

The Titanic Challenge Video Transcript

Music Plays

Graphic Text Display

Victorian Maths Challenge.

The Titanic Challenge.

SCENE 1

Host

Ahoy! Welcome to the Titanic Challenge. Hi, I'm Byron, I'm an Engineer and I'll be the host for today's challenge.

A naval architect, or naval engineer, is someone who designs boats. They're responsible for making sure boats always float, even in extreme weather.

Naval architects use maths concepts to work out whether a boat will float, and how much weight it can carry. They also calculate how fast the boat will move through the water and how stable it will be.

The Titanic Challenge is named after the Titanic, a British ship that was built in 1912, and at the time was the largest ship in the whole world. Unfortunately the Titanic sank on its maiden voyage, after hitting an iceberg.

In this challenge we'll explore some of the concepts involved in working out how a boat floats. Then as a family you'll build your own boat and test it to see how much weight it can carry.

SCENE 2

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Maths Concepts.

Host

Have you ever thought about why somethings sink in water, and why some things float? You probably know that heavier things usually sink, like a rock, while a light

thing tends to float. To understand more about why this happens, we'll need to discuss something called density.

Density describes how much stuff is inside an object. More formally, it's the relationship between [the object's] mass and volume, or really, how heavy it is in relation to its size.

Graphic Display

Animation of a cuboid with increasing opacity, entitled 'More Dense'.

Host

<Host picks up and shows a small rock>

For example, [this] rock is quite heavy, even though it's relatively small. So we would say, 'this rock is dense'.

Water has a certain amount of density too. If an object I put in water, is more dense than water, it will sink, like this rock.

<Host places the rock in a large tub of water, which then sinks to the bottom>

If an object is less dense than the water, like this container; it floats.

<Host places a small container in to the same tub of water, which then floats on the surface>

Something that sinks, we call 'negatively buoyant'; which is the rock. Something that floats, we call that 'positively buoyant', like our container.

This teaches us that objects which are low in density are more likely to float. What can you find lying around your home that has low density that you could use in your boat?

SCENE 3

Graphic Text Display

The Challenge

Host

Alright, it's time to gather some items to make your boat. You can use anything you'd like, but make sure it's waterproof.

In the challenge description, we ask you to build a boat that is 30 centimetres long, by 20 centimetres wide, by 10 centimetres tall. The base of which is about the size of an A4 sheet of paper.

Once you've built your boat, and it's floating on the water, make sure you test how much weight the boat can carry before it sinks.

Graphic Display

Animation of a paper boat floating on water; two arrows flash above the boat, pointing downwards. The boat slowly sinks in to the water.

Host

Well, that's it from me!

Remember to take some photos and videos, and upload them to the Challenge website.

As always, play it safe by the water, and best of luck with the Titanic Challenge.

Graphic Text Display

The Education State.

Victoria State Government.

Music Stops