Big Blowout!

Teaching points:

This experiment demonstrates to students how a whale's blowhole works, using the balloon as a model lung. To go into more depth with your students, consider spending some time beforehand exploring the concept of air pressure. The anatomy of a lung or comparing and contrasting a human lung with a whale's lung might be an excellent way to add another layer of understanding to this learning experience.

Materials needed:

- 2L plastic bottle
- Straw
- Sticky tack
- Water
- Bowl
- Balloon
- Ruler
- Scissors

Materials needed for the extension:

- Oil spill images, sourced from online
- Spoon
- Measuring jug
- Images of oil spills
- Dishwashing liquid
- Cotton ball
- Sponge
- Water
- Vegetable oil
- Salt
- Shallow container

Teaching points:

Ocean pollution and oil spills are the focus of this extension activity. Students will also be introduced to the salinity of seawater, working out the percentage of a number and why oil and water don't mix. Investigating ocean pollution, particularly oil spills, is an excellent way of getting the most out of this extension. Your students could research this topic before doing the activity or afterwards as a deeper inquiry.

Hubba Blubber

Teaching points:

Hubba Blubber is about the function and makeup of blubber. Deeper teaching could include a look into fat molecules, why fat is less dense than water, types of nutrients stored in blubber and how it protects the organs it surrounds. Comparing ocean temperatures worldwide, diving into migratory patterns of whales and looking at how nursing mothers travel without eating for months could also be linked to this learning experience.

Materials needed:

- Ice cubes
- Big bowl
- Zip-lock bags
- Cold water
- Solid shortening or fat
- Spatula
- Towel
- Duct tape
- Watch or timer

Materials needed for the extension:

- Four big sponges
- Two light-coloured, thin sheets of fabric, large enough to cover a sponge
- Water
- A shady area
- An area in direct sunlight
- Four bowls/containers

Teaching points:

The extension activity explores how whales have the potential to overheat during stranding events. Deeper teaching points might include looking at warm-blooded animals, the process of heatstroke and the effectiveness of different materials to absorb or reflect heat.

Feeding Frenzy

Teaching points:

In this learning experience, students will be able to see how a baleen whale filters its food by using a comb and cereal floating in the water. You might like to use the **Baleen/Toothed Marine Mammal Sorting Activity** on the Twinkl site before or after doing this activity to help students better understand the different types of whales and how this impacts their behaviour and types of prey.

Materials needed:

- Crisp rice cereal
- Plastic comb
- Chopsticks
- Plastic tub, just large enough for the cereal to float
- Hand towel
- Water

Materials needed for the extension:

- Gloves for each student handling rubbish
- One day's worth of waste in the classroom rubbish bin
- Tarpaulin
- Hand soap and towel
- Well-ventilated space
- Paper or whiteboard to record findings on
- Pen or whiteboard marker
- Bags

Teaching points:

With plastic pollution being an ever-present danger to marine life, this extension touches on some statistics around microplastics and how they have become so widespread in the ocean. Students will do a waste audit of the rubbish found in their classroom and around the school to see how much is made of plastic. They will also discuss some ways of decreasing the amount used. Additional teaching points could include waste and waste management or the importance of keeping waterways and drains clean.