

Bio-Club

Ysgol Uwchradd Tywyn

Gwynedd

“The Bio Club gives us the time and opportunity to pursue additional and interesting topics, and undertake activities which would not be practically possible with a full science class. The pupils attending have volunteered to be part of the Club so they are keen, they feel a sense of ownership, and are happy to give up their lunchtime to take part in the activities.”

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.

Introduction

Ysgol Uwchradd Tywyn is a naturally bilingual school for 11 to 16-year-old pupils. The school is located near the station in the seaside town of Tywyn, South Gwynedd. Around two-thirds of pupils come from the school’s catchment area, which includes Tywyn itself and the surrounding rural villages and outlying areas. The vast majority of pupils come from areas that are neither prosperous nor socially or economically disadvantaged.

Brief summary

Ysgol Uwchradd Tywyn’s Bio Club is aimed specifically at Year 8 pupils enabling them to spend more time on fun, biology-themed activities outside of the constraints of whole class teaching.

Links to Curriculum

- The basic structure and function of some cells, tissues, organs and organ systems and how they support vital life processes
- How and why food webs are affected by environmental factors, e.g. light intensity, water availability, temperature, and their fluctuations use a range of apparatus
- Using equipment safely and with skill, taking action to control the risks to themselves and others

Details of Club activities

The Bio Club was initiated by a former Biology teacher at the school who was back in the department supply teaching for a term. It was decided to set up the Club for year 8 pupils particularly as they had fewer science lessons in the timetable than other year groups in KS3 (only three lessons a week, compared with four in Years 7 and 9). Also, it was considered that



by Year 8 they have had a year of secondary science, are familiar with the basic scientific equipment, and many are keen to spend more time in the laboratory investigating and following up topics. Many pupils at the school start their fairly intensive Triple Science GCSE courses in Year 9, so Year 8 presents an ideal opportunity to introduce enrichment activities which may give them an interest, or even a career path, for life.

“You know, Miss, doing that rat dissection really helped me with the test! You know the question where we had to label the human digestive system? Well it’s just like inside a rat isn’t it!”

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

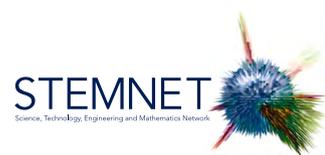
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The Club was held at lunchtimes once a week, and open to pupils of all abilities in Year 8. Although lunchtimes are short (only 40 minutes in total) this was preferred to an after school club session, due to difficulties with transport home in the late autumn term with its dark evenings and unpredictable weather. With this in mind, the different sessions of the Club were mapped out in advance, with the teacher planning a series of weekly sessions on a variety of popular biological topics, ranging from microscope work, through planting seeds and cuttings, to rat dissection!



A total of 16 year 8 pupils took part in Bio Club activities in this first term. According to the club leader, forward planning and preparation were the key to success. With a limited amount of time during the lunch break, and varied interests amongst the students, it proved very useful to know in advance what topic would be covered in each session. Specialist equipment needed to be in place and materials provided, so the assistance of the school’s lab technician and support from other members of the science department was invaluable.

For the two rat dissection sessions where extra assistance was needed, it decided to call on three Year 9 students who had previous experience of this activity from a school open evening. They were more than happy to help out, working alongside the younger students to give tips and encouragement as the different organs were revealed! This proved to be a valuable experience for everyone; for the club leader and Year 8 club members benefitting from the extra assistance with the activity, and for the Year 9 students themselves, who have become proficient in many aspects of health and safety, and have built on their knowledge and understanding of mammalian anatomy!

The Bio Club proved to be a great success. So much so, that several students asked if the Bio Club would be running again the following term! As the original Club leader was a STEM Ambassador, the school was happy for her to come into school on that basis to assist at a further Bio Club session in the following term specifically to do more rat dissections! The year 9 ‘lab assistants’ came too, and it was great to see once again how keen they were to share their expertise. Some budding STEM Ambassadors for the future for sure!

Benefits and impact for the students

- The club members clearly enjoyed the chance to do more biology activities outside of normal science lessons. They often brought friends along with them to the next session.
- A wide range of abilities was represented within the club members, giving friends who were in different sets for science the chance to enjoy an activity together, and to meet up with others who they perhaps never had lessons with.
- Students had the chance to work one-to-one with staff and older pupils, something which is not usually possible during normal lessons
- It was felt that students developed a real ownership of the Club, discussing it with the club leader in the corridor, and asking if they could go round others in the year group to collect names for future sessions.

