**Dal y Gwynt - Eye of the Storm**

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| **Theme Name: STEM and Women in STEM** | | |
| **AOLE** | **Theme** | **Suggested Learning Experiences** |
| **Science and Technology, LLC** | **What is STEM?** | * Research into the definition of STEM - what does it stand for and why is it important.   [STEM - What is it and why is it important?](https://www.youtube.com/watch?v=fH5iLx_jCUk) - What is STEM - might not need to watch full video   * Group work researching the key areas of STEM - Science, Technology, Engineering and Mathematics.   What is engineering - [NASA for Kids: Intro to Engineering](https://www.youtube.com/watch?v=1u-MiKDo2VI)   * Create group presentations on each key area of STEM with real life examples from daily life. * Create a poster of how STEM appears in their own homes. * Complete small practical challenges that bring together all four STEM areas: build a bridge strong enough to hold a shoe using different materials (LEGO, cardboard, craft sticks). Groups work with one key material to problem-solve collaboratively. * Resources for other practical tasks:   [50+ STEM activities for any primary classroom](https://www.stem.org.uk/system/files/elibrary-resources/2020/09/50%2B%20STEM%20activities%20for%20any%20classroom%20-%20Primary.pdf) - STEM learning resources for primary schools  LEGO Learning Resources - <https://education.lego.com/en-gb/lessons/?grades=Years+2-6,Years+3-5,Year+4-5,Year+4-6>  [STEM Activities | Downshire Primary School](https://www.downshireps.co.uk/stem-activities/) - small practical challenges for children to take part in.  Videos of experiments that can be done in school [DIY STEM experiment videos](https://education.theiet.org/diy-stem-experiment-videos)   * Welsh 2nd Language - Practice technical vocabulary related to STEM subjects * Techniquest offer both in person and digital education packages for schools to provide engaging STEM content for children: [Education • Techniquest](https://www.techniquest.org/education/) |
| **LLC, Humanities,**  **Health and Wellbeing** | **Jobs in STEM** | * Look at the different jobs in STEM - Create a list of how many jobs can you think of that come under STEM or involve STEM subjects - think of people associated with this job. Try to think of one role that doesn’t involve STEM - Debate on does a job without STEM exist? * Speed Job Guessing activity: half the class receives cards with STEM role descriptions, the other half rotates to "interview" and guess the careers. * Ask any of the children about parents / family members' jobs - which of these fit into the STEM industry. Invite parents and family members to speak about their jobs and identify which fit into STEM industries. Create a classroom map showing the variety of STEM careers represented in their community. * Use quizzes and resources to help pupils explore what STEM careers might suit their interests. 100 jobs in STEM - [100 jobs in science, tech, engineering and maths](https://education.theiet.org/media/sodcl0e2/100-jobs-in-stem-poster-final-2022.pdf) * Career in science - [Why a career in science is for me video and poster](https://www.stem.org.uk/resources/elibrary/resource/489275/why-career-science-me-video-and-poster) - is science for me * What job in STEM is right for me: [Quiz: what STEM career is your perfect match? | Girlguiding](https://www.girlguiding.org.uk/what-we-do/blog/quiz-what-stem-career-is-your-perfect-match/) * Debate task - in groups prepare a short persuasive speech / debate about the importance of STEM careers in Wales / UK / World |
| **Humanties** | **Famous STEM Figures**   * **Women in STEM** * **Men in STEM** * **Welsh STEM Figures** | * Explore important historical and modern figures from STEM, with focus on women's contributions. Create timelines showing key STEM figures and their discoveries or innovations. * Research lesser-known women in STEM using resources like Beyond Curie ([**https://www.beyondcurie.com/**](https://www.beyondcurie.com/)), which showcases 40 women's contributions to science and technology. Children choose someone who inspires them to create infographic posters explaining their achievements and impact. * Create presentations or short videos showcasing a chosen woman's contributions to STEM and the lasting impact of her work. Focus on overcoming barriers and challenging stereotypes. * Explore what modern inventions were inspired by past work by women in STEM. |
| **Humanities, LLC** | **STEM in Wales** | * Investigate scientific and technological innovations that have originated from Wales. Create a timeline of Welsh STEM achievements and their global impact. * Research local STEM examples in their area - engineering structures, energy plants, hospitals, technology companies. Interview local STEM professionals about their work and its community impact. * Select four key areas of STEM in Wales and research their impacts on local communities, exploring both historical and present examples. |
| **Science & Technology, Health & Wellbeing, Humanities** | **STEM and the environment** | * Design a "House of the Future" project where groups plan eco-friendly homes incorporating various technologies. Research renewable energy, sustainable materials, and smart home technologies. * [My Green City](https://www.stem.org.uk/resources/elibrary/resource/477197/my-green-city) - Resource to provide children with the task to design a sustainable city linking to areas of STEM. * Investigate STEM inventions created specifically to help environmental challenges - from water purification systems to renewable energy innovations. Create presentations showing how these technologies work and their environmental benefits. * Dragons Den Style pitch - design a piece of technology that will help solve an environmental issue using STEM ideas. * [Lesson plans: Explorify activities | Eden Project](https://www.edenproject.com/learn/schools/school-lesson-plans/lesson-plans-explorify-activities) - Resources from the Eden project |
| **Expressive Arts, LLC** | **Creativity in STEM** | * Explore the different ways STEM connects to creative outputs - TV, Gaming, Film, Theatre. * Using SCRATCH - create a short creative story that promotes a message from the play (climate crisis, resilience, dreams, inventions) * Look at how artists and scientists collaborate - from medical illustration to architectural design to special effects in movies. Come up with a project that combines artistic skills with scientific understanding. * [FIRST® LEGO® League](https://education.theiet.org/first-lego-league-programmes/) - First Lego League programme offers free STEM resources and opportunities for children to get involved in STEM. Young people work in groups to explore a given topic and to design, build and program an autonomous LEGO® robot and solve missions   Links of this programme to the curriculum are here: [FIRST® LEGO® League curriculum links](https://education.theiet.org/first-lego-league-programmes/about-first-lego-league/curriculum-links) |
| **LLC, Science and Technology** | **STEM in day to day life** | * Make a list of all the daily activities that involve skills that link to STEM (baking - chemistry and maths, painting - physics and colour theory, researching - scientific methods, building - engineering and maths) * Faraday challenges - [IET Faraday® DIY Challenge Day](https://education.theiet.org/primary/iet-faraday-diy-challenge-days) - challenges to help contextualise STEM in real life examples * Explore how STEM appears in the classes hobbies - photography, sports, music etc * Children create a STEM board where they can identify what they already do that connects and involves STEM. |