

Science:

Design a Submarine Inspired by Penguins



Learning Intention

We are creating a design for a new research submarine, using what we have learned about penguins.

Task

1. Explain task: we are going to design a new research submarine for ocean scientists, inspired by penguins. Rather than rush into a final design, we are going to spend a few minutes discussing the design and then sketching out some ideas, before we move on to our proper diagram.
2. Think about the adaptations that penguin use to help them swim:
 - ◆ **Streamlining: torpedo shape allows them to move more easily through the water**
 - ◆ **Flippers to propel**
 - ◆ **Feet and tail to steer**
 - ◆ **Counter-shaded (dark backs, light tummies), to hide from predators and prey (We would suggest writing this on your board, around a sketched outline of a penguin underwater)**
3. Have a think about what your penguin submarine might look like and what features it will have.
4. Next, spend five minutes with a piece of scrap paper just sketching out the shape you think your sub will be, and how it will look. This will help you to get a clear picture of your submarine design, and allow you to think about the special features it may have.
5. Remember, this is for ocean research scientists not villains, so laser-guided missiles are not going to be much use but what about a grab, lined with barbs, like a penguin beak?
6. Pupils should now:
 - ◆ **Draw an outline of penguin your submarine**
 - ◆ **Add modifications (How will it move? How will it steer? What can it do? Where will the scientist sit? What tools will it have?)**
 - ◆ **Add labels**
 - ◆ **Shade or colour**

Extension

Build a model of your submarine, using junk materials.

