

KS3 DT Will your canoe/boat float? (Year 3 rolling programme)

Through this unit pupils will: Design and make a floating canoe from a range of materials.

They will adapt their canoe to make it go stay afloat.

Pupils will investigate how long their canoe can stay afloat for

Pupils will understand the terms 'float' and 'sink'

They develop their designs by thinking about the purpose of the canoe and the needs of possible users; to mark, measure, cut and join materials with increasing accuracy.

They use a variety of tools with precision and care.

Keywords: Canoe, boat, float, sink, waterproof, materials, not waterproof, distance,

Curriculum intent:	<p>Subject curriculum intent</p> <p>Students will develop the skills to create their own canoes. Students will develop an understanding about floating and sinking to create a canoe. Students will be able to locate their equipment using symbols or written instructions. Students will learn to create something that will float. Pupils can use a timer to test how long their canoe stays afloat for. Students will develop their ability to independently research canoes recipes using books and the internet and suggest improvements to their canoe. Students will develop teamwork, communication and leadership skills which can be transferred into other subject areas</p>
End of KS3 intent/outcome	
<p>In KS3, pupils will develop their understanding of floating and sinking.</p> <p>They will know that a boat or canoe can move, that their canoe will need to stay afloat.</p> <p>Pupils will know that their canoe will need to be made from waterproof material. Pupils will understand that if the canoe is too heavy then it will sink</p>	
Intent for topics:	Topic specific statement
Key vocabulary for subject:	<p>spoken, signed, symbols, AAC:</p> <ul style="list-style-type: none"> • Canoe • Float • Sink • Water •
Prior knowledge: what pupils may already have studied	

Key stage	Subject	Topic title	Term/year taught	Content/What might pupils already know?
3	Science	Properties of Materials	Year 2 of 3 year plan (2022-2023)	Pupils may encounter which materials are waterproof
3	Geography	Flood Disasters	Year 1 of 3 year plan (2024-2025)	
Links to other subjects: English- reading, key words Maths- numeracy, time. Science- materials				

	<u>Step P5-6</u>	<u>Step P7-8</u>	<u>Step 1</u> <u>Step 2</u>
<u>Subject specific knowledge</u> <u>What do pupils need to know?</u>	Know the difference between floating and sinking. Knows a canoe/boat can move. Knows that it needs to stay above the water. Evaluates their canoe by naming best features.	Knows what a canoe is. Knows that a canoe stays on top of the water Knows what tools they need to make their canoe	Knows what waterproof means Understands weight may play a part on floating Research range of models to inform their own design. Is able to evaluate their design and make any improvements.
<u>Subject specific skills</u> <u>What do pupils need to be able to do?</u>	Able to identify objects that float and objects that don't. Adds parts to almost complete canoe Draw own pattern to decorate canoe	Is able to identify all moving parts. Puts all parts together to make a canoe when given parts.	Designs a canoe with all component parts, (bottom, sides) Design a canoe on paper then can use the design to make model.

	Uses scissors to cut out a simple template Evaluates their canoe by naming best features.	Construct canoe from given parts and add a design to decorate. Uses basic tools appropriately to construct their canoe	Identifies and uses a wider range of tools Identifies appropriate material to make canoe.
<u>Suggested teaching activities</u> <u>How should I teach this?</u>	Show items which will float/sink Guessing game of which will float/sink? Activity on materials - which are waterproof, which aren't - lead to questioning around things being waterproof and the need for it		
<u>Subject specific knowledge</u> <u>What do pupils need to know?</u>	Knows that a canoe needs to float. Evaluates their canoe by naming best features.	Can make changes to materials used for bottom/sides Is able to evaluate their design and give some ways they can improve it.	Know that a canoe needs to be light so its able to float. Changes design to improve performance and identify how and what has improved the performance. Is able to evaluate their design and make any improvements.
<u>Subject specific skills</u> <u>What do pupils need to be able to do?</u>	Can make a canoe which will float	Can make a canoe stay afloat for longer periods of time by changing types of materials used.	Is able to adapt a design to improve performance and makes necessary changes to their canoe.
<u>Suggested teaching activities</u> <u>How should I teach this?</u>	Through regular make do and evaluate practice, for pupils to continually test and improve their design		