

“I have thoroughly enjoyed running the Xplosives Club and seeing the enjoyment that the pupils have had. But on a more serious note, it has enabled the year 7 pupils to develop their team working skills and as well as increasing their interest in STEM subjects.”

Quick facts for teachers

What is a STEM Club?

Although they complement the curriculum, they are not designed to be about writing, tests, or exams. Activities may involve practical experiments, investigation, discussion and reflection. Most of all, they should be fun.

They can motivate and build confidence in young people who struggle with STEM subjects, and provide an extra outlet for children who already show aptitude and are interested in furthering their learning.

The aims of STEM Clubs are to:

- enrich, enhance and extend the secondary school curriculum
- improve attainment in, interactions with, and experiences of, the STEM subjects among pupils
- improve collaboration between schools and also between schools and industry
- encourage pupils to continue their education in STEM beyond GCSE and Diploma (or equivalent qualification) level.

The Xplosive Club

Bassaleg Comprehensive School

Newport

Introduction



Bassaleg Comprehensive School is a large thriving comprehensive school which welcomes pupils of all abilities. Learning in its widest form is at the heart of all that we do. Through our academic curriculum, the extensive range of enrichment activities and our pastoral support system, we aim to develop in pupils an enthusiasm for learning as well as the necessary skills to enable them to fulfil their academic potential to become good citizens as well as thoughtful and responsible individuals.

Bassaleg is an English medium, mixed 11-18 comprehensive school. The catchment area is that covered by the High Cross, Marshfield, Mount Pleasant, Pentrepoeth and Rogerstone Primary Schools. The number of pupils on roll is approximately 1,762, of whom 436 are in the Sixth Form.

Brief Summary

Biology teacher Patrick Pullen has set up STEM clubs for KS3 pupils allowing progression from a weekly fun club for Year 7s that develops and enthusiasm and enquiry about science, to a club that develops the appreciation of scientific enquiry through CREST Awards.

Links to Curriculum

The club supports the development of important learning outcomes and skills such as:

- Working independently, in small groups and teams
- Problem solving science based problems
- Take part in practicals and hands-on activities
- Independent learning
- Solving science-based problems



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What are STEM Ambassadors?

STEM Ambassadors are volunteers of all ages and from all backgrounds working in STEM related roles from apprentices to geologists and nuclear physicists to zoologists.

Have they received any training to work in schools?

All STEM Ambassadors are registered and have been checked by the CRB, and have each received an induction into working in the classroom.

What do they do?

STEM Ambassadors provide a wide variety of services such as careers talks, mentoring, helping with school events or clubs and facilitating workplace visits. Past activities have included: building rockets, farm walks, mock job interviews, rat dissection and speed dating!

How much does STEMNET charge?

Absolutely nothing.

Sounds great – how can I book my STEM Ambassador?

Simply log on to www.stemnet.org.uk to find your local contact.

Inspire young people in science, technology, engineering and maths (STEM)

Become a STEM Ambassador

For further information visit: www.stemnet.org.uk

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Details of Club activities

Patrick Pullen, biology teacher at Bassaleg Comprehensive School, has set up two Key Stage 3 STEM Clubs to encourage the pupils to get involved in science, have fun and develop and interest and an enthusiasm for the subject. The Xplosive Club is an extracurricular science club run during lunch every Thursday. This year is our most popular year yet with over 30 attendees each week. Here we attempt to uncover the burning questions such as “Can we make a hovercraft?”, “How many different coloured flames can we make?”, “Could science make a rubber glove explode?” and “Can we build a tower out of spaghetti and marshmallows?” We don’t always come to a firm conclusion, but we do have fun finding out!



Keen to enable the pupils to progress, Patrick set up a club for the pupils to carry out longer investigations and decided to run it as a CREST Club. Using one of the many and varied project ideas on the British Science Association CREST Awards web page, the pupils investigated the importance of cleanliness and hand washing.

There are four levels of CREST Award; Discovery, Bronze, Silver and Gold. Each Award provides an easy-to-run framework for curriculum enhancement for both student and teacher.

Most of the Awards can be completed as individual or team project and are an ideal as part of a STEM club programme. The 24 students completed their Bronze CREST Awards.

The clubs have been a great way to get the pupils excited about science and relate science to the real-world and developing team building, communication and problem solving.

Benefits and impact for students

The benefit and impact of the clubs are evident in the enthusiasm that the pupils display. The Xplosive club is very popular with the pupils and raises the profile of science in the school. The pupils enjoy the activities and that they would not carry out in normal science lessons.

The CREST Awards Club enables the pupils to carry out investigations and develop the following skills:

- Problem solving
- Independent learning
- Organisation
- Teamwork
- Communication.