Lifejackets - Why do we need to wear lifejackets?

Fact

- A lifejacket could help to save your life if you were to fall out of a boat into the water.
- A lifejacket is designed to keep your head out of the water so you can breathe.
- It can do this because it's buoyant – it floats.
- A lifejacket is made out of foam which is lighter than water.
- Lifejackets are usually a bright colour so others can see you easily in the water.
- Some lifejackets have whistles too so that you can let people know where you are easily by blowing the whistle.

Do you know

- When something falls or is put into water it displaces the water. When a brick is put into water it pushes the same sized amount of water.
- Foam sits above the water because it is lighter than the amount of water it displaces.
- A scientist called Archimedes discovered the principal of displacement. Legend has it that he was taking a bath and noticed that the level of the water rose when he got in. He was so excited he ran down the road in his towel shouting "Eureka!"
- Lifejackets help your body keep its heat when you fall into cold water.
- People have been using lifejackets for over 150 years

Experiments you can do

Weigh it all up

What you need:

Some kitchen scales
A small clean empty plastic bottle with the lid on (a fizzy drink bottle is good)
A sink or a bucket full of water

What you do:

Weigh the empty bottle on the kitchen scales. Write down how much the empty bottle weighs. Put the bottle in the water and see if it floats or sinks.
Fill the bottle, right to the very top, with water and put the lid back on. Put the bottle back into the water and see if it floats or sinks. Weigh the bottle full of water and see how heavy it is now.

The empty bottle floated because it was lighter than the bottle sized amount of water it was trying to displace.

Other Investigations
How buoyant is foam?
Some flutter boards are made with foam. See if you have foam flutter boards for your school pool. If not the flutter boards that you use at school will be very buoyant anyway so ask if you can use one of them.
See if you can hold the flutter board under the water. It will take a lot of effort because the force of the water pushing up on the board is a lot stronger than the force of the board pushing down on the water. That's because the board is much lighter than a flutter board sized amount of water.

Jokes
What jacket doesn't have buttons?
A life jacket (they usually have zips)