

### Knowledge Organiser

Year Group	Subject	Topic
6	Science	The Titanic

#### The Big Picture

In this topic you will be engaging in a different approach to your science. You will use your science and link it to an historical event in context; the sinking of the Titanic. This topic is based around applying the working scientifically skills that you have learned so far in your science lessons, to explore some of the scientific concepts behind the Titanic, e.g. floating and sinking.

#### Enquiry Question

##### Working Scientifically

This topic develops the following working scientifically skills:

Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.

Take measurements, use a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.

Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.

Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.

#### Key Vocabulary

buoyancy:	the ability of an object to float in water
density:	how much matter (stuff) an object has to its volume
floating:	when an object stays on the surface of a liquid
hypothermia:	occurs when there's a dangerous drop in body temperature
iceberg:	large pieces of ice broken off from a glacier or large areas of floating ice
sink:	go below the surface of water
thermal insulation:	a material that decreases the flow of heat from a hot area to a cooler one
upthrust:	the force that pushes an object up and makes it seem to lose weight in a water



#### Did you know?

- The RMS *Titanic* was the world's largest passenger ship. When it was launched, it measured 269 metres (882 feet) in length.
- 100,000 people turned up to see the ship's launch on May 31, 1911.
- The *Titanic* hit an iceberg that was about 30m (100 feet tall) and came from a glacier in Greenland.

The *Titanic* was to be the biggest, fastest and most luxurious liner ever to be built.



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It was 882 feet, 9 inches long with a maximum breadth of 92 feet, 6 inches. Her total height, measured from the base of the keel to the top of the bridge, was 104 feet.

After just three years, The *Titanic* was finished - a floating city, ready to set sail on her maiden voyage from Southampton to New York



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- 492 - the number of **Titanic passengers** who survived.
- 37% - the percentage of passengers who survived.
- 61% - the percentage of First Class passengers who survived.
- 42% - the percentage of Standard Class passengers who survived.
- 24% - the percentage of Third Class passengers who survived.

Source:  
<http://www.titanicfacts.net/titanic-survivors.html>

## Floating and sinking

Floating, sinking and density is a topic that you will work on in more detail in secondary school. In this topic you will begin to develop and explore some basic ideas. Covering the Titanic also brings opportunities for activities in other curriculum areas. Some objects like wood, sponges and unpeeled oranges are less dense than water, so they will float.

Hollow objects such as balloons, empty plastic bottles will float. These things float because they have air in them, and air is less dense than water; we say that these things are buoyant.

The shape of an object can be changed so that even though the mass has not changed the increase in volume makes it less dense. For example, a plasticine ball placed in water, will sink, but flatten the plasticine and make it into a bowl shape and the volume is increased so it will float. This is the science behind why such a huge ship as the Titanic could float.

### Life Jacket:

Buoyancy aid – waterproof outer layer with foam inside.

Inflatable life jackets have air chambers, they trigger and inflate when they come:

- into contact with water
- under pressure from being under water.

The air chambers are at the front to keep the person floating on their back.

## Hypothermia

Hypothermia is a medical emergency which can threaten a person's life.

It happens when a person's body loses heat faster than it can produce heat.

This leads to a dangerously low body temperature.

Our normal body temperature is around 98.6 F (37 C)

Hypothermia happens when the body temperature falls below 95 F (35 C).

What happens when someone suffers from hypothermia

They:

- shiver
- slur their speech or mumble
- breathe more slowly and take, shallow breaths.
- have a weak pulse
- become clumsy and lack coordination
- become drowsy
- become confused

lose consciousness



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