



Sinking Ships

<p>Subject: Science, Maths</p> <p>Context: Everyday materials - floating and sinking, size and shape, weighing and measuring, counting etc.</p>	<p>Year Group: Year 2</p>	<p>Date:</p>
<p>Knowledge, Skills and Understanding:</p> <p>This activity investigates what the size and geometry of boats and how that affects the ability to hold weights.</p>		
<p>Learning Objectives (Choose from):</p> <ul style="list-style-type: none"> • Asking simple questions and recognising that they can be answered in different ways. • Observing closely, using simple equipment. • Performing simple tests. • Identifying and classifying. • Using their observations and ideas to suggest answers to questions. • Gathering and recording data to help in answering questions. • Distinguish between an object and the material from which it is made. • Describe the simple physical properties of a variety of everyday materials. • Compare and group together a variety of everyday materials on the basis of their simple physical properties. 		
<p>Lesson Overview:</p> <p>Make boats of different sizes and shapes e.g. long & thin, short & wide, large, small and test whether the size of the boat relates to how much weight they can carry.</p> <p>Activity:</p> <ul style="list-style-type: none"> • Fill the reservoir with water. • Measure the size of the boats (length & width) and record on the board. • Float the different boats. • Add marbles to each boat one at a time. • Record what happens and how many marbles it takes to sink each boat. • Weigh the amount of marbles it takes to sink each boat and record the results. 	<p>Resources:</p> <ul style="list-style-type: none"> • Moti-Lab reservoir • paper boat templates • a ruler • set of scales • lots of marbles the same size <p>Key Vocabulary:</p> <p>float, sink, faster, slower, heavier, lighter, larger smaller, stable, unstable</p>	



Conclusion / Plenary:

- Does the size of the boat affect how much weight it can carry?
- Are wider boats more stable?
- Some objects float on the top of the water.
- Some objects soak up the water then sink.
- Recognise that the marbles sink and adding marbles to the boats affects its ability to float.
- Describe the relationship between the size of a boat and what weight it can hold.
- Describe the relationship between the shape of a boat and what weight it can hold.

Cross Curricular Links:

Maths

Measurement

- Compare, describe and solve practical problems for:
 - Lengths and heights [for example, long/short, longer/shorter, tall/short, double/half].
 - Mass/weight [for example, heavy/light, heavier than, lighter than].
 - Weighing exercise and recording results.
 - Making tables to demonstrate results.

English

- Learn the names of simple shapes.
- State observations in speech and writing.
- List materials in groups.

Complementary Activities

- Investigate different types of boats for different uses, e.g. a cruise ship, and a canoe?

Useful Links:

For paper boat templates:

- <https://www.pinterest.co.uk/pin/431290101784695464/?!p=true> - Pintrest Boat Making
- <https://www.youtube.com/watch?v=1wu5oKy4m5s> - making paper boat video
- <https://www.youtube.com/watch?v=b3QZpBL8-Tg> - paper boat making video
- <https://www.persil.com/uk/dirt-is-good/arts-crafts/how-to-make-a-paper-boat-step-by-step.html>

Videos on displacement / buoyancy:

Challenge Questions (Choose from):

Does the size of the boat relate to how well it floats and the weight it can carry?

Can you describe and list the different objects in size?

Can you group similar objects?

Which boat do you think will float the best? Why?

Were your predictions right?



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| <ul style="list-style-type: none">• https://www.youtube.com/watch?v=xniW3_afO-0 - displacement animation• https://www.youtube.com/watch?v=CvWrkxzCiaY - why do ships float? Animation | |
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