Science and Technology AoLE- Report to Governors

This report details work from the Spring term relating to the Science and Technology AoLE. Most classes detail a variety of examples of children's work with pictures examples. For most classes there are also specific examples of how the digital competency framework has been taught and developed in each classroom this year and how this has linked in with other AoLEs as a cross curricular skill.

The report is listed in the order below.

1. STF
2. Nursery
3. Reception
4. Year 1
5. Year 2
6. Year 3
7. Year 4
8. Year 5
9. Year 6

STF

This term we have explored science and technology through our Cynefin project and biscuit making. We were able to follow a sequence of instructions to create our biscuits and make design choices about how we want them to look. We also used a range of materials and tools to create our biscuits which was lots of fun! We have also engaged in a range of cooking sessions throughout the term to develop our independence in selecting tools and following instructions.

Additionally, through Cynefin we made our own plates and developed our ability to design and communicate about what we were making and use simple tools, materials and equipment to construct. We have also shown a lot of curiosity this term about how things work. We constructed a shelter outside using tarpaulin and string and tried lots of different methods to make our structure secure.

Nursery

Nursery could not wait for their trip to Swansea Community Farm! In preparation, we learnt about the different animals in English and Welsh. We talked about where the animals like to live and what they like to eat. We really enjoyed tasting food from the farm which opened up lots of conversations about where our food comes from and chatted about what it means to eat Halal. We also learnt some new songs about farms and played lots of games on the computer developing our mouse control skills.

Reception

We recently introduced a range of large loose parts to our provision outside. The children have spent a lot of time exploring building a range of different dens and paths. The adults talk to the children about the different materials that they are using and help them to plan their creations.

They all really enjoy using a range of different to create a range of different buildings for a variety of purposes in their play.

The children in Reception use a range of DCF skills in their play. We have been using word wall to develop our numeracy and literacy skills. We have been using the iPads to take and edit pictures and through our film fortnight project we have been learning how to take films. We also used JIT charts to collate the class votes for film fortnight, decoding the results from the graph to establish the winner.

Year 1

Digital learning has been a highly favoured AOLE this term. As children have grown increasingly confident with logging on and navigating J2E, they have embraced the opportunity to explore various digital tools and utilizing them to create and analyse graphs.

Year 1 explored online safety, learning songs and completing activities which remind them of key actions if they face tricky situations online. They explore the abbreviation TAG (tell a grown-up) and use the term to solve a variety of situations concerning online safety. They use their knowledge to create puppets for a puppet show, singing the 'funny tummy' song and performing to their friends (QR code below). This term they also explore the animation software on J1T. The children are encouraged to create an animation for Welsh week and for their cynefin topic, Carethin Cross. The majority of children displayed highly creative skills when using their animations in J2E5 the following week to produce an animated poster about the cynefin showcase. After initially inputting their animations from their files, the majority were able to change the font type, size, page colour, font colour and save their work successfully.

Our community farm visits have proven to be enriching experiences, providing students with hands-on opportunities to engage with nature and authentic learning experiences. Students have gained valuable knowledge through a variety of fun activities such as planting flowers and discussions about different animals and their habitats. During this term, we have taken advantage of outdoor spaces has been a driver to fostering exploration and creativity. From creating dens to investigating the sink or swim phenomenon in our water area, pupils have engaged with scientific principles in the interactive outdoor environment.

Year 2

Our study on the River Tawe gave us the opportunity to explore the living creatures, and those that were found in and around it. Pupils discovered many fish live there and this gave them ideas for the diet their River Tawe Monsters might consume. We explored physical features and discovered habitats and homes too. They learnt about the mythology of the Loch Ness Monster, and this too helped them to create one of their own for the Tawe setting and compare the two countries.

In addition to the above, the class also learnt the story of Jac Abertawe and his history. They then compared him to Gelert and drew parallels between the two. Pupils were very saddened by the actions taken. This generated interesting discussion. A curious question resulted in us exploring how the water cycle occurs. We did this practically and then looked at the process. Also, we experimented practically how rivers form and where water goes when it rains. We concluded that gravity was to play in its movement.

One of the most fun and creative projects were our bridge building missions. Pupils designed bridges and then worked collaboratively and creatively to build a bridge out of paper and a few other resources after studying the different forms and constructions. They then made others using construction resources such as Lego and K'Nex and they were tested using weights.

Finally, we also explored floating and sinking, making predictions, finding answers and recording the results. This task and the litter pick also gave the children a focus on materials and their properties.

Year 2 have had many opportunities to develop their DCF skills this term. They have explored the spheros and Botley (coding robots), learning to navigate both, whilst further developing their coding skills from the previous term.

They have also explored the online safety topic, learning how to stay safe online and what to do if faced with a challenging situation. They explore the impact of sharing pictures without permission and how far pictures can travel and be shared online, in a short space of time. From each online safety lesson, they create a rule. As You Tubers they present these rules on flip grid, having to scan a QR code through their Chromebook to join the classes flip grid page. The class also explored animations on JIT for Welsh week and further for their cynefin topic- The River Tawe. The class created animated rivers adding details based on their knowledge so far. These were then used in

file name: River Tawe
created by: Pearl-Marie F

posters on J2E5 where they added the classes view on the topic (QR code example below).

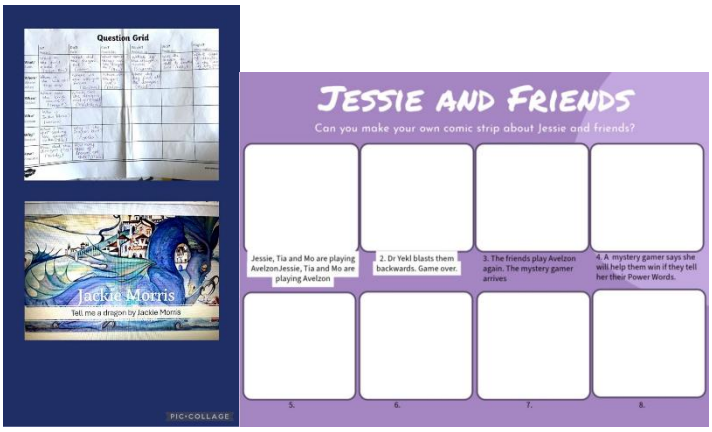
Year 3

To start of our Cynefin topic this term, children used their senses to guess where we would be learning about. Upon discovering we would be learning about Penllergaer woods, Year 3 went on a trip to the woods. Whilst in the woods, children identified several trees, plants and animals that they saw. We talked about the different insects found in the woods and the conditions in which they need to survive. Children then researched an animal of their choice looking closely at diet, habitat and appearance before writing an information report on the animal. Children were very interested in finding out about deforestation and whilst learning about this we discussed the important job trees have of converting carbon dioxide into oxygen.

Year three began the spring term exploring online safety. They looked at online bullying and discussed safe trusted adults in their lives that could support them through these situations. This proceeded with exploration on how we can keep ourselves safe online by ensuring that personal information is not shared. This was supported by creating a comic strip on Adobe creative cloud, detailing the events of our online safety videos, which learners accessed through their google classroom.

This comic strip creation highlighted the importance of being mindful when talking to strangers online, reminding us of what to do if we are faced with unkindness or uncertainty online. Many children navigate through HWB, google classrooms and adobe successfully.

This term learners have also had the opportunity to use PowerPoint to explore questions relating to their novel, creating animations on JIT for Welsh week, used Adobe creative cloud to design RNLI posters and exploring microbits to create games and dice for their end of term class party.

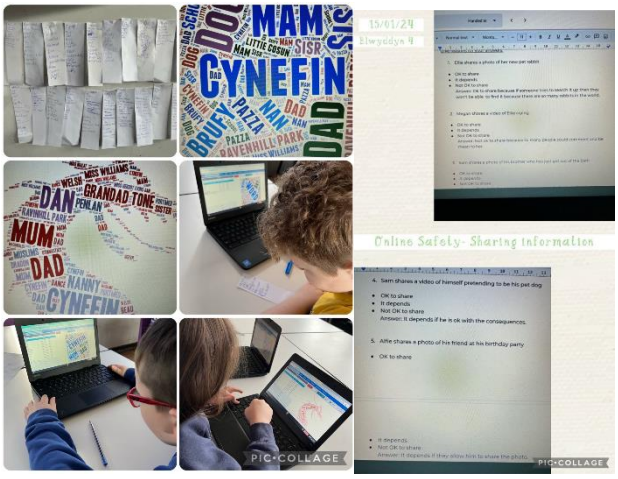


Year 4

To begin the spring term, year 4 explored online safety. Learners explored sharing content online and exploring a variety of situations where this may be appropriate or not, giving reasons for their answers. The class also looked at the consequences of sharing content without consent and how to support them in any tricky situations they may face. We explored the definitions of a trusted adult, and children were challenged to identify trusted adults in an online safety episode. Each week the classroom would create an online safety rule for our school which were then complied, through creating a vlog on Flipgrid. Most learners showed a comprehensive understanding of each rule and were able to explain these in their videos.

Year 4 also had opportunities during the spring term to explore adobe creative cloud in more depth, creating posters for a RNLI competition. They also used coding robots, spheros, to develop their coding skills from the Autumn Term, driving the spheros to different destinations around the classroom. Many learners used these tools effectively to achieve a specific output.

To complement our cynefin topic, learners in year 4 compiled their own thoughts on cynefin, detailing what this meant to them. Using this information they then inputted their lists to create word art, where they could edit the designs through changing font, colour palette, writing direction, shape, opacity and word animation. They completed this task by adding the words of their peers to create a word cloud that reflected them and their class. Nearly all learners wrote purposefully, creating highly effective visuals.



Year 5

Year 5 advanced their DCF skills this year, demonstrating excellent research skills for the Cynefin projects. The class found information from a range of given sources and entered information into a record. They considered, created and communicated information and ideas in different forms using text, images and pictures. The class each created their own detailed PowerPoint on the most famous player in Penlan's history, Liam Williams. They also created digital posters advertising the Penlan display and new kits for the club. Year 5 loved writing, filming and learning about digital editing while making persuasive, group video adverts for Penlan rugby club. Through this term the class has also had a strong emphasis on developing their coding skills, completing challenges through programming robots such as spheros and microbits. During the cynefin topic the class put their coding knowledge to the test, creating algorithms for the spheros to help them reach target destinations labelled as Carethin cross, Penlan RFC and other local areas. They celebrated their cynefin though this lesson also by creating word art based on what cynefin meant to them (images below).

The class has also explored online safety in depth this term, giving them ownership and understanding over our online school rules. The class used flip grid to discuss these rules whilst exploring the editing options on the platform to make their vlogs more professional. Some learners also contributed to a school online safety video.

Year 6

Year 6 have explored online safety in depth this term, giving learners a platform to share their own experiences whilst further providing support and advice on how to deal with difficult situations online. Learners look at different situations and decide on the best response for each one. They work extensively on google classrooms, progressing their skills to complete tasks on this platform.

This term the class also have opportunities to explore adobe creative cloud to create posters, microbits to code using the LED lights and the spheros coding robots Their sphero journey begins by using the drawing function to navigate the spheroes around a boat course. This requires careful thought of the speed and distance of their code each time. This is progressed by moving on to block coding, complementing their j2e coding skills from the first term. Most of the class are able to use minimal blocks in a highly effective manner, moving the spheros accurately to the required destinations. Nearly all learners use the correct vocabulary in context such as algorithm and debugging.