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

| **Theme: Invention** | | |
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| **AOLE** | **Strand** | **Suggested Learning Experiences** |
| **Science and Technology**  **LLC**  Humanities  Science and Technology | **Inventors:**  Opportunities for oracy and ideas generation | * Discuss:   A common saying is that “Necessity is the mother of invention.” What does this mean?  <https://hwb.gov.wales/repository/resource/8a2800ab-8486-4de0-aab1-ac2cf2aabb55>  This is a great resource on Hwb that has a unit about inventing and inventions with lots of good examples.   * independent research * powerpoint presentations * top trumps * grouping and sorting into disciplines * make a guess who game * sort into a timeline * Famous inventors: * Female inventors:   <https://www.bbc.co.uk/news/world-40923649>   * Welsh inventors * Welsh inventions:   <https://www.wales.com/about/history-and-heritage/welsh-inventions>  (**Teachers,** please be aware that the last item on this list is Viagra, so you might want to print it rather than let pupils do independent research)  NB The day of the lone scientist or inventor is nearly gone and today much work is done in teams, perhaps comprising businesses, universities, hospitals and other technical groups. The credit for new advances, therefore goes to the team rather than a lone individual.  One modern exception to this is perhaps James Dyson  Teacher background info  <https://en.wikipedia.org/wiki/James_Dyson>  [Good Bad Billionaire - Sir James Dyson: Sucking up the cash - BBC Sounds](https://www.bbc.co.uk/sounds/play/w3ct7q8w)  Many small businesses are trying to think of ways to help solve plastics pollution.  [Reducing plastic pollution - Keep Wales Tidy - Caru Cymru](https://keepwalestidy.cymru/caru-cymru/policy-and-research/reducing-plastic-pollution/)  [Second Life Products Wales Ltd](https://slpw.co.uk/#:~:text=About%20Second%20Life%20Products%20Wales,%2C%20collection%2C%20and%20recycling%20process).  One such company is Zombie plastics based in Swansea.  <https://zombieplastics.co.uk/?srsltid=AfmBOooMCDDK_hjEDXvjysu1iANshz09G4iTbQ4i6QEOzvbOQuaBQpFr>    They pick up waste from the seashore (fishing nets etc) and make it into new stuff. |
| **Science and Technology** | **Inventing**  Opportunities for problem solving | **The design process:**  See summary sheet   * The design process always starts with a problem. What are you trying to solve? (ie the necessity) * [Invention Ideas: 13 Ways to Stretch Kids’ Creativity - BEGiN](https://www.beginlearning.com/parent-resources/invention-ideas/) * Thinking of many ideas is a good way to let off steam and even silly suggestions may have an element that could be used in the final design. * Plan for several versions of the invention and then choose the best * Build and trial your invention * Make note of difficulties, adaptations and changes as you go * What went well and what didn’t work. How could you solve your problems? * Have another go and build in some modifications, test and re-evaluate. * links to resilience theme as trial and error or redoing work can be tough for many * Discuss strategies for tackling failure. Inventors expect to fail as this tells them how to improve their product |
| **Humanities**  **science and technology** | **Have a go** | * Having tried out the process on something quick and easy, use your research as a basis, and allow the children to design their own weather machines to predict, measure or show the effects of the weather, with minimal intervention. discuss as a class issues such as resourcing, recording of progress, use of tools, glue guns etc, presentation of results |
| **Humanities, science and technology** | **Solving a real world problem** | * Choose to look at an issue that affects your locality or a national issue. It could be to do with weather defences such as flood or wind defences, tidal surges, or any other problem that affects your school/ area. * work in teams to solve the problem. Generate different ideas, do some research and get inventing. * You could test your ideas in a competition form as a whole class * you might want to gather your ideas to make a whole class solution * You could write up your findings and recommendations and pass them to your local council.   [Resilient Swansea](https://www.swansea.gov.uk/article/31205/Resilient-Swansea#:~:text=Our%20future%20strategy%20needs%20to,the%20decisions%20we%20make%20today)  The above link takes you to the resilient Swansea Page and shows what Swansea is doing as a city to tackle the problems that we might have to tackle resulting from the climate crisis.  The key issues might give you some ideas for inventions.  You might want to use a tasc wheel to structure the process. A copy of the wheel is in the resource folder and guidelines for using the wheel are on Hwb, link below.  [Four purposes - TASC wheel alignment to support learning (pupil and professional)](https://hwb.gov.wales/playlists/view/9ea266e4-d83e-4245-adae-b5d888a1a6fc/en/13) |