

Student-led STEM Clubs Handbook



STEM
CLUBS

"Taking part in STEM clubs helped me to not only develop my communication skills, but also the ability to present information in an accessible way to primary school children. The experience was very enjoyable, particularly running science experiments!"

Y12 Student Ambassador



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1 Why run a student-led STEM club?

The Benefits

It is increasingly recognised that giving students opportunities to act as ambassadors and mentors for STEM subjects outside of school can be of great benefit to the individual, their institution, and to the broader public. The mentoring student learns transferable employability skills, whilst primary school pupils meet enthusiastic role models who engage them in STEM subjects. A key benefit for the younger pupils is the opportunity to interact with young people close in age and better able to relate to them, whilst demonstrating how STEM subjects develop and knowledge broadens throughout their education.

Student Ambassador schemes help develop valuable skills that apply to other subjects, further education and future employment by providing opportunities to learn about time management, project organisation, teamwork, leadership and communication.

"This programme is brilliant - I recommend it to everyone. It is loved by learners, parents, staff and leadership alike. Once started it is so good it is hard to stop. This year we intend to work with over 40 Year 12 students supporting 12 local primary schools and three of our in-house STEM clubs"

H. Hammond, Science Director, Alexandra Park School (Science Club)

The handbook is designed to support after-school STEM Clubs at a host secondary school or off-site at a local primary school. Case studies on club formats have been included and can be used as a basis to devise the format that will work best for your set of circumstances. Information for Student Ambassadors has been included at the end of the hand book with suggested templates that can be used by a teacher or student.

"A brilliant idea! Great for transition to secondary school too."

Parent, Maths Club





2 How to run a student-led STEM club

Setting up the scheme

- ✓ gain support of senior leadership before setting up the scheme
- ✓ approach local primary schools to set up partner school
- ✓ discuss the scheme with your head of department and technicians so they are aware of any required involvement
- ✓ utilise the STEM Clubs Best Practice Handbook for helpful information and hints and tips from Club leaders: www.stem.org.uk/stem-clubs/support

Recruiting your Student Ambassadors

- Book a slot in assembly and set out the advantages of signing up to the scheme and the commitment required.
- Provide an application form – it is useful for the students to communicate why they are interested and what they would bring to the project. Include the dates of training sessions and the after-school clubs so that they can check their availability and commit to the whole programme.

“I have been blown away by the positive impact this project has had on our children.”

Mr James Wilshire, Headteacher of Muswell Hill Primary School (Science Club)

Arranging your training programme

- Students are required to attend a series of training sessions, delivered in school once a week by the lead teacher. Allow time for the training to take place before initial sessions with primary pupils, to ensure the students are fully prepared.

Week 1	Week 2	Week 3	Week 4	Week 5
<p>Introductions, overview of the scheme, timings, expectations.</p> <p>A student handbook is useful – a sample one is available on the Ogden Trust website Science Ambassador scheme: www.ogdentrust.com/resources/how-to-run-an-ambassador-scheme</p> <p>STEM Ambassador visit.</p>	<p>Safeguarding</p>	<p>Communication skills and classroom management</p>	<p>Preparing a session as a group including writing risk assessments</p>	<p>Session preparation in pairs</p>

3 Overview of a typical scheme



Planning the first term of club sessions

For busy teachers, a six-to-eight week model can work well for a student-led STEM Club programme as it can be completed in a half-term. The STEM Clubs Programme contains a number of age and ability differentiated themed activities designed to cover a half-term's worth of club sessions. The activities are free to download from the STEM Clubs website and provide a good starting point for club leaders and student ambassadors.

The themed activity sets can help student ambassadors understand the difference between the club leader role and the participation of pupils in an activity. Helping the student ambassador understand what is involved in an activity, in order to create and develop their own ideas for club sessions.

Suggested links for activity ideas:

- www.stem.org.uk/stem-clubs/featured-resources
- www.stem.org.uk/stem-clubs/resources
- www.stem.org.uk/esero/resources
- www.rigb.org/education/masterclasses
- www.ogdentrust.com/resources-cpd/resources
- <https://library.crestawards.org>
- www.raeng.org.uk/education/schools/teaching-and-learning-resources/activity-resources



Safeguarding

The lead teacher should always be present in the classroom and be actively involved in monitoring the activities and the behaviour of the younger pupils. The sixth form students should not be left alone at any time. It is essential that they have relevant safeguarding training for their own protection. Your designated safeguarding officer at school should be able to help you with this.



Launch and end club events

In order to raise the profile of STEM subjects it is great to involve parents and siblings by hosting either a launch event at the start of the scheme and/or a celebration event at the end.

A launch event is a good way of communicating to the parents how the club will operate and gives them the opportunity to ask any questions they may have about the logistics of the scheme. If you invite a guest speaker this also allows the older student ambassadors to meet their primary charges for the first time without the added pressure of running the session. An inspirational launch event really gets the scheme off to a great start for all concerned.

At the end of the scheme, invite parents to join you after the last session and present certificates to the pupils. This can be a great way of celebrating the success of all involved and is very useful to collect feedback from the parents.



STEM Ambassadors

STEM Ambassadors are a valuable resource with a vast knowledge of running school and club interventions. A STEM Ambassador would be able to help mentor students and provide a valuable insight, best practice, hints and tips and help generate ideas and opportunities for the students to consider.

STEM Ambassadors can help raise awareness of potential careers. You can find information on STEM Ambassadors and how to book one at:

www.stem.org.uk/stem-ambassadors

3 Overview of a typical scheme



Health and safety

If the STEM club takes place at a primary school the secondary lead teacher will need to carry out the appropriate risk assessment and complete the school/county paperwork for off-site visits.

Review and implement appropriate safety protocols to protect any unaccompanied student traveling to and from another school. It is advised that a risk assessment be carried out and suitable measures taken to ensure the safety of the students concerned.

Health and safety in the classroom is essential, especially when involving practical STEM demonstrations and activities. Problems can be avoided by careful planning, requiring the students to submit a risk assessment in advance of delivering any activities, and in conducting a dry run of any demonstrations well before any of the pupils or parents etc. are involved.

The CLEAPSS and SSERC websites are useful reference points. Check that your school's insurance covers these outreach activities.

- www.cleapss.org.uk
- www.sserc.org.uk

"As a Year 6 teacher it has been fantastic that I could send some of my pupils to attend the student-led STEM clubs. It feeds their curiosity of STEM subjects as well as giving them an insight into how these subjects operate at secondary school level. I saw a rise in their self-confidence after attending the clubs which then in turn had a positive impact on my STEM club activities back at school."

Y6 teacher



Planning sessions

In your training it is useful to work with the student ambassadors to prepare a club session together. Think ahead and prepare a trial activity session for the students. You can find useful information on starting a club and best practice advice from club leaders at: www.stem.org.uk/stem-clubs/support.

Select a suitable activity for the students to learn from and lead them through it from the perspective of the club leader starting with the aim of the activity and ending with the expected end result. Emphasise the importance of ordering materials and equipment in advance of any club activity, assessing how long the activity takes and making sure the students understand the science involved. It is hard to carry out a successful activity without the right equipment, knowing how to do the activity and the expected outcomes.

Provide a framework that the students can use to plan their club activities (a sample can be found in the useful documents section).



Enhance employability skills

Student led clubs are an ideal way to boost essential employability skills identified as Gatsby Benchmarks. The Skills Builder Framework is a good way to maximise students skill sets and is available as a free download from: www.skillsbuilder.org/framework. It is suitable for use in both secondary and primary schools.

The STEM Club will provide opportunities to enhance skills sets for both the Student Ambassadors and the pupils they engage with.



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Case study A

ESERO-UK Space Club – Chipping Campden School

✔ The school has run a variety of student-led STEM clubs over the past six years and the current model of the Space Club is easy to run and very popular with student ambassadors, primary children and their parents.

✔ The club takes place in our secondary school science lab on a weekly basis from 4:00-5:00pm.

Student ambassadors

After an assembly on the structure and benefits of Space Club, sixth form students apply to lead the scheme.

They follow a structured training programme at lunchtimes which includes a talk from the school's designated safeguarding officer and sessions on science communication and classroom management.

The students work in pairs to plan the practical sessions. Each pair takes the lead for a week with the other students acting as classroom assistants. They meet weekly for a briefing from the lead pair so that they are well prepared for the after-school session.

Primary students

The primary students are nominated by their teachers and information sheets detailing any medical issues, contact numbers, photo permission etc. are returned by the parents/ guardians. The parents/guardians are responsible for transporting the pupils to our secondary school.

✔ Get recognition for your school

Outreach projects like this can form part of your submission for the Space Education Quality Mark (SEQM). For further details refer to the ESERO-UK website: www.stem.org.uk/esero

Sample programme

Week 1 Launch event –
Family Stargazing evening

Week 2 Volcanoes & lava – 'Is there anyone out there?' ESERO-UK
Martian Volcanoes

Week 3 Astronaut's visor – Mission:
starlight
Mission: Starlight

Week 4 Investigating craters – 'Is there anyone out there?' ESERO-UK
Craters

Week 5 Designing a
parachute
Soft Landings

Week 6 Building a
telescope
Telescope

Week 7 Astronappy – British Science
Week primary resource Pack 2018
PLUS celebration event
Astronappy



Top tips

✔ Involve families

Our launch event aims to raise the profile of the scheme within the local and school community. Student ambassadors set up a series of activities in the school hall in the style of a science fair and the primary pupils, their parents and siblings participate in the hands-on activities.

This is followed by a short talk from a guest speaker and a stargazing session. It is worth having a backup plan in case of poor weather. Parents are invited to join the group for refreshments and presentation of certificates at the end of the last session.

The primary pupils complete eight activities during the cycle and can gain their CREST SuperStar Awards: www.crestawards.org/which-level. Certificates for both primary pupils and their student ambassadors are available from ESERO-UK (esero-uk@stem.org.uk).

✔ Apply for funding

The club can run relatively cheaply but we were grateful to receive funding from The Worshipful Company of Glassmakers, Glass in Society fund, which enabled us to buy some binoculars for stargazing, make and take telescope kits and to pay for the CREST submissions. Details of further funding opportunities can be found in the STEM Clubs handbook: www.stem.org.uk/stem-clubs/support.



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Case study B

Alcester Grammar School Royal Institution Maths for Physics Masterclass Series



- ✔ The school has run this student-led scheme in partnership with The Royal Institution for the past two years.
- ✔ The club takes place in the secondary school science lab on a weekly basis from 4:00-5:00pm.

Student Ambassadors

After an assembly on the structure and benefits of the scheme, sixth form students apply to lead the programme.

They attend a bespoke training session covering communication skills, classroom management and club activity planning which is led by experts from The Royal Institution at the local hub school. The student ambassadors consider presentation styles, try out some typical primary masterclass activities and role play teaching a particular maths skill.

Primary students

The primary pupils are nominated by their teachers and information sheets detailing any medical issues, contact numbers, photo permission etc. are returned by the parents/ guardians. The parents/guardians are responsible for transporting the pupils to our secondary school.

All of the paperwork is provided electronically by The Royal Institution.

Sample programme

- Week 1** Guest Speaker – Maths in a Suitcase: investigating reflection.

- Week 2** Sporty Speeds

- Week 3** Hooke's Law

- Week 4** Scaling the Solar System

- Week 5** Powers of Ten

- Week 6** Balancing Act – investigating moments

"Although I was nervous at first, I really enjoyed being involved in running the Maths Masterclasses. It gave me a boost to my confidence and helped my communication skills. My respect for my teachers increased too when I experienced what teaching was like!"

Y12 student



Benefits of working with the Royal Institution (Ri)

- ✓ The Ri Masterclass team can provide full support to set up your Masterclass series, including a bespoke sixth form training session and teaching resources. For further information contact: masterclasses@ri.ac.uk
- ✓ All the associated administration is provided as templates, e.g. invitation packs, risk assessment, child protection policies, etc).
- ✓ Schools have a high quality outreach offer for potential feeder primaries.
- ✓ The Ri Masterclass Programme is a well-respected brand.
- ✓ Sixth form student ambassadors receive lapel badges, leader's certificate and an invitation to a celebratory maths day at the Ri.
- ✓ Primary pupils receive certificates and an invitation to a celebration event at the Royal Institution, London.
- ✓ A collection of 'off the shelf' (OTS) Masterclass resources to support Student Ambassadors are available on the Ri website: www.rigb.org/education/masterclasses/masterclass-resources.

"A fantastic opportunity to attend The Royal Institution in London with my son. We loved the outstanding speakers who really captivated the audience."

Y6 parent



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Case study C

Alexandra Park School Science Club



✔ Alexandra Park School has been facilitating sixth form-led science clubs in local primary schools for the past four years, we are just beginning our fifth cycle. We started this brilliant scheme while being the lead school in an Ogden secondary partnership; it has been overwhelmingly successful for all parties.

✔ The club takes place in local primary schools with Year 12 student ambassadors during their Wednesday afternoon enrichment time. Sessions run from 2-3pm.

Student ambassadors

All our sixth form students have Wednesday afternoon enrichment time.

Year 13 students who were involved in the project in the previous academic year promote the scheme in the first assembly with the new Year 12 cohort in the autumn term. They give the Year 12 students an insight in to why the programme is so enjoyable and rewarding, including for its UCAS value and the transferable skills gained. They also let them know that it takes commitment and hard work. The Year 12s sign up either on paper or via an electronic enrichment options form.

We start with a four-week training programme running from mid-September until the autumn half-term break. The student ambassadors then lead 10-12 weekly, hour-long sessions in local primary schools, each primary is different and has varying needs so no two get identical provision.

Primary pupils

When initially setting up this programme, a connection to local primary school science leads is essential; to establish this, it is worth talking to both school leadership and the transition team to gain contacts in local primary schools for the initial few years. Contact is made in the summer term and primary colleagues confirm their interest in September. Over the years we have also worked with primaries where a Year 12 student has been really keen to run a club at their old school (fantastic continuity). When first running this programme, you may want to start small with the most local or well-known primaries; once word gets out plenty of others will be keen!

Typical activities

BSA Crest SuperStar activities are a great place to start – something like 'Fantastic Fingerprints' is light on equipment and a great one to joint plan as part of their training programme.

Other popular activities include:

- Making sherbet (a science week favourite especially for the primaries who invite parents in on science week)
- Slime (beware of the Borax rules – see CLEAPSS guidance)
- Designing rockets and launching water rockets
- Lava lamps
- Paper helicopters





Top tips

- ✔ Get the Year 12s to work as a team and rotate between a starter, main and plenary activity. Make sure it links to some real-world science and where possible have an investigation giving an 'er er' statement eg – longer winged helicopters fall slower or larger mass of citric acid = sourer sherbet. A plenary that gets student feedback eg post-it notes for 'one thing I have learnt' and 'one thing I want to find out' is also useful.
- ✔ Insist on seeing club activity plans and requisitions a set time in advance – we do not allow students to take equipment out unless we have seen an activity plan, risk assessment and their requisition by the Friday of the week before the session.
- ✔ Have additional time in the week when the student ambassadors see you – we have either Thursday or Friday lunchtime as a fixed time for them to come with club activity plans, etc. and practise the practical they will do the next week; if they need more time they can continue practising after school one day.
- ✔ Make sure the students evaluate each session – the more they reflect on their practice and the behaviour and engagement of the primary students the better the sessions get.
- ✔ Plan to finish in British Science Week – it gives a good closing point, especially if the primary is celebrating BSW in some way. It also gives the Year 12 students time to focus on the end of year exams.





7 Evaluating your scheme

- ✓ Encourage your student ambassadors to reflect on their practice so that the scheme can have high impact.
- ✓ If they are collecting evidence for a portfolio to submit for an accreditation it is essential that this aspect is carefully considered from the start.

Exit slips

A simple 'what went well' and 'even better if..' activity can be useful in the early stages to gauge the engagement of the primary pupils. Encourage the student ambassadors to do this individually too and discuss both sets of responses in your weekly support session.

Quick quizzes

Simple true/false or multi-choice quizzes can be used to monitor the understanding of the content. Many electronic versions are available for free (such as Kahoot or Plickers). Primary pupils respond well to working in teams on these activities too.

Pre- and post-club questionnaires

Use these to gauge the success of the scheme as a whole. Has the club led to a greater interest in STEM subjects or a greater awareness of STEM careers? Would the participants recommend the club to their friends?





7 Evaluating your scheme

Student Ambassador reflective journal

The supervising teacher should give feedback after each session. A sample Student Ambassador Evaluation Form is included in the useful documents section. The student should spend some time evaluating on a weekly basis; combining this with the supervisor feedback should be encouraged so the student can think of action points to improve on for next time.

“Taking part in a student-led STEM club is rewarding and inspiring for both the leading students and participants.”

Parent, Maths Club

STEM Clubs Impact Evaluation Toolkit

The STEM Clubs programme has an impact evaluation toolkit available to use, it includes a student survey and a spreadsheet which analyses the responses in easy to read graphs and comparison sheets. The toolkit advocates for the survey to be carried out at the start of the first club session and again in the last club session or activity to show the impact of the intervention on the pupils. The toolkit is best used when covering 6-8 weeks of club sessions. Student Ambassadors could use the toolkit to measure and evaluate their club sessions and include their findings in a post club review. The STEM Clubs toolkit is available as a free resource from STEMclubs@stem.org.uk





- ✔ STEM Club certificate (participant and leader versions). Contact: STEMclubs@stem.org.uk
- ✔ ESERO-UK STEM Club certificate (participant and leader versions). Contact: ESERO-UK@stem.org.uk
- ✔ BSA CREST Awards (SuperStar for primary pupils, Silver/Gold for Science Communication for secondary pupils)
- ✔ V-inspired Awards (volunteering awards): www.vinspired.com
- ✔ Youth STEMM Awards: www.ysawards.co.uk

Students can further enhance their learning by taking part in opportunities such as the Royal Institution Maths Masterclass.

"CREST has been rewarding and celebrating excellent project work in the UK for almost thirty years and we've had some amazingly creative projects over that time. What makes the student-led projects special is the way that the older students are developing their science and communication skills alongside helping younger ones in a really meaningful way."

Maria Rossini, Education Partnerships Manager for the British Science Association



9 Useful documents



1. Student
Ambassador
Information

2. Club
Activity Plan
Template

3. Risk
Assessment
Template

4. Student
Ambassador
Evaluation
Form

5. Letter
to Primary
School

6. Letter and
Booking Form
to Parents

Introduction

Our school is looking to build strong relationships with primary schools and we want to help support STEM subject learning for the pupils who will one day attend our school. We would like to run a series of STEM Club sessions in local primary schools which are led by our students. The aim is to support younger pupils understanding and knowledge of science and show them it can be fun and engaging as well as filled with useful facts that link to the world around them. We hope that with your support we can fully engage these pupils and provide them with opportunities to explore STEM subjects through practical experiments and design and build projects suitable for their age group.

Your commitment

Your role is to run six after school club sessions, each one lasting up to an hour in a local primary school. You will pull together a portfolio of STEM subject activities suitable for the age of the pupils you will be working with, working out what materials and components are needed, you will plan your club sessions and take the lead in running the club. You will have support from a member of staff at the primary school, but you are the Club Leader and it will be your responsibility to make sure the activities are safe, you have everything you need to run them and that you are comfortable in showing the pupils what to do before helping them to carry out the activities.

The benefits

By getting involved you will have opportunities to enhance important employability skills, boost your own STEM knowledge and have a lot of fun in the process.

Employability skills are transferable skill sets that you need throughout your education whether in school, during an apprenticeship or at university. They are essential skills to have when you are looking for employment. Many employers outline a set of skills they want from an employee and it is important for your career development that you can provide evidence that you understand what the skills are and have experience in using them. Running a STEM Club would be an ideal opportunity to boost these skills and provide strong evidence.

Employability skills are often broken down into eight essential skills which sit within the following four areas:

Communication

1. Listening – ability to listen and understand information
2. Presenting – vocal communication of information or ideas

Creative Problem solving

3. Problem Solving – ability to find a solution to a complex situation or challenge
4. Creativity – use of imagination and the generation of new ideas

Self-Management

5. Staying Positive – ability to use tactics to overcome setbacks and achieve goals
6. Aiming High – ability to set clear, tangible goals and devise a robust route to achieving them

Inter-personal

7. Leadership – supporting, encouraging and motivating others to achieve a shared goal
8. Teamwork – working cooperatively with others towards achieving a shared goal

You can find lots of useful careers information on the STEM Learning website: www.stem.org.uk/stem-careers. At the end of your involvement with the STEM Club you will receive a certificate for your record of achievements.

What you need to do

The first thing is to put yourself forward and agree to be involved. Talk it through with your teacher who will help mentor you through the process of running your own STEM Club. Then you need to start planning your club and what you will do in it.

Planning your club

- Work with your teacher to identify a suitable local primary school, consider: how far away is it; how easy it is for you to get to it; how much equipment you might need to carry.
- Send a letter to a school, introducing the concept, explaining what you want to do and how this will benefit the schools involved. You could contact them by email and telephone and follow up with them if you don't hear back.
- Set a date to visit your chosen school so you can build a relationship and work together to plan when and how the club will operate.
- Think about the type of activities you want to run and plan ahead – will you theme them, think up activities of your own or use ones already put together? Consider how much time you have for each activity and how much support will you have available in each session. Think about ordering materials in advance, how you will cover the cost of components and whether you will reward the pupils at the end of the club with certificates etc.
- Make sure activities, experiments etc. are suitable for the pupils you are working with and consider the health and safety aspects. Complete a risk assessment.
- Think about how long a club session will be and how long you need to set up and clear up, as this will affect how much time you need in the primary classroom.
- Think about the aim of the sessions: what do you want to achieve, what do you want the pupils to achieve and what does the primary school want to achieve. There are lots of ways to add extra benefits to your club, here are some suggestions:
 - invite a STEM Ambassador to a club session or ask one for advice, best practice, hints and tips on how to make the most of the club
 - what about a club challenge where teams devise the best solution to a problem you have set
 - you could set a task for the pupils to complete away from the club and ask them to involve their parents or siblings
 - ask the pupils to think of a simple experiment they would like to do and help them to plan it
 - could you include a session where parents join in and see what their children have been doing
 - can you help the pupils enhance their essential skills by including opportunities that support: listening; presenting; problem solving; creativity; staying positive; aiming high; leadership; teamwork
 - can you link your club sessions to an event or activity the school is involved with

Club session

Once you have fully planned your club, assessed the risks and built a relationship with the teachers you should start to think about each club session and what you need to do to make your club successful and that you are calm and confident in your delivery.

- Practice the activities and make them fun and engaging and note how long you take to demonstrate.
- Make sure the science behind the activity is correct and that you make it relevant for the pupils.
- Practice what you want to say and how you will say it. Be confident and remember to look at the pupils as you speak. Make a few notes to remind you but don't read from a script.
- Think of how the activity links to real world scenarios. Can you find a way to make it relevant to the pupils.
- Prepare any additional materials you may need, such as PowerPoint presentations or printed guidance notes for the pupils or for yourself.
- Think about what you will wear and the image you want to present to the pupils and school.
- Review the risk assessment and update it so you are prepared for any eventuality.
- Prepare each club session in advance. Put all of the materials, components and tools you need into a box or bag ready to be used. Make sure you have spare equipment with you.
- If any of your experiments are going to be messy then consider how you will protect the environment you are working in and how you will clean up afterwards.
- Check with the primary school for what you can and can't do in the club sessions and for guidance on how you should behave towards the pupils, what to do in an emergency or if you feel uncomfortable with the behaviour of the pupils.

Share best practice

Set aside some time to review what went well, what could be improved and share your learning curve with your teacher and fellow students working in other primary schools. Discuss hints and tips for running successful club sessions or activities and ask for advice or even help with a particular aspect of a project.

Club impact

Think about how you will monitor the impact of your club on the pupils, we suggest using the STEM Club impact toolkit, it includes a pupil evaluation form that you use in the first and last sessions of the club and a spreadsheet to enter the pupil's responses. The spreadsheet produces a series of graphs that will help demonstrate how effective the club has been.

Each week the link primary school teacher will provide you with feedback on your club session. The feedback is to help you make the most of your abilities, hone your essential skills and make sure the club sessions are engaging and run well.

Reward and recognition

Always have a positive attitude in every club session. Consider what went well, what could be improved and how you can overcome any issues. Look for ways to make it a positive experience for everyone involved and seek out opportunities to reward the pupils and yourself.

Here are some ideas for you to consider:

- Congratulate all pupils for excellent project work at the end of each session.
- Devise a reward system such as issuing stars or some other suitable mechanism.
- Create a certificate of achievement for each of the pupils, which you give in the last club session.
- Document your progress in the club: went well and what could be improved; new ideas for the following week; what employability skills you have demonstrated etc.
- Thank the pupils and the primary school for letting you run the club, highlight what you learned and how the experience will benefit you.
- Ask the primary school to provide you with a supporting letter or recommendation that you can use at interviews.
- Take pride in the certificate, reward or recognition you receive from your school for taking part.
- Reward yourself for a job well done.

Templates

The student-led handbook contains templates which you and your teacher can use. Please amend or create your own to suit your needs. Here are some helpful comments regarding the templates:

Club Activity Plan - use this template or devise your own with guidance from your teacher and the primary school teacher.

Practical Activity - Risk Assessment Template: Use the template or one provided by your teacher. Carry out research so that you understand the purpose of a risk assessment and how to complete one.

Student Ambassador Evaluation Form - the primary school teacher will use this form to provide you and your teacher with helpful feedback after each session.

Letter to Primary School - Decide who should send the letter, teacher or Student Ambassador? Draft your own version or edit this example.

Letter and Booking Form to Parents - Create a document that can be given to the primary pupils parents to raise awareness of the club. Keep it simple but attractive, professional and economical to print. Remember to include a basic booking or reservation form.

Club Activity Plan

Topic

Learning objectives

Resources needed

Points from last week

Starter

Main activity

Plenary

Extension activities

Key questions/ideas

A risk assessment must be completed and signed off for any practical activities

Practical activity – Risk Assessment Template

Name		Date		
Checked by lead teacher <input type="checkbox"/>		Date		
Checked by supervising teacher <input type="checkbox"/>		Date		
Hazard Hazardous substances, procedure or equipment	Risk What problems could arise?	Sources of information	Control measures How will you reduce the risk?	Emergency procedures What will you do if a problem arises?

For further information please consult the [CLEAPSS](#) or [SSERC](#) website

Student Ambassador Evaluation Form

Evaluating teacher's name/initials

Date

Please give the students your feedback by circling the appropriate level for each area DURING the STEM club session. (If you wish to highlight individual performances, for example if one student has excelled at a particular aspect or improved significantly, use the student's first names or initials next to the level indicator.)

Subject knowledge

1. Thoroughly researched and understood topic – could answer even the deepest questions.

2. Had researched the topic in some detail – could answer all but the hardest questions.

3. Adequate knowledge for this session – could answer most questions.

4. Needs to do a bit more preparation in terms of knowledge and understanding of topic.

Presentation

1. Clear stimulating presentation – shows awareness of prior learning and attempts to meet individuals' needs.

2. Clear interesting presentation which deals with questions.

3. Clear presentation, but presenter 'sticks to script' and does not develop points in response to questions.

4. Not clear enough presentation for pupils to follow easily and understand what they are being taught/asked to do.

Class management

1. Controls small groups well and is actively involved with individuals and groups.

2. Controls small groups through clear instructions and follow-up.

3. Control uncertain or deteriorating – instructions may need clarifying.

4. Not yet building satisfactory relationships – some frustration or upset.

Communication skills and quality of teaching

1. Uses clear and appropriate language, checks for understanding and modifies if needed.

2. Uses clear and appropriate language and repeats if necessary.

3. Uses clear language but assumes understanding.

4. Explanations too complicated, not clear enough and not well thought through.

Outcomes and experiences

1. All pupils well-motivated and happy for whole session.

2. Most pupils well-motivated and happy for most of session.

3. Some pupils were not motivated/bored or presenters ran out of material/activities.

4. Some pupils frustrated by poorly-planned or disorganised instructions/activity.

Additional comments

Letter to Primary School

'Insert School Name and Address'

'Insert Date'

Dear *'Insert Name'*

Free STEM Club provision for your School

Our school, *'insert name of your school'* is looking to build upon our relationship with your school and is committed to providing students with opportunities and experiences that will stimulate and enhance knowledge in STEM subjects and widen their future career prospects.

We are looking to work with local primary schools by offering after school STEM clubs for their pupils. The clubs will be led by confident and engaged *'insert year group'* students that are keen to support younger pupil's exploration of STEM subjects. The students are part of our schools Student STEM Ambassador Scheme.

The scheme helps our students to develop strong employability skills such as leadership, project management, communication, commitment and decision making. The aim is for the students to devise, schedule and deliver a series of six STEM Club activities suitable for the pupils they engage with. The students will take responsibility for the club and the activities, carrying out risk assessments, sourcing components and materials etc., the students will be supported by our school to help them develop the skills they need to run a successful club.

The primary school will be asked to have a member of their staff present during the club sessions to provide assistance if required. The main role of the staff member is to monitor pupil behaviour and to provide an evaluation of the student club leader and the club. We will ask the primary school to complete a simple evaluation form of the club provision which will be used by the student to develop their skills and to further enhance the STEM Club.

We would like to offer your school the opportunity to be involved. We will work closely with you to ensure the club meets expectation and that the student club leader provides a high quality, fun and engaging learning experience for your pupils. The clubs will run after school and each club session will last for *'insert time'*. Once you confirm you would like to be involved we can schedule when the club will start, the day it will run on and agree which year group and the maximum number of pupils who can attend.

If you would like to be involved or to know more about this opportunity then contact *'insert contact name and email or telephone number'*.

We very much hope that we can work with you on this project and strengthen the relationship between our schools and enhance the education of your pupils.

Yours sincerely

'insert name'

'insert job title or similar depending on who is sending the letter'

Letter and Booking Form to Parents

Dear Parents

Exciting New STEM Club provision for our School

We are delighted to offer our pupils a great opportunity to explore, science, technology, engineering and mathematics (STEM) through practical science experiments and design and build projects.

Working together in small teams the pupils will take part in practical problem solving activities that will boost their knowledge, enhance team working, inspire creativity and promote enjoyment in these key subject areas.

The STEM Club is part of a collaboration with our local secondary school and will be led by older students with support from our staff. The club will explore STEM subjects in fun and enjoyable experiments that support curricular learning and encourage children to try new ideas and discover scientific facts for themselves. The club is suitable for girls and boys of all abilities.

Places are limited so an early response is required, please return the tear off sheet to reception to reserve a place by the closing date.



Open to pupils in year group:	Number of places available:
Day of the week:	Time:
First club session:	Last club session:
Cost:	Closing date for reservations:

..... Cut here and return the bottom section to the school

STEM Club

I would like _____ in class _____
to take part in the STEM Club, please reserve a place, thank you.

Signed _____
Parent / Guardian Name _____
Date _____

Notes

Notes

Notes



STEM Learning is supported by a unique partnership of government, charitable trusts and employers. We are dedicated to raising young people's engagement and achievement in STEM subjects and careers.

For more information on the programmes and publications available from STEM Learning, visit our website www.stem.org.uk



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