Great Linford Primary School

JANUARY

STEM

SINK OR SWIM

STEM FAMILY CHALLENGES

Create a boat from recycled materials which can float while holding more than 10 pennies.

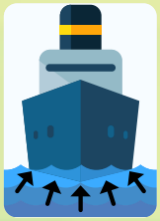
INEOS TEAMUK

Real Life Context

'INEOS TEAM UK' is a British sailing team based in Portsmouth and led by the most successful Olympic sailor of all time, Sir Ben Ainslie. In 2021, they will challenge for the 36th America's Cup competition in New Zealand. It is important they don't sink!

Step 1: Bold Predictions

Gather small items around your house that you think might sink or float when put in water. For example: a paper clip, pencil, bouncy ball, rubber band, crayon, rock, leaf, bottle cap. Get a large bowl and have an adult help you fill it with water. Before putting each object in the water, make a prediction: Will the object sink or float?



Ships are heavy but they are shaped so that they push aside lots of water. The water pushes back to keep them floating.

Step 2: Testing Materials

Place each object carefully, one at a time, on top of the water. Record the results.

Optional Digital Links: *Record your results in a table on Excel or Google Sheets. Maybe you could take photographs and add comments to explain what is happening in each. You could present these on slides.*

Step 3: Analysis

Were your predictions correct? Can you group the objects that did and did not float? What do they have in common? What questions do you have? ***Optional Digital Links:*** *tinyurl.com/y495znzb*

Step 4: Design

Create different designs for your boat showing what materials you can use. Recycle materials you already have at home! Choose your favourite design, explaining why you like it best, and build it. Test whether your boat floats in a bowl of water. How many pennies can it hold? Can you re-design your boat so that it holds more pennies? ***Hint:*** *One design might be made from paper: tinyurl.com/y3ycvbl9*

Submit Your Entries: ***How will you present your challenge?***

Show as many of the steps as you can as part of your project. We look forward to seeing whose design holds the most! You could create a booklet, a set of slides on a computer, build a display board with writing and drawings, photograph or video your creation, or something of your choosing!

Submit your project to stem@greatlinfordprimaryschool.co.uk by **Sunday 31st January**.

By submitting work, you agree to your project being used on the school website or social media platforms.