a review of the aggregated data for 2023, the next section looks more closely at the registration and participation data for a single competition, the Physics Challenge.

⁸ STFC (2023) *Public engagement: Wonder Initiative*. Available [here](#).

2.1 Physics Challenge

As noted above, the Physics Challenge is a problem solving paper often used by schools to select those who will go forward into the BPhO Round 1 competition. One hour is allowed for completion and it is marked in school and can be sat anytime between September and December.

Table 5 below summarises the registration of schools for the Y13 Physics Challenge in 2022 and 2023. We can see that UK schools dominate the registrations and that there is a roughly 60/40 split between non-fee paying and fee-paying schools in the UK with small changes between 2022 and 2023. This split reflects the general proportion of non-fee paying/fee-paying schools in England⁹.

Year	2022		2023	
	n	%	n	%
Total schools	362		481	
UK	330	91.2%	429	89.2%
Overseas	32	8.8%	52	10.8%
UK - fee-paying	142	43.0%	170	39.6%
UK - non-fee paying	188	57.0%	259	60.4%

Table 5. Physics challenge registrations by schools

As before we can look at the IMD of the non-fee paying schools in England. A reminder that those in group 1 are located in the 20% most deprived areas of England and those in group 5 are in the 20% least deprived areas of England.

English IMD quintiles	2022		2023	
	n	%	n	%
1	24	13.6%	26	10.8%
2	33	18.8%	33	13.7%
3	42	23.9%	55	22.8%
4	28	15.9%	47	19.5%
5	49	27.8%	80	33.2%
	176		241	

In 2022, around one third of schools were from the 40% most deprived areas whereas this fell to 24.5% in 2023. We can see that participation from non-fee paying schools grew between 2022 and 2023 with the largest gains in quintiles 3, 4 and 5. This split shows the benefit of not only considering the aggregated data for 2023 but also how the different challenges and competitions can vary year to year. The BPhO team may be able to identify the underlying

⁹ BESA (2024) Key UK education statistics. Available [here](#).

reasons for changes in participation in these quintiles but if the reason is not apparent then it would warrant further investigation.

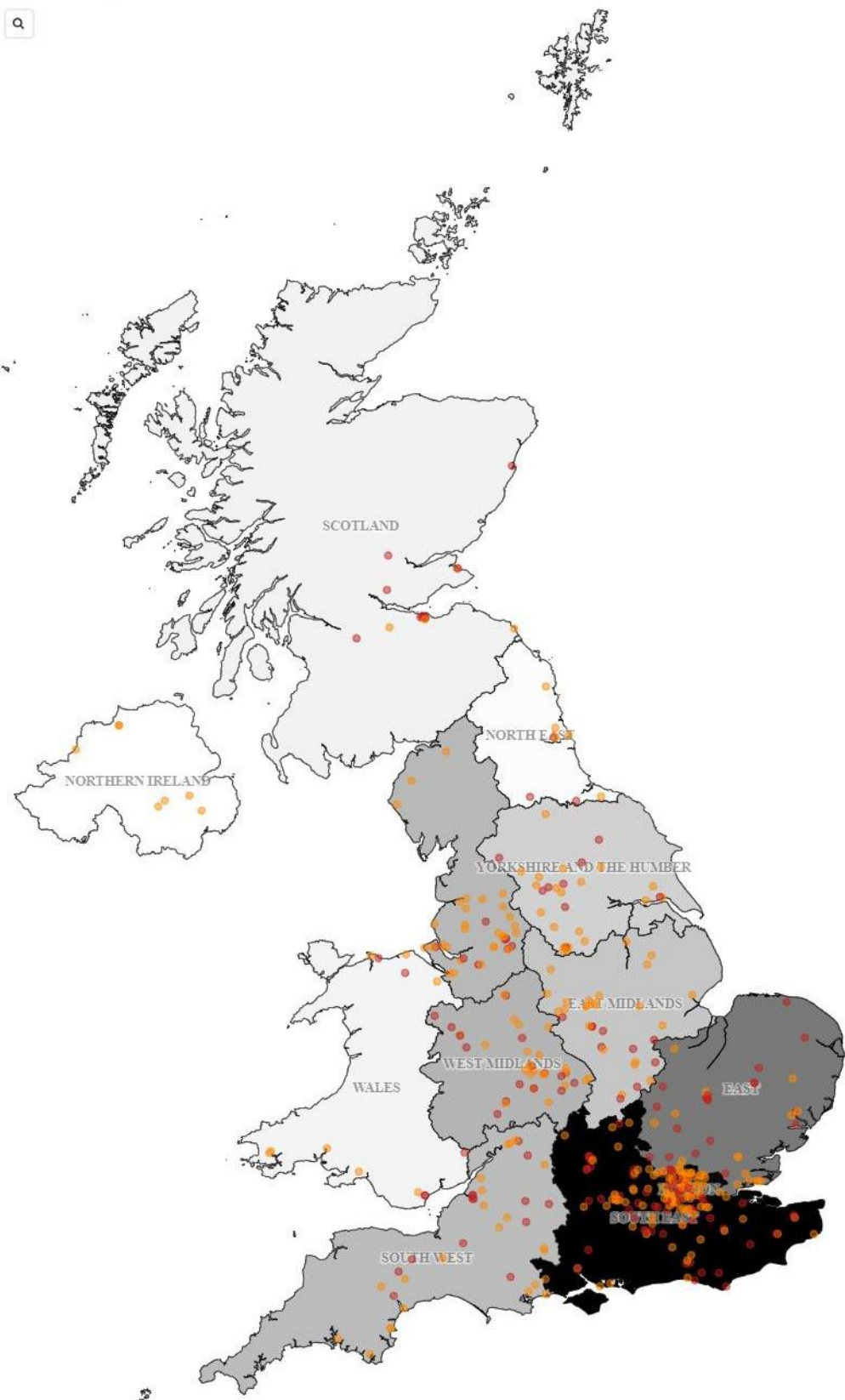
With regards to the geographical spread of the schools participating in the Physics Challenge, the following figure shows the distribution for 2023. The nations and regions are colour coded by level of participation with the darker grey/black signifying higher participation. The circles then indicate the general location of the participating schools and as in Figure 1 these are colour coded to show whether they are fee-paying or not. Similar observations can be made about the spread of participating schools in the nations of the UK.

- Comparing Scotland and Northern Ireland for example, you can see all of the Northern Ireland schools are non-fee paying whereas most of the participating schools in Scotland are not.
- Then considering Wales, the distribution of schools is limited to the northern and southern coasts only, with no engagement from schools in central Wales.
- There is broad geographical reach across England but there are opportunities to reach those outside of urban areas.

Whilst this provides an example from one of the competitions, whilst there is impressive engagement across England there are various areas where further participation could be encouraged. It would also be interesting to further explore differences in engagement in terms of fee-paying and non-fee paying schools, especially when Scotland and Northern Ireland are considered.

Physics Challenge 2023

6 84
■ Fee-paying ■ Non-fee-paying



Source: ONS Open Geography Portal, ONS

A reminder that when we considered the registration data for the Physics Challenge in 2022 and 2023, there was a roughly 60/40 split between non-fee-paying and fee-paying schools. When we looked at the proportions who then went on to submit an entry to the Physics Challenge this shifted in favour of fee-paying schools. When looking at 2023 entries from UK schools, 1616 entries were received from fee-paying schools (covering 188 schools) and 1283 entries from non-fee-paying schools (covering 235 schools). This means around 56% of entries were from individuals at fee-paying schools even though they account for around 40% of the schools.

Now considering the gender of the participants, the split for males and females is outlined in Table 6. A small number of students did not provide their gender or they indicated non-binary or gender fluid therefore due to the small numbers in these groupings, the two categories being used for comparison in the table below are male and female.

	UK only		Fee paying		Non-fee paying	
	n	%	n	%	n	%
Male	2174	77.4%	1182	74.9%	1005	80.5%
Female	633	22.6%	396	25.1%	244	19.5%
	2807		1578		1249	

Table 6. Gender split for Physics Challenge submissions in 2023

Overall, the proportion of female students participating in the Physics Challenge is generally reflective of the proportions taking Physics at A-level in England, which was 23.3% in 2024¹⁰. It is noted that these proportions vary between fee-paying and non-fee paying schools. However, when we reviewed the gender split for the Intermediate Physics Challenge, this was not necessarily reflective of the school population proportions taking GCSE where 48.8% of the total entries come from female students¹¹. Around 69% of UK entries were from male students and 31% from female students.

In summary, with regards to participation in BPhO competitions and challenges, there is a broad geographical reach across the UK however schools in areas of deprivation and non-urban environments could be targeted to encourage participation. The gender split within one example competition reflects the demographic within the A-level population but this is not the case for the Intermediate Physics Challenge. Therefore there is an opportunity to grow participation amongst female students. Based on this analysis it is worthwhile to monitor aggregated data across the competitions but also at the level of individual competitions in order to see who is being reached and where efforts could be made to encourage equitable participation in activities regardless of demographics.

¹⁰ IOP (2024) *IOP hails physics A-level popularity but low proportion of girls “deeply concerning”*. Available [here](#).

¹¹ CaSE (2024) *School exam results analysis 2024*. Available [here](#).

3. Professional learning and support for teachers

Moving on now from the participation and registration data, this section looks at the feedback provided by teachers on their experiences of BPhO activities. Whilst many students participate in activities without ongoing support from their teacher, teachers can play an important role in preparing students for the activities and encouraging them to participate in the first instance.

There are mixture of resources and activities available to teachers. This section begins with a look at feedback linked to an event held in June 2024. BPhO hosted an in-person workshop for teachers at GResearch in London where the focus for the day was on problem solving skills in physics. There were lots of opportunities for teachers to try problems and work with experienced teachers and there was also a session on ideas for practicals. Information about the BPhO challenges was provided along with an overview of Oxbridge admissions and interviews. During the lunch break a group of four teachers took part in a short discussion with Ondata about their experiences of working with their students on BPhO challenges. In this section we include the discussion relevant to their role in support of students and their experiences of the event and the support they themselves have received from BPhO. The discussion relating to the impact of participation on their students follows in Section 4.

The teachers who participated in the discussion all had different levels of experience with BPhO. The first teacher in the group was just getting involved with BPhO for the first time. They were taking over a co-ordinator role from a colleague who had left the school. Their initial experience was brief and involved supporting one of their students in submitting their entry after being approached by them one week before the deadline. The second teacher has been involved in BPhO challenges on and off for several years and finds students generally approach them when they want to get involved. The third teacher was new to BPhO this year and was working on getting their Year 10s, 11s and 12s involved. In this first year they've only been able to organised four hours of preparation before submitting for the challenges and wants to do more in the coming year. The fourth teacher runs a regular out of hours club for students focussing on Olympiad style questions. Participation is open to all and they have tens of students regularly attending.

In terms of their experiences of the problem solving day so far, they had found it extremely helpful. The teachers noted that one of the challenges they had was in approaching novel problems for the first time 'live' in front of their students as they were concerned about not being able to solve it immediately. However this event had given them more confidence in tackling problems along with their class and they felt that more of these types of events would be welcomed by teachers. The teachers

themselves noted that they get a lot of personal enjoyment from working on the Olympiad style of questions. Based on their positive experience at the event, one of the teachers noted that they now intended trying to use less structured questions with their students more generally in their classes. One remarked that for next year they wanted to bring their whole department as they'd found the day so helpful.

The in-person event in June 2024 was only one of a number of different activities which teachers could participate in. For example there was also a taster session for Y10 students to encourage participation in BPhO. Following both of these events teachers were asked to provide feedback via a survey. Their responses (n=64) have provided some insight into how they intended to use BPhO in school and provided more context about their school.

The majority of teachers attending the in-person workshop and Y10 taster day had previously supported their students with taking part in a BPhO activity (77%). The most common activity schools had previously engaged with was the Physics Challenge (20%), followed by BPhO Round 1 and the Senior and Junior Challenges (all at 15%). In terms of the how they structured the support in schools, only 45% of teachers had an extra-curricular club or extension class for their students. The topic and purpose of these had a very broad range and included a problem solving focus but also extended to engineering and astronomy projects and university interview preparation.

When it came to student participation in BPhO activities, only 11% indicated they intended to engage a whole class. In terms of their plans to engage with students, the majority responded that they would allow students to opt-in to participate (66%) and that it was open to all. However, many teachers also commented that they would target students as well. In terms of only targeting specific students, 19% of the teachers intended to take this approach.

It was clear from the feedback from teachers that they all got something out of the event they attended which they could apply when back in school.

- When asked to indicate impact against a number of statements, 78% of teachers indicated it was 'very likely' they would apply what they learned in the classroom and 22% said 'quite likely'.
- A similar split indicated 'very likely' (74%) and 'quite likely' (26%) when asked if they would be able to use outcomes from the event in any extension classes.
- The third area they were asked about was support for students applying to university. This split dropped slightly with 66% saying 'very likely' whilst 34% were 'quite likely' to use the information provided. In the comments, the reason they would not necessarily

use the information was that they didn't have a role which required them to formally support student applications to university.

- When asked about how the event had contributed to their confidence in supporting their students with BPhO challenges, 47% strongly agreed and 48% agreed. There was one teacher who disagreed with this statement and this seemed to stem from a misunderstanding about the purpose of the event itself as they had expected more general problem solving extension rather than there being a BPhO focus. For the two teachers who neither agreed nor disagreed they had indicated they were already quite experienced with BPhO challenges and had very positive feedback about the event they attended, so it is likely they were already very confident.
- All of the teachers indicated they strongly agreed (60%) or agreed (40%) that it was useful being able to discuss the approaches and ask questions of the experienced teachers.
- The final statement they were asked about was whether following the event, they are likely to try another BPhO competition they have not entered students into before. 46% of teachers strongly agreed and 52% agreed. There was one teacher who disagreed. They had previously participated and had a positive experience at the event so it reasonable to assume they were going to continue with their current level of engagement.

One recurring request was for more time for problem solving as part of the teacher workshop. Even though the proportion of time given to this activity was significant, teachers wanted more. There was also a request for some example questions to have worked solutions to help provide structured and model answers which teachers could take away. Teachers appreciated the practical resources and tips discussed, however there were some teachers who would have liked to have seen practical ideas using equipment schools commonly have. Another area where teachers would recommend a review was the length of the session on the Oxbridge admissions process. Some did find it very useful but there did seem to be a preference for having more time on problem solving. Another suggestion related to the language being used by the session leads: teachers encouraged BPhO to be more inclusive in their language in order to move away from always referring to male students and to use examples where female students and other underrepresented groups were featured.

Overall, these events were very positively received by the teachers. They felt they were well run and engaging. Teachers enjoyed being able to spend time on problem-solving strategies in order to guide students and liked having the opportunity to spend time solving problems so that they get a sense of what their students will go through. The events helped to build a sense of community amongst the teachers as they worked together to solve problems and share

ideas. The events were also felt to be useful whether they were attended by an experienced teacher or someone new to the BPhO challenges. Teachers were able to discuss their experiences with problem solving and BPhO challenges and this was seen as being very worthwhile and reassuring, especially when some teachers can find themselves isolated as the only physics specialist in their school. Access to the professional facilities and environment at GResearch was also mentioned as a positive. Some teachers noted that they were going away from the day with a reignited interest in problem solving, especially in using more challenging problems with their students. For others, they were motivated to start their own extension class. Teachers were keen for BPhO to provide more of these types of opportunities.

The feedback from these activities helps to provide insight into the benefits to teachers and that regardless of their levels of experience, they were all able to take positives away with them to apply in the classroom. The following section now goes on to look at the benefits to students of participation.

4. Benefits of participation for students

The three relevant evaluation themes in relation to benefits of participation for students are discussed in this section. These include:

- Increased confidence and enjoyment for students taking part in BPhO activities.
- Skills development for students.
- Effect of participation in BPhO on attitudes and intentions in relation to physics-related study and careers.

4.1 Student attitudes and intentions

In the teacher focus group, the discussion of the main benefits of participation brought up several areas. One of the core benefits of participation raised by the teachers was that the students have something tangible and positive to go on their UCAS application form to help them stand out.

When asked about their students' attitudes and intentions in relation to physics-related study and careers, teachers in the focus group noted that the students who participated were generally planning to study physics, maths, engineering or medicine. They also had aspirations for Russell Group and Oxbridge universities. The teachers observed that those participating were a self-selecting group and were of a higher ability. With regards to thinking about whether participation in BPhO was successful or not, teachers aren't judging this by the number of silvers and golds achieved, instead for them it is about supporting students who want to participate and being satisfied with the support they are able to give them. For those getting involved for the first time they are already planning what else they can do to support their students next time around.

Following the Y10 Taster day in June 2023 students were asked to feedback about their experiences of the day and their general attitudes and intentions in relation to physics. Those attending had a clear interest in physics and maths with 78% saying they were 'very likely' or 'likely' to take physics at A-level and for maths this was 83%. 63% were 'very likely' or 'likely' to take physics at university with only 9% 'unlikely' and 28% 'unsure'. In terms of alternative routes into physics, students were much less likely to consider an apprenticeship as an option with only 30% 'very likely' or 'likely' to consider it. When it came to career intentions, 80% of students were 'very likely' or 'likely' to go into a science career and 65% agreed or strongly agreed that physics would help them to get a job. When asked about what their family thought about studying physics, 37% strongly agreed that their family thought it was a good idea, 35% agreed whilst 24% neither agreed nor disagreed and 4% disagreed.

The attendees at the event also enjoyed studying physics (41% strongly agreed and 48% agreed) and felt it was something they were good at (22% strongly agreed and 52% agreed). Over 90% of the students strongly agreed or agreed that they enjoyed problem solving. Whilst physics was clearly something the students enjoyed and were good at, only 21% strongly agreed it was something they talked about to their family, 25% agreed, 28% neither agreed nor disagreed but 25% disagreed and 2% strongly disagreed.

4.2 Students' enjoyment of physics and skills development

In the feedback from the teacher focus group one key highlight for teachers was the development of the students' problem solving skills and their increased resilience in approaching different types of questions in exam settings. The teachers noted that the students enjoyed working with the Olympiad style of questions. One teacher gave an example where the Olympiad questions use an alternative set of units (e.g. hops instead of metres) and that this supported the development of their students' critical thinking skills.

For the students at the Y10 taster day, when asked about whether the event had helped to increase their interest in physics 70% said 'yes', 28% were 'unsure' and only one respondent (2%) said 'no'. Students were asked to elaborate on why they had given this answer and many of the students said that they had enjoyed the event and it was this enjoyment that had increased their interest in studying physics further. In addition to this the comments indicated that being able to explore physics outside of the classroom context and seeing how physics could apply to everyday life was particularly important. This also included being introduced to new topics and ideas and this helped students to see how broad physics is as a subject and improved their understanding of physics more generally. The students enjoyed meeting new people, peers and BPhO staff. They especially enjoyed working with peers on problems in order to get new perspectives on how to solve something. Students felt their problem solving skills had developed and seeing the physics toy demonstrations helped them to appreciate how physics could be found all around them.

In addition to the teacher focus group and event feedback, some teachers provided comments to BPhO following their students' participation in the Senior Physics Challenge (4 responses) and the Physics Challenge (32 responses). The comments from the teachers indicated really positive engagement from their students with the questions and that they enjoyed solving the problems set. One teacher noted that the level of the questions was suitable as it allowed students at all levels to engage with the Senior Physics Challenge. Another commented that there was a good range of topics and levels of complexity within the questions set. For the Physics Challenge, teachers used the paper as a competition (84%) but also as a classroom

resource (15%). Teachers commented that this would be an ongoing resource that they would use to engage their pupils.

In addition to looking at the general attitudes and experiences of students we were also able to talk to a small number of students who were invited to a training camp following successful participation in the Astro and Physics round 1 and round 2 challenges. From the training camps, teams were then selected to go on to participate in the international competitions. The following section looks at these experiences more closely.

4.3 Student experiences of the national competitions

A small group of students who had participated in the competition team selection process took part in a focus group discussion in June 2024 to share their experiences. The students were in Y13 and in the process of sitting their A-levels and each attended a different school. They had come through a variety of routes to participation in the team training and selection process, two of them participated in the physics camp (Alex and Blake) and one of them in the astro camp (Cameron). Alex and Blake had experience with participating in problem solving challenges in other subjects such as maths, chemistry, biology and linguistics but had a core interest in maths and problem solving. They had approached their teachers about taking part in the physics competitions as it was an opportunity they and their friends had identified. For Cameron, everyone in their Year 12 and Year 13 were encouraged by their teacher to take part in the appropriate BPhO challenge and participation in the challenges was seen as a “big thing” in their school. Cameron’s school used the Physics Challenge in order to select those who would go forward to participate in the BPhO Round 1 paper.

Alex talked through their experiences of the different rounds and papers. Along with their friend they prepared for BPhO Round 1 by looking at the online resources available. This is a physics problem solving paper consisting of one set of short questions followed by a second set of questions needing a longer answer and overall 2 hours and forty minutes is the time available to complete the paper. To give a sense of scale, there were around three and a half thousand entries in 2023 and those selected for the International Physics Olympiad team scored 70-80%¹². Alex worked through past papers available on the BPhO website along with their friend and this was done independently in their own time without the direct support of a teacher. If they had questions they were able to approach their school teachers but generally they were self-motivated to practice questions outside of their lessons and extra-curricular activities. Following their results in Round 1, all three of the students were invited to submit for Round 2 and then ultimately received an invitation to the training camp. Blake was surprised to have

¹² British Physics Olympiad (2024) BPhO round 1. Available [here](#).

received the invitation and this meant that following the submission of their Round 2 response and the timing of the training camp they hadn't worked on any BPhO problems.

Alex and Blake summarised their experiences of the physics training camp. They noted that following a tour of the college facilities and an introduction to the people they'd be working with, they were very quickly into working on physics, maths and problem solving activities. A key difference between their experiences at school and the training camp was that most of the topics were delivered in a lecture style. Blake noted that they were given a lot of questions to tackle but felt they were never given enough time to try and work through them, instead they felt the emphasis was on being "taught all this material". Alex would have liked clearer instructions on what questions they were expected to do immediately and which were optional or should be done following the training camp.

The length of the day was another factor which was different to what they were used to in school. For Blake, in order to spend time on some of the questions on top of the timetabled sessions they were studying for a total of 12 hours each day. They felt that they would have benefited from more time in between lectures to absorb the material being shared in the sessions. This extra time would be beneficial, especially where many of the topics were new to the students. For example, Alex described how "we kind of had a little underlying idea of what some sort of electromagnetism was, they [the lecturers] kind of really took up a step. And you started looking at like the Maxwell's equations, like the differential form, how you get Gauss's law and all these different things, which was much more advanced than what we do at school". It should be noted that the students weren't questioning being challenged at this level nor was there an issue with the lecture-style, more that they would have liked more time to grasp these ideas which were new to them. Blake commented that "all the lectures were very good" and Alex "found learning all the new topics to be really, really interesting". The students commented that they benefitted from seeing how other people approached solving problems in a different way to them and they were able to use this experience to improve their own problem solving skills.

Blake noted that there was some material that they were familiar with (e.g. waves) and others which were completely new and it wasn't clear to them how these topics were going to be useful for solving questions and they wondered if the topics had been selected to pique their interest. Therefore they requested a clearer description of how the different topics and sessions fit into their preparation and the relevance for the competition. Blake summed this up as, "when you're consuming hours and hours of theory a day that can get quite confusing and overwhelming. So yes, it was kind of a very wide and interesting mixture. But it would be nice if all of it was more clearly signposted with what the expectations were of us."

Another benefit for Alex was the opportunity to do more experimental and practical work. They noted that for A-level they don't enjoy the practicals as "you get given a list of very itemised instructions and have to follow them" whereas the practicals they did at the training camp required much more thought.

When considering the rounds of tests they experienced during the week, Blake noted that there were multiple practical tests, "which is very good and nice to see your own progress" but when it came to the theory test they were confused as to why there was only one hour of theory at the end of the week and that the content wasn't necessarily linked to what they had covered in that week. So again, the feedback was very much about managing the students' expectations of where to target their time in the lead up to the theory test and what to make a priority.

Cameron attended the Astro camp noted that it sounded much more "workshop-y" and similar to school lessons rather than the lecture-based experience in the physics camp. However, they did have a similar concern around having "too many problems, and not enough time". They noted that their theory test was longer at three hours and they definitely needed the time they spent in the evenings outside of sessions answering questions in order to prepare for the test. They felt the teaching was fast paced and they also would have liked more time to absorb what they were learning as there wasn't much time to go back over things.

In general, the experience of the long days was challenging for the students. All three students agreed that they would have been happy to undertake some pre-reading or preparation for the training camp if it allowed more time to be spent applying the theory from the different sessions to problems in order for them to have a clearer sense of their progression across the course of the week.

Following on from the training camp there have been ongoing impacts for the students who participated. Cameron said they felt that their problem solving skills had greatly improved and that they were more open-minded and creative when it came to approaching novel problems and not just in physics: "that kind of mindset and thinking has made it easier to try and sort of learn new stuff or apply it to things I'm currently studying, and see how that stuff becomes either easier or more accessible". Alex agreed with this and noted that the training camp gave them the opportunity to "reset your whole ability to encounter new material".

Blake described how the impact of the experience built up for them over the different rounds and into the training camp. Over the course of the rounds they had been doing a few hours here and there on the questions but then the training camp really accelerated their learning as those dedicated five days helped them to pick up more very quickly and Alex agreed that the

intensity of the training camp was a benefit. The experience helped build their confidence and make them feel that approaching novel problems was more achievable.

For Cameron, the Astro camp experience has also positively impacted the school astronomy club which they run. They've brought lots of the content from the experience back into the club to share with their peers. They also felt that as a result of the intensity of the camp they had experienced "a permanent change" which has "fundamentally changed my work ethic" and how well they learn and how efficient they now are with their time. The experience helped them to realise that they were able to focus in a high pressured environment, giving them a sense of their own resilience in a way they previously hadn't experienced.

In terms of pastoral care and the accommodation, the students felt very well looked after and that "everyone was very helpful and friendly". Thinking ahead to their university experience, whilst the students generally had already been through their interviews, they did find the training camp helped them prepare for the transition to university. They were encouraged to "evolve a bit beyond what you do at A level" and "it required a real change of thought process" and introduced them to topics (e.g. Maxwell's equations) that they will cover as part of an undergraduate physics course (Blake). It also helped them to gain insight into how to produce more "elegant" solutions more quickly and the independent learning skills and time management will also be valuable for preparing for university life as well as the experience they had of just being in an unfamiliar setting (Cameron). With regards to other experiences, one of the students had been to some engineering related tasters and events to help them narrow down their university choices but for the others they had only been to open days so this was the most significant interaction they'd had with a university setting.

For Alex who worked independently of a teacher, they would have liked to have access to videos of people working through problems and talking about how they approached solving them. This would have given them a better idea of how to start tackling some questions. For Alex, this was the first year their school had taken part and they hope their school will be able to start building some momentum based on their experience but they did feel that because their teacher didn't have time available to support them they had to "you just got to go for it yourself" which can take a highly motivated student to make that first step. In Cameron's school there was an established culture of participation in problem solving challenges and competitions and regular support available across the whole school year, helping them to feel comfortable with the prospect of participating in BPhO Round 1. All three of the students were reluctant to go and ask for more support from their teachers beyond what was already on offer within the school, especially when they got to the stage where there were only two of them in the school participating in Round 2. Reflecting on Cameron's experience, Alex felt that they

had a positive experience in being the trail blazer for their school and that they wanted to encourage other people to take the step and to know that they could engage and access the resources they needed online in order to participate. They felt that BPhO could perhaps signpost some of the resources more clearly for those students working independently.

At the end of the discussion, the students were asked to give advice to others who were perhaps considering participating in the next year of BPhO challenges. The key pieces of advice were:

- Alex: “You can’t get started too early”. Spend time on problems from the past papers which you can easily access online. It’s also important to spend time on the longer problems and you can find examples of this beyond the physics competitions as “the problems are all designed to be accessible”. The topics relate to the A-level specification but Alex encouraged students to check their own exam board in case there are one or two things not covered by the one they are studying.
- Blake: “there’s absolutely nothing to lose from [taking part]”. If you’ve got an interest in physics or a physics-related course at university it’s really relevant for any interviews you may do and there’s a lot of overlap with the type of questions and problems you may be asked to solve.
- Cameron: Wider reading about physics topics and ensuring you’ve got a good grasp of the fundamental mathematical principles will also contribute to a positive experience.

Across this section on benefits there have been a number of positives for participating students. At all levels, there is evidence from students and teachers about the students’ improvement in their problem solving skills and this has resulted in an increased confidence in themselves. Students have certainly enjoyed the various experiences available to them, however, it should be noted that a lot of these students tend to be self-selecting, especially at the senior level, and that physics is already something they are considering. These positive experiences are contributing to an increased interest in physics post-16 and there is evidence of the activities having ongoing impacts for students as they prepare for university life.

The final discussion section of the report reviews the evidence so far and looks at barriers to engagement with BPhO and makes a series of recommendations for consideration by BPhO.

5. Barriers to engagement with BPhO

There are different areas which contribute to barriers to engagement with BPhO activities which are discussed in this section. Following this is a short set of recommendations.

Teacher workload

This aspect was of concern to both teachers and students and has the most potential to widen the impact of BPhO's activities. The students in the focus group were reluctant to go to their teachers to ask for more support and for the teachers in the focus group they had concerns around the time needed for marking. More than one teacher indicated they were going to establish eligibility criteria in order to be submitted to the challenge because they only had limited time available for marking. Teachers recognise the benefits of being involved in the marking of papers but they did say that having some parts of the papers which could be auto-marked would be appreciated. The Y10 online Junior Physics Challenge was cited as a low workload example way of getting more students involved. The teachers at the Y10 Taster day also made requests for help with marking and it was noted that if this support was provided then the teachers in schools would be able to dedicate more time to supporting the students' preparation.

Information about competitions and school culture

One element of this is about communicating with students and teachers about the opportunities available. One teacher asked for a simplification of the different challenges available as they find the number of options difficult to navigate. A further comment was made by another teacher who requested a review of the website structure and content in order to make it easier to identify upcoming competitions. The students who took part in the Y10 taster day were asked if they thought they would go on to participate in one of the BPhO challenges. 47% said yes, 2% (n=1) said no and over half (51%) were unsure. They were asked to explain why they gave these responses. For those who said they were unsure, they commented that they didn't understand what the BPhO challenges involved and also that they were nervous about taking part or they did not have confidence in their own abilities.

Other barriers identified by the students included the timing of the challenges in relation to their GCSE exams, as they weren't sure how this would all fit together. For another student they commented that they weren't aware of the BPhO challenges being talked about in school by their teachers as an opportunity. For some who responded 'yes' they would participate they noted that it was something which is easily available to them (or indeed mandatory) in their school and some had already completed a challenge. Some students who had previously completed a challenge commented that they had enjoyed it and wanted to do it again.

5.1 Recommendations

The following recommendations are focussed on addressing some of the barriers identified in this report, along with other aspects arising in earlier discussion sections. Recommendations are linked to helping to address concerns around teacher workload and information about the competitions and school culture along with monitoring participation levels and encouraging more schools to get involved.

- a) Review the information available to schools and produce a short 'Getting started' PDF leaflet for those joining the BPhO activities for the first time. This could include a timeline for the year and how the challenges fall across different months, along with information on which activities require marking and which are online. Information could also be provided on different models for supporting students based on previous experiences of teachers.
- b) To supplement this 'Getting started' guidance, a short impact report aimed at teachers on how participating in the BPhO activities contributes to a positive culture of physics and problem solving within schools could be collated. Whilst the first leaflet manages expectations of the logistics involved, the second one helps to emphasise the benefits to teachers and students if the teachers dedicate time within their workload to supporting students and marking papers.
- c) A significant amount of support is available already for students who are entering individually. In order to help them feel more confident approaching their teachers, a third leaflet or document could be produced which summarises how teachers can support their student. This could also be combined with some short case studies on how schools have built on the experiences of individual participants to expand interest in problem solving activities and participation of BPhO activities in future years.
- d) Given the feedback from teachers about their intentions to set eligibility criteria, BPhO should monitor this situation over the next year or so to see what criteria schools are using. It is important that teachers do not inadvertently exclude certain groups of people from participating due to their chosen selection criteria.
- e) In order to encourage more participation from Scottish and Welsh schools, collaborate with teaching colleagues in Scotland and Wales to identify the curriculum topics and qualifications relevant to the different challenges and competitions. In my experience, the lack of explicit guidance on curriculum links is a particular barrier to participation for teachers, especially in Scotland.
- f) Review the guidance at the training camps to help manage expectations around what students should be focussing their time on during the week as well as how the different topics covered in the sessions contribute to their preparation for the final testing.

Review whether preparatory reading can be provided in order to allow for more time for problem solving within the training week.

- g) Establish regular monitoring of challenge participation levels annually and by competition in terms of geography, socioeconomic factors and gender. This would allow the identification of areas and groups to target as part of taster activities and teacher workshops. There are likely to be various organisations such as the Institute of Physics and the Ogden Trust where BPhO can work in partnership to extend the reach of the competitions. There is also additional research (such as that linked to science capital and the ASPIRES3 study¹³ or the improving gender balance resources from the IOP¹⁴) which can be referred to which supports equitable engagement with physics, which could help to address concerns from some teachers about the activities being inclusive for different groups. To further support this there is also the potential to set up a student advisory group to contribute to the planning and implementation of the challenges and this would help to bring a student voice to the processes of marking and question setting. They are likely to also have insights into encouraging and supporting participation of students.
- h) There is an opportunity to further build participation in BPhO activities at lower secondary school which could support increased uptake of physics post-16. The activities in senior years of study successfully engage students in enjoyable problem solving activities and encourage their interest in physics topics outside of those in the classroom. Extending this experience to more students prior to their GCSE selection would provide a positive opportunity for students to see the potential of physics and also help to build their confidence in feeling able to take the subject. The Year 7/8 physics challenge has been established and it is recommended that attention is paid to the impact of this in schools, especially in this next year in order to see how this may contribute to building confidence in problem solving and an interest in physics.
- i) Further embed and develop the evaluation framework and evaluation tools and publish information on reach and impact. Given the scale of participation annually and the geographical spread of participants across the UK, BPhO can provide schools, teachers, partners, funders and other interested parties with significant and helpful information about attitudes and intentions towards physics and the ongoing benefits and outcomes of participation in the challenges and competitions. As noted in the report, this information is not widely available for comparable activities but would be welcome.

¹³ ASPIRES3 (2023) *Young people's STEM trajectories, Age 10-22*. Available [here](#).

¹⁴ IOP (2024) *Dismantling barriers to inclusion in physics*. Available [here](#).

6. Conclusion

The BPhO activities have broad geographical reach across the UK and there are significant numbers of submissions to individual competitions. Based on the analysis of registrations data there are further opportunities to expand participation in various areas of the UK and through regular monitoring of participation along with school location, socioeconomic factors (via Indices of Multiple Deprivation) and gender, BPhO will be able to target activities at under-represented groups and areas. The split of fee-paying and non-fee-paying schools in the UK reflects the general numbers in the sector, as does the gender balance of A-level participation in England (specifically the Physics Challenge).

The benefits of participation to students are well established. There is evidence of increased confidence in problem solving skills and an increased interest in physics. Through participation in the rounds and also in the selection process for the competition teams, students develop independent learning skills and time management skills. They also reported increased self-confidence and resilience when it comes to approaching novel problems. All of these aspects will be carried forward into their future studies and career. Those participating in the challenges often already have an interest in physics and are planning to go on to a physics-related degree and career and find participation in BPhO can help them to prepare for university as the activities develop their problem solving skills but also encourage an interest in physics topics outside of what they experience in the classroom.

For teachers, they are able to develop their own problem solving skills and increase their confidence in working with complex and challenging problems with their students. This has an effect not only on the students participating in the annual challenges and competitions but it also carries through into the teachers' professional life in the classroom. By attending workshops and events offered by BPhO they also become part of a supportive community where they are able to share their experiences running the competitions and supporting students and it is where teachers new to BPhO can get advice and guidance about getting started. Workload is of course an ongoing issue and is a significant barrier to participation but teachers do feel well supported by BPhO.

There are of course opportunities to further develop advice and guidance for teachers and students but the activities on offer are successful in positively engaging and impacting people across the UK.

Appendix A – Overview of Evaluation Framework

The evaluation themes outlined in Table 7 were identified by the British Physics Olympiad team with advice and guidance provided by Ondata. A set of evaluation tools were developed to support data collection for each of the themes and these were deployed at events in 2024.

Theme	Purpose
1. Increased levels of participation in BPhO.	To identify whether there have been increased levels of participation in BPhO activities in comparison with previous years.
2. Increased confidence and enjoyment for students taking part in BPhO activities.	To understand how BPhO activities support the development of students' confidence in taking part in the competitions, what the motivation is for students who participate and how enjoyable they find the activities and competitions.
3. Skills development for students.	To identify which skills the BPhO activities support the development of and in particular, how students' problem solving skills develop.
4. Professional learning and support for teachers.	To gather insight into how effective the support provided to teachers is in terms of them being able to support their students' successful participation in BPhO activities.
5. Barriers to engagement with BPhO.	To explore what successful participation and engagement with BPhO means and what barriers exist that prevent schools and students from taking part in activities.
6. Student experiences of the selection and training for the national competitions.	To describe the journey of students through the different activities and rounds of competition in order to identify particular areas of success and potential aspects for further development.
7. Effect of participation in BPhO on attitudes and intentions in relation to physics-related study and careers.	To investigate the attitudes and intentions of participating students towards physics-related study and careers and whether their experiences of BPhO activities have an effect.

Table 7. Summary of evaluation framework themes

Appendix B – Participation data for BPhO competitions

This section outlines the registration data by competition and year.

Competition	Y13 BPhO Physics Challenge	Y13 BPhO Physics Challenge	Y13 BPhO round 1 - UK	Y13 BPhO round 1 - UK	Experimental challenge	Experimental challenge
Year	2022	2023	2022	2023	2022	2023
Total schools	362	481	412	458	92	120
UK	91.20%	89.20%	100.00%	100.00%	97.80%	98.30%
Overseas	8.80%	10.80%	0.00%	0.00%	2.20%	1.70%
UK - fee-paying	43.00%	39.60%	43.40%	42.60%	53.30%	50.80%
UK - non-fee paying	57.00%	60.40%	56.60%	57.40%	46.70%	49.20%
Regions/Nation						
East Midlands	7.60%	7.50%	7.00%	6.10%	4.40%	3.40%
East of England	11.20%	12.40%	10.00%	11.80%	16.70%	16.10%
Isle of Man	0.30%	0.00%	0.20%	0.00%	0.00%	0.00%
Guernsey	0.00%	0.00%	0.20%	0.00%	0.00%	0.00%
Jersey	0.00%	0.20%	0.00%	0.00%	0.00%	0.00%
London	17.90%	18.90%	20.10%	18.10%	18.90%	19.50%
North East	1.20%	1.90%	1.90%	1.70%	1.10%	3.40%
North West	7.90%	8.40%	8.00%	8.30%	11.10%	5.90%
Northern Ireland	1.20%	1.40%	0.50%	1.10%	2.20%	0.80%
Scotland	3.30%	3.30%	3.20%	3.70%	4.40%	2.50%
South East	22.10%	19.60%	19.20%	20.30%	18.90%	26.30%
South West	8.50%	8.20%	9.50%	10.50%	3.30%	4.20%
Wales	2.10%	3.00%	3.60%	3.30%	1.10%	5.10%
West Midlands	11.20%	8.60%	10.20%	9.80%	16.70%	8.50%
Yorkshire and The Humber	5.50%	6.50%	6.30%	5.20%	3.30%	5.90%

Table 8. Year 13 competitions

Competition	Y12 SPC paper UK 2023	Y12 SPC paper UK 2024	Y12 - SPC online 2023	Y12 SPC online - 2024
Year	2023	2024	2023	2024
Total schools	576	307	278	304
UK	100.00%	100.00%	100.00%	88.20%
Overseas	0.00%	0.00%	7.20%	11.80%
UK - fee-paying	42.90%	37.50%	46.80%	46.30%
UK - non-fee paying	57.10%	62.50%	53.20%	53.70%
Regions/Nation				
East Midlands	5.00%	7.80%	5.40%	6.00%
East of England	12.20%	14.30%	13.30%	14.20%
Isle of Man	0.00%	0.00%	0.00%	0.00%
Guernsey	0.20%	0.00%	0.00%	0.00%
Jersey	0.00%	0.00%	0.00%	0.00%
London	22.20%	16.30%	22.30%	17.20%
North East	1.60%	1.30%	1.80%	2.20%
North West	8.20%	10.40%	6.50%	6.30%
Northern Ireland	1.20%	1.00%	0.70%	1.90%
Scotland	3.10%	2.00%	2.50%	3.40%
South East	20.10%	19.90%	20.90%	20.50%
South West	8.50%	7.80%	9.40%	9.00%
Wales	2.80%	3.90%	2.20%	2.20%
West Midlands	9.70%	8.10%	11.20%	11.90%
Yorkshire and The Humber	5.20%	7.20%	4.00%	5.20%

Table 9. Year 12 competitions

Competition	Y11 IPC 2023 - online	Y11 IPC 2024 - online	Y11 IPC 2023 - paper	Y11 IPC 2024 - paper
Year	2023	2024	2023	2024
Total schools	194	177	336	189
UK	90.70%	84.70%	100.00%	100.00%
Overseas	9.30%	15.30%	0.00%	0.00%
UK - fee-paying	59.10%	58.70%	52.10%	46.60%
UK - non-fee paying	40.90%	41.30%	47.90%	53.40%
Regions/Nation				
East Midlands	4.50%	5.30%	4.80%	6.90%
East of England	15.30%	13.30%	11.30%	12.70%
Isle of Man	0.00%	0.00%	0.00%	0.00%
Guernsey	0.00%	0.00%	0.00%	0.00%
Jersey	0.00%	0.00%	0.00%	0.00%
London	20.50%	25.30%	21.10%	22.20%
North East	1.70%	2.00%	1.20%	2.10%
North West	4.50%	2.70%	7.40%	6.90%
Northern Ireland	0.60%	0.70%	1.20%	1.60%
Scotland	3.40%	4.70%	3.90%	3.70%
South East	22.20%	20.00%	23.20%	21.70%
South West	10.20%	8.00%	8.00%	6.90%
Wales	2.30%	4.00%	1.80%	3.20%
West Midlands	10.20%	10.70%	11.90%	6.90%
Yorkshire and The Humber	4.00%	2.70%	3.90%	4.20%

Table 10. Year 11 competitions

Competition	Junior Physics Challenge 2023 (Year10)	Junior Physics Challenge 2024 (Year 10)
Year	2023	2024
Total schools	296	64
UK	89.90%	81.30%
Overseas	10.10%	18.80%
UK - fee-paying	53.00%	63.50%
UK - non-fee paying	47.00%	36.50%
Regions/Nation		
East Midlands	5.60%	5.80%
East of England	12.80%	13.50%
Isle of Man	0.00%	0.00%
Guernsey	0.00%	0.00%
Jersey	0.00%	0.00%
London	20.30%	25.00%
North East	2.30%	0.00%
North West	6.00%	9.60%
Northern Ireland	0.40%	0.00%
Scotland	3.40%	1.90%
South East	19.50%	19.20%
South West	7.90%	5.80%
Wales	2.30%	1.90%
West Midlands	13.50%	11.50%
Yorkshire and The Humber	6.00%	5.80%

Table 11. Year 10 competitions

Competition	Y10&1 1 JAC 2022	Y10&1 1 JAC 2023	BAAO Astro Challenge 2022	BAAO Astro Challenge 2023	BAAO Competition 2023	BAAO Astro Round 1 2024
Year	2022	2023	2022	2023	2023	2024
Total schools	56	71	101	141	6	31
UK	87.50%	83.10%	89.10%	81.60%	100.00%	100.00 %
Overseas	12.50%	16.90%	10.90%	18.40%	0.00%	0.00%
UK - fee-paying	51.00%	55.90%	45.60%	43.50%	33.30%	51.60%
UK - non-fee paying	49.00%	44.10%	54.40%	56.50%	66.70%	48.40%
Regions/Nation						
East Midlands	2.00%	6.80%	5.60%	8.70%	0.00%	3.20%
East of England	12.20%	10.20%	15.60%	12.20%	16.70%	9.70%
Isle of Man	2.00%	0.00%	2.20%	0.00%	0.00%	0.00%
Guernsey	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Jersey	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
London	28.60%	27.10%	16.70%	21.70%	16.70%	25.80%
North East	0.00%	0.00%	1.10%	0.90%	0.00%	0.00%
North West	2.00%	5.10%	8.90%	7.00%	16.70%	6.50%
Northern Ireland	0.00%	0.00%	2.20%	0.00%	0.00%	0.00%
Scotland	4.10%	3.40%	4.40%	2.60%	0.00%	3.20%
South East	22.40%	18.60%	17.80%	18.30%	50.00%	19.40%
South West	12.20%	8.50%	7.80%	9.60%	0.00%	9.70%
Wales	6.10%	3.40%	4.40%	3.50%	0.00%	3.20%
West Midlands	6.10%	10.20%	8.90%	9.60%	0.00%	16.10%
Yorkshire and The Humber	2.00%	6.80%	4.40%	6.10%	0.00%	3.20%

Table 12. Astro competitions

BPhO

Report 2025



SPONSORED BY G-RESEARCH



Chair's Letter



This year marks another exciting chapter for the British Physics Olympiad (BPhO). Thanks to the generous support of our sponsor, G-Research, we have been able to broaden our reach and enhance our programmes significantly. We are now engaging over **60,000 students** from across the UK and beyond, providing not only challenging **competitions**, but also a rich suite of **resources** that support both students and teachers. Our expanded offerings help develop advanced problem-solving skills and continue to support and encourage the next generation of scientists.

Each year, two teams of top-performing students from the BPhO are selected to represent the UK at the **International** and **European Physics Olympiads**, as well as the **International Olympiad on Astronomy and Astrophysics**. Through intensive training camps, they prepare to compete alongside the best young physicists from around the world. UK teams consistently return with medals, and we celebrate their achievements at our annual **BPhO Awards Day sponsored by G-Research** at the Royal Society, alongside the domestic competition winners.

The BPhO has gone from strength to strength in relation to numbers of participants and the range of competitions. From our **new competition** papers, such as Y7 /Y8 Physics Challenge, to our growing portfolio of events and resources, we remain committed to providing high-quality opportunities for young people to stretch their thinking, develop their problem-solving skills and deepen their understanding of physics. We are equally proud of the support we provide for **teachers**, who play such a vital role in nurturing talent. With continued collaboration and innovation, we look forward to building on this momentum in the years ahead.

Robin Hughes, BPhO Chair

Participant Impact

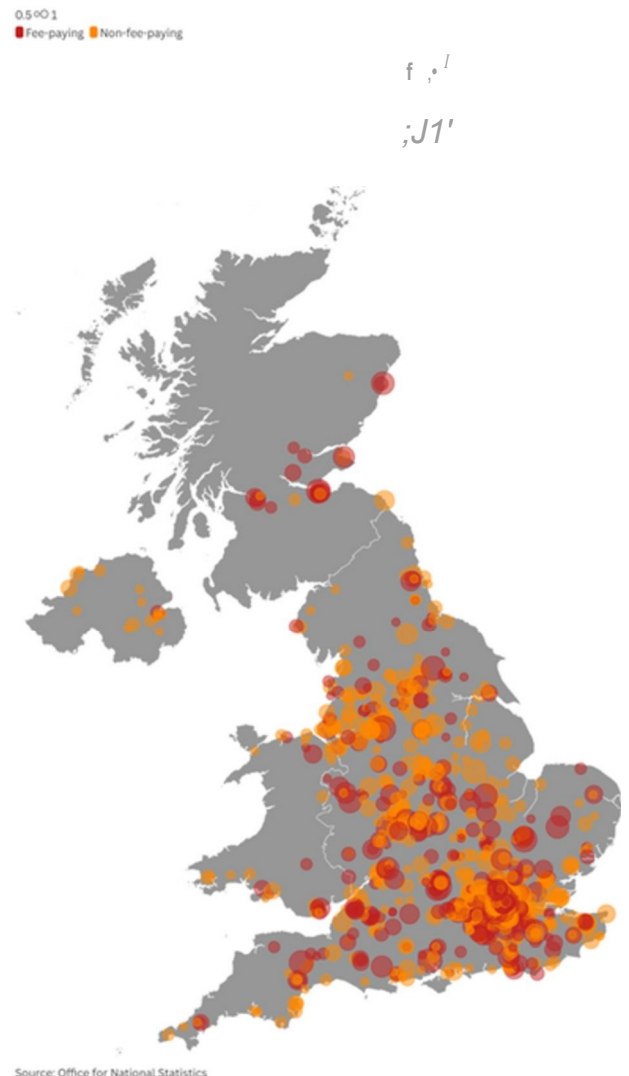
National reach

1,700 schools across the UK take part in BPhO competitions, with 53,000 young people participating in 2023/24. In addition, nearly 4,000 students follow our online webinars.

Impact beyond participation

Participants develop problem solving skills and have increased resilience and confidence in approaching different types of questions in exam settings.

"That kind of mindset and thinking has made it easier to try and sort of learn new stuff or apply it to things I'm currently studying, and see how that stuff becomes either easier or more accessible."



Student events

Since 2022 the BPhO has run a number of in-person taster days and masterclasses for young people aged 14-17 years. Following a Year 10 taster day at G-Research, 70% of pupils said the event had helped to **increase their interest in physics**.

"I enjoyed coming at alternative ways of solving problems which we don't get to go through as much at school."

Pupils also got a lot of enjoyment from **exploring topics** that they had not had the chance to explore in the classroom and that the experience of the taster had showed that physics is **relevant to real life**.

The Competitions

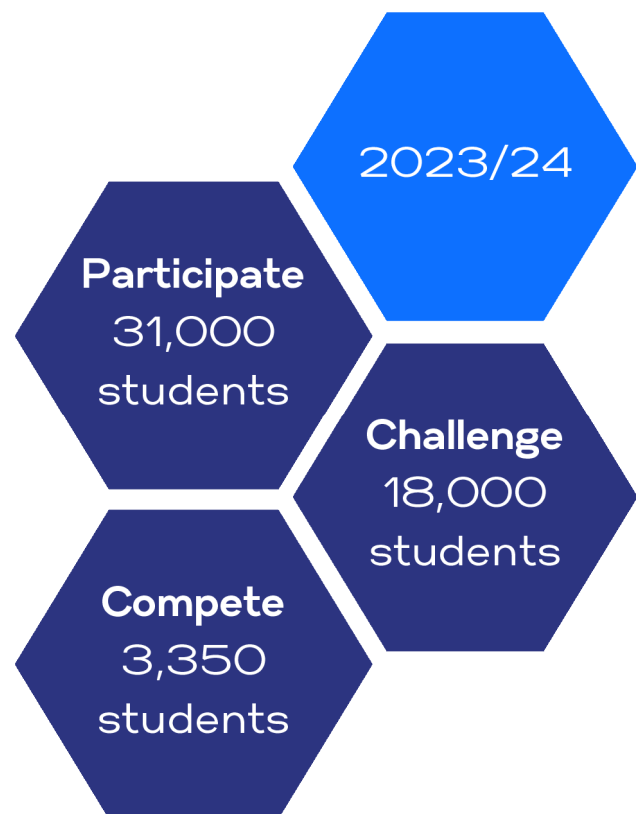
Competitions

We provide 15 annual competitions with three levels of engagement:

Participate: Our online, multiple-choice quizzes designed to spark interest in physics problem-solving, offering many easy questions alongside a few more challenging ones. (For ages 11-17)

Challenge: Our challenge papers foster a deeper interest and understanding in problem-solving, require mathematical techniques and are designed to stretch the most capable students. (For ages 14-18)

Compete: Our most advanced papers, such as BPhO Round 1, identify and reward the best problem-solvers in UK schools and are used to select the UK teams for international competition. (For ages 17-18)



"Before taking the Intermediate Challenge I hadn't even considered that I was good at Physics. It helped build my confidence. The problems were interesting and something I hadn't thought of before."

Sophie, University of Oxford,
Gold Award in the Physics Intermediate Challenge
(Subsequently on the team for the European Physics Olympiad)

Activities and Resources

Resources and events

Taster Days and **Masterclasses** events, both in-person and online, give young people the chance to develop problem-solving skills beyond the classroom.

Teacher events provide guidance and resources to help teachers the confidence to support their students in developing problem solving skills in physics.

100% of teachers attending problem solving events said they would be able to **apply what they learned** in their classrooms. Following the event **95% felt more confident** supporting their students in participating in BPhO challenges.

Resources, such as the new BPhO Interactive Database and past papers provide teachers with access to past BPhO questions.

Training camps are used to select and train students for international competitions. An annual **awards day** at the Royal Society celebrates the successes of 70 students.

"Very helpful and informative and reignited my interest in using more challenging problems with my students."

"I have a much better understanding on how to guide students to solve physics questions in general, not only BPhO-type."



With thanks to our sponsor, G-Research

We are deeply grateful to our sponsors, G-Research, for their generous support.

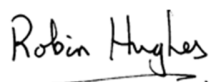
Their commitment makes it possible for us to deliver high-quality enrichment activities, provide free resources to schools, and offer life-changing opportunities for students across the UK. From the first online quiz in Year 7 to the international stage, every step our students take is supported by this vital funding.

Thank you for helping us inspire the next generation of physicists.

The British Physics Olympiad Trust

Trustees' Report (continued)

The annual report was approved by the trustees of the charity on ...29/01/2026.... and signed on its behalf by:

A handwritten signature in black ink that reads "Robin Hughes". The signature is written in a cursive style with a horizontal line underneath the name.

Mr Robin Hughes
Chairman and trustee

The British Physics Olympiad Trust

Statement of Trustees' Responsibilities

The trustees are responsible for preparing the trustees' report and the financial statements in accordance with the United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice) and applicable law and regulations.

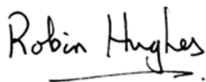
The law applicable to charities requires the trustees to prepare financial statements for each financial year which give a true and fair view of the state of affairs of the charity and of the incoming resources and application of resources of the charity for that period. In preparing these financial statements, the trustees are required to:

- select suitable accounting policies and then apply them consistently;
- observe the methods and principles in the Charities SORP;
- make judgements and estimates that are reasonable and prudent;
- state whether applicable accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the charity will continue in business.

The trustees are responsible for keeping proper accounting records that disclose with reasonable accuracy at any time the financial position of the charity and enable them to ensure that the financial statements comply with the Charities Act 2011, the Charities (Accounts and Reports) Regulations 2008, and the provisions of the constitution. The trustees are also responsible for safeguarding the assets of the charity and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The trustees are responsible for the maintenance and integrity of the corporate and financial information included on the charitable company's website. Legislation governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Approved by the trustees of the charity on ...29/01/2026..... and signed on its behalf by:



Mr Robin Hughes
Chairman and trustee

The British Physics Olympiad Trust

Independent Examiner's Report to the trustees of The British Physics Olympiad Trust

I report to the trustees on my examination of the accounts of The British Physics Olympiad Trust for the year ended 31 August 2024.

Responsibilities and basis of report

As the charity trustees of The British Physics Olympiad Trust you are responsible for the preparation of the accounts in accordance with the requirements of the Charities Act 2011 ('the Act').

I report in respect of my examination of the The British Physics Olympiad Trust's accounts carried out under section 145 of the 2011 Act and in carrying out my examination I have followed all the applicable Directions given by the Charity Commission under section 145(5)(b) of the Act.

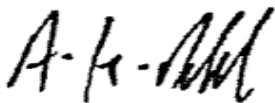
Independent examiner's statement

Since The British Physics Olympiad Trust's gross income exceeded £250,000 your examiner must be a member of a body listed in section 145 of the 2011 Act. I confirm that I am qualified to undertake the examination because I am a member of , which is one of the listed bodies.

I have completed my examination. I confirm that no material matters have come to my attention in connection with the examination giving me cause to believe that in any material respect:

1. accounting records were not kept in respect of The British Physics Olympiad Trust as required by section 130 of the Act; or
2. the accounts do not accord with those records; or
3. the accounts do not comply with the accounting requirements concerning the form and content of accounts set out in the Charities (Accounts and Reports) Regulations 2008 other than any requirement that the accounts give a 'true and fair view' which is not a matter considered as part of an independent examination.

I have no concerns and have come across no other matters in connection with the examination to which attention should be drawn in this report in order to enable a proper understanding of the accounts to be reached.



.....
Ajay Bahl FCA
Wenn Townsend Chartered Accountants

30 St Giles'
Oxford
OX1 3LE

Date: 29/01/2026

The British Physics Olympiad Trust

Statement of Financial Activities for the Year Ended 31 August 2024

	Note	Unrestricted funds £	Total 2024 £
Income and Endowments from:			
Other trading activities	2	296,616	296,616
Investment income	3	6,231	6,231
Total income		302,847	302,847
Expenditure on:			
Raising funds		(89,925)	(89,925)
Charitable activities	4	(141,754)	(141,754)
Total expenditure		(231,679)	(231,679)
Net income		71,168	71,168
Net movement in funds		71,168	71,168
Reconciliation of funds			
Total funds brought forward		354,571	354,571
Total funds carried forward	12	425,739	425,739

	Note	Unrestricted funds £	Total 2023 £
Income and Endowments from:			
Other trading activities	2	232,680	232,680
Investment income	3	2,751	2,751
Total income		235,431	235,431
Expenditure on:			
Raising funds		(35,142)	(35,142)
Charitable activities	4	(77,347)	(77,347)
Total expenditure		(112,489)	(112,489)
Net income		122,942	122,942
Net movement in funds		122,942	122,942
Reconciliation of funds			
Total funds brought forward		231,629	231,629
Total funds carried forward	12	354,571	354,571

The British Physics Olympiad Trust

Statement of Financial Activities for the Year Ended 31 August 2024 (continued)

All of the charity's activities derive from continuing operations during the above two periods.

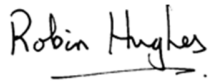
The funds breakdown for 2023 is shown in note 12.

The British Physics Olympiad Trust

(Registration number: 1146064)
Balance Sheet as at 31 August 2024

	Note	2024 £	2023 £
Current assets			
Debtors	8	35,000	-
Cash at bank and in hand	9	421,289	354,571
		<u>456,289</u>	<u>354,571</u>
Creditors: Amounts falling due within one year	10	<u>(30,550)</u>	<u>-</u>
Net assets		<u>425,739</u>	<u>354,571</u>
Funds of the charity:			
Unrestricted income funds			
Unrestricted funds		<u>425,739</u>	<u>354,571</u>
Total funds	12	<u>425,739</u>	<u>354,571</u>

The financial statements on pages 14 to 22 were approved by the trustees, and authorised for issue on ...29/01/2026..... and signed on their behalf by:



Mr Robin Hughes
Chairman and trustee

The British Physics Olympiad Trust

Notes to the Financial Statements for the Year Ended 31 August 2024

1 Accounting policies

Statement of compliance

The financial statements have been prepared in accordance with the second edition of the Charities Statement of Recommended Practice issued in October 2019, the Financial Reporting Standard applicable in the United Kingdom and Republic of Ireland (FRS 102) and the Charities Act 2011.

Basis of preparation

The British Physics Olympiad Trust meets the definition of a public benefit entity under FRS 102. The accounts (financial statements) have been prepared under the historical cost convention with items recognised at cost or transaction value unless otherwise stated in the relevant note(s) to these accounts.

Going concern

The trustees consider that there are no material uncertainties about the charity's ability to continue as a going concern.

Changes in accounting policy

The previous years accounts were prepared using the receipts and payments basis. As the revenue threshold for the receipts and payments basis has been surpassed, the accounts for this year have been prepared on an accruals basis.

Income and endowments

All income is recognised once the charity has entitlement to the income, it is probable that the income will be received and the amount of income receivable can be measured reliably.

Interest on funds held on deposit is included when receivable and the amount can be reliably measured by the charity; this is normally upon notification of the interest paid or payable by the bank or deposit taking institution.

Expenditure

All expenditure is recognised once there is a legal or constructive obligation to that expenditure, it is probable settlement is required and the amount can be measured reliably. All costs are allocated to the applicable expenditure heading that aggregate similar costs to that category. Where costs cannot be directly attributed to particular headings they have been allocated on a basis consistent with the use of resources, with central staff costs allocated on the basis of time spent, and depreciation charges allocated on the portion of the asset's use. Other support costs are allocated based on the spread of staff costs.

Governance costs

These include the costs attributable to the charity's compliance with constitutional and statutory requirements, including audit, strategic management and trustees meetings and reimbursed expenses.

The British Physics Olympiad Trust

Notes to the Financial Statements for the Year Ended 31 August 2024 (continued)

Taxation

The charity is considered to pass the tests set out in Paragraph 1 Schedule 6 of the Finance Act 2010 and therefore it meets the definition of a charitable company for UK corporation tax purposes. Accordingly, the charity is potentially exempt from taxation in respect of income or capital gains received within categories covered by Chapter 3 Part 11 of the Corporation Tax Act 2010 or Section 256 of the Taxation of Chargeable Gains Act 1992, to the extent that such income or gains are applied exclusively to charitable purposes.

Trade debtors

Trade debtors are amounts due from customers for services performed in the ordinary course of business.

Trade debtors are recognised initially at the transaction price. They are subsequently measured at amortised cost using the effective interest method, less provision for impairment. A provision for the impairment of trade debtors is established when there is objective evidence that the charity will not be able to collect all amounts due according to the original terms of the receivables.

Cash and cash equivalents

Cash and cash equivalents comprise cash on hand and call deposits, and other short-term highly liquid investments that are readily convertible to a known amount of cash and are subject to an insignificant risk of change in value.

Trade creditors

Trade creditors are obligations to pay for goods or services that have been acquired in the ordinary course of business from suppliers. Accounts payable are classified as current liabilities if the creditor does not have an unconditional right, at the end of the reporting period, to defer settlement of the creditor for at least twelve months after the reporting date. If there is an unconditional right to defer settlement for at least twelve months after the reporting date, they are presented as non-current liabilities.

Trade Creditors are recognised initially at the transaction price and subsequently measured at amortised cost using the effective interest method.

Fund structure

Unrestricted income funds are general funds that are available for use at the trustees discretion in furtherance of the objectives of the charity.

The British Physics Olympiad Trust

Notes to the Financial Statements for the Year Ended 31 August 2024 (continued)

2 Income from other trading activities

	Unrestricted funds General £	Total funds £
Events income;		
Other events income	296,616	296,616
Total for 2024	296,616	296,616
Total for 2023	232,680	232,680

3 Investment income

	Unrestricted funds General £	Total funds £
Interest receivable and similar income;		
Interest receivable on bank deposits	6,231	6,231
Total for 2024	6,231	6,231
Total for 2023	2,751	2,751

4 Expenditure on charitable activities

	Unrestricted funds General £	Total funds £
Note		
Governance costs	141,754	141,754
Total for 2024	141,754	141,754
Total for 2023	77,347	77,347

The British Physics Olympiad Trust

Notes to the Financial Statements for the Year Ended 31 August 2024 (continued)

5 Analysis of governance and support costs

Governance costs

	Unrestricted funds General £	Total funds £
Other staff costs	6,804	6,804
Other fees paid to examiner	7,400	7,400
Legal fees	1,638	1,638
Marketing and publicity	1,422	1,422
Other governance costs	124,490	124,490
Total for 2024	141,754	141,754
Total for 2023	77,347	77,347

6 Staff costs

The aggregate payroll costs were as follows:

	2024 £	2023 £
Staff costs during the year were:		
Wages and salaries (raising funds)	89,925	35,142
Other staff costs	6,804	742
	96,729	35,884

The monthly average number of persons (including senior management / leadership team) employed by the charity during the year expressed as full time equivalents was as follows:

	2024 No	2023 No
Employee Average	21	20

No employee received emoluments of more than £60,000 during the year

The British Physics Olympiad Trust

Notes to the Financial Statements for the Year Ended 31 August 2024 (continued)

7 Taxation

The charity is a registered charity and is therefore exempt from taxation.

8 Debtors

	2024 £
Trade debtors	<u>35,000</u>

9 Cash and cash equivalents

	2024 £	2023 £
Cash at bank	<u>421,289</u>	<u>354,571</u>

10 Creditors: amounts falling due within one year

	2024 £
Trade creditors	13,543
Other taxation and social security	3,195
Other creditors	12,048
Accruals	<u>1,764</u>
	<u>30,550</u>

11 Pension and other schemes

Defined contribution pension scheme

The charity operates a defined contribution pension scheme. The pension cost charge for the year represents contributions payable by the charity to the scheme and amounted to £Nil (2023 - £Nil).

The British Physics Olympiad Trust

Notes to the Financial Statements for the Year Ended 31 August 2024 (continued)

12 Funds

	Balance at 1 September 2023 £	Incoming resources £	Resources expended £	Balance at 31 August 2024 £
Unrestricted funds				
General	354,571	302,847	(231,679)	425,739

	Balance at 1 September 2022 £	Incoming resources £	Resources expended £	Balance at 31 August 2023 £
Unrestricted funds				
General	231,629	235,431	(112,489)	354,571

13 Analysis of net assets between funds

	Unrestricted funds General £	Total funds at 31 August 2024 £
Current assets	456,289	456,289
Current liabilities	(30,550)	(30,550)
Total net assets	425,739	425,739

	Unrestricted funds General £	Total funds at 31 August 2023 £
Current assets	354,571	354,571

The British Physics Olympiad Trust

Statement of Financial Activities by fund for the Year Ended 31 August 2024

	Total Unrestricted Funds 2024 £	Total Unrestricted Funds 2023 £
Income and Endowments from:		
Other trading activities	296,616	232,680
Investment income	6,231	2,751
Total income	<u>302,847</u>	<u>235,431</u>
Expenditure on:		
Raising funds	(89,925)	(35,142)
Charitable activities	<u>(141,754)</u>	<u>(77,347)</u>
Total expenditure	<u>(231,679)</u>	<u>(112,489)</u>
Net income	<u>71,168</u>	<u>122,942</u>
Net movement in funds	71,168	122,942
Reconciliation of funds		
Total funds brought forward	<u>354,571</u>	<u>231,629</u>
Total funds carried forward	<u><u>425,739</u></u>	<u><u>354,571</u></u>

The British Physics Olympiad Trust

Detailed Statement of Financial Activities for the Year Ended 31 August 2024

	Total 2024 £	Total 2023 £
Income and Endowments from:		
Other trading activities (analysed below)	296,616	232,680
Investment income (analysed below)	6,231	2,751
Total income	302,847	235,431
Expenditure on:		
Raising funds (analysed below)	(89,925)	(35,142)
Charitable activities (analysed below)	(141,754)	(77,347)
Total expenditure	(231,679)	(112,489)
Net income	71,168	122,942
Net movement in funds	71,168	122,942
Reconciliation of funds		
Total funds brought forward	354,571	231,629
Total funds carried forward	425,739	354,571

The British Physics Olympiad Trust

Detailed Statement of Financial Activities for the Year Ended 31 August 2024 (continued)

	Total 2024 £	Total 2023 £
<i>Other trading activities</i>		
Exhibitions	296,616	232,680
	<u>296,616</u>	<u>232,680</u>
<i>Investment income</i>		
Interest on cash deposits	6,231	2,751
	<u>6,231</u>	<u>2,751</u>
<i>Raising funds</i>		
Wages and salaries	(89,925)	(35,142)
	<u>(89,925)</u>	<u>(35,142)</u>
<i>Charitable activities</i>		
Volunteer expenses	(6,804)	(742)
Insurance	(1,918)	(269)
Registration fees	(1,931)	(7,420)
Office expenses	(380)	-
Computer software and maintenance costs	(4,403)	(4,222)
Printing, postage and stationery	(1,968)	(2,245)
Presentations	(22,106)	-
Trade subscriptions	(10,048)	(397)
Travel and subsistence	(64,428)	(23,239)
Accommodation	(16,668)	(32,450)
Advertising	(1,422)	(4,001)
Accountancy fees	(7,400)	(1,590)
Legal and professional fees	(1,638)	-
Bank charges	(640)	(772)
	<u>(141,754)</u>	<u>(77,347)</u>

THE BRITISH PHYSICS OLYMPIAD TRUST

England & Wales - Charity number 1146064

Accounts

Charity number: 1146064

The British Physics Olympiad Trust

**Report & Accounts
for the year
ended 31st August 2023**

**Wenn Townsend
Chartered Accountants
Oxford**

The British Physics Olympiad Trust

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The British Physics Olympiad Trust

Trustees' Annual Report for the year ended 31st August 2023

Legal and Administration Information

Registered charity name	The British Physics Olympiad Trust (also known as BPhO)
Charity registration number	1146064
Registered office	The British Physics Olympiad Trust Department of Physics University of Oxford Denys Wilkinson Building Oxford OX1 3RH
Trustees	Dr Anson Cheung Mr Robin Hughes (Chair) Dr Sian Tedaldi (Administrator)
Website	www.BPhO.org.uk
Independent examiner	Wenn Townsend Chartered Accountants 30 St Giles Oxford OX1 3LE

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2023

The Trustees present their Annual Report and Accounts for the year ended 31st August 2023.

Reference and Administration Details

The Charity name is The British Physics Olympiad Trust, and is also known as BPhO. The Charity has the registered number 1146064, and its principal address is:

The British Physics Olympiad Trust
Department of Physics
University of Oxford
Denys Wilkinson Building, Oxford, OX1 3RH

Trustees

The following Trustees held office during the year:

Dr Anson Cheung	
Mr Robin Hughes	Chair
Dr Sian Tedaldi	Administrator

Charitable Objects and Main Activities Undertaken

The objects of the Charity are the advancement of education and engagement of students in physics including:

- The organisation of annual physics competitions; and
- The support of teams to represent Britain at the International Physics Olympiad and at the International Olympiad on Astronomy & Astrophysics

Website www.BPhO.org.uk

Structure, Governance and Management

The governing document is a Trust Deed dated 11th January 2012. Trustees are appointed or reappointed at a meeting of the Trustees.

The BPhO is run through the Outreach Office of the Physics Department of the University of Oxford. One of the Trustees (Dr Sian Tedaldi) is the Physics Outreach Officer, who has a shared role. This provides both administrative and academic support, an awareness and understanding of the requirements for developing students' physics skills and knowledge, whilst also providing facilities for enabling many volunteers to be able to offer their services to the BPhO.

A Child Protection Policy and a Data Protection Policy are in place. DBS checks are carried out on the Trustees, but also on the volunteers, who are mostly teachers (some retired), who are engaged in running problem solving classes, lecturing and participating in the training camps.

All work is voluntary, apart from that of the Administrator, who is an employee of Oxford University and who is allowed to devote a percentage of time to the administrative running of the BPhO.

Day to day running of the BPhO is by a Management Committee of five members who coordinate the relevant activities during the course of the academic year, funnelling many of the administrative activities through the Oxford Administration Office.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2023

Charitable Objects and Main Activities Undertaken

The objects of the Charity are the advancement of education and engagement of students in physics including:

- The organisation of annual physics competitions in schools and colleges.
- The selection and support of teams to represent the UK at the International Physics Olympiad and the International Olympiad on Astronomy & Astrophysics.
- Encouraging the study of physics in Years 10-13, and to recognise and reward excellence in young physicists.

The key activities are the setting of competition papers and running Training Camps. For this an active Management Committee liaises with thirty to forty volunteers, mainly teachers or physics research students, who participate in a wide range of quite specific large and small roles to expedite the aims of the BPhO. There are five distinct areas in which we focus for running and development.

1. Paper setting:
 - a. Setting problems and papers
 - b. Ensuring consistency across papers
 - c. Providing a mechanism for checking papers
 - d. Assessing suitability in level of difficulty and content
2. BPhO Training
 - a. Organising and delivering training for two or three training camps per year
 - b. Providing mentoring for the team and reserves
 - c. Setting problems and further reading
 - d. Planning training across all activities for students and teachers
3. Widening engagement
 - a. Advertising and promoting resources to teachers and students
 - b. Developing new materials and resources for physics teaching
 - c. Maintaining and developing the website
 - d. Running events (Workshops) with a key aim of developing skills and enthusiasm for stretching physics content (outside of training)
4. Sponsorship
 - a. Promoting the BPhO to potential sponsors
 - b. Organising contributions in money, time, promotion and equipment
 - c. Engaging past Olympiad students
5. Sustainability and expansion
 - a. Developing links with other organisations who will use the BPhO competitions
 - b. Teaching resources related to the level of the competitions
 - c. Introducing new competitions

The team of volunteer supporters who participate in these is a rolling group who can afford to give of their time, depending upon personal, family and career commitments. This is a real limitation in the BPhO activities, and so the team of core paper setters is small whilst the surrounding group of contributors, checkers and supporters in one way or another is relatively large.

- Papers are ordered for this number of students, but the marking will not have been completed by the time boundaries are set. So only half of the marks are returned.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2023

With such a wide range of papers being produced (13 competitions this year), there is a lot of pressure to ensure that each competition goes through many checks. Question papers and mark schemes should reflect the ability and experience of both of students and teachers for each level; being interesting questions, stretching, informative, eliciting a deeper understanding amongst all who try them. They are not mere questions to get by; they are to encourage perseverance, build determination and resilience and possibly, to encourage students to discuss them and develop their skills in expressing their grasp of the concepts through explain their ideas to their peers. Our paper setters are under some pressure to write papers whilst teaching full time in school. We have checkers, who are asked to look at the paper in detail and others who look at the topics and a broader view to see if the paper is realistic for the target audience.

Paper setters or Team Leaders are:

- Junior Physics Challenge (Year 10) – Mr Iain Holmes (Kettering Buccleugh Academy)
- Junior Astro Challenge Online (Year 10) Dr Chris Crowe (Harrow School)
- Intermediate Physics Challenge Online – Mr Paul Nicholls (Merchiston Castle School)
- Intermediate Physics Challenge - Mr Paul Nicholls (The Duchess School, Northumberland)
- Senior Physics Challenge Online– Mr Robin Hughes (Project Physicist on Isaac Physics)
- Senior Physics Challenge - Mr Robin Hughes (Project Physicist on Isaac Physics)
- Physics Challenge – Dr Stephen Martin (Hills Road Sixth Form College & Cavendish Outreach)
- Astro Challenge, BAO Astrophysics Olympiad, Junior AC - Dr Alex Calverley (RGS Guildford)
- BPhO British Physics Olympiad (Round 1) – Dr Adam Patchett (Stamford Endowed School)
- BPhO British Physics Olympiad (Round 2) – Dr Rupert Alison, Dr James Bedford (Harrow School)
- Astro Olympiad Round 2 – Dr Alex Calverley (RGS Guildford)
- Experimental project – Mr Matthew Bennett (Truro Sixth Form College)
- Computational Challenge – Dr Andrew French (Winchester College)

The aim of the Trust is to offer students questions based on physics problem solving. This is to extend students' skills beyond examined courses and to provide them with the opportunities to apply their physics knowledge and to grasp the power of the subject, which is to analyse the nature of the physical world. This year there have been over thirty thousand students from several hundred schools of all types across the UK (and a number of International schools following a UK education system), who have participated in the competitions. These students are encouraged to develop problem solving skills through a set of competitions, or by teachers making use of the online resources on the BPhO website. The level of skill required to solve physics problems is high, but it is reached by determination and endeavour rather than being solely an ingrained natural talent. The UK competes in a global market and science is the key to future economic development. The examination system is a route to competence, but it is important that something additional is offered to students who want to excel in this subject. Mathematical skills are vital and the BPhO does include this in the competition papers. The BPhO is there to provide opportunities for students to appreciate the challenges of the subject and to realise that it is a mathematical subject for which mathematical solutions to problems provide a perspective on understanding. It is to support students in achieving their aspirations for university entrance.

When planning our activities for each year, the Trustees are cognisant of the Charity Commission's guidance on public benefit and, in this regard, the BPhO ensures that access to resources and training is open to all students, whatever their school, background and location. The BPhO resources are freely available via the website www.BPhO.org.uk to teachers and students from all schools. The widest reach is the goal, with boys and girls being able to benefit from access to materials focused at their level of ability and above, and not being confined to going through their teachers. Attendance at some of the annual meetings for physics teachers enables the charity to disseminate information, to encourage teachers to participate in the activities, and allows for them to develop their students' skills to the highest level. This is particularly significant in allowing those students with aspirations to further their knowledge and to engage realistically in the challenges of applying to the top university courses in physics and engineering. Teacher Workshops are run each year, and schools with less engagement with the Olympiad are encouraged to attend where possible.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2023

Background

Problem solving is an empowering activity and is one way of developing students' confidence in taking up life's challenges. Teachers can be unaware of the level that can be reached by some of the very best students. For both teachers and their students, engaging with others at workshops and problem solving events encourages participation and gaining confidence in seeing that physics is hard for everyone, but that the rewards can be great. The BPhO endeavours to allow those students and teachers to benefit from the wealth of accumulated experience that is available from the group of volunteer teachers. It is also part of the remit to ensure good practice in teaching extension material to challenge students from all backgrounds. To be able to share materials, information, ideas and expertise from those who have developed that expertise. This encourages the exchange of information to the benefit of teachers and students.

The BPhO is very much a network and maintaining contact with everyone is an ongoing process throughout the year. About 40 teachers (a few retired) from a variety of schools, contribute their time and experience to the benefit of the BPhO. The rewards are in seen in the developing expertise of strong students who gain confidence in a subject that they enjoy and which can be seen as economically important for the country. We also want to do well in international competitions in which our (two) teams of five students have been selected to represent the UK. The students are worked hard and they certainly apply themselves with great determination in the limited training time available. The variety of schools from which these students come each year testifies to a broad programme of attracting able, enthusiastic and extremely hard working students with an avid interest in the subject. These volunteer teachers provide all of the work that goes into teaching and setting of exam papers for the BPhO; we maintain contacts by email with all those who do small tasks such as checking aspects of a competition paper in order to encourage and offer opportunities for participation in the BPhO. Postgraduate student markers are paid at demonstrator rates for the marking of about 2800 papers for Round 1 in November this year. We have also received a similar number of scripts from ASDAN China, who organises the participation of Chinese independent schools in the BPhO competitions. For the BPhO Round 1 paper (a chargeable entry due to the cost of marking), non-fee-paying schools are awarded four free entries for their students each year. The introduction of the Astronomy & Astrophysics competition, with the training camps and other support, is a significant expenditure and could not be sustained indefinitely. But plans are in hand to obtain sponsorship from companies in this field, and we have an income through the sale of the Round 1 paper and several of the others overseas.

The number of contributors to the BPhO is extensive, and the charity is very much a network linking teachers and students.

We would like to record one of the teachers who passed away earlier in the year, Mr Guy Bagnall. A retired Head of Physics at Harrow School, Guy had been engaged in the BPhO for thirty years. Along with Cyril Isenberg, they formed a partnership which entailed running two International Physics Olympiads in the UK: in 1986 in Harrow and in 2000 in Leicester. They ran very successful UK teams from 1984 onwards, having the outright winners of the IPhO on two occasions, in 1989 and 1990. Guy wrote very interesting and often quite challenging questions for team selection. He was very interested in practical work and developed a number of selection camp practicals which would prove to be a challenge today, both for a student to do and for us to set up. He was undoubtedly good fun for us, but also inspirational for students.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2023

Main achievements during the year

- A continued emphasis on widening the number of students and schools, especially from state funded schools, will open up opportunities to a very wide range of outstanding students who will revel in the chance to perform in a competitive and aspirational subject. We have nearly UK 1000 schools registered, of whom 2/3 are non-fee-paying.
- Schools participating in our Quiz competitions have slowly grown. These have proved to be very popular and develops confidence in students, most being able to gain a medal in a national physics competition..
- To advertise the BPhO to teachers and to widen participation has been our focus in recent years, developing the BPhO beyond team selection, and in attempting to engage teachers and students more widely in physics problem solving. Physics problem solving is a difficult activity to master, but on the positive side, there are tremendous benefits to be gained from its mastery. Students gain confidence in themselves and engage with the subject at a deeper level, looking for more challenges. The online competitions proved to be a great success, and students enjoyed them, particularly in the light of exams being thwarted this year.
- Our fifth workshop with China was online again with 60 students. It is an effective means of strengthening our links with ASDAN China. Five days with students created much interest from those who attended. We would like to run such events in this country also.
- We participated in last year's IPhO organised by Lithuania and but could not enter the European Physics Olympiad (EuPhO) this time because A levels started up again. The physics team travelled to Tokyo for this prestigious competition. The UK team all won medals, with two Silver and three Bronze for the IPhO.

IPhO Team:

Aditya Tekriwal	St Bernard's Catholic Grammar School & University of Oxford
Alex Mylet	Caterham School & University of Oxford Surrey
Coy Zhu	Nottingham High School & University of Cambridge
Mali Jongman-Rios	Hills Road Sixth Form College & University of Oxford
Ojas Gulati	Tiffin School & Massachusetts Institute of Technology
Moosa Saghir (Res)	St Olave's Grammar School & University of Cambridge

The IOAA in Poland in August 2023 was a great success. They were the top team, an extraordinary achievement. The team were selected at the online Easter Camp and trained over the summer. As usual the training was initiated with the Easter Training Camp at which a squad of fourteen students attended for training and selection. This activity is attracting some new schools of all categories, and also some individuals who have a singular interest in astronomy, a subject not undertaken by many schools.

• The IOAA team were:

Ben Woodrow	Hills Road Sixth Form College & University of Oxford
Charlotte Stevenson	King's College London Mathematics School & University of Oxford
Freddie Weir	Royal Grammar School, Guildford
James Kennedy	Elizabeth College, Guernsey & University of Oxford
Ryan Lin	Reading School & University of Oxford
Liam O'Shea (Res.)	Woodhouse College & University of Oxford

Beyond these two groups at the top end, we estimate that in excess of 40,000 students are engaged with the BPhO this year. The number of schools is 800 - 1000.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2023

The **competition activities** for this year have been:

Individual reports on most of the competitions are produced for teachers. They are downloaded from the Competition Platform, and include some statistics about entries and results and also the grade boundaries for the awards.

September 2022 - Physics Challenge (Year 13): an estimate from the orders is 3-4 thousand students from over 400 schools using this paper or part of it. It is not a competition paper, but a resource to encourage students to develop their physics problem solving and to want to go on to the next level. Many schools use this as a pre-competition paper; some try it out in class whilst many more schools than this use it as a source of questions for their teaching. This paper encourages participation within a class environment, providing questions often for extension, which precipitates further discussion on a range of topics. It covers topics within the syllabus for physics, but with questions that would not be on a typical exam paper that students would meet. We are also trying to engage teachers with problem solving for their students.

Sept/Oct 2022 BAAO Astro Challenge (Year 13): similar in idea to the Physics Challenge: this paper is written for students with little acquaintance with the subject. The necessary physics is often presented within the questions. This is to show students that they can participate despite the impression they gain from the subject title that they know nothing of the subject. However, good physicists know enough to do well. This paper is sent out as a resource and seems to find some interest amongst teachers and students, but it is hard to gauge how effective it is in gaining student numbers.

Nov 2022 – British Physics Olympiad (Round 1): This is the first of the senior level physics papers, which is the start of team selection for the UK team for the IPhO. This year the numbers rose to 2700, a significant increase from the previous year. This is a 2hr 40 min paper in school with a significant amount of choice in the questions, corresponding to a five hour paper in total. Four free entries (normally £18 per entry) were offered to all state schools. This does encourage a greater number of schools to participate.

The paper was also taken by a similar number of students in students in China at about the same time, organised in conjunction with the Chinese arm of a British charity ASDAN. This enabled comparison of the results at this level, whilst also indicating to students the international aspect of physics, to see how they did compared to a cohort from another part of the world.

This paper provides a distinctly different challenge to students from a conventional A2 paper; it is more mathematical, the questions are less scaffolded, and the overall level of difficulty is much higher. It is undoubtedly at the physics extension level for students. The intake of girls, whilst only amounting to 20-25%, nevertheless is encouraging in that they wish to participate at the highest level. There is often a girl on the team, which corresponds to a 20% female participation. The length of the paper has been reduced, and possibly less information is gathered about student skills and knowledge, but it is a small price to pay if participation can be increased.

Jan 2023 - BPhO Experimental Project: Schools send in their best two entries and these are marked by the BPhO. This has not expanded much, although over 200 students at GCSE and AS are engaged, from about 50 schools, with the best examples being of a very high standard and reflecting some remarkably detailed investigations. Marking these entries has proved to be difficult as they require a certain level of experience to understand the school level student presentations, and need to be marked by only one or two people working together to provide consistency and moderation.

January 2023 - BPhO Round 2: 120 students from 50 schools were invited to take this three-hour paper after their success in Round 1 in November. This paper tests a range of skills and is much more a test of synoptic skills in physics, and not on well taught mathematical techniques. The scores ranged between 20% up to 80%. From this paper, 13 students were invited to the "Oxford Easter Training Camp". The numbers are limited for marking purposes.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2023

January 2023 – BAAO Competition Paper: around 80 students from 30 schools were either invited or, in a small number of cases, asked to take this paper. This included a small number of girls and also participation by several non-fee-paying schools, again as last year, about one third of the school entry. This was quite encouraging in the participation. It is expected to develop slowly. Fourteen students were invited to the online Training Camp over Easter. Astro Training Camps have been developed, at Oxford, Cambridge and Marlborough College, for both theory and for Observational skills. All students who have taken part have become engaged in astronomy subsequently. It has been a remarkably attractive aspect, although small numbers are involved at this stage.

March 2023 - Intermediate Physics Challenge Online: 4000 students participated from 200 schools, which was most encouraging.

March 2022 - Senior Physics Challenge Online: this is a Year 12 competition. Over 5000 students participated from nearly 400 schools.

The IPC and SPC online competitions were very successful as a substitution for the usual paper challenge problem solving papers. But the paper competitions are now back and do attract a significant entry (similar in number to the online competitions, which are clearly not challenges in the same sense). They do engaged students with the assortment of questions which entertain and may challenge them occasionally.

May 2023 Junior Physics Challenge Online: this is a Year 10 competition and has been running for 4 years now. Numbers have risen again this year. But it is a popular competition and encourages thousands of students to develop their confidence in physics. The distribution of the marks is very similar to last year. We expect numbers to pick up again when schools open up.

The distributions of marks for male and female candidates are similar and the number of girls is slightly greater than boys entering. There is a difference, with girls less often only taking Paper 1 out of the two. Other factors play a role but it is not clear what they are.

Squad Selection: A squad of 27 students, decided on the results of Rounds 1 & 2, and the BAAO Paper were invited to the **Training and Selection Camp** for five days over Easter. They are split into two groups, for the Physics route to the IPhO and the Astro route to the IOAA. This is intensive and has been tuned most recently to focus very much on solving problems in several topics – on the Physics side, Thermodynamics, Rotational Dynamics, Electromagnetism, Relativity, Waves, but no Practical Skills this year. The parallel training camp for the Astronomy & Astrophysics Olympiad was run with 14 students.

These activities satisfy our stated objectives to

- The organisation of annual physics competitions in schools and colleges.
- The selection and support of teams to represent Britain at the IPhO and IOAA.

In doing so, the opportunity is taken to engage with schools and encourage both students and teachers to participate. The BPhO Trust is committed to its programme of school competitions, student training, new developments in teacher support and broadening the publicity of the BPhO. The aim is to build up numbers, but also to provide resources to develop skill in problem solving for students who have less access to such opportunities.

The end of year saw our team of five physics students at the IPhO organised in Tokyo. A five hour theoretical exam, followed by a five hour online data taking challenge, is tough even for the strongest candidates and confidence levels need to be high, not to think that one might do well, but rather to believe that there are parts that can be done at all. Many students fall by the wayside when they lose heart. Our students keep going and that in itself is an important learning point in life.

Awards at Royal Society April 2023: The Presentation Day at the Royal Society recognises the students who have talent, but who have also worked very hard to achieve the top results. After a Covid interlude, we had an exceptionally busy day with teams from two EuPhO competitions and two IPhOs, along with three Astro teams being present and receiving awards.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2023

Sponsors: We are fortunate to have the support of a new sponsor in G Research. They are willing to support our work in outreach, running competitions, marking and team training. We are in a position to develop new ideas and methods.

We have a new Competition Platform, modern coding and excellent support. This enables us to control the issuing of the challenge papers and running the online competitions. It is a great asset and will become even more useful over time.

Policy on reserves

Cash surplus to current needs, which is all unrestricted, is held in an interest-earning deposit account. These funds are held in order to meet any unexpected expenditure as it arises and to provide a resource to draw on for future activities. At present, amongst other things, it is enabling the provision of free entries to the Round 1 competition paper, supporting CPD Workshops for teachers, and enabling teachers to attend the International Physics Olympiad as visiting delegates.

The BPhO has between two and three years running expenditure in savings at the current rate of expenditure. Developments in our outreach and training programme in the near future may entail significant extra costs but, given that there is an income stream from one set of competition papers (which subsidises all of the other electronically available ones) it is not the intention to run down the reserves. Rather the opportunity will be taken to develop the BPhO. We have a significant income stream through our links with China and the use of our papers. This is exciting, but has produced a considerable workload which we have not experienced before.

Future Plans

We continue to look for wider engagement with pupils and teachers. A continued emphasis on widening the number of students and schools, especially from state funded schools, will open up opportunities to a very wide range of outstanding students who will revel in the chance to perform in a competitive and aspirational subject. The information from the online entry database will be accessible from the Oxford Administration Office next year, rather than making request through the IT department. This may allow for a more informed approach to our target audience.

We would like to have more teachers experiencing the training camp events and being able to attend the International Physics Olympiad. It is an eye-opening opportunity for teachers who do not realise how far many good students can go if the reins are released.

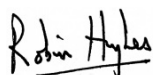
We want to develop the Astro Competitions, particularly the Junior Astro Challenge in November. It is online, and is a way of raising interest rather than setting very challenging problems to students.

The development of the data base systems for collecting data on participation of schools and students, will also reduce the workload at the Oxford office in handling papers and entries.

Declaration

The trustees declare that they have approved the trustees report above.

Signed on behalf of the trustees:



Robin Hughes

Mr Robin Hughes, Chairman of the Trustees

Date..... 27th June 2024.....

The British Physics Olympiad Trust

Independent Examiner's Report to the Members of The British Physics Olympiad Trust

I report to the charity trustees on my examination of the accounts of the charity for the year ended 31st August 2023 which are set out on pages 11 to 12.

Responsibilities and basis of report

As the charity's trustees you are responsible for the preparation of the accounts in accordance with the requirements of the Charities Act 2011 ('the Act').

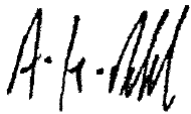
I report in respect of my examination of the charity's accounts carried out under section 145 of the Act and in carrying out my examination I have followed all the applicable Directions given by the Charity Commission under section 145(5)(b) of the Act.

Independent examiner's statement

I have completed my examination. I confirm that no material matters have come to my attention in connection with the examination giving me cause to believe that in any material respect:

1. accounting records were not kept in respect of the charity as required by section 130 of the Act; or
2. the accounts do not accord with those records;

I have no concerns and have come across no other matters in connection with the examination to which attention should be drawn in this report in order to enable a proper understanding of the accounts to be reached.



A K Bahl BA BFP FCA
Wenn Townsend
30 St Giles'
Oxford
OX1 3LE

27 June 2024

The British Physics Olympiad Trust

**Receipts and payments accounts
for the year ended 31st August 2023**

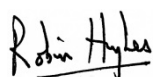
	Unrestricted Funds	Restricted Funds	Total Funds 2023	Total Funds 2022
	£	£	£	£
Receipts				
Receipts from educational activities	232,680	-	232,680	178,430
Bank interest received	2,751	-	2,751	158
	<u>235,431</u>	<u>-</u>	<u>235,431</u>	<u>178,588</u>
Total receipts	<u>235,431</u>	<u>-</u>	<u>235,431</u>	<u>178,588</u>
Payments				
Administration staff costs	35,142	-	35,142	30,380
Accommodation	32,450	-	32,450	19,992
Travel and subsistence	23,239	-	23,239	14,084
Marketing	4,001	-	4,001	13,433
Printing, post, and stationery	2,245	-	2,245	2,329
Conference expenses	742	-	742	15,070
Subscriptions	397	-	397	5,575
Accountancy fees	1,590	-	1,590	2,915
Insurance	269	-	269	1247
Registration fees	7,420	-	7,420	5,477
Website costs	4,222	-	4,222	2,152
Bank charges	772	-	772	-
	<u>112,489</u>	<u>-</u>	<u>112,489</u>	<u>111,531</u>
Total payments	<u>112,489</u>	<u>-</u>	<u>112,489</u>	<u>111,531</u>
Net of receipts/(payments)	<u>122,942</u>	<u>-</u>	<u>122,942</u>	<u>67,057</u>
Transfers between funds	-	-	-	-
Cash funds as at 31st August 2022	<u>231,629</u>	<u>-</u>	<u>231,629</u>	<u>164,572</u>
Cash funds as at 31st August 2023	<u>354,571</u>	<u>-</u>	<u>354,571</u>	<u>231,629</u>

The British Physics Olympiad Trust

**Statement of Assets and Liabilities
as at 31st August 2023**

	Unrestricted Funds	Restricted Funds	Total Funds 2023	Total Funds 2022
	£	£	£	£
Cash at bank				
Barclays Current Account	65,704	-	65,704	52,989
Unity Trust Savings	14,094	-	14,094	116,028
Unity Trust Checking	224,779	-	224,779	12,618
Physics Account	49,994	-	49,994	39,994
	<u>354,571</u>	<u>-</u>	<u>354,571</u>	<u>231,629</u>
Total cash funds	<u>354,571</u>	<u>-</u>	<u>354,571</u>	<u>231,629</u>
 Unrestricted funds	 <u>354,571</u>	 <u>-</u>	 <u>354,471</u>	 <u>231,629</u>

These accounts were approved at a meeting of the Trustees held on 16th September 2024



Robin Hughes
Chairman of the Trustees

THE BRITISH PHYSICS OLYMPIAD TRUST

England & Wales - Charity number 1146064

Accounts

Charity number: 1146064

The British Physics Olympiad Trust

**Accounts
for the year
ended 31st August 2022**

**Wenn Townsend
Chartered Accountants
Oxford**

The British Physics Olympiad Trust

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The British Physics Olympiad Trust

Trustees' Annual Report for the year ended 31st August 2022

Legal and Administration Information

Registered charity name	The British Physics Olympiad Trust (also known as BPhO)
Charity registration number	1146064
Registered office	The British Physics Olympiad Trust Department of Physics University of Oxford Denys Wilkinson Building Oxford OX1 3RH
Trustees	Dr Anson Cheung Mr Iain Holmes Mr Robin Hughes (Chair) Mrs Clare Thomson Dr Sian Tedaldi (Administrator)
Website	www.BPhO.org.uk
Independent examiner	Wenn Townsend Chartered Accountants 30 St Giles Oxford OX1 3LE

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2022

The Trustees present their Annual Report and Accounts for the year ended 31st August 2022.

Reference and Administration Details

The Charity name is The British Physics Olympiad Trust, and is also known as BPhO. The Charity has the registered number 1146064, and its principal address is:

The British Physics Olympiad Trust
Department of Physics
University of Oxford
Denys Wilkinson Building, Oxford, OX1 3RH

Trustees

The following Trustees held office during the year:

Dr Anson Cheung

Mr Robin Hughes Chair

Dr Sian Tedaldi Administrator

Two trustees (Iain Holmes and Clare Thomson) resigned during the year due to other work and family commitments.

Charitable Objects and Main Activities Undertaken

The objects of the Charity are the advancement of education and engagement of students in physics including:

- The organisation of annual physics competitions; and
- The support of teams to represent Britain at the International Physics Olympiad and at the International Olympiad on Astronomy & Astrophysics

Website www.BPhO.org.uk

Structure, Governance and Management

The governing document is a Trust Deed dated 11th January 2012. Trustees are appointed or reappointed at a meeting of the Trustees.

The BPhO is run through the Outreach Office of the Physics Department of the University of Oxford. One of the Trustees (Dr Sian Tedaldi) is the Physics Outreach Officer, who has a shared role. This provides both administrative and academic support, an awareness and understanding of the requirements for developing students' physics skills and knowledge, whilst also providing facilities for enabling many volunteers to be able to offer their services to the BPhO.

A Child Protection Policy and a Data Protection Policy are in place. DBS checks are carried out on the Trustees, but also on the volunteers, who are mostly teachers (some retired), who are engaged in running problem solving classes, lecturing and participating in the training camps.

All work is voluntary, apart from that of the Administrator, who is an employee of Oxford University and who is allowed to devote a percentage of time to the administrative running of the BPhO.

Day to day running of the BPhO is by a Management Committee of five members who coordinate the relevant activities during the course of the academic year, funnelling many of the administrative activities through the Oxford Administration Office.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2022

Charitable Objects and Main Activities Undertaken

The objects of the Charity are the advancement of education and engagement of students in physics including:

- The organisation of annual physics competitions in schools and colleges.
- The selection and support of teams to represent the UK at the International Physics Olympiad and the International Olympiad on Astronomy & Astrophysics.
- Encouraging the study of physics in Years 10-13, and to recognise and reward excellence in young physicists.

The key activities are the setting of competition papers and running Training Camps. For this an active Management Committee liaises with thirty to forty volunteers, mainly teachers or physics research students, who participate in a wide range of quite specific large and small roles to expedite the aims of the BPhO. There are five distinct areas in which we focus for running and development.

1. Paper setting:
 - a. Setting problems and papers
 - b. Ensuring consistency across papers
 - c. Providing a mechanism for checking papers
 - d. Assessing suitability in level of difficulty and content
2. BPhO Training
 - a. Organising and delivering training for two or three training camps per year
 - b. Providing mentoring for the team and reserves
 - c. Setting problems and further reading
 - d. Planning training across all activities for students and teachers
3. Widening engagement
 - a. Advertising and promoting resources to teachers and students
 - b. Developing new materials and resources for physics teaching
 - c. Maintaining and developing the website
 - d. Running events (Workshops) with a key aim of developing skills and enthusiasm for stretching physics content (outside of training)
4. Sponsorship
 - a. Promoting the BPhO to potential sponsors
 - b. Organising contributions in money, time, promotion and equipment
 - c. Engaging past Olympiad students
5. Sustainability and expansion
 - a. Developing links with other organisations who will use the BPhO competitions
 - b. Teaching resources related to the level of the competitions
 - c. Introducing new competitions

The team of volunteer supporters who participate in these is a rolling group who can afford to give of their time, depending upon personal, family and career commitments. This is a real limitation in the BPhO activities, and so the team of core paper setters is small whilst the surrounding group of contributors, checkers and supporters in one way or another is relatively large.

- Papers are ordered for this number of students, but the marking will not have been completed by the time boundaries are set. So only half of the marks are returned.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2022

With such a wide range of papers being produced (11 competitions this year), there is a lot of pressure to ensure that each competition goes through many checks. Question papers and mark schemes should reflect the ability and experience of both of students and teachers for each level; being interesting questions, stretching, informative, eliciting a deeper understanding amongst all who try them. They are not mere questions to get by; they are to encourage perseverance, build determination and resilience and possibly, to encourage students to discuss them and develop their skills in expressing their grasp of the concepts through explain their ideas to their peers. Our paper setters are under some pressure to write papers whilst teaching full time in school. We have checkers, who are asked to look at the paper in detail and others who look at the topics and a broader view to see if the paper is realistic for the target audience.

Paper setters or Team Leaders are:

- Junior Physics Challenge (Year 10) – Mr Iain Holmes (Kettering Buccleugh Academy)
- Intermediate Physics Challenge Online – Mr Paul Nicholls (Merchiston Castle School)
- Senior Physics Challenge Online– Mr Robin Hughes (Project Physicist on Isaac Physics)
- Physics Challenge – Dr Stephen Martin (Hills Road Sixth Form College & Cavendish Outreach)
- Astro Challenge, BAAO Astrophysics Olympiad, Junior AC - Dr Alex Calverley (RGS Guildford)
- BPhO British Physics Olympiad (Round 1) – Dr Adam Patchett (Stamford Endowed School)
- BPhO British Physics Olympiad (Round 1) – Dr Rupert Alison, Dr James Bedford (Harrow School)
- Experimental project – Mr Matthew Bennett (Truro Sixth Form College)
- Computational Challenge – Dr Andrew French (Winchester College)

The aim of the Trust is to offer students questions based on physics problem solving. This is to extend students' skills beyond examined courses and to provide them with the opportunities to apply their physics knowledge and to grasp the power of the subject, which is to analyse the nature of the physical world. This year there have been over thirty thousand students from several hundred schools of all types across the UK (and a number of International schools following a UK education system), who have participated in the competitions. These students are encouraged to develop problem solving skills through a set of competitions, or by teachers making use of the online resources on the BPhO website. The level of skill required to solve physics problems is high, but it is reached by determination and endeavour rather than being solely an ingrained natural talent. The UK competes in a global market and science is the key to future economic development. The examination system is a route to competence, but it is important that something additional is offered to students who want to excel in this subject. Mathematical skills are vital and the BPhO does include this in the competition papers. The BPhO is there to provide opportunities for students to appreciate the challenges of the subject and to realise that it is a mathematical subject for which mathematical solutions to problems provide a perspective on understanding. It is to support students in achieving their aspirations for university entrance.

When planning our activities for each year, the Trustees are cognisant of the Charity Commission's guidance on public benefit and, in this regard, the BPhO ensures that access to resources and training is open to all students, whatever their school, background and location. The BPhO resources are freely available via the website www.BPhO.org.uk to teachers and students from all schools. The widest reach is the goal, with boys and girls being able to benefit from access to materials focused at their level of ability and above, and not being confined to going through their teachers. Attendance at some of the annual meetings for physics teachers enables the charity to disseminate information, to encourage teachers to participate in the activities, and allows for them to develop their students' skills to the highest level. This is particularly significant in allowing those students with aspirations to further their knowledge and to engage realistically in the challenges of applying to the top university courses in physics and engineering. Teacher Workshops are run each year, and schools with less engagement with the Olympiad are encouraged to attend where possible.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2022

Responses to Covid-19

The online competitions have been retained and so these IPC and SPC online Competitions now precede the IPC and SPC Challenge Paper Competitions. Both are extremely successful in attracting participants. The online competitions are about participation rather than problem solving skills.

The BPhO finances are in good shape given the savings made in several areas. Several of the competitions bring in a modest income and these have continued to run. The large expenditure activities of the Annual awards, training camps and sending teams overseas have not taken place.

Outreach activities are being thought about and we hope to start in the Autumn term of 2022.

Training of the teams entered for the IPhO, EuPhO and IOAA equivalent has all taken place again, although the physics competition has been kept as an online one due to the fact that the venue for the IPhO was due to be Belarus in July 2022.

Background

Problem solving is an empowering activity and is one way of developing students' confidence in taking up life's challenges. Teachers can be unaware of the level that can be reached by some of the very best students. For both teachers and their students, engaging with others at workshops and problem solving events encourages participation and gaining confidence in seeing that physics is hard for everyone, but that the rewards can be great. The BPhO endeavours to allow those students and teachers to benefit from the wealth of accumulated experience that is available from the group of volunteer teachers. It is also part of the remit to ensure good practice in teaching extension material to challenge students from all backgrounds. To be able to share materials, information, ideas and expertise from those who have developed that expertise. This encourages the exchange of information to the benefit of teachers and students.

The BPhO is very much a network and maintaining contact with everyone is an ongoing process throughout the year. About 40 teachers (a few retired) from a variety of schools, contribute their time and experience to the benefit of the BPhO. The rewards are in seen in the developing expertise of strong students who gain confidence in a subject that they enjoy and which can be seen as economically important for the country. We also want to do well in international competitions in which our (two) teams of five students have been selected to represent the UK. The students are worked hard and they certainly apply themselves with great determination in the limited training time available. The variety of schools from which these students come each year testifies to a broad programme of attracting able, enthusiastic and extremely hard working students with an avid interest in the subject. These volunteer teachers provide all of the work that goes into teaching and setting of exam papers for the BPhO; we maintain contacts by email with all those who do small tasks such as checking aspects of a competition paper in order to encourage and offer opportunities for participation in the BPhO. Postgraduate student markers are paid at demonstrator rates for the marking of about 2300 papers for Round 1 in November this year.

For the BPhO Round 1 paper (a chargeable entry due to the cost of marking), non-fee-paying schools are awarded two free entries for their students each year. The introduction of the Astronomy & Astrophysics competition, with the training camps and other support, is a significant expenditure and could not be sustained indefinitely. But plans are in hand to obtain sponsorship from companies in this field, and we have an income through the sale of the Round 1 paper and several of the others overseas.

The number of contributors to the BPhO is extensive, and the charity is very much a network linking teachers and students. We would like to record one of the teachers who passed away earlier in the year.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2022

Main achievements during the year

- A continued emphasis on widening the number of students and schools, especially from state funded schools, will open up opportunities to a very wide range of outstanding students who will revel in the chance to perform in a competitive and aspirational subject.
- We were pleased to be able to keep all of the competition running, even in slightly different forms in some cases, but continuing the new online ones as the situation improves.
- To advertise the BPhO to teachers and to widen participation has been our focus in recent years, developing the BPhO beyond team selection, and in attempting to engage teachers and students more widely in physics problem solving. Physics problem solving is a difficult activity to master, but on the positive side, there are tremendous benefits to be gained from its mastery. Students gain confidence in themselves and engage with the subject at a deeper level, looking for more challenges. The online competitions proved to be a great success, and students enjoyed them, particularly in the light of exams being thwarted this year.
- Our fifth workshop with China was online again with 60 students. It is an effective means of strengthening our links with ASDAN China. Five days with students created much interest from those who attended. We would like to run such events in this country also.
- We participated in last year's IPhO organised by Lithuania and but could not enter the European Physics Olympiad (EuPhO) this time because A levels started up again. The physics team stayed in Cambridge for the events. The UK team all won medals, with one Silver and four Bronzes for the IPhO and two Silver and two Bronze in the EuPhO.

IPhO Team:

Benedict Harvey	Eton College & Trinity College Cambridge
Finley Easton	Prior Pursglove School & St Catherine's College Oxford
Francesca Di Cecio	St Paul's Girls School & Corpus Christi College Cambridge
Marc Giroux	Wilson's School & Merton College Oxford
Ojas Gulati	Tiffin School
Rhys Ho (Reserve)	Cranbrook School & King's College Cambridge

- The IOAA organised by Georgia was a great success. The team were selected at the online Easter Camp and trained over the summer. As usual the training was initiated with the Easter Training Camp, all online, in which a squad of thirteen students attended for training and selection. This activity is attracting some new schools of all categories, and also some individuals who have a singular interest in astronomy, a subject not undertaken by many schools.
- The team were:

Siobann Bouyer	Wilson's School & University College Oxford
Emma Harris	The Perse School
Alex Jones	Royal Grammar School, Guildford & Queens' College Cambridge
Anirudh Khaitan	Reading School & Queens' College Cambridge
Albert Kwok	Haberdashers' Aske's Boys' School & Queens' College Cambridge
Anna Sleight	Nottingham High School & Fitzwilliam College Cambridge
- We estimate that in excess of 40,000 students are engaged with the BPhO this year. The number of schools is 700 - 800. This is certainly lower than some years, but the Covid situation has taken its toll.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2022

The **competition activities** for this year have been:

September 2021 - Physics Challenge (Year 13): an estimate from the orders is 3-4 thousand students from over 400 schools using this paper or part of it. It is not a competition paper, but a resource to encourage students to develop their physics problem solving and to want to go on to the next level. Many schools use this as a pre-competition paper; some try it out in class whilst many more schools than this use it as a source of questions for their teaching. This paper encourages participation within a class environment, providing questions often for extension, which precipitates further discussion on a range of topics. It covers topics within the syllabus for physics, but with questions that would not be on a typical exam paper that students would meet. We are also trying to engage teachers with problem solving for their students.

Sept/Oct 2021 BAAO Astro Challenge (Year 13): similar in idea to the Physics Challenge: this paper is written for students with little acquaintance with the subject. The necessary physics is often presented within the questions. This is to show students that they can participate despite the impression they gain from the subject title that they know nothing of the subject. However, good physicists know enough to do well. This paper is sent out as a resource and seems to find some interest amongst teachers and students, but it is hard to gauge how effective it is in gaining student numbers.

Nov 2021 – British Physics Olympiad (Round 1): This is the first of the senior level physics papers, which is the start of team selection for the UK team for the IPhO and EuPhO in summer 2021. This year the numbers rose to 2300, a significant increase (by 700) from the previous year. This is a 2hr 40 min paper in school with a significant amount of choice in the questions, corresponding to a five hour paper in total. Two free entries (normally £18 per entry) were offered to all state schools. This does encourage a greater number of schools to participate.

Averages for this year indicate that the strength of the cohort remained largely unchanged. Despite the difficult conditions, students entering this competition had the stamina and skills to do well, and ultimately formed two international teams who all gained medals in their competitions.

The paper was also taken by 1000 students in China at about the same time, organised in conjunction with the Chinese arm of a British charity ASDAN. This enabled comparison of the results at this level, whilst also indicating to students the international aspect of physics, to see how they did compared to a cohort from another part of the world.

This paper provides a distinctly different challenge to students from a conventional A2 paper; it is more mathematical, the questions are less scaffolded, and the overall level of difficulty is much higher. It is undoubtedly at the physics extension level for students. The intake of girls, whilst only amounting to 20-25%, nevertheless is encouraging in that they wish to participate at the highest level. There is often a girl on the team, which corresponds to a 20% female participation. The length of the paper has been reduced, and possibly less information is gathered about student skills and knowledge, but it is a small price to pay if participation can be increased.

Jan 2022 - BPhO Experimental Project: Schools send in their best two entries and these are marked by the BPhO. This has not expanded much, although over 200 students at GCSE and AS are engaged, from about 50 schools, with the best examples being of a very high standard and reflecting some remarkably detailed investigations. Marking these entries has proved to be difficult as they require a certain level of experience to understand the school level student presentations, and need to be marked by only one or two people working together to provide consistency and moderation.

January 2022 - BPhO Round 2: 120 students from 50 schools were invited to take this three-hour paper after their success in Round 1 in November. This paper tests a range of skills as after being written for thirty years by a single writer, is now re-finding its style; it is much more a test of synoptic skills in physics, and not on well taught mathematical techniques. The scores ranged between 20% up to 80%. From this paper, 13 students were invited to the "Oxford Easter Training Camp" (held in person). The numbers are limited for marking purposes.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2022

January 2022 – BAAO Competition Paper: 68 students from 32 schools were either invited or, in a small number of cases, asked to take this paper. This included a small number of girls (10%), and participation by several non-fee-paying schools, again as last year, about one third of the school entry. This was quite encouraging in the participation. It is expected to develop slowly. Twelve students were invited to the online Training Camp over Easter. Astro Training Camps have been developed, at Oxford, Cambridge and Marlborough College, for both theory and for Observational skills. All students who have taken part have become engaged in astronomy subsequently. It has been a remarkably attractive aspect, although small numbers are involved at this stage.

March 2022 - Intermediate Physics Challenge Online: 4000 students participated from 200 schools, which was most encouraging.

March 2022 - Senior Physics Challenge Online: this is a Year 12 competition. Over 5000 students participated from 380 schools.

The M/F ratio is not available as this competition was run on the Biology Olympiad platform to avoid a clash with the IPC and such information is not available there.

The IPC and SPC online competitions were very successful as a substitution for the usual paper challenge problem solving papers. But the paper competitions are now back and do attract a significant entry (similar in number to the online competitions, which are clearly not challenges in the same sense). They do engaged students with the assortment of questions which entertain and may challenge them occasionally.

May 2022 Junior Physics Challenge Online: this is a Year 10 competition and has been running for 4 years now. Numbers have risen again this year. But it is a popular competition and encourages thousands of students to develop their confidence in physics. The distribution of the marks is very similar to last year. We expect numbers to pick up again when schools open up.

The distributions of marks for male and female candidates are similar and the number of girls is slightly greater than boys entering. There is a difference, with girls less often only taking Paper 1 out of the two. Other factors play a role but it is not clear what they are.

Squad Selection: A squad of 26 students, decided on the results of Rounds 1 & 2, and the BAAO Paper were invited to another online **Training Camp** for five days over Easter. They are split into two groups, for the Physics route to the IPhO and the Astro route to the IOAA. This is intensive and has been tuned most recently to focus very much on solving problems in several topics – on the Physics side, Thermodynamics, Rotational Dynamics, Electromagnetism, Relativity, Waves, but no Practical Skills this year. The parallel training camp for the Astronomy & Astrophysics Olympiad was run with 14 students.

We had online training rather than meeting at Training Camps.

These activities satisfy our stated objectives to

- The organisation of annual physics competitions in schools and colleges.
- The selection and support of teams to represent Britain at the IPhO and IOAA.

In doing so, the opportunity is taken to engage with schools and encourage both students and teachers to participate. The BPhO Trust is committed to its programme of school competitions, student training, new developments in teacher support and broadening the publicity of the BPhO. The aim is to build up numbers, but also to provide resources to develop skill in problem solving for students who have less access to such opportunities.

The end of year saw our team of five physics students at the EuPhO organised in Estonia. A five hour theoretical exam, followed by a five hour online data taking challenge, is tough even for the strongest candidates and confidence levels need to be high, not to think that one might do well, but rather to believe that there are parts that can be done at all. Many students fall by the wayside when they lose heart. Our students keep going and that in itself is an important learning point in life.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2022

Awards at Royal Society April 2022: The Presentation Day at the Royal Society recognises the students who have talent, but who have also worked very hard to achieve the top results. After a Covid interlude, we had an exceptionally busy day with teams from two EuPhO competitions and two IPhOs, along with three Astro teams being present and receiving awards.

Sponsors: The BPhO has several former sponsors although they were put on hold for the lockdown period. We cannot deal with book prizes, and financial support is on hold. Nevertheless, sponsorship funding is a small part of our income and so whilst it is unfortunate, we particularly welcome their interest in the BPhO activities, encouraging us to develop the important links between school physics and the demands of the usual IPhO, held in July. The perseverance, determination, the skill base and the team effort that need to be developed is considerable, but without the financial support, both in kind and in backing the principle, little would be accomplished.

Policy on reserves

Cash surplus to current needs, which is all unrestricted, is held in an interest-earning deposit account. These funds are held in order to meet any unexpected expenditure as it arises and to provide a resource to draw on for future activities. At present, amongst other things, it is enabling the provision of free entries to the Round 1 competition paper, supporting CPD Workshops for teachers, and enabling teachers to attend the International Physics Olympiad as visiting delegates.

The BPhO has between two and three years running expenditure in savings at the current rate of expenditure. Developments in our outreach and training programme in the near future may entail significant extra costs but, given that there is an income stream from one set of competition papers (which subsidises all of the other electronically available ones) it is not the intention to run down the reserves. Rather the opportunity will be taken to develop the BPhO. We have a significant income stream through our links with China and the use of our papers. This is exciting, but has produced a considerable workload which we have not experienced before.

Future Plans

We continue to look for wider engagement with pupils and teachers. A continued emphasis on widening the number of students and schools, especially from state funded schools, will open up opportunities to a very wide range of outstanding students who will revel in the chance to perform in a competitive and aspirational subject. The information from the online entry database will be accessible from the Oxford Administration Office next year, rather than making request through the IT department. This may allow for a more informed approach to our target audience.

We would like to have more teachers experiencing the training camp events and being able to attend the International Physics Olympiad. It is an eye-opening opportunity for teachers who do not realise how far many good students can go if the reins are released.

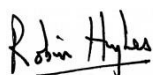
We want to develop the Astro Competitions, particularly the Junior Astro Challenge in November. It is online, and is a way of raising interest rather than setting very challenging problems to students.

The development of the data base systems for collecting data on participation of schools and students, will also reduce the workload at the Oxford office in handling papers and entries.

Declaration

The trustees declare that they have approved the trustees report above.

Signed on behalf of the trustees:



Mr Robin Hughes, Chairman of the Trustees

Date: 27th June 2023

The British Physics Olympiad Trust

Independent Examiner's Report to the Members of The British Physics Olympiad Trust

I report to the charity trustees on my examination of the accounts of the charity for the year ended 31st August 2022 which are set out on pages 11 to 12.

Responsibilities and basis of report

As the charity's trustees you are responsible for the preparation of the accounts in accordance with the requirements of the Charities Act 2011 ('the Act').

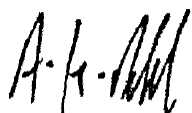
I report in respect of my examination of the charity's accounts carried out under section 145 of the Act and in carrying out my examination I have followed all the applicable Directions given by the Charity Commission under section 145(5)(b) of the Act.

Independent examiner's statement

I have completed my examination. I confirm that no material matters have come to my attention in connection with the examination giving me cause to believe that in any material respect:

1. accounting records were not kept in respect of the charity as required by section 130 of the Act; or
2. the accounts do not accord with those records;

I have no concerns and have come across no other matters in connection with the examination to which attention should be drawn in this report in order to enable a proper understanding of the accounts to be reached.



A K Bahl BA BFP FCA
Wenn Townsend
30 St Giles'
Oxford
OX1 3LE

27th June 2023

The British Physics Olympiad Trust

**Receipts and payments accounts
for the year ended 31st August 2022**

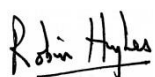
	Unrestricted Funds	Restricted Funds	Total Funds 2022	Total Funds 2021
	£	£	£	£
Receipts				
Receipts from educational activities	178,430	-	178,430	123,691
Bank interest received	158	-	158	324
	<u>178,588</u>	<u>-</u>	<u>178,588</u>	<u>124,015</u>
Total receipts	<u><u>178,588</u></u>	<u><u>-</u></u>	<u><u>178,588</u></u>	<u><u>124,015</u></u>
Payments				
Administration staff costs	30,380	-	30,380	19,764
Casual staff and teaching fees	-	-	-	11,109
Accommodation	19,992	-	19,992	-
Travel and subsistence	14,084	-	14,084	5,151
Marketing	13,433	-	13,433	1,455
Printing, post, and stationery	2,329	-	2,329	2,130
Conference expenses	15,070	-	15,070	-
Subscriptions	5,575	-	5,575	25
Accountancy fees	2,915	-	2,915	1,590
Insurance	124	-	124	558
Registration fees	5,477	-	5,477	-
Website costs	2,152	-	2,152	243
	<u>111,531</u>	<u>-</u>	<u>111,531</u>	<u>42,025</u>
Total payments	<u><u>111,531</u></u>	<u><u>-</u></u>	<u><u>111,531</u></u>	<u><u>42,025</u></u>
Net of receipts/(payments)	<u>67,057</u>	<u>-</u>	<u>67,057</u>	<u>81,990</u>
Transfers between funds	-	-	-	-
Cash funds as at 31st August 2021	<u>164,572</u>	<u>-</u>	<u>164,572</u>	<u>82,582</u>
Cash funds as at 31st August 2022	<u><u>231,629</u></u>	<u><u>-</u></u>	<u><u>231,629</u></u>	<u><u>164,572</u></u>

The British Physics Olympiad Trust

Statement of Assets and Liabilities
as at 31st August 2022

	Unrestricted Funds	Restricted Funds	Total Funds 2022	Total Funds 2021
	£	£	£	£
Cash at bank				
Barclays Current Account	52,989	-	52,989	84,321
Unity Trust Savings	116,028	-	116,028	105,876
Unity Trust Checking	12,618	-	12,618	11,160
Physics Account	49,994	-	39,994	(36,785)
Total cash funds	<u>231,629</u>	<u>-</u>	<u>231,629</u>	<u>164,572</u>
 Unrestricted funds	 <u>231,629</u>	 <u>-</u>	 <u>231,629</u>	 <u>164,572</u>

These accounts were approved at a meeting of the Trustees held on 27th June 2023.



Robin Hughes
Chairman of the Trustees

THE BRITISH PHYSICS OLYMPIAD TRUST

England & Wales - Charity number 1146064

Accounts

Charity number: 1146064

The British Physics Olympiad Trust

**Accounts
for the year
ended 31st August 2021**

**Wenn Townsend
Chartered Accountants
Oxford**

The British Physics Olympiad Trust

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The British Physics Olympiad Trust

Trustees' Annual Report for the year ended 31st August 2021

Legal and Administration Information

Registered charity name	The British Physics Olympiad Trust (also known as BPhO)
Charity registration number	1146064
Registered office	The British Physics Olympiad Trust Department of Physics University of Oxford Denys Wilkinson Building Oxford OX1 3RH
Trustees	Dr Anson Cheung Mr Iain Holmes Mr Robin Hughes (Chair) Mrs Clare Thomson Dr Sian Tedaldi (Administrator)
Website	www.BPhO.org.uk
Independent examiner	Wenn Townsend Chartered Accountants 30 St Giles Oxford OX1 3LE

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2021

The Trustees present their Annual Report and Accounts for the year ended 31st August 2021.

Reference and Administration Details

The Charity name is The British Physics Olympiad Trust, and is also known as BPhO. The Charity has the registered number 1146064, and its principal address is:

The British Physics Olympiad Trust
Department of Physics
University of Oxford
Denys Wilkinson Building, Oxford, OX1 3RH

Trustees

The following Trustees held office during the year:

Dr Anson Cheung	
Mr Iain Holmes	
Mr Robin Hughes	Chair
Mrs Clare Thomson	
Dr Sian Tedaldi	Administrator

Charitable Objects and Main Activities Undertaken

The objects of the Charity are the advancement of education and engagement of students in physics including:

- The organisation of annual physics competitions; and
- The support of teams to represent Britain at the International Physics Olympiad and at the International Olympiad on Astronomy & Astrophysics

Website www.BPhO.org.uk

Structure, Governance and Management

The governing document is a Trust Deed dated 11th January 2012. Trustees are appointed or reappointed at a meeting of the Trustees.

The BPhO is run through the Outreach Office of the Physics Department of the University of Oxford. One of the Trustees (Dr Sian Tedaldi) is the Physics Outreach Officer, who has a shared role. This provides both administrative and academic support, an awareness and understanding of the requirements for developing students' physics skills and knowledge, whilst also providing facilities for enabling many volunteers to be able to offer their services to the BPhO.

A Child Protection Policy and a Data Protection Policy are in place. DBS checks are carried out on the Trustees, but also on the volunteers, who are mostly teachers (some retired), who are engaged in running problem solving classes, lecturing and participating in the training camps.

All work is voluntary, apart from that of the Administrator, who is an employee of Oxford University and who is allowed to devote a percentage of time to the administrative running of the BPhO

Day to day running of the BPhO is by a Management Committee of five members who coordinate the relevant activities during the course of the academic year, funnelling many of the administrative activities through the Oxford Administration Office.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2021

Charitable Objects and Main Activities Undertaken

The objects of the Charity are the advancement of education and engagement of students in physics including:

- The organisation of annual physics competitions in schools and colleges.
- The selection and support of teams to represent the UK at the International Physics Olympiad and the International Olympiad on Astronomy & Astrophysics.
- Encouraging the study of physics in Years 10-13, and to recognise and reward excellence in young physicists.

The key activities are the setting of competition papers and running Training Camps. For this an active Management Committee liaises with thirty to forty volunteers, mainly teachers or physics research students, who participate in a wide range of quite specific large and small roles to expedite the aims of the BPhO. There are five distinct areas in which we focus for running and development.

1. Paper setting:
 - a. Setting problems and papers
 - b. Ensuring consistency across papers
 - c. Providing a mechanism for checking papers
 - d. Assessing suitability in level of difficulty and content
2. BPhO Training
 - a. Organising and delivering training for two or three training camps per year
 - b. Providing mentoring for the team and reserves
 - c. Setting problems and further reading
 - d. Planning training across all activities for students and teachers
3. Widening engagement
 - a. Advertising and promoting resources to teachers and students
 - b. Developing new materials and resources for physics teaching
 - c. Maintaining and developing the website
 - d. Running events (Workshops) with a key aim of developing skills and enthusiasm for stretching physics content (outside of training)
4. Sponsorship
 - a. Promoting the BPhO to potential sponsors
 - b. Organising contributions in money, time , promotion and equipment
 - c. Engaging past Olympiad students
5. Sustainability and expansion
 - a. Developing links with other organisations who will use the BPhO competitions
 - b. Teaching resources related to the level of the competitions
 - c. Introducing new competitions

The team of volunteer supporters who participate in these is a rolling group who can afford to give of their time, depending upon personal, family and career commitments. This is a real limitation in the BPhO activities, and so the team of core paper setters is small whilst the surrounding group of contributors, checkers and supporters in one way or another is relatively large.

The British Physics Olympiad Trust

**Trustees' Annual Report (continued)
for the year ended 31st August 2021**

Competition paper		Schools 2016-17	Schools 2017-18	Students 2017-18	Schools 2018-19	Students 2018-19	Schools 2019-20	Students 2019-20	Schools 2020-21	Students 2020-21
Junior Physics Challenge Y10 online	Year 10	N/A	140	6436	205	10950	100	5169	122	6170
Intermediate Physics Challenge Y11	Year 11	305	375	8656	424	8867	349	2534 6000*	204 (Online)	4710 (Online)
Senior Physics Challenge Y12	Year 12	427	465	6791	518	6362	556	3054 6000*	380 (Online)	5270 (Online)
Physics Challenge (competition & resource)	Year 13	158	360	3780	254	3000	354	2698 registered		~4000
Astro Challenge (competition & resource)	Year 13	30	65	27	161	72	127	315		
BAAO Astrophysics Olympiad	Year 13	33	59	83	133	277	71	100	32	68
BPhO Round 1	Year 13 or below	348	319	1745	349	1965	396	2081	270	1640
BPhO Round 2	Year 13 or below	40	80	102	80	100	80	100	46	80
Junior Astro Challenge	Y10/11	n/a	n/a	n/a	n/a	n/a	28	855	36	955
Experimental project	Year 10/11 & Year 12/13	32	46	135	54	220	56	247	50	250

- Papers are ordered for this number of students, but the marking will not have been completed by the time boundaries are set. So only half of the marks are returned.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2021

With such a wide range of papers being produced (ten competitions this year), there is a lot of pressure to ensure that each competition goes through many checks. Question papers and mark schemes should reflect the ability and experience of both of students and teachers for each level; being interesting questions, stretching, informative, eliciting a deeper understanding amongst all who try them. They are not mere questions to get by; they are to encourage perseverance, build determination and resilience and possibly, to encourage students to discuss them and develop their skills in expressing their grasp of the concepts through explain their ideas to their peers. Our paper setters are under some pressure to write papers whilst teaching full time in school. We have checkers, who are asked to look at the paper in detail and others who look at the topics and a broader view to see if the paper is realistic for the target audience.

Paper setters or Team Leaders are:

- Junior Physics Challenge (Year 10) – Mr Iain Holmes (Kettering Buccleugh Academy)
- Intermediate Physics Challenge Online – Mr Paul Nicholls (Merchiston Castle School)
- Senior Physics Challenge Online– Mr Robin Hughes (Project Physicist on Isaac Physics)
- Physics Challenge – Dr Stephen Martin (Hills Road Sixth Form College & Cavendish Outreach)
- Astro Challenge, BAAO Astrophysics Olympiad, Junior AC - Dr Alex Calverley (RGS Guildford)
- BPhO British Physics Olympiad (Round 1) – Dr Adam Patchett (Stamford Endowed School)
- BPhO British Physics Olympiad (Round 1) – Dr James Bedford (Harrow School)
- Experimental project – Mr Matthew Bennett (Truro Sixth Form College)

The aim of the Trust is to offer students questions based on physics problem solving. This is to extend students' skills beyond examined courses and to provide them with the opportunities to apply their physics knowledge and to grasp the power of the subject, which is to analyse the nature of the physical world. This year there have been over thirty thousand students from several hundred schools of all types across the UK (and a number of International schools following a UK education system), who have participated in the competitions. These students are encouraged to develop problem solving skills through a set of competitions, or by teachers making use of the online resources on the BPhO website. The level of skill required to solve physics problems is high, but it is reached by determination and endeavour rather than being solely an ingrained natural talent. The UK competes in a global market and science is the key to future economic development. The examination system is a route to competence, but it is important that something additional is offered to students who want to excel in this subject. Mathematical skills are vital and the BPhO does include this in the competition papers. The BPhO is there to provide opportunities for students to appreciate the challenges of the subject and to realise that it is a mathematical subject for which mathematical solutions to problems provide a perspective on understanding. It is to support students in achieving their aspirations for university entrance.

When planning our activities for each year, the Trustees are cognisant of the Charity Commission's guidance on public benefit and, in this regard, the BPhO ensures that access to resources and training is open to all students, whatever their school, background and location. The BPhO resources are freely available via the website www.BPhO.org.uk to teachers and students from all schools. The widest reach is the goal, with boys and girls being able to benefit from access to materials focused at their level of ability and above, and not being confined to going through their teachers. Attendance at some of the annual meetings for physics teachers enables the charity to disseminate information, to encourage teachers to participate in the activities, and allows for them to develop their students' skills to the highest level. This is particularly significant in allowing those students with aspirations to further their knowledge and to engage realistically in the challenges of applying to the top university courses in physics and engineering. Teacher Workshops are run each year, and schools with less engagement with the Olympiad are encouraged to attend where possible.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2021

Responses to Covid-19

Some competitions have been moved online, particularly with the IPC and SPC in March. They became multiple competitions this year and were well received. The JPC was online in May as usual and the experience with that competition helped us this year. Meeting students has been curtailed and the training for the teams has been online.

The online competitions have been run with some students at home and teachers monitoring them.

It has not been possible to run our usual physical events. We will take these up again when we can.

The BPhO finances are in good shape given the savings made in several areas. Several of the competitions bring in a modest income and these have continued to run. The large expenditure activities of the Annual awards, training camps and sending teams overseas have not taken place.

Outreach activities this year have been cut.

Training of the teams entered for the IPhO, EuPhO and IOAA equivalent has all taken place online.

Background

Problem solving is an empowering activity and is one way of developing students' confidence in taking up life's challenges. Teachers can be unaware of the level that can be reached by some of the very best students. For both teachers and their students, engaging with others at workshops and problem solving events encourages participation and gaining confidence in seeing that physics is hard for everyone, but that the rewards can be great. The BPhO endeavours to allow those students and teachers to benefit from the wealth of accumulated experience that is available from the group of volunteer teachers. It is also part of the remit to ensure good practice in teaching extension material to challenge students from all backgrounds. To be able to share materials, information, ideas and expertise from those who have developed that expertise. This encourages the exchange of information to the benefit of teachers and students.

The BPhO is very much a network and maintaining contact with everyone is an ongoing process throughout the year. About 40 teachers (a few retired) from a variety of schools, contribute their time and experience to the benefit of the BPhO. The rewards are in seen in the developing expertise of strong students who gain confidence in a subject that they enjoy and which can be seen as economically important for the country. We also want to do well in international competitions in which our (two) teams of five students have been selected to represent the UK. The students are worked hard and they certainly apply themselves with great determination in the limited training time available. The variety of schools from which these students come each year testifies to a broad programme of attracting able, enthusiastic and extremely hard working students with an avid interest in the subject. These volunteer teachers provide all of the work that goes into teaching and setting of exam papers for the BPhO; we maintain contacts by email with all those who do small tasks such as checking aspects of a competition paper in order to encourage and offer opportunities for participation in the BPhO. Postgraduate student markers are paid at demonstrator rates for the marking of about 1,600 papers for Round 1 in November this year.

For the BPhO Round 1 paper (a chargeable entry due to the cost of marking), non-fee-paying schools are awarded two free entries for their students each year. The introduction of the Astronomy & Astrophysics competition, with the training camps and other support, is a significant expenditure and could not be sustained indefinitely. But plans are in hand to obtain sponsorship from companies in this field, and we have an income through the sale of the Round 1 paper and several of the others overseas.

The number of contributors to the BPhO is extensive, and the charity is very much a network linking teachers and students. We would like to record one of the teachers who passed away earlier in the year.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2021

Main achievements during the year

- A continued emphasis on widening the number of students and schools, especially from state funded schools, will open up opportunities to a very wide range of outstanding students who will revel in the chance to perform in a competitive and aspirational subject.
- We were pleased to be able to keep all of the competition running, even in slightly different forms in some cases.
- To advertise the BPhO to teachers and to widen participation has been our focus in recent years, developing the BPhO beyond team selection, and in attempting to engage teachers and students more widely in physics problem solving. Physics problem solving is a difficult activity to master, but on the positive side, there are tremendous benefits to be gained from its mastery. Students gain confidence in themselves and engage with the subject at a deeper level, looking for more challenges. The online competitions proved to be a great success, and students enjoyed them, particularly in the light of exams being thwarted this year.
- Our fifth workshop with China was online again with 60 students. It is an effective means of strengthening our links with ASDAN China. Five days with students created much interest from those who attended. We would like to run such events in this country also.
- We participated in last year's IPhO organised by Lithuania and also entered the European Physics Olympiad (EuPhO) for the second time. Both these were online and the teams stayed in Cambridge for the events. The UK team all won medals, with one Silver and four Bronzes for the IPhO and two Silver and two Bronze in the EuPhO.

IPhO Team:	Freddie Hand – Silver
	Mihir Manium – Bronze
	Junhe Chen – Bronze
	James Brownlie – Bronze
	Luke Hayward - Bronze
EuPhO Team:	Harry Wild – Silver
	Harry Cookson – Silver
	Kitty Joyce – Bronze
	Edward Hilditch - Bronze

- The IOAA organised by Columbia was postponed last year and takes place online this year in November. The team were selected at the online Easter Camp and have been training over the summer. As usual the training was initiated with the Easter Training Camp, all online, in which a squad of thirteen students attended for training and selection. This activity is attracting some new schools of all categories, and also some individuals who have a singular interest in astronomy, a subject not undertaken by many schools.
- We estimate that in excess of 23,000 students are engaged with the BPhO this year. The number of schools is 700 - 800. This is certainly lower than some years, but the Covid situation has taken its toll.

The **competition activities** for this year have been:

September 2020 - Physics Challenge (Year 13): an estimate from the orders is 3-4 thousand students from over 400 schools using this paper or part of it. It is not a competition paper, but a resource to encourage students to develop their physics problem solving and to want to go on to the next level. Many schools use this as a pre-competition paper; some try it out in class whilst many more schools than this use it as a source of questions for their teaching. This paper encourages participation within a class environment, providing questions often for extension, which precipitates further discussion on a range of topics. It covers topics within the syllabus for physics, but with questions that would not be on a typical exam paper that students would meet. We are also trying to engage teachers with problem solving for their students.

The British Physics Olympiad Trust

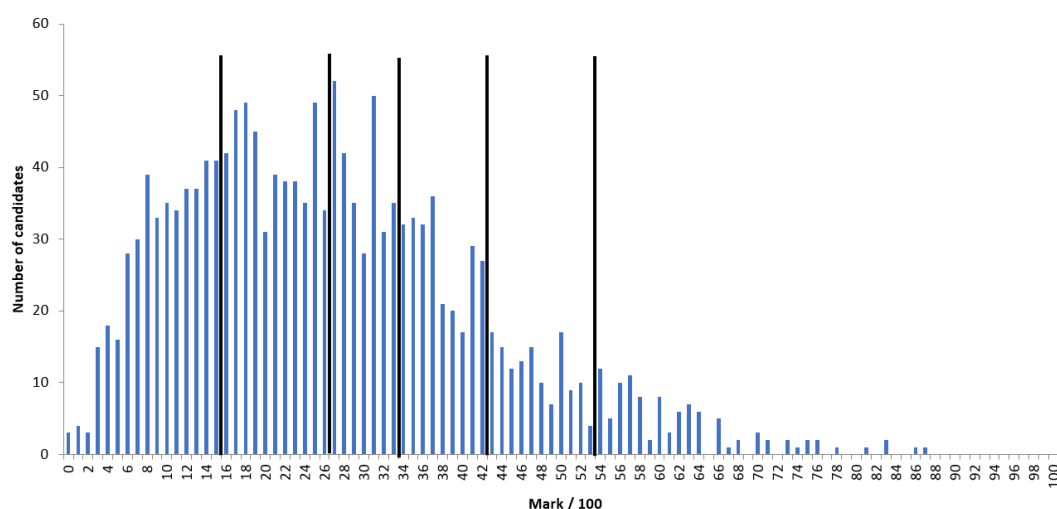
Trustees' Annual Report (continued) for the year ended 31st August 2021

Sept/Oct 2020 BAO Astro Challenge (Year 13): similar in idea to the Physics Challenge: this paper is written for students with little acquaintance with the subject. The necessary physics is often presented within the questions. This is to show students that they can participate despite the impression they gain from the subject title that they know nothing of the subject. However, good physicists know enough to do well. This paper is sent out as a resource and seems to find some interest amongst teachers and students, but it is hard to gauge how effective it is in gaining student numbers.

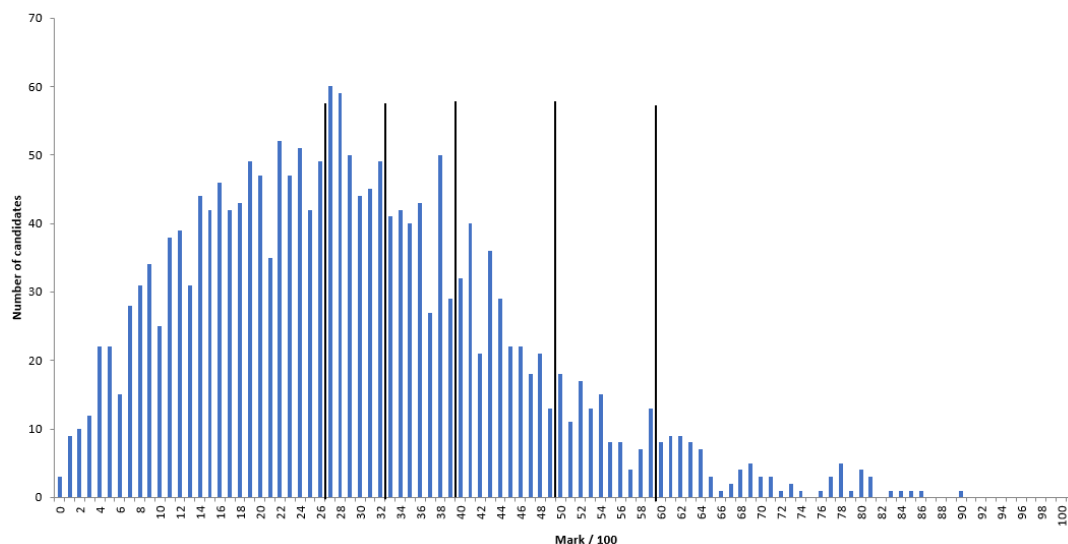
Nov 2020 – British Physics Olympiad (Round 1): This is the first of the senior level physics papers, which is the start of team selection for the UK team for the IPhO and EuPhO in summer 2021. This year the numbers dropped to 1640 from 270 schools, a significant fall from the previous year's high of 2080. But the 375 girls (23%) pushed up the percentage entry slightly. This is a 2hr 40 min paper in school with a significant amount of choice in the questions, corresponding to a five hour paper in total. Two free entries (normally £18 per entry) were offered to all state schools. This does encourage a greater number of schools to participate.

Averages for 2021 - 26.8%, 2019 - 29.1% indicate that the strength of the cohort remained largely unchanged. Despite the difficult conditions, students entering this competition had the stamina and skills to do well, and ultimately formed two international teams who all gained medals in their competitions.

Distribution of Marks - Round 1 Nov 2020



Distribution of Marks - Round 1 Nov 2019



The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2021

The paper was also taken by 1000 students in China at about the same time, organised in conjunction with the Chinese arm of a British charity ASDAN. This enabled comparison of the results at this level, whilst also indicating to students the international aspect of physics, to see how they did compared to a cohort from another part of the world.

This paper provides a distinctly different challenge to students from a conventional A2 paper; it is more mathematical, the questions are less scaffolded, and the overall level of difficulty is much higher. It is undoubtedly at the physics extension level for students. The intake of girls, whilst only amounting to 23%, nevertheless is encouraging in that they wish to participate at the highest level. There is often a girl on the team, which corresponds to a 20% female participation. The length of the paper has been reduced, and possibly less information is gathered about student skills and knowledge, but it is a small price to pay if participation can be increased.

Jan 2021 - BPhO Experimental Project: Schools send in their best two entries and these are marked by the BPhO. This has not expanded much, although over 200 students at GCSE and AS are engaged, from about 50 schools, with the best examples being of a very high standard and reflecting some remarkably detailed investigations. Marking these entries has proved to be difficult as they require a certain level of experience to understand the school level student presentations, and need to be marked by only one or two people working together to provide consistency and moderation.

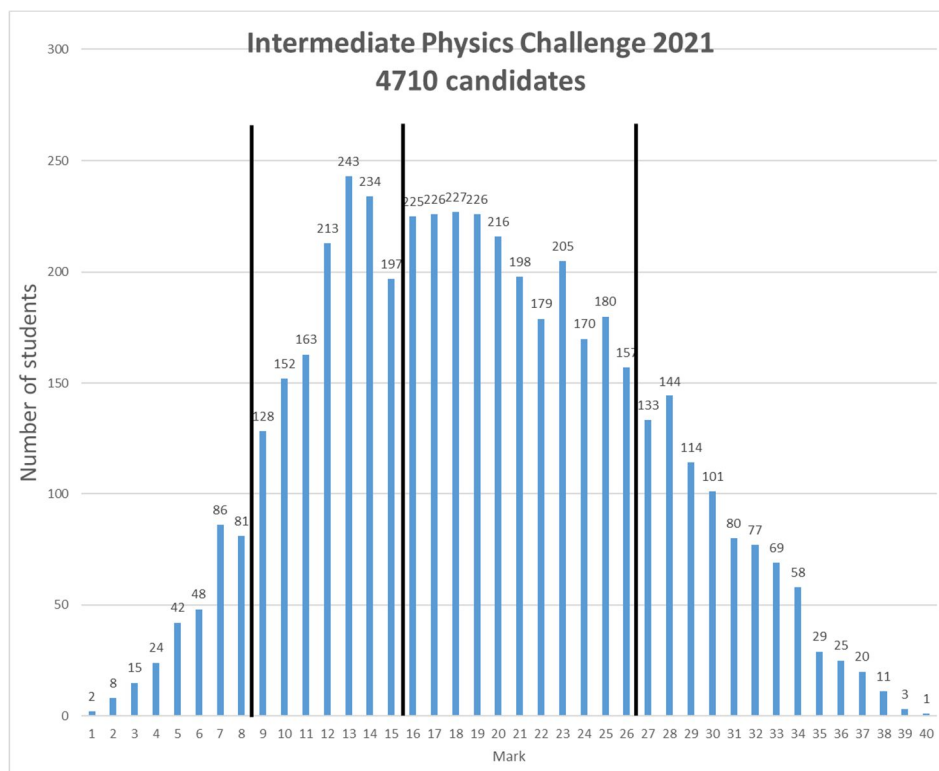
January 2021 - BPhO Round 2: 80 students from 46 schools were invited to take this three-hour paper after their success in Round 1 in November. This paper tests a range of skills as after being written for thirty years by a single writer, is now re-finding its style; it is much more a test of synoptic skills in physics, and not on well taught mathematical techniques. The scores ranged between 20% up to 80%. From this paper, 14 students were invited to the "Oxford Easter Training Camp" (held online). The numbers are limited for marking purposes.

January 2021 – BAAO Competition Paper: 68 students from 32 schools were either invited or, in a small number of cases, asked to take this paper. This included a small number of girls (10%), and participation by several non-fee-paying schools, again as last year, about one third of the school entry. This was quite encouraging in the participation. It is expected to develop slowly. Twelve students were invited to the online Training Camp over Easter. Astro Training Camps have been developed, at Oxford, Cambridge and Marlborough College, for both theory and for Observational skills. All students who have taken part have become engaged in astronomy subsequently. It has been a remarkably attractive aspect, although small numbers are involved at this stage.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2021

March 2021 - Intermediate Physics Challenge Online: 4710 students participated from **204 schools**, which was most encouraging.



For the IPC we have the separate M/F data, with about 100 (2.5 %) students putting in silly answers or not declaring. There is a difference in the distributions for the two groups but it is not clear why.

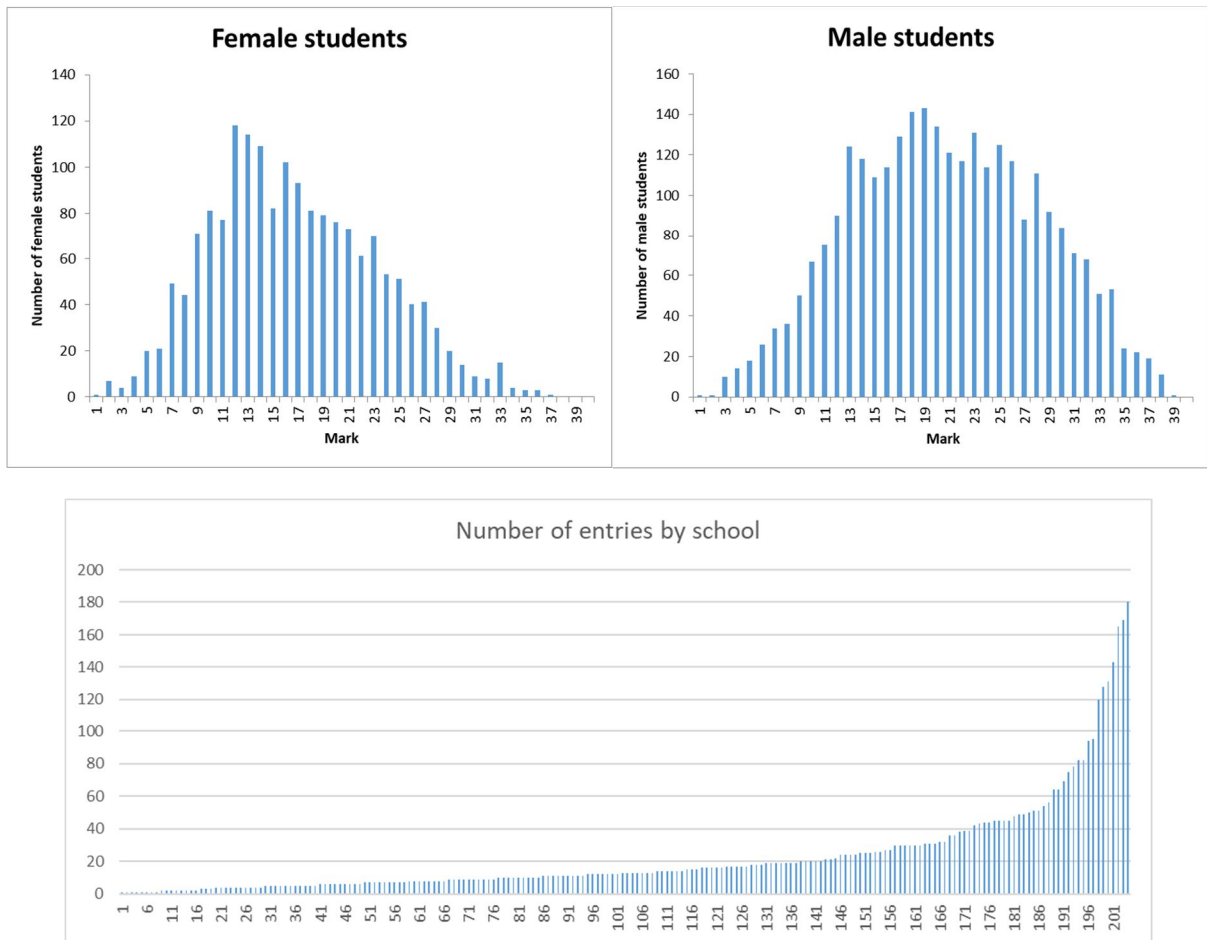
Table 1. Gender breakdown of results.

Group	Paper 1 Average/20	Paper 2 Average/20	Both papers Average/20
All	11.5	8.3	19.2
Female (1735) 37 %	10.0	7.2	16.8
Male (2854) 61 %	12.4	9.1	20.7

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2021

Table 2. Total results by Gender



March 2021 - Senior Physics Challenge Online: this is a Year 12 competition. About **5270 students** participated from **380 schools**.

The M/F ratio is not available as this competition was run on the Biology Olympiad platform to avoid a clash with the IPC and such information is not available there.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2021

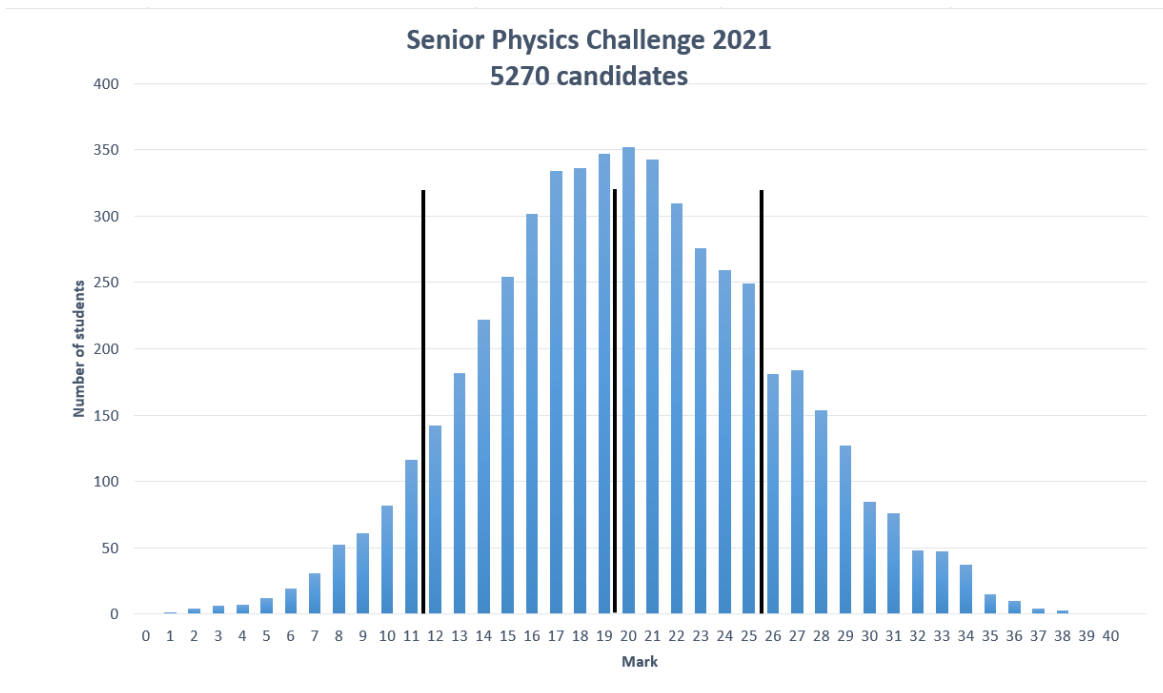
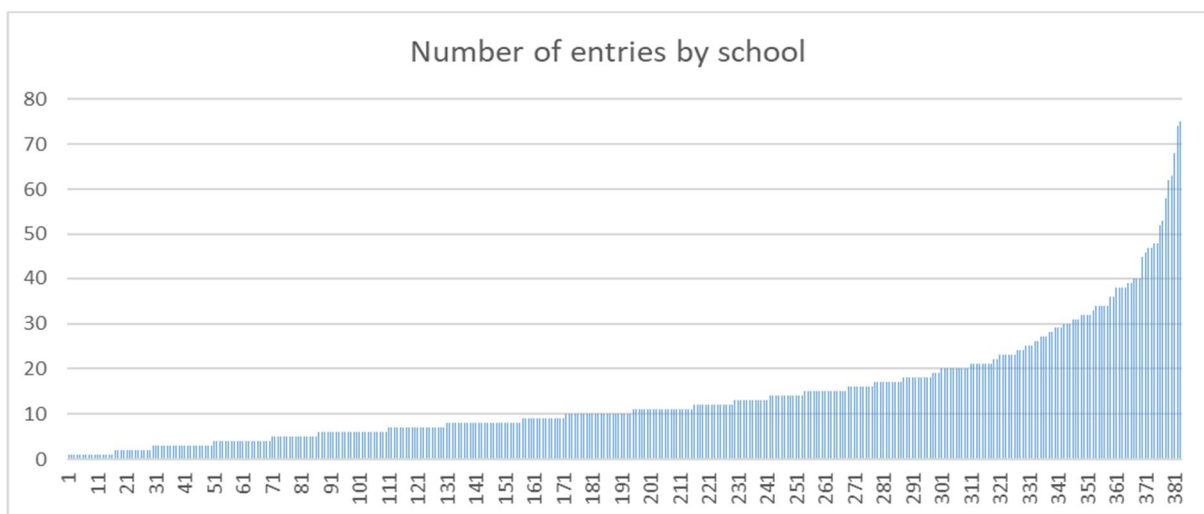


Figure 2. Distribution of marks



The IPC and SPC competitions were very successful as a substitution for the usual paper challenge problem solving papers, which would have been very difficult for schools to administer. They engaged students with the assortment of questions which entertained and challenged them occasionally.

May 2021 Junior Physics Challenge Online: this is a Year 10 competition and has been running for 3 years now. Numbers have dropped this year with the difficulties of managing this within school. But it is a popular competition and encourages thousands of students to develop their confidence in physics. The distribution of the marks is very similar to last year. We expect numbers to pick up again when schools open up.

	2021	2020	2019	2018
Candidates	6170	5169	10964	5867
Schools	122	100	205	140

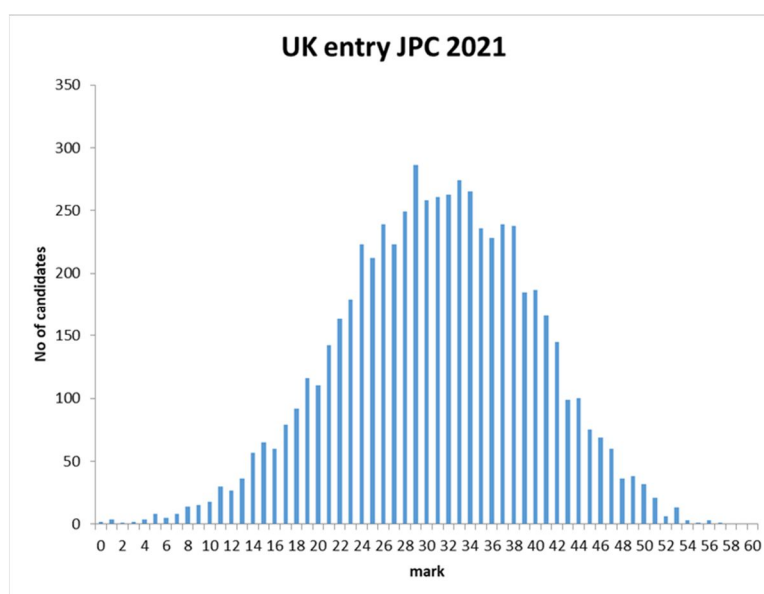
The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2021

The distributions of marks for male and female candidates are shown. There is a difference, with girls less often only taking Paper 1 out of the two. Other factors play a role but it is not clear what they are.

It is most encouraging to see not only the girls competing very favourable with the boys in this subject, but also the large numbers taking part.

Male	3561	61%
Female	2304	39%



Squad Selection: A squad of 25 students, decided on the results of Rounds 1 & 2, and the BAAO Paper were invited to another online **Training Camp** for five days over Easter. They are split into two groups, for the Physics route to the IPhO and the Astro route to the IOAA. This is intensive and has been tuned most recently to focus very much on solving problems in several topics – on the Physics side, Thermodynamics, Rotational Dynamics, Electromagnetism, Relativity, Waves, but no Practical Skills this year. The parallel training camp for the Astronomy & Astrophysics Olympiad was run with 14 students.

We had online training rather than meeting at Training Camps.

These activities satisfy our stated objectives to

- The organisation of annual physics competitions in schools and colleges.
- The selection and support of teams to represent Britain at the IPhO and IOAA.

In doing so, the opportunity is taken to engage with schools and encourage both students and teachers to participate. The BPhO Trust is committed to its programme of school competitions, student training, new developments in teacher support and broadening the publicity of the BPhO. The aim is to build up numbers, but also to provide resources to develop skill in problem solving for students who have less access to such opportunities.

The end of year saw our team of five physics students at the EuPhO organised in Estonia. A five hour theoretical exam, followed by a five hour online data taking challenge, is tough even for the strongest candidates and confidence levels need to be high, not to think that one might do well, but rather to believe that there are parts that can be done at all. Many students fall by the wayside when they lose heart. Our students keep going and that in itself is an important learning point in life.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2021

Awards at Royal Society April 2021: The Presentation Day at the Royal Society recognises the students who have talent, but who have also worked very hard to achieve the top results. It has had to be postponed and we hope at some stage to meet the students and some of their teachers who have been so successful through their hard work.

Sponsors: The BPhO has several continuing sponsors although they have had to be put on hold for the lockdown period. We cannot deal with book prizes, and financial support is on hold temporarily. Nevertheless, sponsorship funding is a small part of our income and so whilst it is unfortunate, we particularly welcome their interest in the BPhO activities, encouraging us to develop the important links between school physics and the demands of the usual IPhO, held in July. The perseverance, determination, the skill base and the team effort that need to be developed is considerable, but without the financial support, both in kind and in backing the principle, little would be accomplished.

Policy on reserves

Cash surplus to current needs, which is all unrestricted, is held in an interest-earning deposit account. These funds are held in order to meet any unexpected expenditure as it arises and to provide a resource to draw on for future activities. At present, amongst other things, it is enabling the provision of free entries to the Round 1 competition paper, supporting CPD Workshops for teachers, and enabling teachers to attend the International Physics Olympiad as visiting delegates.

The BPhO has between two and three years running expenditure in savings at the current rate of expenditure. Developments in our outreach and training programme in the near future may entail significant extra costs but, given that there is an income stream from one set of competition papers (which subsidises all of the other electronically available ones) it is not the intention to run down the reserves. Rather the opportunity will be taken to develop the BPhO. We have a significant income stream through our links with China and the use of our papers. This is exciting, but has produced a considerable workload which we have not experienced before.

Future Plans

We continue to look for wider engagement with pupils and teachers. A continued emphasis on widening the number of students and schools, especially from state funded schools, will open up opportunities to a very wide range of outstanding students who will revel in the chance to perform in a competitive and aspirational subject. The information from the online entry database will be accessible from the Oxford Administration Office next year, rather than making request through the IT department. This may allow for a more informed approach to our target audience.

We would like to have more teachers experiencing the training camp events and being able to attend the International Physics Olympiad. It is an eye-opening opportunity for teachers who do not realise how far many good students can go if the reins are released.

We want to develop the Astro Competitions, particularly the Junior Astro Challenge in November. It is online, and is a way of raising interest rather than setting very challenging problems to students.

The development of the data base systems for collecting data on participation of schools and students, will also reduce the workload at the Oxford office in handling papers and entries.

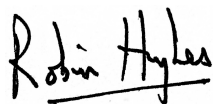
The British Physics Olympiad Trust

**Trustees' Annual Report (continued)
for the year ended 31st August 2021**

Declaration

The trustees declare that they have approved the trustees report above.

Signed on behalf of the trustees:

A handwritten signature in black ink that reads "Robin Hughes". The signature is written in a cursive style with a horizontal line underneath the name.

Mr Robin Hughes, Chairman of the Trustees

Date: 30th June 2022

The British Physics Olympiad Trust

Independent Examiner's Report to the Members of The British Physics Olympiad Trust

I report to the charity trustees on my examination of the accounts of the charity for the year ended 31st August 2021 which are set out on pages 17 to 18.

Responsibilities and basis of report

As the charity's trustees you are responsible for the preparation of the accounts in accordance with the requirements of the Charities Act 2011 ('the Act').

I report in respect of my examination of the charity's accounts carried out under section 145 of the Act and in carrying out my examination I have followed all the applicable Directions given by the Charity Commission under section 145(5)(b) of the Act.

Independent examiner's statement

I have completed my examination. I confirm that no material matters have come to my attention in connection with the examination giving me cause to believe that in any material respect:

1. accounting records were not kept in respect of the charity as required by section 130 of the Act; or
2. the accounts do not accord with those records;

I have no concerns and have come across no other matters in connection with the examination to which attention should be drawn in this report in order to enable a proper understanding of the accounts to be reached.

A K Bahl BA BFP FCA
Wenn Townsend
30 St Giles'
Oxford
OX1 3LE

24th June 2022

The British Physics Olympiad Trust

**Receipts and payments accounts
for the year ended 31st August 2021**

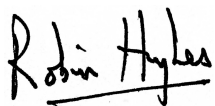
	Unrestricted Funds	Restricted Funds	Total Funds 2021	Total Funds 2020
	£	£	£	£
Receipts				
Receipts from educational activities	123,691	-	123,691	72,501
Donations	-	-	-	-
Bank interest received	324	-	324	106
	<u>124,015</u>	<u>-</u>	<u>124,015</u>	<u>72,607</u>
Total receipts	<u>124,015</u>	<u>-</u>	<u>124,015</u>	<u>72,607</u>
Payments				
Administration staff costs	19,764	-	19,764	20,435
Casual staff and teaching fees	13,239	-	13,239	10,000
Consumables	-	-	-	3,087
Equipment	-	-	-	551
Bank charges	-	-	-	77
Accommodation	-	-	-	1,156
Travel and subsistence	5,151	-	5,151	1,624
Marketing	1,455	-	1,455	26,218
Printing, post, and stationery	-	-	-	2,130
Conference expenses	-	-	-	-
Subscriptions	25	-	25	45
Accountancy fees	1,590	-	1,590	2,695
Insurance	558	-	558	442
Registration fees	-	-	-	-
Website costs	243	-	243	140
	<u>42,025</u>	<u>-</u>	<u>42,025</u>	<u>68,000</u>
Total payments	<u>42,025</u>	<u>-</u>	<u>42,025</u>	<u>68,000</u>
Net of receipts/(payments)	<u>81,990</u>	<u>-</u>	<u>81,990</u>	<u>4,007</u>
Transfers between funds	-	-	-	-
Cash funds as at 31st August 2020	<u>82,582</u>	<u>-</u>	<u>82,582</u>	<u>78,575</u>
Cash funds as at 31st August 2021	<u>164,572</u>	<u>-</u>	<u>164,572</u>	<u>82,582</u>

The British Physics Olympiad Trust

Statement of Assets and Liabilities
as at 31st August 2021

	Unrestricted Funds	Restricted Funds	Total Funds 2021	Total Funds 2020
	£	£	£	£
Cash at bank				
Barclays Current Account	84,321	-	84,321	18,104
Unity Trust Savings	105,876	-	105,876	105,552
Unity Trust Checking	11,160	-	11,160	6,444
Physics Account	(36,784)	-	(36,784)	(47,518)
Total cash funds	<u>164,572</u>	<u>-</u>	<u>164,572</u>	<u>82,582</u>
 Unrestricted funds	 <u>164,572</u>	 <u>-</u>	 <u>164,572</u>	 <u>82,582</u>

These accounts were approved at a meeting of the Trustees held on 30th June 2022.



Robin Hughes
Chairman of the Trustees

THE BRITISH PHYSICS OLYMPIAD TRUST

England & Wales - Charity number 1146064

Accounts

Charity number: 1146064

The British Physics Olympiad Trust

**Accounts
for the year
ended 31st August 2020**

**Wenn Townsend
Chartered Accountants
Oxford**

The British Physics Olympiad Trust

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The British Physics Olympiad Trust

Trustees' Annual Report for the year ended 31st August 2020

Legal and Administration Information

Registered charity name	The British Physics Olympiad Trust (also known as BPhO)
Charity registration number	1146064
Registered office	The British Physics Olympiad Trust Department of Physics University of Oxford Denys Wilkinson Building Oxford OX1 3RH
Trustees	Dr Anson Cheung Mr Iain Holmes Mr Robin Hughes (Chair) Mrs Clare Thomson Dr Sian Tedaldi (Administrator)
Website	www.BPhO.org.uk
Independent examiner	Wenn Townsend Chartered Accountants and Statutory Auditor 30 St Giles Oxford OX1 3LE

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2020

Structure, Governance and Management

The governing document is a Trust Deed dated 11 January 2012. Trustees are appointed or reappointed at a meeting of the Trustees.

The BPhO is run through the Outreach Office of the Physics Department of the University of Oxford. One of the Trustees (Dr Sian Tedaldi) is the Physics Outreach Officer, who has a shared role. This provides both administrative and academic support, an awareness and understanding of the requirements for developing students' physics skills and knowledge, whilst also providing facilities for enabling many volunteers to be able to offer their services to the BPhO.

A Child Protection Policy and a Data Protection Policy are in place. DBS checks are carried out on the Trustees, but also on the volunteers, who are mostly teachers (some retired), who are engaged in running problem solving classes, lecturing, and participating in the training camps.

All work is voluntary, apart from that of the Administrator, who is an employee of Oxford University and who is allowed to devote a percentage of time to the administrative running of the BPhO.

Day to day running of the BPhO is by a Management Committee of five members who coordinate the relevant activities during the course of the academic year, funnelling many of the administrative activities through the Oxford Administration Office.

Charitable Objects and Main Activities Undertaken

The objects of the Charity are the advancement of education and engagement of students in physics including:

- The organisation of annual physics competitions in schools and colleges.
- The selection and support of teams to represent the UK at the International Physics Olympiad and the International Olympiad on Astronomy & Astrophysics.
- Encouraging the study of physics in Years 10-13, and to recognise and reward excellence in young physicists.

The key activities are the setting of competition papers and running Training Camps. For this an active Management Committee liaises with thirty to forty volunteers, mainly teachers or physics research students, who participate in a wide range of quite specific large and small roles to expedite the aims of the BPhO. There are five distinct areas in which we focus for running and development.

1. Paper setting:

- a. Setting problems and papers
- b. Ensuring consistency across papers
- c. Providing a mechanism for checking papers
- d. Assessing suitability in level of difficulty and content

2. BPhO Training

- a. Organising and delivering training for two or three training camps per year
- b. Providing mentoring for the team and reserves
- c. Setting problems and further reading
- d. Planning training across all activities for students and teachers

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2020

3. Widening engagement

- a. Advertising and promoting resources to teachers and students
- b. Developing new materials and resources for physics teaching
- c. Maintaining and developing the website
- d. Running events (Workshops) with a key aim of developing skills and enthusiasm for stretching physics content (outside of training)

4. Sponsorship

- a. Promoting the BPhO to potential sponsors
- b. Organising contributions in money, time, promotion, and equipment
- c. Engaging past Olympiad students

5. Sustainability and expansion

- a. Developing links with other organisations who will use the BPhO competitions
- b. Teaching resources related to the level of the competitions
- c. Introducing new competitions

The team of volunteer supporters who participate in these is a rolling group who can afford to give of their time, depending upon personal, family and career commitments. This is a real limitation in the BPhO activities, and so the team of core paper setters is small whilst the surrounding group of contributors, checkers, and supporters in one way or another is relatively large.

Paper setters or Team Leaders are:

- Junior Physics Challenge (Year 10) – Mr Iain Holmes (Kettering Buccleugh Academy)
- Intermediate Physics Challenge – Mr Paul Nicholls (Merchiston Castle School)
- Senior Physics Challenge – Mr Robin Hughes (Project Physicist on Isaac Physics)
- Physics Challenge – Dr Stephen Martin – (Hills Road Sixth Form College & Cavendish Outreach)
- Astro Challenge, BAAO Astrophysics Olympiad Dr Alex Calverley (RGS Guildford)
- BPhO British Physics Olympiad (Round 1) – Dr Adam Patchett (Stamford Endowed School)
- BPhO British Physics Olympiad (Round 1) – Dr James Bedford (Harrow School)
- Experimental project – Mr Matt Bennett (Truro Sixth Form College)

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2020

Competition paper		Schools (2016-17)	Schools (2017-18)	Individuals (2017-18)	Schools (2018-19)	Individuals (2018-19)	Schools 2019-20	Students 2019-20
Junior Physics Challenge Y10	Year 10 (Online)	N/A	140	6436	205	10950	100	5169
Intermediate Physics Challenge Y11	Year 11	305	375	8656	424	8867	349	2534 6000*
Senior Physics Challenge Y12	Year 12	427	465	6791	518	6362	556	3054 6000*
Physics Challenge (competition and a resource)	Year 13	158	360	3780	254	3000	354	2698 registered
Astro Challenge (competition and a resource)	Year 13	30	65	27	161	72	127	315
BAAO Astrophysics Olympiad	Year 13	33	59	83	133	277	71	100
BPhO Round 1	Year 13 or below	348	319	1745	349	1965	396	2081
BPhO Round 2	Year 13 or below	40	80	102	80	100	80	100
Junior Astro Challenge	Y10/11	n/a	n/a	n/a	n/a	n/a	28	855
Experimental project	Year 10/11 & Year 12/13	32	46	135	54	220	56	247

- Papers are ordered for this number of students, but the marking will not have been completed by the time boundaries are set. So only half of the marks are returned.

With such a wide range of papers being produced (ten competitions this year, with the introduction of the Junior Astro Challenge), there is a lot of pressure to ensure that each competition goes through many checks. Question papers and mark schemes should reflect the ability and experience of both of students and teachers for each level; being interesting questions, stretching, informative, eliciting a deeper understanding amongst all who try them. They are not mere questions to get by; they are to encourage perseverance, build determination and resilience and possibly, to encourage students to discuss them and develop their skills in expressing their grasp of the concepts through explain their ideas to their peers.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2020

The aim of the Trust is to offer students questions based on physics problem solving. This is to extend students' skills beyond examined courses and to provide them with the opportunities to apply their physics knowledge and to grasp the power of the subject, which is to analyse the nature of the physical world. This year there have been over thirty thousand students from several hundred schools of all types across the UK (and a number of International schools following a UK education system), who have participated in the competitions. These students are encouraged to develop problem solving skills through a set of competitions, or by teachers making use of the online resources on the BPhO website. The level of skill required to solve physics problems is high, but it is reached by determination and endeavour rather than being solely an ingrained natural talent. The UK competes in a global market and science is the key to future economic development. The examination system is a route to competence, but it is important that something additional is offered to students who want to excel in this subject. Mathematical skills are vital and the BPhO does include this in the competition papers. The BPhO is there to provide opportunities for students to appreciate the challenges of the subject and to realise that it is a mathematical subject for which mathematical solutions to problems provide a perspective on understanding. It is to support students in achieving their aspirations for university entrance.

When planning our activities for each year, the Trustees are cognisant of the Charity Commission's guidance on public benefit and, in this regard, the BPhO ensures that access to resources and training is open to all students, whatever their school, background and location. The BPhO resources are freely available via the website www.BPhO.org.uk to teachers and students from all schools. The widest reach is the goal, with boys and girls being able to benefit from access to materials focused at their level of ability and above, and not being confined to going through their teachers. Attendance at some of the annual meetings for physics teachers enables the charity to disseminate information, to encourage teachers to participate in the activities, and allows for them to develop their students' skills to the highest level. This is particularly significant in allowing those students with aspirations to further their knowledge and to engage realistically in the challenges of applying to the top university courses in physics and engineering. Teacher Workshops are run each year, and schools with less engagement with the Olympiad are encouraged to attend where possible.

Responses to Covid-19

Competitions have been moved online, although the competition dates have managed to slip through when students have been in school. There has been little disruption to the activities, in part due to our main competition season just about finishing before lockdown. We did not obtain the result from so many teachers for the Intermediate Physics Challenge, although students participated. The final competition, the JPC was online in any case. That ran successfully. Meeting students has been curtailed and the training for the teams has been online.

Plans are being made for moving the other competitions online, which does change their nature in some cases. The online competitions have been run with students at home and teachers monitoring them.

It has not been possible to run our usual physical events. We will take these up again when we can.

The BPhO finances are in good shape given the savings made in several areas. Several of the competitions bring in a modest income and these have continued to run. The large expenditure activities of the Annual awards, training camps and sending teams overseas have not taken place.

Outreach activities this year have been cut.

Training of the teams entered for the IPhO, EuPhO and IOAA equivalent has all taken place online.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2020

Background

Problem solving is an empowering activity and is one way of developing students' confidence in taking up life's challenges. Teachers can be unaware of the level that can be reached by some of the very best students. For both teachers and their students, engaging with others at workshops and problem-solving events encourages participation and gaining confidence in seeing that physics is hard for everyone, but that the rewards can be great. The BPhO endeavours to allow those students and teachers to benefit from the wealth of accumulated experience that is available from the group of volunteer teachers. It is also part of the remit to ensure good practice in teaching extension material to challenge students from all backgrounds. To be able to share materials, information, ideas, and expertise from those who have developed that expertise. This encourages the exchange of information to the benefit of teachers and students.

The BPhO is very much a network and maintaining contact with everyone is an ongoing process throughout the year. About 40 teachers (a few retired) from a variety of schools, contribute their time and experience to the benefit of the BPhO. The rewards are in seen in the developing expertise of strong students who gain confidence in a subject that they enjoy, and which can be seen as economically important for the country. We also want to do well in international competitions in which our (two) teams of five students have been selected to represent the UK. The students are worked hard, and they certainly apply themselves with great determination in the limited training time available. The variety of schools from which these students come each year testifies to a broad programme of attracting able, enthusiastic, and extremely hard-working students with an avid interest in the subject. These volunteer teachers provide all of the work that goes into teaching and setting of exam papers for the BPhO; we maintain contacts by email with all those who do small tasks such as checking aspects of a competition paper in order to encourage and offer opportunities for participation in the BPhO. Postgraduate student markers are paid at demonstrator rates for the marking of about 2,000 papers for Round 1 in November of each year. The BPhO is able to fund one or two schoolteachers to attend the International Physics Olympiad in July of each year.

For the BPhO Round 1 paper (a chargeable entry due to the cost of marking), non-fee-paying schools are awarded two free entries for their students each year. The introduction of the Astronomy & Astrophysics competition, with the training camps and other support, is a significant expenditure and could not be sustained indefinitely. But plans are in hand to obtain sponsorship from companies in this field, and we have an income through the sale of the Round 1 paper and several of the others overseas.

The number of contributors to the BPhO is extensive, and the charity is very much a network linking teachers and students. We would like to record one of the teachers who passed away earlier in the year.

Main achievements during the year

- A continued emphasis on widening the number of students and schools, especially from state funded schools, will open up opportunities to a very wide range of outstanding students who will revel in the chance to perform in a competitive and aspirational subject. The Junior Physics Challenge online Competition, for Year 10 in May, launched in 2018, had half the previous year's entry. This took place after the start of lockdown and the 5000 students enjoyed the experience.
- To advertise the BPhO to teachers and to widen participation has been our focus in recent years, developing the BPhO beyond team selection, and in attempting to engage teachers and students more widely in physics problem solving. This has been somewhat curtailed this year. Physics problem solving is a difficult activity to master, but on the positive side, there are tremendous benefits to be gained from its mastery. Students gain confidence in themselves and engage with the subject at a deeper level, looking for more challenges.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2020

- Our fourth workshop with China was online with 60 students. It is an effective means of strengthening our links with ASDAN China. Five days with students created much interest from those who attended. We would like to run such events in this country also.

The IPhO was postponed and we entered the European Physics Olympiad (EuPhO) instead. The UK team all won medals, with one Silver and four Bronzes. The team were Ben Burgess, Nick Maslov, Oliver Sier, Rubaiyat Khondaker, Max Wong, with James Wirth and George Whittle as reserves.

- An alternative to the IOAA took place in September 2019 as an online competition. The UK team was led by Charles Barclay and Dr Alex Calverley. As usual the training was initiated with the Easter Training Camp, all online, in which a squad of thirteen students attended for training and selection. This activity is attracting some new schools of all categories, and also some individuals who have a singular interest in astronomy, a subject not undertaken by many schools.
- We estimate that in excess of 22,000 students are engaged with the BPhO this year. The number of schools is 700 - 800.

The **competition activities** for this year have been:

September 2019 - Physics Challenge (Year 13): an estimate from the orders is 3-4 thousand students from over 400 schools using this paper or part of it. It is not a competition paper, but a resource to encourage students to develop their physics problem solving and to want to go on to the next level. Many schools use this as a pre-competition paper; some try it out in class whilst many more schools than this use it as a source of questions for their teaching. This paper encourages participation within a class environment, providing questions often for extension, which precipitates further discussion on a range of topics. It covers topics within the syllabus for physics, but with questions that would not be on a typical exam paper that students would meet. We are also trying to engage teachers with problem solving for their students.

Sept/Oct 2019 BAAO Astro Challenge (Year 13): similar in idea to the Physics Challenge: this paper is written for students with little acquaintance with the subject. The necessary physics is often presented within the questions. This is to show students that they can participate despite the impression they gain from the subject title that they know nothing of the subject. However, good physicists know enough to do well.

Nov 2019 – British Physics Olympiad (Round 1): This is the first of the senior level physics papers, which is the start of team selection for the UK team for the IPhO in July 2020 (though switched to the EuPhO). This year 2081 students participated (including 10% AS students), of which 400 were girls (20%), in this 2hr 40 min paper in school. 396 schools (349 in 2018) entered. Independent schools may enter larger numbers of students in a few cases and so the corresponding candidate entries are 46% (48% 2017), 54% (52% 2017) for non-fee paying and fee-paying schools, similar to the previous year. It is the schools reached which is the number of significance however. Medals were awarded to the top 900 students, with the top 100 being invited to participate in Round 2. Two free entries (normally £18 per entry) were offered to all state schools. This does encourage a greater number of schools to participate. Up to 190 non-fee-paying schools ordered approximately 300 free papers. This is a significant contribution to increasing the range of schools participating.

The paper was also taken by 1000 students in China at about the same time, organised in conjunction with the Chinese arm of a British charity ASDAN. This enabled comparison of the results at this level, whilst also indicating to students the international aspect of physics, to see how they did compared to a cohort from another part of the world. Some analysis and a report is written for each competition to endeavour to maintain a consistency and suitable level of challenge for students, and also to observe trends developing in what topics students can cope with. The distributions shown indicate a similar set of results for the small number of students at the top end, with

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2020

a different entry cohort for students making up the bulk of the middle to lower mark range. This depends on the school approach to entry, which is distinctly different in China for several reasons, some of them being logistical and cost related (they put in a younger age range).

This paper provides a distinctly different challenge to students from a conventional A2 paper; it is more mathematical, the questions are less scaffolded, and the overall level of difficulty is much higher. It is undoubtedly at the extension level of physics for students. The intake of girls, whilst only amounting to 20%, nevertheless is encouraging in that they wish to participate at the highest level. There is often a girl on the team, which corresponds to a 20% female participation. The length of the paper has been reduced, and possibly less information is gathered about student skills and knowledge, but it is a small price to pay if participation can be increased.

Dec 2019 - BPhO Experimental Project: Schools send in their best two entries and these are marked by the BPhO. This has not expanded much, although over 200 students at GCSE and AS are engaged, from about 50 schools, with the best examples being of a very high standard and reflecting some remarkably detailed investigations. Marking these entries has proved to be difficult as they require a certain level of experience to understand the school level student presentations, many of which are extremely good.

January 2019 - BPhO Round 2: 100 students were invited to take this three-hour paper after their success in Round 1 in November. This paper tests a range of skills as after being written for thirty years by a single writer, is now re-finding its style; it is much more a test of synoptic skills in physics, and not on well taught mathematical techniques. The scores ranged between 20% up to 80%. From this paper, 14 students were invited to the "Oxford Easter Training Camp" (held online).

January 2019 – BAAO Competition Paper: 71 students were either invited or, in a small number of cases, asked to take this paper. This included a small number of girls (11%), and participation by several non-fee-paying schools, again as last year, about one third of the school entry. This was quite encouraging in the participation. It is expected to develop slowly. Twelve students were invited to the online Training Camp over Easter. Astro Training Camps have been developed, at Oxford, Cambridge, and Marlborough College, for both theory and for Observational skills. All students who have taken part have become engaged in astronomy subsequently. It has been a remarkably attractive aspect, although small numbers are involved at this stage.

March 2019 - GCSE Challenge (Intermediate Physics Challenge): 2534 marks were entered within a week of the one hour competition paper being sat, which was also a date close to the end of term this year, from the 349 schools ordering papers) (in 2018, 3437 submitted marks). This is from reported results, whilst the numbers of participants entered when papers are ordered online is over 6000. Since only about half the schools enter their results (there is no great incentive for them to do so), it would seem that the number of participants reported is about 50% of those who take part. Papers are marked within the schools. The grade boundaries are set when nearly three thousand marks have been entered and this provides a set of Gold (62%), Silver and Bronze I, Bronze II and Commendation awards. Comments reported from teachers are that the paper is tough. It is a fine line between tough and too difficult.

March 2019 - AS Challenge (Senior Physics Challenge): almost 6000 of this one-hour competition paper were ordered by schools, and 2698 results were reported back one week after sitting the paper (orders were taken from 556 schools). Details of awards are as for the GCSE Challenge above, with only about 50% of the entries being reported.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2020

These two competitions for younger students are to show them that there are real challenges in physics, and to encourage them to participate at the next level. To some extent, this works; names recur in the list of successful candidates in subsequent years. In order to set the grade boundaries, over 3000 results for AS papers had been entered one week after the papers had been sat. This is about half of the number of students who take this paper.

Squad Selection: A squad of 25 students, decided on the results of Rounds 1 & 2, and the BAAO Paper were invited to an online **Training Camp** for five days over Easter. They are split into two groups, for the Physics route to the IPhO and the Astro route to the IOAA. This is intensive and has been tuned most recently to focus very much on solving problems in several topics – on the Physics side, Thermodynamics, Rotational Dynamics, Electromagnetism, Relativity, Waves, but no Practical Skills this year. The parallel training camp for the Astronomy & Astrophysics Olympiad was run with 14 students.

We had online training rather than meeting at Training Camps.

These activities satisfy our stated objectives to:

- The organisation of annual physics competitions in schools and colleges.
- The selection and support of teams to represent Britain at the IPhO and IOAA.

In doing so, the opportunity is taken to engage with schools and encourage both students and teachers to participate. The BPhO Trust is committed to its programme of school competitions, student training, new developments in teacher support and broadening the publicity of the BPhO. The aim is to build up numbers, but also to provide resources to develop skill in problem solving for students who have less access to such opportunities.

The end of year saw our team of five physics students at the EuPhO organised in Estonia. A five hour theoretical exam, followed by a five hour online data taking challenge, is tough even for the strongest candidates and confidence levels need to be high, not to think that one might do well, but rather to believe that there are parts that can be done at all. Many students fall by the wayside when they lose heart. Our students keep going and that in itself is an important learning point in life.

Awards at Royal Society April 2019: The Presentation Day at the Royal Society recognises the students who have talent, but who have also worked very hard to achieve the top results. It has had to be postponed and we hope at some stage to meet the students and some of their teachers who have been so successful through their hard work.

Sponsors: The BPhO has several continuing sponsors although they have had to be put on hold for the lockdown period. We cannot deal with book prizes, and financial support is on hold temporarily. Nevertheless, sponsorship funding is a small part of our income and so whilst it is unfortunate, we particularly welcome their interest in the BPhO activities, encouraging us to develop the important links between school physics and the demands of the usual IPhO, held in July. The perseverance, determination, the skill base, and the team effort that need to be developed is considerable, but without the financial support, both in kind and in backing the principle, little would be accomplished.

Policy on reserves

Cash surplus to current needs, which is all unrestricted, is held in an interest-earning deposit account. These funds are held in order to meet any unexpected expenditure as it arises and to provide a resource to draw on for future activities. At present, amongst other things, it is enabling the provision of free entries to the Round 1 competition paper, supporting CPD Workshops for teachers, and enabling teachers to attend the International Physics Olympiad as visiting delegates.

The British Physics Olympiad Trust

Trustees' Annual Report (continued) for the year ended 31st August 2020

The BPhO has between two and three years running expenditure in savings at the current rate of expenditure. Developments in our outreach and training programme in the near future may entail significant extra costs but, given that there is an income stream from one set of competition papers (which subsidises all of the other electronically available ones) it is not the intention to run down the reserves. Rather the opportunity will be taken to develop the BPhO. We have a significant income stream through our links with China and the use of our papers. This is exciting, but has produced a considerable workload which we have not experienced before.

Future Plans

We continue to look for wider engagement with pupils and teachers. A continued emphasis on widening the number of students and schools, especially from state funded schools, will open up opportunities to a very wide range of outstanding students who will revel in the chance to perform in a competitive and aspirational subject. The information from the online entry database will be accessible from the Oxford Administration Office next year, rather than making request through the IT department. This may allow for a more informed approach to our target audience.

We would like to have more teachers experiencing the training camp events and being able to attend the International Physics Olympiad. It is an eye-opening opportunity for teachers who do not realise how far many good students can go if the reins are released.

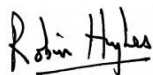
We want to develop the Astro Competitions, particularly the Junior Astro Challenge in November. It is online, and is a way of raising interest rather than setting very challenging problems to students.

The development of the data base systems for collecting data on participation of schools and students, will also reduce the workload at the Oxford office in handling papers and entries.

Declaration

The trustees declare that they have approved the trustees report above.

Signed on behalf of the trustees:



Robin Hughes

Mr Robin Hughes, Chairman of the Trustees

Date: 10th June 2021

The British Physics Olympiad Trust

Independent Examiner's Report to the Members of The British Physics Olympiad Trust

I report to the charity trustees on my examination of the accounts of the charity for the year ended 31st August 2019 which are set out on pages 11 to 12.

Responsibilities and basis of report

As the charity's trustees you are responsible for the preparation of the accounts in accordance with the requirements of the Charities Act 2011 ('the Act').

I report in respect of my examination of the charity's accounts carried out under section 145 of the Act and in carrying out my examination I have followed all the applicable Directions given by the Charity Commission under section 145(5)(b) of the Act.

Independent examiner's statement

I have completed my examination. I confirm that no material matters have come to my attention in connection with the examination giving me cause to believe that in any material respect:

1. accounting records were not kept in respect of the charity as required by section 130 of the Act; or
2. the accounts do not accord with those records;

I have no concerns and have come across no other matters in connection with the examination to which attention should be drawn in this report in order to enable a proper understanding of the accounts to be reached.

A K Bahl BA BFP FCA
Wenn Townsend
30 St Giles'
Oxford
OX1 3LE

..... **2021**

The British Physics Olympiad Trust

**Receipts and payments accounts
for the year ended 31st August 2020**

	Unrestricted Funds	Restricted Funds	Total Funds 2020	Total Funds 2019
	£	£	£	£
Receipts				
Receipts from educational activities	72,501	-	72,501	84,510
Donations	-	-	-	11,500
Bank interest received	106	-	106	542
	<u>72,607</u>	<u>-</u>	<u>72,607</u>	<u>96,552</u>
Total receipts	<u>72,607</u>	<u>-</u>	<u>72,607</u>	<u>96,552</u>
Payments				
Administration staff costs	20,435	-	20,435	2,438
Casual staff and teaching fees	10,000	-	10,000	20,687
Consumables	3,087	-	3,087	-
Equipment	551	-	551	-
Bank charges	77	-	77	289
Accommodation	1,156	-	1,156	16,747
Travel and subsistence	1,624	-	1,624	17,645
Marketing	26,218	-	26,218	1,998
Printing, post, and stationery	2,130	-	2,130	2,294
Conference expenses	-	-	-	15,225
Subscriptions	45	-	45	417
Accountancy fees	2,695	-	2,695	1,500
Insurance	442	-	442	-
Registration fees	-	-	-	20,008
Website costs	140	-	140	2,580
	<u>68,600</u>	<u>-</u>	<u>68,000</u>	<u>101,828</u>
Total payments	<u>68,600</u>	<u>-</u>	<u>68,000</u>	<u>101,828</u>
Net of receipts/(payments)	<u>4,007</u>	<u>-</u>	<u>4,007</u>	<u>(5,276)</u>
Transfers between funds	-	-	-	-
Cash funds as at 31st August 2019	<u>78,575</u>	<u>-</u>	<u>78,575</u>	<u>83,851</u>
Cash funds as at 31st August 2020	<u>82,582</u>	<u>-</u>	<u>82,582</u>	<u>78,575</u>

The British Physics Olympiad Trust

**Statement of Assets and Liabilities
as at 31st August 2020**

	Unrestricted Funds	Restricted Funds	Total Funds 2020	Total Funds 2019
	£	£	£	£
Cash at bank				
Barclays Current Account	18,104	-	18,104	-
Unity Trust Savings	105,552	-	105,552	105,446
Unity Trust Checking	6,444	-	6,444	15,312
Physics Account	(47,518)	-	(47,518)	(42,183)
Total cash funds	<u>82,582</u>	<u>-</u>	<u>82,582</u>	<u>78,575</u>
 Unrestricted funds	 <u>82,582</u>	 <u>-</u>	 <u>82,582</u>	 <u>78,575</u>

These accounts were approved at a meeting of the Trustees held on 10th June 2021.

Robin Hughes
Chairman of the Trustees