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Company Incorporated by Royal Charter RC000805 (England and Wales)

The Association for Science Education

Trustees' Annual Report and Group Financial Statements

For the Year Ended 31 July 2021

The Association for Science Education

Trustees' Annual Report and Group Financial Statements

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LEGAL AND ADMINISTRATIVE INFORMATION

Trustees who served during the year and up to the date of approval of the financial statements:	Richard Needham - Elected by Membership and Chair of Trustees (resigned 31 December 2020) Ali Redmore - Elected by Membership and Chair of Trustees (appointed 31 December 2020) Roger McCune MBE - Appointed Member, Association Treasurer Bryan Berry - Appointed Member Maggie Hannon – Appointed Member (Trustee rep on Q&A Committee) Daniel Sandford Smith – Elected by Membership Susan Burr – Elected by Membership Simon Quinnell – representing Education Group and immediate past Chair Leigh Hoath – representing Education Group Manoj Chitnavis – co-opted Trustee Cerian Ayres – representing Education Group (appointed 1 August 2021) Jane Turner – Chair of the Association and Trustee (appointed 1 August 2021) Geoff Mackey – elected by Membership (appointed 1 August 2021)
Patron	HRH The Prince Philip, Duke of Edinburgh, KG,PC, KT, GMBE, FRS (until 9 April 2021)
President	Prof Sir John Holman KBE
Chair of the Association	Simon Quinnell (1 August 2020 – 31 July 2021) Jane Turner (1 August 2021 – 31 July 2022)
Chief Executive Officer	Hannah Russell
Charity number:	313123
OSCR number:	SC042473
Royal Charter incorporation number:	RC000805 (England and Wales)
Principal address	College Lane Hatfield AL10 9AA
Auditors	HW Fisher LLP Acre House 11-15 William Road London NW1 3ER
Bankers	NatWest Plc 35, Town centre Hatfield AL10 0JU

Chair's introduction

The last academic year has been our first full year of a world experiencing Covid-19 and during this time the organisation has faced and survived many challenges. As we look forward, it's a good chance to reflect on the hard work of the ASE, including its staff, volunteers and members, in ensuring that the Association is at the leading edge of science education. A huge thank you needs to be given to all those involved in making everything we have done so far a success!

#wearetheASE

The 2020-21 academic year will go down in history as the first full year of ASE being totally online for most of us. With no face-to-face courses or meetings, it has been a steep learning curve, but has brought many benefits. Attendance at most committees, both regional and national, has been higher and more consistent, the time taken to travel and the associated costs have been greatly reduced and, more importantly, our organisation's environmental impact has been heavily lessened. As we move forward, these important points have been taken on board; as much as we want our face-to-face meetings back, where those social interactions, networking and conversations allowing new ideas to spring up are so important, we need to take note of what we have learnt. As we move forward, we are recommending one face-to-face meeting for all committees at least once a year, while continuing online for the rest, so that we get a good balance. As part of this move back to some physical meetings, the national committees and groups are meeting for a Committee Day in

Spring 2022. The Institute of Physics has kindly agreed to host us at their Head Office and the day will include the chance to come together to discuss the ASE's plans for the future and the continuation of our ongoing strategies. Alongside the hard work of committees, we have also been exploring how to support and share information across the Association's teams of volunteers. The Chair Trio have continued to bring together the Chairs of national committees and groups through the Education Group, through which they discuss how committees can share good practice and identify the issues they face as Chairs. This has also led to the ASE team developing a shared online space so that all committees can communicate in a more effective way, sharing expertise, events and information.

The Chair Trio and occasionally Quattro (also including the incoming Chair-Elect) have continued to work effectively as a group, with the incoming Chair benefiting from the experience of the Immediate-past Chair and allowing the Chair-Elect to transition smoothly

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into the role. The Chair of the Association leads the Education Group and the Region Officer's Group, and ensures engagement with all the national committees to help support them in their work and with their thinking around the ASE strategy. Along with the Education Group, the Chair Trio have been able to inform ASE HQ staff about the current situation on the chalkface and provide a voice for our members during these difficult times.

During this online year, the ASE has become a beacon of good online practice, and we have developed and delivered an outstanding array of online CPD and events. The most important was the 2021 Annual Conference, our first online, which was an event that was a resounding success. The Conference was a mammoth undertaking by our Honorary Conference Secretary, Professor Christine Harrison, and our ASE staff team. Spread over four days, with countless sessions and strands, the Conference allowed our members and the wider science education profession the chance to catch up and engage with a range of outstanding sessions, workshops and keynote lectures, with many commenting that the use of chats, breakout rooms and other online tools made the experience more engaging rather than less. A huge thank you to all the attendees and volunteers who made it so successful.

The Annual Conference was just one of our online strands. There have been other successful online conferences throughout the year, including ASE Futures, Technicians, autumn, summer and Scotland conferences, with each providing a learning and reflection process that helped us all to hone our online skills. We have also developed online CPD courses, including a series of physics for non-specialists and our technician leadership

programme, which have all been well-received by attendees. Regional and national TeachMeets and TechMeets have been happening, keeping people in touch, and our well-regarded series of webinars on a range of subjects have helped and supported countless participants. The organisation has shown how flexible it can be to respond to the needs of the community and the feedback we have received has been extremely positive.

Throughout the last year we have had a focus on CPD from many of our committees and we are developing a strategy to take CPD further as an organisation whilst working closely with partners on wider policies for and improvements in science education CPD across the country.

NSTA

Unfortunately we were unable to host this year's NSTA President in person at our Annual Conference and this of course was the same situation for our usual return visits to the NSTA Conference. We were fortunate to attend some online sessions at NSTA and were able to offer the same service to our US colleagues. As we move forward, we hope that physical visits will support our work with NSTA and our current Chair looks forward to visiting the national NSTA Conference in Houston in the spring of 2022.

As an organisation, we are always trying to spread the word about the benefits of being a member of the ASE and what it has meant to us all as individuals. Our strong presence during the Covid-19 pandemic, our new departmental membership, our reworked early career membership and our joint primary and secondary membership has helped us to continue to reach those in the community

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who need our support. Of course, there is still work to be done, so please shout out to everyone about the benefits and your own #wearetheASE story.

One of the other main highlights throughout the year has been the ASE's continued advocacy for science education, with consultation responses highlighting the thoughts of the membership. We have also continued to support practical work with guidance and surveys, as schools emerge from the pandemic, to gauge the state of practical work in schools.

As an organisation, we continue to grow and raise the profile of what we all do. As part of this, the ASE has taken an active part in securing science education projects from various funders, to provide support for members and the wider community, and using the expertise from our membership and volunteers to do so. These have been hard won and thanks go to all those who have been involved in these bids and projects. These projects include ASE RISE, the retention initiative for science education, which has come from the successful Teacher SOS project and has been funded by the Gatsby Foundation. We have the Keeping Science Practical project, funded by the Wolfson Foundation, to help support schools in

disadvantaged areas to make the most of effective practical work. We are also working with the Institute of Physics and Department for Education on a funded project exploring and supporting Inclusion in Schools, working with underrepresented groups in science. The ASE is a great platform for all these projects and they ensure that we are at the heart of science education.

Throughout a difficult year, our CEO, President, Chair Trio, ASE staff, committee members, volunteers and members have raised the bar time and time again for what we can do together as the ASE. Although we are all looking forward to normality again, we have come a long way and there are key aspects to take forward and reflect upon from the global crisis that we have all experienced. It has been a pleasure being the ASE Chair during this strange time, during which we have shown that the ASE is more than an organisation, it is a community that's there to help and support each other, and this has been needed more this year than ever before. Well done, everyone.

Simon Quinnell

Chair of the Association 2020/21

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Left to right: Hannah Russell (Chief Executive), Jane Turner (Chair-Elect), Simon Quinnell (Chair of the Association), Janice Griffiths (Immediate-past Chair) and Helen Harden (incoming Chair-Elect)

Tribute to HRH Prince Philip, the Duke of Edinburgh

In 2020-2021 we were saddened by the passing of our patron, His Royal Highness Prince Philip, the Duke of Edinburgh.

The progress of science and technology – and their importance to the health, security and prosperity of the nation – were a lifelong passion of Prince Philip, who generously undertook to be patron and supporter of many charities and organisations in this field, including the ASE. His Royal Highness had been an ardent supporter of the Association for Science Education for more than 50 years and played a valued role in the growth and success of the organisation since the inception of our current incarnation in 1963, when the Science Masters' Association and the Association of Women Science Teachers merged to create the Association as it is today.

In an address given at the inaugural ASE Conference in that year, when his patronage began, His Royal Highness said: "The structure of a modern industrial society consists of a series of overlapping interdependent functional groups. Each member of these groups needs a certain amount of scientific education. For some, a highly specialised scientific knowledge is essential for their work; others only need background understanding of the scientific method and the present state of scientific knowledge. Whatever may be the arguments about the relative merits of science and the humanities, it seems quite clear that, in this day and age, no-one can do valuable work in any academic subject, in research, or in industry and commerce without at least some basic knowledge of science."

The Prince's commitment to the cause of excellence in science education endured, and he was kind enough to join us as guest of honour at the opening of our current Headquarters in 2008. His humour and passion were remembered by all present, as was his pride in his ASE tie – and his admonition of those gentlemen present who were not similarly attired!

In a letter to the Association to mark our 50th anniversary in 2013, he wrote: "Times have changed, but our national prosperity remains in the hands of our scientists and engineers. Their potential can only be discovered and nurtured within an inspiring and challenging system of science education."

We could not agree more as we mourn the loss of a true friend of the Association.

Honorary Treasurer's Annual Report 2020/21

On behalf of Trustees, I am delighted to report that our finances have improved significantly over the past year. The impact of COVID-19 has been significant on the ASE as has been the case with many charities. We benefited during the year from a generous bequest and this has assisted us to build up our unrestricted reserves to the target figure agreed by Trustees.

The Association has adapted extremely well to new ways of remote working and service provision, many of which have proved popular and have had the benefit of enabling us to save costs at a difficult time. A tight oversight of the finances has been maintained, with a detailed quarterly reporting system in place. The budget and cash flow are monitored on a monthly basis by the Chief Executive and Director of Finance and Operations. Trustees have confidence in the current financial health of the ASE and, as such, have been able to focus on the wide range of Association activities that support science education across the UK and beyond.

It is recognised that there is still a need for vigilance in relation to financial management.

Membership fees and our core activities, which include conferences, projects and publications, continue to be the main ongoing

sources of income. The pandemic impacted on our events income; in particular as we were unable to hold any face-to-face conferences during 2021. However, other income streams held up well and we were able to reduce our expenditure significantly to compensate for income shortfalls.

Trustees are committed to ensuring the provision of improved services for our members, while continuing to monitor operational costs. We want to ensure that we meet fully the needs of members and the wider science education community. While we look to the future with confidence, there remains a need to act with prudence. The Association continues to look at ways to expand its membership and develop new income streams so that we are able to maintain our robust reserves position into 2021-22 and beyond.

Thanks, as always, are due to the staff at Headquarters and in particular our Chief Executive. The commitment and hard work of the staff is recognised by Trustees. On a personal note, I wish to thank the Director of Finance and Operations for the support received as Treasurer over the past year.

Roger McCune MBE (*Honorary Treasurer*)

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Trustees' Annual Report for the year ended 31 July 2021

The Trustees present their annual report and consolidated financial statements for the year ended 31 July 2021.

The financial statements have been prepared in accordance with the accounting policies set out in note 1 to the financial statements and comply with the Charity's constitution, the Charities Act 2011, the Charities and Trustee Investment (Scotland) Act 2005, regulation 8 of the Charities Accounts (Scotland) Regulations 2006 and Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS102) (effective 1 January 2019).

Objectives and activities

Objects

The objects of the Association are to promote education by the following means:

- (a) improving the teaching of science; and
- (b) providing an authoritative medium through which opinions of teachers of science may be expressed on educational matters; and
- (c) affording means of communication among all persons and bodies of persons concerned with the teaching of science in particular and education in general.

Activities

The Rules of the Association provide for the promotion of its objects by:-

- (a) holding general and other meetings; and
- (b) publishing journals and other literature including literature in electronic formats concerned with the teaching of science and ancillary matters; and
- (c) establishing and maintaining of a centre or centres of administration and of information on any aspect of science education; and
- (d)-(h) the administration of the Chartered Science Teacher award, CSciTeach including the register thereof and associated standards, admissions, removals disciplinary matters and appeals, and
- (i) such other means as the Association may from time to time determine and as may be consistent with the charitable objects of the Association.

Public Benefit

The trustees have complied with the duty in section 17 of the Charities Act 2011 to have due regard to public benefit guidance issued by the Charity Commission.

Risk assessment

The Trustees have assessed the risks to which the Charity may be exposed. A risk register is produced quarterly by the Chief Executive and Director of Finance and Operations which sets out the main operational, finance and compliance risks facing the Association. Key risks are currently identified as the loss of income in the key areas of membership, events, projects and publications along with the risk of losing key staff. Appropriate further actions are taken after discussions with the Board of Trustees.

Highlights of 2020/21

- In January 2021 we launched our new strategic plan, setting out our goals and commitments over the next three years.
- Also in January we held our first online Annual Conference, with an impressive 1,121 registered delegates, providing 1,634 delegate days of continuing professional development (CPD) to our community.
- Thanks to the energy and commitment of the staff team, our committees and wider volunteer network, we continued to provide a wide range of other online support. Our summer conference trio (Summer, Futures and Technicians Conferences) attracted 328 delegates, while our webinars benefited over 1,200 registrants and our online courses continued to grow in popularity, with over 1,500 registrations. With support from the Wellcome Trust, we provided 68 Explorify workshops for primary schools and teachers. New online resources included videos to accompany our popular BEST STEPS resources (with thanks to the support of the Horners' Livery Company).
- From a regional perspective, we had over 3,300 registrations for online events across the UK, including regional conferences, smaller events, TeachMeets and TechMeets. In addition to these events, the Field Officer team ran a further seven online professional registration workshops, attracting 189 delegates.
- We continued to work hard to represent the science education community, partnering with key stakeholders across the sector. With support from the Gatsby Foundation, we published both the results of our summer 2020 practical science survey and a review of the Gatsby Good Practical Science benchmarks through a Covid-19 lens, as well as contributing to other reports and responding to consultations.
- Although individual membership numbers were down, we introduced two new organisational membership categories (science department and hybrid) to complement our well-received primary school membership. These are already proving popular. We also amalgamated International Associate membership into our other categories, recognising that our members are science educators first and foremost, rather than necessarily wanting to be defined by where they are based.
- As part of our commitment to environmental sustainability, we made the decision to move to a 'digital first' model for our three paper journals, *Education in Science*, *Primary Science* and *School Science Review*. This means that individual members can still opt in to receive hard copies, but the default is to access copies digitally. From September 2021, all ASE journals will follow this new model.
- Despite the Covid-19 pandemic, the Association had an incredibly successful year of bidding for innovative projects. This included funding from the Gatsby Foundation to support our ongoing work around science teacher retention and wellbeing, as well as funding from the Wolfson Foundation, Wellcome Trust, Department for Education and Institute of Physics, providing vital support to our work on practical science, primary science, subject-specific CPD, science and maths, and diversity and inclusion.

Achievements and performance

With the ongoing Covid-19 pandemic, 2020-2021 was undoubtedly a challenging year for the science education community and for schools and colleges more broadly. Our staff, Trustees, committee members and wider volunteer network have continued to work tirelessly to support science educators through this difficult time.

The Association is structured as a charity, registered with the Charity Commission in England and with the Office of the Scottish Charity Regulator in Scotland and incorporated by Royal Charter. As such, the ASE is obliged in law to confer public benefit – it does this through its aims, which are wholly concerned with education. The aims express a commitment to improving science education for all young people, primarily but not exclusively across the UK. This is achieved by supporting science educators across the sector, including trainees, teachers, technicians, initial teacher educators, consultants, researchers and others concerned with the provision of science education in schools and colleges, and by influencing components of society, including government, such that science education can flourish. The ASE has its focus solely on science education and, as such, we are uniquely placed among professional bodies in supporting everyone working in education across the sciences.

Our current Strategic Plan 2021-2024 was first presented to members at the January 2021 Annual General Meeting (AGM). Trustees seek evidence that progress is being made with the Strategic Plan and the Chief Executive provides a report to Trustees at their quarterly meetings.

Challenges facing our community

Global crises such as the Covid-19 pandemic and climate change have underlined the need for a strong future pipeline of scientists and engineers, as well as scientific literacy for all. In order to achieve our mission of promoting excellence in science education, we have committed to focusing on the following challenges over the next three years, embedding them across our activities:

1. **Recruitment & retention** of specialist science teachers and technicians;
2. **Access to subject- and context-specific continuing professional**

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development (CPD) for all teachers of science and technicians;

3. **Student access to frequent, varied and purposeful practical science**, led by expert teachers, with strong technical support and suitable facilities and equipment; and
4. **The need for dynamic and fit-for-purpose science curricula, assessment and qualification frameworks** that prepare young people for their future lives, both within and outside STEM careers;
5. Linked to many of these challenges, we believe that there is a particular need to **raise the profile of primary science**, with an engaging, creative and appropriate curriculum and greater support for primary schools to develop science leadership, teaching and learning; and
6. **Environmental sustainability**, including climate change, as a key challenge for our time, reflecting young people's needs as global citizens and recognising the role that science education can play in

understanding the issues and developing solutions.

We have also committed to **embedding equality, diversity and inclusion** across our activities, systems and processes.

Strategic themes and objectives

To meet these challenges, we have identified four strategic themes, together with key deliverables that will help us to measure our impact:

- Organisational sustainability
- Community
- Professionalism
- Advocacy

We recognise that working in partnership is and will continue to be vital in delivering our strategy. We value our work with key partners and will continue to engage with stakeholders in the UK and internationally to support our community and achieve our mission.

Theme 1: Organisational Sustainability

Objectives:

- Ensure operational excellence across the Association through effective use of governance, information technology (IT), marketing & communications, finance and human resources.
- Continue to build our reputation as a welcoming and inclusive

organisation, both as a workplace and for our community.

- Continue to review our IT to make best use of systems and infrastructure.
- Continue to develop and embed a culture of evidence-based decision-making across our activities.
- Continue to review the Association's portfolio of activities to ensure that

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we are maximising return on investment and delivery of our mission.

- **Consider new commercial opportunities that align with the ASE's mission, vision and expertise.**

During 2020-2021, the ASE continued to deliver its mission and charitable objectives through its staff and members, who were represented on the Trustee Body and across the Association's committee structure.

The governance structure of the Association has continued to follow charity sector best practice. Trustees meet four times per year and are updated on a regular basis on their responsibilities, so that they are clear about their roles and able to deliver against the six key duties as set out in the 'The Essential Trustee' (CC3) of the Charity Commission. A Trustee skills audit is completed and updated each September.

The Trustees have delegated the authority to manage the Association to the Chief Executive, who reports on the performance of the Association against the strategic plan approved by the Trustees. The Chief Executive is supported by the staff team, including our new Director of Finance and Operations, Laura Rafferty, who joined the Association in January 2021. The major control documentations of the Association are kept up-to-date as appropriate.

There has been a continued emphasis on prudent, managed monitoring of finances. This has been particularly important given the ongoing impact of Covid-19 on our activities. Cash flow has continued to be keenly monitored by the Chief Executive, Finance

team and Honorary Treasurer and reported to Trustees on a quarterly basis.

In response to the Covid-19 pandemic, all committee meetings have been held by video conference since March 2020. This has worked well and has enabled us to engage committee members who previously struggled to attend meetings at ASE Headquarters, as well as resulting in a financial saving to the ASE. Going forward, we are aiming to move to a blended model, with a mixture of face-to-face and online meetings.

The Association is keen to encourage as wide a representation of its community as possible on its committees. Members are invited to apply for committee vacancies through announcements in the *Education in Science* magazine and on the website.

In order to support the smooth running of the ASE over the Covid-19 pandemic, the Chief Executive, Chair of Trustees, Chair of the Association and Treasurer have continued to meet by monthly video conference as a Management Support Group to discuss progress and issues. Notes have been kept of these meetings and made available to all Trustees, with the wider Trustee body consulted on key decisions.

From an IT perspective, in spring 2020, the long-awaited move to a cloud-based software and server-based platform was completed – enhancing both data security and working practices. This has been particularly useful given the Covid-19 situation and concomitant increase in the need for remote-working solutions. The move necessitated the replacement of a greater number of obsolete machines than previously anticipated, but this should see a reduction in the spend on IT

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hardware going forward. On the platform front, thanks to the work of the team and external developers, our systems were considerably more stable than in the previous year. This has meant that, as we enter negotiations to extend our external supplier contract we are able to look beyond simple support and maintenance towards further development and enhancement options.

Over 2020/21 we were able to benefit financially from the Government Job Retention Scheme, allowing us to furlough a number of staff members over the year. We were also enormously grateful for the support provided to the Association by the late Dr John Barker, who left the ASE a significant

donation in his Will, which has been recognised in the 2020/21 accounts.

The Association is committed to embedding equality, diversity and inclusion across our activities, systems and processes. In addition to completing the 2021 Science Council and Royal Academy of Engineering Diversity & Inclusion benchmarking framework, in 2020-21 we set up a new Diversity & Inclusion working group to guide and inform our work in this area.

Trustees and the ASE staff wish to thank our members and partner organisations for their continuing support, and particularly our volunteers for their generosity with the time they commit to the Association.

Theme 2: Community

Objectives

- Ensure our membership offerings are fit for purpose, with a membership structure that supports and attracts those involved with science education across all sectors and career stages, in the UK and internationally.
- Expand our support for early career teachers in primary and secondary education, building engagement with these audiences to understand their needs.
- Increase our engagement with heads of science departments and science co-ordinators, highlighting our value for these audiences, particularly for those new, or aspiring, to these roles.
- Explore opportunities to improve primary-secondary collaboration.
- Continue to increase our international links and networks, supporting members to network and share best practice on a global scale as well as increasing access to and awareness of our events, activities, publications and resources.
- Increase the profile of our teacher educator and consultant (Futures) membership category, ensuring a clear offering for this target audience.
- Introduce a retired membership category, recognising the significant

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expertise and support that this group brings to our community.

- **Continue to expand the Association's offering for our community of technicians.**
- **Work with further education stakeholders to better understand this audience and ensure that we are meeting their needs.**
- **Increase our engagement with school and college Senior Leadership Teams, recognising the significant influence that these groups have on teacher and technician recruitment and retention.**
- **Explore new ways to engage with Multi Academy Trusts (MATs) and ensure that we are responding to different models of initial teacher education to support those coming to teaching through both school-based and university routes.**

Recruitment, retention and support for members remain key priorities. In 2020/21, the work of the ASE staff team, national and regional committees and other volunteer support enabled us to deliver a wide variety of online activities at which ASE membership was promoted. Many of these are outlined on the following pages.

- Responding to feedback from our community, we introduced two new membership categories: science department membership for secondary schools and colleges and hybrid membership for primary + secondary. Both categories have been well received and are already allowing us to broaden our reach and support for teachers and technicians across the UK and internationally. These two

institutional membership categories sit alongside our existing popular primary school membership.

Our new trainee and early career membership plan, launched in 2019/20, has also continued to grow and we have been pleased to support the Primary Science Enhancement Award for Initial Teacher Education being piloted by the Primary Science Teaching Trust (PSTT), with discounted membership fees for trainees taking part in this scheme.

Recognising that our members are science educators first and foremost, rather than necessarily wanting to be defined by where they are based, in 2020/21 we amalgamated International Associate membership into our other categories.

From a university perspective, library subscriptions remained strong, with 272 active libraries for 2020/21. Further Education (FE) membership remains an area for further development in 2021/22.

As anticipated, the 2020/21 school year brought with it significant levels of stress for many teachers and technicians in balancing the logistical challenges resulting from Covid-19 alongside delivering high quality education, both face-to-face and remotely, and for many of those working with older students, leading on the teacher-assessed grades that took place instead of exams. Having paused our Science Teacher SOS pilot during the early stages of the pandemic, we were grateful for the support of the Gatsby Foundation in allowing us to complete the pilot in 2020/21. We look forward to expanding this important work in 2021/22.

The ASE remains concerned about the situation with its technician members, particularly in light of Covid-19, which has led

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to many technicians leaving their roles or being fearful of redundancy. Technicians play a key role in enabling students to access safe and effective practical science as well as providing vital support to science teachers. We will continue to advocate for greater

support and recognition of those working in these roles.

Theme 3: Professionalism

Objectives:

- Offer a professional learning journey for everyone working to support science education in the UK and internationally, through conferences and events, interactions with our journals, books and resources and participation in Association projects and initiatives.
- Continue to expand our continuing professional development activities to allow us to reach and support our members across the UK and internationally, including both face-to-face events and online CPD.
- Increase the visibility and prestige of our publications, ensuring that our publishing and booksales operations remain relevant and beneficial to our membership and to the Association.
- Continue to offer professional registration and increase the profile and recognition of professionally registered members, providing opportunities to contribute through committees and groups, projects, events, mentoring opportunities and publications.
- Continue to develop and expand our accreditation activities, for example through our *Green Tick* evaluation scheme.
- Continue to bid for innovative projects and initiatives that support the key challenges facing our community.

Committees and groups

The importance of peer-to-peer support has been particularly clear through the Covid-19 pandemic; although we have missed the conversations and mutual support gained from face-to-face meetings, members have continued to network online through local and regional groups and national committees, conferences and events, as well as through social media. These activities have provided vital opportunities to support each other as well as for continuing professional development, both for ASE members and the wider science education community.

National Committees

During the year, the Association's committees continued to be active in furthering support and professional practice in science education.

The **Education Group** was ably led by the Chair of the Association, who, as part of the Chair Trio (Immediate-past Chair, current Chair and Chair-Elect) was also active in supporting other committees and events throughout the year. One of the main new Chair Trio activities for 2020/21 was the establishment of a CPD working group, providing valuable guidance as our CPD provision continues to grow. The Education Group has also continued to support the Chairs of committees and groups to network

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and share good practice with each other as a formalised part of the Group activities and has been working with the staff team to provide an online format for sharing news and events. The Education Group has been instrumental in providing a voice for members during these difficult times and has fed back to the ASE and others on key science education issues, giving an insight into schools during the pandemic and the issues being faced by members and the wider community. As part of the relaunch of the resources section on the ASE website (see below), work also began on reviewing and refreshing our Best Practice Guidance documents. These bring together important advice on key aspects of science teaching.

The 11-19 Committee continued to provide vital advice and support across our activities, including guiding the development of our new science department membership. In addition to the work of Helen Harden and Neil Wade, together with Elizabeth Lupton, in leading on our new BEST STEPS videos, and of Andy Chandler-Grevatt, Rob Butler and Sarah Longshaw on our Science Teacher SOS project (see Resources and Projects sections below), the Committee also supported the development and updating of a number of other resources that will be published in 2021/22. This included the first modules of the updated *Science Leaders' Survival Guide* as well as a new Curriculum Evolution Document, led by Caroline Greer. From an events perspective, Committee members generously gave their time to support Conference sessions, webinars and the new ASE Podcast, which aired its first three programmes in 2020/21, hosted by Andy Chandler-Grevatt.

As with the 11-19 Committee, the **Primary Committee** includes representatives from all

four countries of the UK, with a good blend of practising teachers, consultants and ITE providers. In 2020/21 members were actively involved in creating a full and varied programme for the online Annual Conference, as well as supporting the Summer Conference. The Committee also provided valuable advice and support in the development of the Explorify workshop programme funded by the Wellcome Trust, with 68 free workshops delivered between January – July 2021. In addition to this support, led by the Committee, we were delighted to publish the updated version of our *Primary Science Leaders' Survival Guide*, covering everything from assessment guidance to starting a STEM club.

One of the silver linings of the Covid-19 pandemic has been the ability of science educators to join our activities from across the world. The International Day, led by the **International Group** as part of our online Annual Conference in January 2021, proved to be a particular success. The International Group was also pivotal in informing the Association's move to amalgamate International Associate membership with other categories. Some of the Group's wider plans to increase the ASE's international activity remain on hold due to the Covid-19 pandemic. However, the *ASE International* journal has continued to go from strength to strength and, with the change in membership structure, has now been opened up to all ASE members.

The **Health and Safety Group** comprises an experienced set of members, including co-opted representatives from CLEAPSS and SSERC. The Group continues to provide vital support in reviewing and contributing to

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publications, as well as leading on articles for *Education in Science*. In 2020-21, the Committee also supported the Association in reviewing materials for Green Tick Awards and contributed to the online Annual Conference with a series of video presentations, made by the Group, of practicals thought by many to be banned, restricted or too dangerous.

2020-21 was another busy year for the **Laboratory Technicians Committee**, providing valuable support with the technicians strand of the online Annual Conference and the online Technicians Conference in summer 2021. As well as including lunchtime drop-in/TechMeet sessions at both of these conferences, further lunchtime TechMeets, hosted by Simon Quinell, continued to be held regularly throughout 2020/21, with good attendance. Based on the work of the 11-19 Committee, Liz Shaw and Jane Oldham led on work to create a Technician SOS document, while Sue Smith continued to compile the Prep Room page for *Education in Science*. As always, one of the key roles of the Committee has been helping to inform ASE's advocacy work, as well as providing support to RSciTech applicants and to the wider technicians community via the School Science Technicians Facebook group (membership is currently around 4,000). As active users of this group, the Committee is able to spot any hot topics and recurring issues as well as to promote the benefits of the ASE.

The **Research Group** once again provided valuable support to the Annual Conference, including a keynote on "Misunderstandings in Science" (led by Research Group Chair, Alastair Gittner, in conversation with Niki Kaiser), and a ResearchMeet provided an opportunity to hear from a range of researchers about their

ongoing projects. The Group continued to support Headquarters staff with consultation responses and in 2021/22 will be working alongside the staff team on our planned activities around the Ofsted Science Research Review.

The **ASE Futures Committee** includes representation from primary and secondary university ITE, consultants/advisers, practitioners and other organisations, including exam boards and PSQM. As with our other national committees, Futures provides important support in informing our advocacy and other activities. In 2020/21 Alex Sinclair (Chair of the Committee) and Jane Turner (Chair-Elect of the Association) supported discussions with both internal and external stakeholders around our growing CPD provision and both were also appointed as Editors of *Science Teacher Education*, with other Futures members contributing articles. The Committee, in conjunction with ASE staff, helped to create a new "Futures Directory", which will be launched externally in 2021/22. The Committee also led their second online Futures Conference in summer 2021, which attracted 73 delegates. Going forward, we will continue to work with the Group to develop the ASE's plans for CPD, as well as raising the profile of Futures membership.

The **Registration Board** has met to award or reconfirm members for Chartered Science Teacher (CSciTeach), the Registered Scientist (RSci) and Registered Science Technician (RSciTech) awards. Applications have been supported by online professional registration workshops delivered by the Field Officer team, as well as support from committee members. As of July 2021, 345 CSciTeach, 249 RSciTech and 127 RSci awards have now been made by the ASE.

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The **Publications Special Interest Group** has met virtually for a few focused mini-meetings throughout the year, covering topics including the new digital-first arrangement for the journals, the new Millgate Bookshop, the ASE Book of the Year Award, and how to manage the rising number of publishing proposals being submitted. The Group has been very active between meetings, responding quickly to regular email updates sent from the supporting staff.

The following new groups were also established in 2020-21:

- **Industry Advisory Group** – this group has been established to explore new ways to increase our links with industry, for example through our projects and events. The group has representation from a range of science employers, including BASF, GSK, Thomas Swan, the British Compressed Gases Association, Eastman Chemical Company and British Coatings Federation.
- **Inclusive Science Group** – Led by Rob Butler and Dr Jane Essex from the University of Strathclyde, this Group has been established in response to feedback from members and others that science teachers are struggling with the increasing numbers of learners with special educational needs and disabilities (SEND)/additional support needs.
- The Group has been very successful and now sits at around 130 members (both ASE members and non-members). The notes for the meetings are also used as a basis for regular articles in *Education in Science* to help reach as wide an audience as possible.

Publications

During 2020/21, we made the decision to move to a 'digital first' model for our three paper journals, *Education in Science*, *Primary Science* and *School Science Review*. This means that individual members can opt in to still receive their journals on paper if they prefer, but the default is to access copies digitally. The aim has been to reduce our environmental footprint and move alongside other organisations that have done the same. From September 2021, all journals have now followed this new model.

Education in Science features for the year included 'Back to School: curriculum and practical science post-lockdown'; Online learning; Annual Conference 2021; and Technician Support and SEND.

School Science Review themes covered 'Epistemic insight'; 'Science in health care' and 'Science Education and nature'. The proposed new format changes will be reviewed during 2021/22, in the light of the new 'digital first' model mentioned above.

Primary Science featured themes including 'Critical thinking in science'; 'Gender in science'; 'Raising the profile'; 'Science in the Humanities' and 'Healthy science', with a special extra issue sponsored by the Great Science Share for Schools.

The ***Journal of Emergent Science*** has gone from strength to strength under the editorship of Sarah Earle, with issues coming out in January and June.

As mentioned above, in the summer term, we appointed Jane Turner and Alex Sinclair as permanent editors of ***Science Teacher Education***, and three issues were produced,

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including a special issue retrospective of the 2021 Futures Conference.

ASE International has also had a bumper year, with three issues including a wide range of pre-published articles from other ASE journals and a growing number of original submissions, all ably looked after by the ASE International Committee and sponsored by Gratnells, to whom we are grateful for their constant support. At the end of the 2021 academic year, we said goodbye to Marc Neesam as Editor, and welcome Ade Magaji as the new Editor for 2021 onwards.

As always, we say a huge thank you to all our Editors and editorial teams, who work so hard to keep the flow and quality of the ASE journal provision moving onwards and upwards.

In terms of book publishing, both the ASE and Millgate House continue to work hard to publish new and exciting texts for the world of science education. Although sales figures continued to suffer from not being able to hold face-to-face events, a record number of book proposals were received during the year, which will lead to a wide range of new titles over the coming months. Towards the end of 2020/21, Trustees agreed to bring together the ASE's two online bookshops (the ASE and Millgate House Education) into a single online bookstore. This was launched in August 2021 and can be found at www.millgatehouse.co.uk, where ASE members can continue to access discounts off both ASE and Millgate House products.

From an **ASE publications** perspective, *Be Safe* remained our best-selling publication, selling 411 copies, followed by the *ASE Secondary Guide to Science Education* (119 copies) and *Safeguards in the School*

Laboratory, 12th Edition (114 copies). We have continued to sell some of our books as digital products through our website and Ebsco, which we hope will enable us to boost sales and reach wider audiences going forward. In addition to the publication of the new ASE/Hodder subject guides (biology and physics are already available and chemistry will be published shortly), we are also looking forward to the publication of our new books on science investigations through stories

The best-selling publication for **Millgate House Education (MHE)** in 2020/21 was *Science Concept Cartoons set 1*, which sold 661 copies. This was followed by *It's not fair* (393 copies), *Science Concept Cartoons 2* (299 copies) and *Superhero Scientists* (258 copies). The new *Teaching Primary Science Outdoors* book by Helen Spring has also had a good start and is selling steadily.

In other publications news, the 2021 Book of the Year award went to ***Wildhood: the epic journey from adolescence to adulthood in humans and other animals*** by Barbara Natterson-Horowitz and Kathryn Bowers.

The ASE's **Green Tick** programme continues to provide a valuable benefit for both teachers and publishers by evaluating external publications and resources. A number of Green Ticks were awarded in 2020/21, including to Tassomai, the Society for Endocrinology, the Ogden Trust, the National Farmer's Union Farmvention resources, Collins' *Understanding Covid-19* resource collection and *DNA Detectives – The Stone Age Mystery*.

Resources

As already highlighted in this report, we launched a number of new teaching resources in 2020/21, including the **Primary Science**

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Leaders' Survival Guide and new **BEST STEPS supporting videos**, led by the Primary and 11-19 Committees respectively (with support for the videos from the Horners' Livery Company).

We also took the opportunity to refresh and relaunch the resources pages on our website, helping to showcase key resources for primary, 11-19 and technician audiences.

We are grateful for the continued support of the Pan London Assessment Network in enabling us to feature a number of PLAN resources on the ASE website.

Alongside the ASE website, in 2020/21 we took the opportunity to refresh the look and feel of our sister website, **[schoolscience.co.uk](https://www.schoolscience.co.uk)**, which provides free learning resources, information and news.

Annual Conference, events and TeachMeets

With the expanded reach possible through online events, the Northern region generously opened up their annual conference in November 2020 to all regions, resulting in an Autumn Conference attracting 79 delegates.

January 2021 saw the ASE's largest professional development event, the four-day **Annual Conference**, held online for the first time. An astounding 1,122 tickets were sold, representing 1,634 delegate days of CPD. The core of the programme offered live interactive sessions, while live recording and pre-recordings were used for some sessions to allow more flexible engagement for delegates. The Conference included the usual excellent range of high-profile speakers, including the ASE's President, Professor Sir John Holman, Dr Jasper Green HMI, Ofsted subject lead for

science, as well as an outstanding selection of Frontier Science sessions, with leading experts such as Professor Jim Al-Khalili, Professor Robin Lovell-Badge of the Crick Institute, Professor Andrew Pollard of the Oxford Vaccine Group and more. We were very grateful for the support of our Honorary Conference Secretary, Professor Christine Harrison (who supported both the Annual and Summer Conferences) as well as our sponsors and exhibitors, particularly our main Conference sponsor, AQA.

Summer 2021 saw a trio of online ASE conferences, offering valuable professional learning opportunities for teachers, technicians and our Futures Community, with a particular emphasis at the Summer Conference on early career teachers. The three conferences attracted 328 delegates. Thank you to our sponsors and exhibitors for these events, in particular to GCSEPod and AQA, our main conference sponsors for the Summer and Futures Conferences respectively.

In addition to our online conferences, we also ran a number of popular **online courses**, including our Physics for Non-Specialists courses in partnership with Physics Partners, which are proving a particular hit with trainees and early career teachers, as well as our technicians' courses led by Simon Quinnell, which have continued to be very well-received.

Thanks to the support of our region committees, Field Officers and other volunteers, we were also able to continue with regional events through 2020/21. 64 online regional events were held across the UK, including the Scotland Conference (attracting 73 delegates), smaller events, TeachMeets and TechMeets. Although the pressure on schools

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and colleges due to Covid-19 – and the exhaustion levels of teachers and technicians – grew through the year, these events nonetheless reached over 3,300 delegates (compared to 2,250 in 2019/20). The Field Officer team also ran a further seven online professional registration workshops, attracting 189 delegates.

Examples of regional events through the year included *Science meets English* and *Standing on the Shoulders of Giants* for primary members, a talk from Dr Appolinaire Etoundi at the University of West England on robotics and working with para-athletes, sessions on outdoor science, teacher wellbeing and assessment (including a session with SQA for teachers in Scotland, attracting over 100 delegates), a termly cluster group for heads and aspiring heads of science in Northern Ireland and a Saturday STEM spectacular online event organised by Wolverhampton University in collaboration with West Midlands ASE, which had 264 registrations. Several regions produced newsletters and/or worked in partnership with other organisations. For example, Surrey and Sussex led events in partnership with the Sussex Science Learning Partnership, while the Welsh region worked closely with the Royal Society of Chemistry to host three very well-attended events on *Chemistry in the Welsh Curriculum*, as well as a summer event in partnership with the Great Science Share for Schools.

Recognising the particular challenges faced last year by trainee and newly qualified teachers, several regions ran targeted events for this audience. Regions also noted the importance of their events and committee meetings over the year in creating 'a wonderful sense of friendship and mutual support through what have been trying times

professionally', highlighting the value to be gained from getting involved with the ASE.

Projects and initiatives

Despite the impact of the Covid-19 pandemic, the Association had an incredibly successful year of bidding for innovative projects. Project opportunities are evaluated against the science education challenges that they help us to address, their financial implications, and their likely impact on the reputation of the ASE. Where appropriate, bids are submitted.

International projects & initiatives

- **Science Education for Action and Engagement towards Sustainability (SEAS):** This Horizon 2020 programme – SwafS-2018-2020 (Science with and for Society) is establishing, co-ordinating and evaluating collaboration among six open schooling networks led by universities and science centres, with partners in Austria, Belgium, Estonia, Italy, Norway, Sweden and the UK. The lead organisation is the University of Oslo. The focus this year has been on developing guidelines for the project's digital tools, establishing and implementing open school networks and developing an assessment framework for evaluating the project's impact.
- The ASE has continued to provide the secretariat for **Science on Stage UK**, with planning now underway for the next Science on Stage (SonS) Festival to be held in Prague in Spring 2022. 2020/21 activities included webinars, online resources and a session at the online Annual Conference. Our thanks go to Stuart Farmer, David Featonby and all the members of the UK SonS Committee, who continue to support and encourage prospective applicants.

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- The ASE administers the **Alexander Prize** funds (established in memory of Professor & Mrs Alexander for science education work in commonwealth countries). The prize is awarded to a female teacher of science, technology or mathematics who has made a significant contribution to the education of women or girls in situations of scarce resources. No prizes were awarded in 2020/21.

Other key projects and initiatives

- **Primary science – The ‘Key moments in history – a fossil hunter’s story’** project is producing teaching resources and professional learning strategies for teachers of children aged 9-11 years, to support their knowledge and understanding of evolution, the nature of scientific enquiry and the strengths and limitations of scientific knowledge. This project is supported by the Big Questions in Classrooms initiative of the Templeton World Charity Foundation. The focus this year has been on the phase 2 pilot (which had been postponed from the spring and summer terms 2019-20 due to the Covid-19 pandemic) and took place during the autumn, spring and summer terms of this academic year. All evaluation feedback to date has been extremely positive regarding the teaching and learning resources (including the *Sea Dragon* film) from the perspectives of both teachers and their children.
- **Practical science – Good Practical Science (Covid-19):** In response to the significant impact of Covid-19 on practical science, we published the results of our 2020 practical science survey and expert review of the Gatsby *Good Practical Science* benchmarks through a Covid-19 lens. We also ran a series of webinars in Autumn 2020 focused on providing practical science support in biology, chemistry and physics. The sessions were run in partnership with the Institute of Physics, Royal Society of Chemistry and Royal Society of Biology and were funded by the Gatsby Foundation.
- **Teacher retention – Science Teacher SOS:** In January 2018, the ASE launched a campaign to attempt to stem the flow of science teachers leaving the profession. Following a successful bid to the Gatsby Foundation and a generous funding extension to allow the project to re-start after having to be halted early in the pandemic, Dr Andy Chandler-Grevatt from the University of Sussex, together with Field Officers Rob Butler and Sarah Longshaw, completed the pilot of the framework in 2020/21. The report is now available on the ASE website.
- **BEST STEPS – Next Steps:** As mentioned earlier in the report, thanks to the work of Helen Harden, Neil Wade and Elizabeth Lupton we were able to secure funding from the Horners’ Company Charity that enabled the writing of our new BEST STEPS-Next steps resources. The funding allowed for the production of two videos to promote the original BEST STEPS resources, as well as the production of an innovative interactive pdf resource that combined video CPD sessions and example classroom facing materials.
- **Advanced Mathematics Support Programme (AMSP):** This Department for Education-funded project, in partnership with Mathematics in Education and Industry as part of the AMSP, aims to develop the capacities and confidence of

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biology teachers in their use of mathematics within the post-16 context and to encourage more students to study Level 3 mathematics during the post-16 phase. Supported by a focus group of experienced school science leaders who teach post-16 biology and individuals with experience of curriculum and assessment design, the project delivered two popular and well-received online workshops, and ran a policy-focused seminar on the topic of 'Core Maths as an alternative to A level Mathematics for A level students studying science without mathematics'. This project continues until July 2022.

- **Great Bug Hunt:** Run annually since 2015 by the ASE in partnership with the Royal Entomological Society, the ever popular Great Bug Hunt competition was created to help encourage teachers to take science learning out of the primary classroom and bring it to life in the outdoors. As always, we were delighted to receive a fantastic range of entries in workbooks, posters and factsheets using graphs, photos, pictures and poems.

In addition to these projects and initiatives, Autumn 2021 will see the launch of the following four new projects:

- **ASE RISE (Retention Initiative for Science Education)** – with thanks to support from the Gatsby Foundation we will be developing our Science Teacher SOS framework into a new proactive set of tools for science departments
- **Keeping science practical** – thanks to support from the Wolfson Foundation, we are delighted to be launching a new practical science support programme for up to 120 schools in disadvantaged circumstances across the UK over the next three years.
- **ASE BEST BITES** – thanks to funding from the Wellcome Trust, we will be working in partnership with the University of York Science Education Group, supported by CIEC, to develop and pilot the impact of using topic level bite-sized online CPD in science to support teachers in upper primary and lower secondary.
- **Inclusion in Schools** – we are proud to have been subcontracted by the Institute of Physics as their delivery partner for the Inclusion in Schools aspects of their contract with the Department for Education. This work is very much in line with our strategic commitment to diversity and inclusion.

Theme 4: Advocacy

Objectives

- **Raise the profile of science teaching and learning and champion the needs of those working across science education through our marketing, communications, publishing and policy activities, projects and events.**
- **Work with policymakers and other key stakeholders as a critical friend, informing policymaking to help shape science education policy and practice.**

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- **Emphasise the value of our expertise and independence.**
- **Give a voice to our community to help shape the future of science education, engaging our members with key policy issues and channelling their views into our policy activities.**
- **Continue to highlight the key challenges facing our community, drawing on research, and commissioning research where appropriate, to inform our policy activities.**
- **Continue to proactively scan the horizon for changes and initiatives affecting our community.**

Advocacy has long been a key role for the ASE, representing our members and wider community as the voice for science education professionals, helping to shape the science education landscape.

During 2020/21 our main advocacy activities included:

- Representation to the Government's Comprehensive Spending Review (September 2020);
- Contribution to the NFER, Royal Society of Chemistry and Gatsby Foundation report on *The Science Technician Workforce in English Secondary Schools* (published November 2020);
- Temperature Check survey to inform the ASE and our stakeholders of science educators' views on the challenges and opportunities for science education during the continuing Covid-19 crisis (approx. 300 responses) (November-December 2020);
- *Sunday Times* Letter to the Editor in response to the article 'Natural History GCSE to tempt pupils outdoors' (November 2020);
- Response to TIMSS results highlighting a marked decline in Year 9 science performance (December 2020) – this was followed by a webinar on the TIMSS report by Professor Michael J Reiss and Dr Mary Richardson (April 2021);
- Contribution to the Institute of Physics' *Subjects Matter* report (published December 2020) and ongoing representation on the roundtable established to look at the recommendations from this report;
- Response to the Royal Society consultation on their Mathematical Futures programme (January 2021);
- Response to the DfE and Ofqual consultation on the summer exams 2021, led by our 11-19 Committee (February 2021);
- Response to the Pearson Future of Qualifications and Assessment survey (March 2021);
- Contribution to the Ofsted Research Review on science (published April 2021);
- Learned Societies' Group on Scottish STEM Education Briefing Paper for those seeking election to the Scottish Parliament (April 2021);
- Contribution to the Campaign for Science and Engineering (CaSE) Report, *Inspiring Innovation* (published May 2021); and
- Learned Societies' Group on Scottish STEM Education article in the *Herald* on the OECD review of the Curriculum for Excellence.

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The Chief Executive and Director, Curriculum Innovation continued to be active throughout the year in representing the Association at external events such as those run by the Centre for Industry and Education Collaboration (CIEC), the National Farmers' Union (NFU), LEGO® Education and CaSE, Inside Government and others.

In England, the ASE continues to be one of the five partner organisations of the Education Policy Alliance (also including the Institute of Physics, Royal Society, Royal Society of Biology and Royal Society of Chemistry) and to work with the other bodies to achieve stated joint strategic aims, particularly around the science curriculum.

In Wales, ASE Cymru was represented this year at Science and the Assembly.

In Scotland, the ASE is represented on the Royal Society of Edinburgh's Learned Societies' Group on Scottish STEM Education (LSG). In addition to the activities listed above, in 2020/21 we supported the LSG letter to Professor Mark Priestley on the Independent Rapid Review of National Qualifications Experience.

In Northern Ireland, our Field Officer is a member of the Learned Societies and Professional Bodies group and the All-Party Group on Science and Technology, and represented the ASE at Science in Stormont (October 2021). We were also represented at CCEA consultation events on the assessment arrangements for Summer 2021 and facilitated a meeting of primary and secondary teachers

with the Lead Inspector of Science and Technology (John Murray) to discuss the impact of the lockdowns on science learning (June 2021).

The ASE also continues to be an active member of the Council for Subject Associations (CfSA) as well as a number of other steering and advisory groups, including the new Science Working Group convened by STEM Learning, with representation from the Learned Societies, Institute for Research in Schools, Primary Science Teaching Trust and Royal Society.

The *Best Practice Guidance* documents produced by the Education Group also continue to provide a valuable source of information on key issues.

The ASE has regular updates and briefings with DfE, Ofsted and Ofqual. In 2020/21 we also attended meetings with BEIS and the Government Office for Science.

The ASE has links with science associations from several other countries, for example with the National Science Teachers Association (NSTA) and sister associations across Europe. At the January 2021 online Annual Conference, we held a very well-received panel discussion on European Science Education post-Covid, with speakers from Italy, France, Belgium and the Netherlands. By continuing to develop these networks, the ASE can gain insights into professional practice that can be used to benefit our members and support science education in other parts of the world.

Plans for 2021/2022

Supporting our members and the wider science education community remains at the heart of the ASE and has rarely been more important.

The ASE launched its new three-year strategic plan at the January 2021 online Annual Conference. The new plan has been developed in partnership between ASE Trustees, committees, members and staff and covers both ASE activities and those of Millgate House Education. It includes the following strategic themes: Organisational sustainability, Community, Advocacy and Professionalism, as well as highlighting a number of key challenges facing our community, which will form the basis of our policy and project activities over this period. Key activities for 2021/22 are highlighted below.

Organisational sustainability:

- Continue to respond to the implications of the Covid-19 crisis, exploring new ways to deliver our activities, support our community and ensure financial sustainability.
- Continue the review of our national committees to clarify the roles and responsibilities of each, increase diversity, maximise impact and improve links, both with other committees and with ASE Headquarters.
- Help to ensure a strong future pipeline of committee members through better communication of what it means to be on a committee and increased recognition for committee members. Explore ways to increase early career representation on our committees.
- Build on the findings from the Science Council Diversity and Inclusion Benchmarking framework to embed equality, diversity and inclusion (E,D&I) across our systems and processes.
- Continue to develop consistent branding and engaging messaging across our activities, ensuring that we have a clear value proposition, increasing our profile and visibility and exploring new ways to engage teachers.
- Building on the continued success of our online activities, further develop our digital activity, including social media, webinars and podcasts, to ensure that we are maximising our reach.
- Continue to manage the Association's finances prudently, to grow our reserves and ensure sufficient buffer against adverse risks.
- Continue to review and refine the Association's systems, infrastructure, processes and operating procedures.
- Continue to evaluate all project opportunities against their financial implications, educational benefits and likely impact on the reputation of the Association.

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- Launch and embed our new online bookshop, bringing together the current ASE bookshop with Millgate House Education.

Community:

- Strive to increase membership recruitment and retention, with particular focus on institutional membership (primary, secondary and FE) to maximise the reach of our support.
- Continue to increase our support for early career members through targeted online and face to face events.
- Launch a new hybrid (primary + secondary) membership option, providing an opportunity to increase our engagement with all-through schools, MATs and initial teacher education departments.
- Introduce post-16, technician and industry strands at our 2022 Annual Conference.
- Explore opportunities to introduce a mentoring scheme, linking early career members to CSciTeach members in their region.
- Explore new activities to engage Senior Leadership teams, particularly through our projects.

Advocacy:

- Continue to increase our policy and public affairs activities, capturing the views of our members on key policy issues and working in partnership with key stakeholders, including policy-makers, regulators, funders and learned societies, to help shape the science education landscape.
- Continue to focus our advocacy activities around the key challenges facing our

community, particularly those exacerbated by Covid-19, such as student access to frequent varied and purposeful practical science.

- Assess and respond to major consultations (in partnership with other organisations where appropriate).
- Draw on the expertise of our Research Group to promote evidence-based practice, support with horizon-scanning and ensure that our policy activities are research-informed.
- Draw on the expertise of our Education Group to keep the ASE's *Best Practice Guidance* current, relevant and useful to stakeholders and our community.
- Continue to advocate for further support for and recognition of those working in technical roles.

Professionalism:

- Continue to develop our CPD programme, providing a high-quality professional learning offering that meets the needs of our members across our community.
- Subject to Covid-19, return to a face-to-face Annual Conference at Sheffield Hallam University.
- Continue our popular webinar programme, ensuring a broad programme of sessions providing support across our community.
- After a quieter period over spring-summer 2021, resume and continue to expand our regional provision, including a blend of high-quality face-to-face and online conferences and workshops, TeachMeets and TechMeets.

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- Consider opportunities to support our members in developing economies with accessing continuing professional development.
- Launch and promote our new register for teacher educator and consultant (ASE Futures) members.
- Continue to raise the profile of professionally registered members and increase opportunities for members with CSciTeach, RSci or RSciTech to get involved with our activities.
- Continue to enhance our digital journals offering.
- Explore ways to support authors looking to write for our journals for the first time.
- Continue to explore opportunities to collaborate and partner with other like-minded organisations to increase our Open Access journals offering.
- Continue to innovate with formats and outputs across our booksales portfolio.
- Increase the number of books published each year, while continuing to ensure a high-quality offering.
- Continue to grow the number of entries to the ASE Book of the Year Award.
- Explore new opportunities to link to and promote ASE and Millgate books and resources.
- Increase capacity for delivery of projects and initiatives, focusing particularly on the key challenges facing our community and continuing to draw on the expertise of our professionally registered members.
- Continue to develop our reputation as leaders in practical science.
- Explore opportunities to place the ASE at the forefront of embedding environmental sustainability into science education and continue to grow our expertise and reputation around diversity and inclusion.
- Continue to develop and expand our accreditation activities through our Green Tick evaluation programme.
- Build on our reputation as a gateway to high quality science education resources.
- Continue to explore other opportunities for revenue generation that align with the ASE's mission, vision and ethos.

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Structure, governance and management

The Association is governed by the Rules of the Association as adopted at the Annual General Meeting in January 2006 and amended most recently in January 2021. At the January 2016 meeting it was agreed that subject to formal changes to documentation and rules as necessary Council would now be known as the Trustee Body and Assembly as the Education Group. At the Annual General Meeting in January 2011, members voted to change the governance structure of ASE to create a smaller body, which is the Trustee Body of the Association, (Council), responsible for all governance issues, and a larger Education Group, (Assembly), which concerns itself largely with issues related to ASE's work in science education and with communication.

The Trustees have responsibility for ensuring that ASE complies with relevant charity laws and regulations, that the finances are properly regulated and monitored and that appropriate policies are in place. The Trustees ensure that the activities of the Association fit with the Strategic Plan and take a long term view of the health of the Association.

The Trustee body consists of:

- three members elected from the Education Group of the Association
- three members elected from the membership by direct vote
- four further members appointed by Council
- the Chair of the Association (may be delegated to the past-Chair of the Association)

One of the Trustees will be identified to represent Trustees on the Quality and Audit Committee.

A Chair of Trustees and a vice Chair shall be elected from and by the Trustee members.

The Chair-Elect and Immediate Past Chair of the Association may be in attendance at meetings of the Trustee Body and may participate in Trustee discussions both at and between meetings.

New Trustees take part in training on the management of the finances of the Association and on the responsibilities of trustees. They are given associated literature. On-going training consists of the circulation of Charity Commission updates and training on aspects of the Trustee's role.

The Trustees are responsible for the direction and management of the Association through its Strategic Plan.

Key responsibilities include ensuring a clear vision, the corporate behaviour of the charity, legal and regulatory governance, compliance, guardianship of assets and ensuring high standards of governance.

The Trustee body normally meets on three/four occasions during the year.

Trustees who served during the year and up to the date of approval of these financial statements are listed below:-

Richard Needham - Elected by Membership and Chair of Trustees (until 31 December 2020)

Ali Redmore - Elected by Membership and Chair of Trustees (from 31 December 2020)

Roger McCune MBE - Appointed Member, Association Treasurer

Bryan Berry - Appointed Member

Maggie Hannon – Appointed Member (Trustee rep on Q&A Committee)

Daniel Sandford Smith – Elected by Membership

Susan Burr – Elected by Membership

Simon Quinnell – representing Education Group and immediate past Chair

Leigh Hoath – representing Education Group

The Association for Science Education

Trustees' Annual Report for the year ended 31 July 2021

Trustees (continued)

Cerian Ayres – representing Education Group (from 1 August 2021)

Jane Turner – Chair of the Association (from 1 August 2021)

Geoff Mackey – elected by Membership (from 1 August 2021)

Manoj Chitnavis – co-opted Trustee

Key Management Personnel

The Trustee Body and the Chief Executive are the key management personnel.

The Chair and the Chief Executive are in regular contact to discuss ongoing matters and full reports from the Chief Executive are discussed at meetings of the Trustee Body including all matters relating to activities, finance, budgeting, strategy and future planning.

The Chief Executive is subject to an annual development review by the ASE Chair and Treasurer who advise the remuneration committee of proposed awards which are then ratified by the Trustee Body.

Financial review

The financial position of the charity and the group is set out in the financial statements, including principal sources of funding and resources expended. The financial statements have been prepared in accordance with the accounting policies set out in the notes, the requirements of the Trust Deed and the Charities SORP (FRS 102) and comply with current statutory requirements. More detail on the ASE's financial performance for the year is given in the Honorary Treasurer's annual report on page 9.

Going concern and Covid-19

As stated in note 1b the Trustees have considered going concern and the ongoing effect of the Covid-19 outbreak. The Trustees consider that the outbreak will continue to cause disruption to the Charity's day to day business for some time. As detailed in note 1b, the Trustees have a reasonable expectation that the Charity has adequate resources to continue in operation for the foreseeable future.

Priorities in this regard continue to be maintaining the safety of staff, the financial sustainability of the organisation and the support of our members.

Reserves Policy

It is the policy of the trustees to aim to maintain unrestricted reserves at three months running costs which amounts to approximately £203,000.

Total consolidated unrestricted reserves at 31 July 2021 were £206,425 (2020: £60,835). Trustees are pleased to see that the level of consolidated unrestricted reserves has increased this year and has been brought into line with the organisation's policy.

Investment Policy

Monies are currently held in an interest bearing deposit account.

Membership numbers as at July 2021:

Individual: 3,949 (2020: 4,521)

Organisations: 815 (2020: 781)

Total Members: 4,764 (2020: 5,302)

The Association for Science Education

Trustees' Annual Report for the year ended 31 July 2021

Disclosure of information to auditor

Each of the Trustees has confirmed that there is no information of which they are aware which is relevant to the audit, but of which the auditor is unaware. They have further confirmed that they have taken appropriate steps to identify such relevant information and to establish that the auditor is aware of such information.

Auditor

HW Fisher LLP were appointed auditor to the charity and a resolution proposing that they be re-appointed will be put to the next Annual General Meeting.

On behalf of the Trustee Body



Alison Redmore
Trustee

Dated: 19th March 2022

The Association for Science Education

STATEMENT OF TRUSTEES' RESPONSIBILITIES

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

The law applicable to charities in England & Wales and in Scotland 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 the group and of the incoming resources and application of resources of the group 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 Statement of Recommended Practice (SORP);
- make judgments and estimates that are reasonable and prudent;
- state whether applicable United Kingdom accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements;
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the charity and group will continue in operation.

The Trustees are responsible for keeping proper accounting records that disclose with reasonable accuracy at any time the financial position of the charity and the group and enable them to ensure that the financial statements comply with the Charities Act 2011, the Charity (Accounts and Reports) Regulations 2008, the Charities and Trustee Investment (Scotland) Act 2005, the Charities Accounts (Scotland) Regulations 2006 and the provisions of the charity's constitution. They are also responsible for safeguarding the assets of the charity and group and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The Association for Science Education

INDEPENDENT AUDITORS' REPORT TO THE TRUSTEES OF THE ASSOCIATION FOR SCIENCE EDUCATION

Opinion

We have audited the financial statements of The Association for Science Education (the 'parent charity') and its subsidiary ('the group') for the year ended 31 July 2021 which comprise the consolidated Statement of Financial Activities, Consolidated and Charity Balance Sheets, consolidated Statement of Cash flows, and the notes to the financial statements, including significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards, including Financial Reporting Standard 102 The Financial Reporting Standard applicable in the UK and Republic of Ireland (United Kingdom Generally Accepted Accounting Practice).

In our opinion the financial statements:

- give a true and fair view of the state of the group and parent charity's affairs as at 31 July 2021 and of the group's incoming resources and application of resources, for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Charities Act 2011, the Charities and Trustee Investment (Scotland) Act 2005 and regulation 8 of the Charities Accounts (Scotland) Regulations 2006 (as amended).

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditors' responsibilities for the audit of the group and parent charity financial statements section of our report. We are independent of the group in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Conclusions relating to going concern

In auditing the financial statements, we have concluded that the trustees' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the Charity's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

Our responsibilities and the responsibilities of the trustees with respect to going concern are described in the relevant sections of this report.

Other information

The other information comprises the information included in the annual report other than the financial statements and our auditor's report thereon. The Trustees are responsible for the other information contained within the annual report. Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon. Our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the course of the audit, or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether this gives rise to a material misstatement in the financial statements themselves. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

The Association for Science Education

INDEPENDENT AUDITORS' REPORT TO THE TRUSTEES OF THE ASSOCIATION FOR SCIENCE EDUCATION

Matters on which we are required to report by exception

We have nothing to report in respect of the following matters in relation to which the Charities (Accounts and Reports) Regulations 2008 and the Charities Accounts (Scotland) Regulations 2006 (as amended) require us to report to you if, in our opinion:

- the information given in the Trustees' Report is inconsistent in any material respect with the financial statements; or
- sufficient and proper accounting records have not been kept; or
- the financial statements are not in agreement with the accounting records; or
- we have not received all the information and explanations we require for our audit.

Responsibilities of trustees

As explained more fully in the Statement of Trustees' Responsibilities, the trustees are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the trustees determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error. In preparing the financial statements, the trustees are responsible for assessing the group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the trustees either intend to cease operations, or have no realistic alternative but to do so.

Auditors' responsibilities for the audit of the financial statements

We have been appointed as auditors under section 144 of The Charities Act 2011 and section 44(1)(c) of the Charities and Trustee Investment (Scotland) Act 2005 and report in accordance with the Acts and relevant regulations made or having effect thereunder.

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud, is detailed below.

As part of our planning process:

- We enquired of management the systems and controls the Charity has in place, the areas of the financial statements that are most susceptible to the risk of irregularities and fraud, and whether there was any known, suspected or alleged fraud. The Charity did not inform us of any known, suspected or alleged fraud.
- We obtained an understanding of the legal and regulatory frameworks applicable to the Charity. We determined that the following were most relevant: the Charity SORP, FRS 102, Charities Act 2011, the Charities and Trustee Investment (Scotland) Act 2005 and the Charities Accounts (Scotland) Regulations 2006.
- We considered the incentives and opportunities that exist in the Charity, including the extent of management bias, which present a potential for irregularities and fraud to be perpetuated, and tailored our risk assessment accordingly.
- Using our knowledge of the Charity, together with the discussions held with the Charity at the planning stage, we formed a conclusion on the risk of misstatement due to irregularities including fraud and tailored our procedures according to this risk assessment.

The Association for Science Education

INDEPENDENT AUDITORS' REPORT TO THE TRUSTEES OF THE ASSOCIATION FOR SCIENCE EDUCATION

The key procedures we undertook to detect irregularities including fraud during the course of the audit included:

- Identifying and testing journal entries and the overall accounting records, in particular those that were significant and unusual.
- Reviewing the financial statement disclosures and determining whether accounting policies have been appropriately applied.
- Assessing the extent of compliance, or lack of, with the relevant laws and regulations.
- Assessing the validity of the classification of income, expenditure, assets and liabilities between unrestricted and restricted funds.
- Documenting and verifying all significant related party balances and transactions.
- Reviewing documentation such as board minutes for discussions of irregularities including fraud.

Owing to the inherent limitations of an audit, there is an unavoidable risk that we may not have detected some material misstatements in the financial statements even though we have properly planned and performed our audit in accordance with auditing standards. The primary responsibility for the prevention and detection of irregularities and fraud rests with the trustees of the Charity.

A further description of our responsibilities is available on the Financial Reporting Council's website at: frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

Use of our report

This report is made solely to the charity's trustees, as a body, in accordance with part 4 of the Charities (Accounts and Reports) Regulations 2008 and regulation 10 of the Charities Accounts (Scotland) Regulations 2006. Our audit work has been undertaken so that we might state to the charity's trustees those matters we are required to state to them in an auditors' report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the charity and the charity's trustees as a body, for our audit work, for this report, or for the opinions we have formed.

HW Fisher LLP

HW Fisher LLP
Chartered Accountants
Statutory Auditor

Acre House
11-15 William Road
London
NW1 3ER

Date..... *21 March 2022*

HW Fisher LLP is eligible for appointment as auditors of the charity by virtue of its eligibility for appointment as auditors of a company under of section 1212 of the Companies Act 2006.

The Association for Science Education

Consolidated Statement of Financial Activities (incorporating an income and expenditure account) For the year ended 31 July 2021

		Unrestricted	Restricted	2021 Total	2020 Total see Note 2a
	Note	£	£	£	£
Income from:					
Donations and legacies	3	215,029	-	215,029	1,887
Charitable activities	4	738,222	57,098	795,320	1,017,681
<i>Other income</i>					
Government Grants	5	32,275	-	32,275	13,685
<i>Other trading activities</i>					
Sponsorship and advertising	6	52,509	-	52,509	55,925
Investments	7	20	-	20	472
Total income		1,038,055	57,098	1,095,153	1,089,650
Expenditure on:					
<i>Raising funds:</i>					
Voluntary income	8a/b	-	-	-	50,109
Primary purpose trading activities	8a/b	82,519	-	82,519	28,604
Charitable activities	8a/b	809,946	110,692	920,638	1,106,942
Total expenditure		892,465	110,692	1,003,157	1,185,655
Net income / (expenditure) for the year and net movement in funds	9	145,590	(53,594)	91,996	(96,005)
Reconciliation of funds:					
Total funds brought forward at 1 August		60,835	79,726	140,561	236,566
Total funds carried forward at 31 July		206,425	26,132	232,557	140,561

All of the above results are derived from continuing activities.

There were no other recognised gains or losses other than those stated above.

The attached notes form part of these financial statements.

The Association for Science Education

Charity Statement of Financial Activities (incorporating an income and expenditure account) For the year ended 31 July 2021

		Unrestricted	Restricted	2021 Total	2020 Total see Note 2b
	Note	£	£	£	£
Income from:					
Donations and legacies	3	215,029	-	215,029	1,887
Charitable activities	4	672,383	57,098	729,481	971,821
<i>Other income</i>					
Government Grants	5	32,275	-	32,275	3,685
<i>Other trading activities</i>					
Sponsorship and advertising	6	52,509	-	52,509	55,925
Investments	7	20	-	20	472
Total income		972,216	57,098	1,029,314	1,033,790
Expenditure on:					
<i>Raising funds:</i>					
Voluntary income	8	-	-	-	50,109
Primary purpose trading activities	8	82,519	-	82,519	28,604
Charitable activities	8	732,629	110,692	843,321	1,033,902
Total expenditure		815,148	110,692	925,840	1,112,615
Net income / (expenditure) for the year and net movement in funds	9	157,068	(53,594)	103,474	(78,825)
Reconciliation of funds:					
Total funds brought forward at 1 August		103,523	79,726	183,249	262,074
Total funds carried forward at 31 July		260,591	26,132	286,723	183,249

All of the above results are derived from continuing activities.

There were no other recognised gains or losses other than those stated above.

The attached notes form part of these financial statements.

The Association for Science Education

Consolidated and Charity Balance Sheets As at 31 July 2021

	Note	Group 2021 £	Group 2020 £	Charity 2021 £	Charity 2020 £
Fixed assets:					
Tangible assets	12	-	-	-	-
Intangible Assets	12	30,000	60,000	30,000	60,000
Investment in Subsidiary	13	-	-	-	-
		<u>30,000</u>	<u>60,000</u>	<u>30,000</u>	<u>60,000</u>
Current assets:					
Stock	14	31,933	18,623	26,057	1,921
Debtors	15	163,685	139,512	292,506	212,341
Cash at bank and in hand		<u>389,455</u>	<u>220,335</u>	<u>318,176</u>	<u>195,902</u>
		585,073	378,470	636,739	410,164
Liabilities:					
Creditors: amounts falling due within one year	16	<u>(382,516)</u>	<u>(297,909)</u>	<u>(380,016)</u>	<u>(286,915)</u>
Net current assets		<u>202,557</u>	<u>80,561</u>	<u>256,723</u>	<u>123,249</u>
Total net assets		<u>232,557</u>	<u>140,561</u>	<u>286,723</u>	<u>183,249</u>
Funds					
	17, 18, 19				
Restricted funds		26,132	79,726	26,132	79,726
Unrestricted funds:					
General funds		<u>206,424</u>	<u>60,835</u>	<u>260,591</u>	<u>103,523</u>
Total funds		<u>232,557</u>	<u>140,561</u>	<u>286,723</u>	<u>183,249</u>

Approved by the trustees on 19th March 2022



Alison Redmore
Trustee

The attached notes form part of the financial statements.

The Association for Science Education

Consolidated statement of cash flows For the year ended 31 July 2021

	Note	2021 £	2021 £	2020 £	2020 £
Cash flows from operating activities:					
Net cash provided by / (used in) operating activities	20		169,140		(70,449)
Cash flows from investing activities:					
Interest receivable		(20)		(472)	
Cash provided by / (used in) investing activities			(20)		(472)
Change in cash and cash equivalents in the year			169,120		(70,921)
Cash and cash equivalents at the beginning of the year			220,335		291,256
Cash and cash equivalents at the end of the year	20		389,455		220,335

The Association for Science Education

Notes to the financial statements for the year ended 31 July 2021

I Accounting policies

a) Basis of preparation

The financial statements have been prepared in accordance with the charity's Rules of Association, the Charities Act 2011, the Charities and Trustee Investment (Scotland) Act 2005, the Charities Accounts (Scotland) Regulations 2006 (as amended) and "Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) (effective 1 January 2019)".

The charitable company and group meet the definition of a public benefit entity under FRS 102. Assets and liabilities are initially recognised at historical cost or transaction value unless otherwise stated in the relevant accounting policy or note.

b) Going concern

We have set out in the Trustees' Report a review of financial performance and the charity's reserves position. Unrestricted reserves at the end of July 2021 are closer to our target reserves position and further work is being done to improve the position.

In common with other membership organisations, the Association for Science Education relies upon membership subscriptions, publishing income and events for a substantial part of its annual income. Taking a prudent view of this income, the trustees have prepared cash flow projections for the period to February 2023, which show that, the charity would be able to continue in operation for that period. Accordingly, the trustees consider that there are no material uncertainties about the charity's or the group's ability to continue as a going concern for the foreseeable future. Thus the trustees continue to adopt the going concern basis of accounting in preparing the financial statements.

c) Basis of consolidation

These financial statements consolidate the results of the charity and its wholly-owned subsidiary Millgate House Education Limited on a line by line basis. Transactions and balances between the charity and its subsidiary have been eliminated from the consolidated financial statements. Balances between the companies are disclosed in the notes of the charity's balance sheet.

d) Income

Incoming resources are recognised in the period in which the group is entitled to receive them and the amount can be measured with reasonable certainty and it is probable that income will be received. Income is deferred only when the group has to fulfil conditions before becoming entitled to it or where the donor or funder has specified that the income is to be expended in a future accounting period.

Grants from government and Trusts and Foundations have been included as income from activities in furtherance of the group's objectives where these amount to a contract for services, but as donations where the money is given in response to an appeal or with greater freedom of use, for example monies for core funding.

Investment income is accounted for on an accruals basis.

e) Expenditure

Expenditure is included in the statement of financial activities when incurred and includes attributable VAT which cannot be recovered.

Expenditure comprises the following:

- a. Expenditure on charitable activities comprises monies spent on the charity's primary charitable purposes as described in the Trustees' report. It also includes appropriately apportioned salary costs and support costs (see note 8).
- b. The costs of raising funds comprises the expenditure incurred in primary purpose trading activities by the charity and consists of salaries, direct costs and overheads.
- c. Support costs represent indirect charitable expenditure. In order to carry out the primary purposes of the group it is necessary to provide support in the form of financial procedures, provision of office services and equipment and a suitable working environment. Salary costs have been allocated based on staff time.

The Association for Science Education

Notes to the financial statements for the year ended 31 July 2021

I. Accounting policies (continued)

f) Fixed assets

Tangible

Assets costing in excess of £1,000 and with an expected useful life exceeding one year are capitalised.

Depreciation is charged on these assets at the following annual rates in order to write them off over their estimated useful

Computer and other equipment/software	25% straight line
---------------------------------------	-------------------

Intangible

Amortisation is calculated to write off the cost of the website and CRM system by equal instalments over four years.

g) Investments

Investment in the subsidiary company is stated in the charity at cost.

h) Stocks

Stocks are valued at lower of cost and net realisable value after making due allowance for obsolete and slow-moving items.

Cost includes all expenditure in bringing stock to their present location and condition.

Net realisable value is based on estimated selling price less the anticipated costs to sell.

i) Leased assets

Rentals applicable to operating leases where substantially all of the benefits and risks of ownership remain with the lessor are charged to the statement of financial activities on a straight line basis over the life of the lease.

Assets purchased under hire purchase agreements are capitalised as fixed assets. Obligations under such agreements are included in creditors. Charges are written off to the SOFA over the period of the agreement so as to produce a constant periodic rate of charge.

j) Fund accounting

The unrestricted fund comprises those monies which may be used towards meeting the charitable objectives of the group and which may be applied at the discretion of the Trustees.

The restricted funds are monies granted for, and their use restricted to, a specific purpose, or donations subject to donor-imposed conditions.

k) Pensions

The Association operates a defined contribution group personal pension for employees. The funds are managed by Scottish Widows and contributions are paid monthly by direct debit and charged to the Statement of Financial Activities (SOFA) as incurred.

l) Financial Instruments

The Charity has elected to apply the provisions of Section 11 'Basic Financial Instruments' and Section 12 'Other Financial Instruments Issues' of FRS 102 to all of its financial instruments. The Charity only has financial assets and financial liabilities of a kind that qualify as basic financial instruments. Basic financial instruments are recognised as the amount payable or receivable when the instrument is first recognised together with any subsequent transaction costs but modified in respect of trade debtors for an assessment of potential bad debt.

m) Critical Accounting estimates and judgements

In the application of the Charity's accounting policies, the Trustees are required to make judgements, estimates and assumptions about the carrying amount of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates. The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised where the revision affects only that period, or the period of the revision and future periods where the revision affects both current and future periods. The Trustees believe there are no critical estimates or judgements relevant to the financial statements.

The Association for Science Education

Notes to the financial statements for the year ended 31 July 2021

2a Detailed comparatives for the consolidated statement of financial activities

	2020 Unrestricted £	2020 Restricted £	2020 Total £
Income from:			
Donations and legacies	1,887	-	1,887
Charitable activities	831,334	186,347	1,017,681
<i>Other income</i>			
Government Grants	13,685	-	13,685
<i>Other trading activities</i>			
Sponsorship and advertising	55,925	-	55,925
Investments	472	-	472
Total income	903,303	186,347	1,089,650
Expenditure on:			
<i>Raising funds:</i>			
Voluntary income	50,109	-	50,109
Trading activities	28,604	-	28,604
Charitable activities	964,621	142,321	1,106,942
Total expenditure	1,043,334	142,321	1,185,655
Net income / (expenditure) for the year	(140,031)	44,026	(96,005)
Transfers between funds	(25,881)	25,881	-
Net movement in funds	(165,912)	69,907	(96,005)
Reconciliation of funds:			
Total funds brought forward at 1 August	226,747	9,819	236,566
Total funds carried forward at 31 July	60,835	79,726	140,561

The Association for Science Education

Notes to the financial statements for the year ended 31 July 2021

2b Detailed comparatives for the Charity statement of financial activities

	2020 Unrestricted £	2020 Restricted £	2020 Total £
Income from:			
Donations and legacies	1,887	-	1,887
Charitable activities	785,474	186,347	971,821
<i>Other income</i>			
Government Grants	3,685	-	3,685
<i>Other trading activities</i>			
Sponsorship and advertising	55,925	-	55,925
Investments	472	-	472
Total income	847,443	186,347	1,033,790
Expenditure on:			
<i>Raising funds:</i>			
Voluntary income	50,109	-	50,109
Trading activities	28,604	-	28,604
Charitable activities	891,581	142,321	1,033,902
Total expenditure	970,294	142,321	1,112,615
Net income / (expenditure) for the year	(122,851)	44,026	(78,825)
Transfers between funds	(25,881)	25,881	-
Net movement in funds	(148,732)	69,907	(78,825)
Reconciliation of funds:			
Total funds brought forward at 1 August	252,255	9,819	262,074
Total funds carried forward at 31 July	103,523	79,726	183,249

The Association for Science Education

Notes to the financial statements for the year ended 31 July 2021

3 Income from donations and legacies

	2021	2020
	Unrestricted	Unrestricted
	£	£
Individual donations	1,696	1,887
Legacies	213,333	-
	215,029	1,887

4 Income from charitable activities

	2021	2020
	Total	Total
	£	£
<i>Unrestricted income</i>		
Member subscriptions	418,728	439,502
Sales of publications and journals	177,303	157,928
Conference and workshop income	97,049	198,982
Income from sponsored projects	45,142	34,922
	738,222	831,334
<i>Restricted Income</i>		
Income from sponsored projects	57,098	186,347
	795,320	1,017,681

Included in £795,320 is £65,839 (2020: £45,860) relating to the subsidiary company. The charity only total is £729,481 (2020: £971,821).

5 Government grants

The group received £32,275 (2020: £13,685) from the government's Coronavirus Job Retention Scheme in the year. Included in the £32,275 is £nil (2020: £10,000) relating to the subsidiary company.

6 Income from other trading activities

	2021	2020
	Unrestricted	Unrestricted
	£	£
Advertising and sponsorship	52,509	55,925
	52,509	55,925

Income is from journal and conference advertising and sponsorship and is all primary purpose trading.

7 Investments

	2021	2020
	Unrestricted	Unrestricted
	£	£
Bank Interest	20	472
	20	472

The Association for Science Education

Notes to the financial statements for the year ended 31 July 2021

8a Analysis of expenditure year ended 31 July 2021

	Staff costs £	Other costs £	2021 Total £
<i>Raising funds</i>			
Primary purpose trading activities	82,519	-	82,519
<i>Charitable Activities:</i>			
<i>the promotion and improvement of the teaching of science:</i>			
Members registration and services	36,262	26,096	62,358
Book sales	61,893	27,089	88,982
Journal expenditure	44,377	126,268	170,645
Conferences and other CPD	64,695	25,122	89,817
Regional expenses	80,981	399	81,380
Advocacy & other projects	42,241	6,215	48,456
Support costs	67,400	163,144	230,544
Governance costs	25,027	12,737	37,764
Restricted project expenditure (see note 19 and 19b)	69,431	41,261	110,692
Total expenditure 2021	574,826	428,331	1,003,157
Restricted expenditure	69,431	41,261	110,692
Unrestricted expenditure	505,395	387,070	892,465
Total expenditure 2021	574,826	428,331	1,003,157

8b Analysis of expenditure year ended 31 July 2020

	Staff costs £	Other costs £	2020 Total £
<i>Raising funds</i>			
Voluntary income	50,109	-	50,109
Primary purpose trading activities	28,604	-	28,604
<i>Charitable Activities:</i>			
<i>the promotion and improvement of the teaching of science:</i>			
Members registration and services	42,353	19,789	62,142
Book sales	62,887	47,687	110,574
Journal expenditure	45,384	152,861	198,245
Conferences and other CPD	79,767	109,539	189,306
Regional expenses	76,281	722	77,003
Advocacy & other projects	46,795	-	46,795
Support costs	60,318	172,868	233,186
Governance costs	21,219	26,150	47,369
Restricted project expenditure (see note 19 and 19b)	50,090	92,231	142,321
Total expenditure 2021	563,808	621,847	1,185,655
Restricted expenditure	50,090	92,231	142,321
Unrestricted expenditure	513,718	529,616	1,043,334
Total expenditure 2021	563,808	621,847	1,185,655

The Association for Science Education

Notes to the financial statements for the year ended 31 July 2021

9 Net income / (expenditure) for the year

This is stated after charging / (crediting):	2021	2020
	£	£
Depreciation	-	644
Amortisation	30,000	30,000
Payments under operating leases	2,096	2,096
Auditor's remuneration:		
Audit fees	12,737	9,818

10 Analysis of staff costs, trustee remuneration and expenses, and the cost of key management personnel

Staff costs were as follows:	2021	2020
	£	£
Salaries and wages	510,774	499,532
Social security costs	32,428	33,307
Employer's contribution to defined contribution pension schemes	31,624	30,969
	574,826	563,808

The following number of employees received employee benefits (excluding employer pension) during the year between:

	2021	2020
	No.	No.
£60,001 -£70,000	1	-

The total employee benefits including pension contributions of the key management personnel were £61,816 (2020: £57,101).

Trustees were reimbursed expenses during the year for travel, accommodation and subsistence costs totalling £nil (2020: £4,496).

No Trustee received remuneration or benefits as a trustee however the following trustees received remuneration for the following services provided to the charity: Peter Robinson £2,300 (2020: £3,670) for editing the School Science website and Green Tick award consultancy, Bryan Berry £3,046 (2020: £nil) for CPD delivery, Richard Needham £1,600 (2020: £nil) for project consultancy, Margaret Fleming £600 (2020: £nil) for Green Tick award consultancy and Simon Quinnell £4,000 (2020: £1,700) for CPD delivery. In addition Leigh Hoath received payments totalling £5,000 (2020: £5,700) for editing the Primary Science Journal.

Remuneration to trustees for services provided to the charity were paid under the provisions in Section 5 of the Association's Royal Charter.

Staff numbers

The average number of employees (head count based on number of staff employed) during the year was as follows:

	2021	2020
	No.	No.
Millgate House Education employees	2	2
The Association for Science Education employees	25	24
	27	26

11 Taxation

The charitable company is exempt from corporation tax as any of its non-primary purpose trading income is below the small trading limit allowable for charities.

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Notes to the financial statements for the year ended 31 July 2021

12 Group and Charity Fixed assets	Tangible	Intangible
	equipment	Website and CRM
	£	£
Cost		
At the start of the year	33,938	120,000
At the end of the year	33,938	120,000
Depreciation		
At the start of the year	33,938	60,000
Charge for the year	-	30,000
At the end of the year	33,938	90,000
Net book value		
At the start of the year	-	60,000
At the end of the year	-	30,000

13 Investments

Millgate House Education Limited

On 1 September 2017 the Association for Science Education acquired Millgate House Education Limited, a company incorporated in the United Kingdom and limited by guarantee. Its results have been consolidated in these financial statements. Millgate House Education is considered by the Trustees of the charity to be undertaking primary purpose trading, namely selling science publications.

The registered office of Millgate House Education Limited is College Lane, Hatfield, Hertfordshire, AL10 9AA.

14 Stock	Group	Group	Charity	Charity
	2021	2020	2021	2020
	£	£	£	£
Publications for resale	31,933	18,623	26,057	1,921
	31,933	18,623	26,057	1,921

The Association for Science Education

Notes to the financial statements for the year ended 31 July 2021

15 Debtors	Group	Group	Charity	Charity
	2021	2020	2021	2020
	£	£	£	£
Due within one year				
Trade debtors	37,278	74,495	28,973	41,624
Amount due from subsidiary	-	-	137,126	105,700
Other debtors	5,384	21,332	5,384	21,332
Prepayments and accrued income	121,023	43,685	121,023	43,685
	163,685	139,512	292,506	212,341

16 Creditors: amounts falling due within one year	Group	Group	Charity	Charity
	2021	2020	2021	2020
	£	£	£	£
Trade creditors	56,283	43,209	53,783	32,215
Taxation and social security	19,410	10,449	19,410	10,449
Accruals	100,690	63,496	100,690	63,496
Member subscriptions in advance	185,312	159,851	185,312	159,851
Journal subscriptions in advance	20,821	20,904	20,821	20,904
Finance lease repayments	-	-	-	-
	382,516	297,909	380,016	286,915

17 Analysis of net assets between funds - Group	Group	Group	Group
	Unrestricted	Restricted	Total funds
	£	£	£
Fixed assets	30,000	-	30,000
Current assets	558,941	26,132	585,073
Creditors due within one year	(382,516)	-	(382,516)
Net assets at the end of the year	206,425	26,132	232,557

Analysis of net assets between funds - Charity	Charity	Charity	Charity
	Unrestricted	Restricted	Total funds
	£	£	£
Fixed assets	30,000	-	30,000
Current assets	610,607	26,132	636,739
Creditors due within one year	(380,016)	-	(380,016)
Net assets at the end of the year	260,591	26,132	286,723

The Association for Science Education

Notes to the financial statements for the year ended 31 July 2021

18 Analysis of net assets between funds - prior year - Group

	Group Unrestricted	Group Restricted	Group Total funds
	£	£	£
Fixed assets	60,000	-	60,000
Current assets	298,744	79,726	378,470
Creditors due within one year	(297,909)	-	(297,909)
Net assets at the end of the year	60,835	79,726	140,561

Analysis of net assets between funds - prior year - Charity

	Charity Unrestricted	Charity Restricted	Charity Total funds
	£	£	£
Fixed assets	60,000	-	60,000
Current assets	330,438	79,726	410,164
Creditors due within one year	(286,915)	-	(286,915)
Net assets at the end of the year	103,523	79,726	183,249

19a Movements in restricted funds - Group and Charity

	At the start of the year £	Incoming resources £	Outgoing resources £	At the end of the year £
Restricted funds:				
Alexander Memorial	9,819	-	-	9,819
Science Teacher SOS	8,916	23,500	(31,029)	1,387
Good practical science benchmarks 1 & 2	681	26,843	(27,524)	-
Key Moments in history: a fossil hunter's story	47,755	1,755	(38,112)	11,398
Teaching and Leadership Innovation Fund Round 2 (TLIF 2)	2,120	-	(2,120)	-
Science Education for Action and Engagement towards Sustainability (SEAS)	9,154	-	(4,932)	4,222
Science on stage UK	1,281	-	-	1,281
Best Steps	-	5,000	(5,000)	-
Inclusion in Schools	-	-	(1,975)	(1,975)
Total restricted funds	79,726	57,098	(110,692)	26,132

The Association for Science Education

Notes to the financial statements for the year ended 31 July 2021

19b Movements in restricted funds - prior year - Group and Charity

	At the start of the year £	Incoming resources & gains £	Outgoing resources & losses £	Transfers £	At the end of the year (restated) £
Restricted funds:					
Alexander Memorial	9,819	-	-	-	9,819
Science Teacher SOS	-	30,000	(21,084)	-	8,916
Good practical science benchmarks 1 & 2	-	32,800	(32,119)	-	681
Key Moments in history: a fossil hunter's story	-	84,450	(66,428)	29,733	47,755
Teaching and Leadership Innovation Fund Round 2 (TLIF 2)	-	5,510	(4,164)	774	2,120
I SEE (Inclusive STEM Education to Enhance the capacity to aspire and imagine future Science Education for Action and Engagement towards Sustainability (SEAS)	-	6,622	(1,996)	(4,626)	-
Science on stage UK	-	23,015	(13,861)	-	9,154
	-	3,950	(2,669)	-	1,281
Total restricted funds	9,819	186,347	(142,321)	25,881	79,726

The transfers between funds in the prior year are to adjust for income and expenditure now deemed to be allocated to restricted rather than unrestricted funds.

Purposes of restricted funds

Alexander Memorial

The Alexander Memorial Fund represents a legacy of £10,000 from the late Professor and Mrs Alexander which the ASE has been requested to administer for a memorial award until the funds expire. No prizes were awarded in 2020/21.

Science Teacher SOS

Funding to pilot an end-use and effectiveness study of the Science Teacher SOS framework, more information is provided in the Trustees' Report.

Good practical science benchmarks 1 & 2

Funding to enable the ASE to support implementation of Benchmarks 1 and 2 of the Gatsby Charitable Foundation's Good Practical Science Report, which provides a framework for good practical science in schools and colleges. Further information is available on both the ASE and the Gatsby Charitable Foundation's websites and in the Trustees' Report.

Key Moments in history: a fossil hunter's story

This project is producing teaching resources and professional learning strategies for primary teachers of children aged 9-11 years to support their knowledge and understanding of the big ideas of evolution, the nature of scientific enquiry and the strengths and limitations of scientific knowledge. The project is supported by the Templeton World Charity Foundation and more information is given in the Trustees' Report.

Teaching and Leadership Innovation Fund Round 2 (TLIF 2)

This project provides free CPD for primary and secondary teachers of geography and science, to strengthen their subject knowledge and build confidence and capability in curriculum planning and teaching. It is funded by the Department for Education TLIF and run by the ASE in partnership with the Geographical Association.

Science Education for Action and Engagement towards Sustainability (SEAS)

ASE is a partner organisation for this EU Horizon 2020 funded project which is led by the University of Oslo. More information is provided in the Trustees' Report.

The Association for Science Education

Notes to the financial statements for the year ended 31 July 2021

Purposes of restricted funds (continued)

Science on stage UK

Funding was received from the Reece Foundation and an individual donor to support UK involvement in Science on Stage.

Best Steps

Funding has been received from the Horners Company Charity to produce a brand new BEST STEPS module to accompany existing BEST resources. The resources include CPD videos and classroom resources aimed at identifying gaps in students' knowledge.

Inclusion in Schools

ASE is subcontracted by the Institute of Physics to deliver the Inclusion in Schools project on behalf of the DfE from 1 August 2021, although some costs were incurred in advance of the start date. The primary purpose of this project is to significantly increase the number of students from under-represented groups progressing to physics-based routes (A-level physics, vocational or technical) post

20 Reconciliation of net income / (expenditure) to net cash flow from operating activities

	2021	2020
	£	£
Net income / (expenditure) for the reporting period	91,996	(96,005)
(as per the consolidated statement of financial activities)		
Interest received	20	472
Depreciation and amortisation	30,000	30,644
(Increase) in stock	(13,310)	(16,702)
(Increase)/ decrease in debtors	(24,173)	48,366
Increase/ (decrease) in creditors	84,607	(37,224)
Net cash provided by / (used in) operating activities	169,140	(70,449)

21 Analysis of changes in net debt

The charity had no debt during the year.

22 Operating lease commitments

Total future minimum lease payments under non-cancellable operating leases are as follows:

	Group		Charity	
	Property		Property	
	2021	2020	2021	2020
	£	£	£	£
1 year	2,096	2,096	2,096	2,096
2 - 5 years	7,028	7,480	7,028	7,480
After more than 5 years	-	1,644	-	1,644
	9,124	11,220	9,124	11,220

23 Legal status of the charity

The charity is a company established by Royal Charter and has no share capital.

The registered address of the charity is College Lane, Hatfield, AL10 9AA.

24 Related party transactions

There were no related party transactions other than payments to Trustees for services as detailed in note 10.