

Oceans and Seas

Week 6 - Boats & Ships

Monday: Ship to Ship Communication

Tuesday: How do Boats stay Afloat?

Wednesday: How are Boats Powered?

Thursday: Different Power Sources

Friday: Finishing Boat Building

Monday 6 July

LF: We are learning about the similarities and differences between ways of life in different periods.

Ship to Ship Communication

To day we will compose and decipher telegraph messages using Morse code and create an exhibition poster about ship communication "then and now".

Let's imagine there's a boat sailing in the middle of the Atlantic Ocean. Whereabouts could this be? Go onto Google Earth, find a spot in the middle of the Atlantic Ocean, then have a think If you were aboard this ship in the middle of the ocean, how would you talk or send a message to people on land?

You have probably come up with ideas like use a mobile phone to message or call, use a laptop or a computer and send a message over the internet.

BUT WHAT IF

What if it's 100 years ago and there are no mobile phones or computers. What did people use then?

Watch this clip which tells the story of how the Titanic sank in the middle of the Atlantic ocean, 100 years ago <https://www.youtube.com/watch?v=fHJ8DwXlFyQ>

People on the Titanic sent messages using a Marconi wireless set (there's a photo on the next page). They pressed symbols on a kind of keyboard (a bit like on a computer) and this would send messages to people on land. The messages they sent were in Morse Code.

In Morse Code letters are heard as different types of tapping sound. SOS sounds like this ... <https://www.youtube.com/watch?v=9A3tBINRdiE>

This is a Marconi Wireless Set. It looks very big and very complicated compared to our computers!



This is the Morse Code Key.

1. The length of a dot is 1 unit.
2. A dash is 3 units.
3. The space between parts of the same letter is 1 unit.
4. The space between letters is 3 units.

The space between words is 7 units

A	● ■■■	U	● ● ■■■
B	■■■ ● ● ●	V	● ● ● ■■■
C	■■■ ● ■■■ ●	W	● ■■■ ■■■
D	■■■ ● ●	X	■■■ ● ● ■■■
E	●	Y	■■■ ● ■■■ ■■■
F	● ● ■■■ ●	Z	■■■ ■■■ ● ●
G	■■■ ■■■ ●		
H	● ● ● ●		
I	● ●		
J	● ■■■ ■■■ ■■■		
K	■■■ ● ■■■	1	● ■■■ ■■■ ■■■ ■■■
L	● ■■■ ● ●	2	● ● ■■■ ■■■ ■■■
M	■■■ ■■■	3	● ● ● ■■■ ■■■
N	■■■ ●	4	● ● ● ● ■■■
O	■■■ ■■■ ■■■	5	● ● ● ● ●
P	● ■■■ ■■■ ●	6	■■■ ● ● ● ●
Q	■■■ ■■■ ● ■■■	7	■■■ ■■■ ● ● ●
R	● ■■■ ●	8	■■■ ■■■ ■■■ ● ●
S	● ● ●	9	■■■ ■■■ ■■■ ■■■ ●
T	■■■	0	■■■ ■■■ ■■■ ■■■ ■■■

Tuesday 7 July

LF: We are learning how to observe closely using simple equipment in simple tests. We are learning how to use observations and ideas to suggest answers to questions.

How Do Boats Stay Afloat?

Today we will conduct an experiment with objects to find out what floats and sinks and think about why different objects float or sink.

You will need:

- A tub of water (washing up bowl / bucket / sink / bath that type of thing)
- Floating bath toy (or other plastic toy)
- Metal object of similar size to the "floating bath toy".
- Modelling clay, plasticine or playdough.
- Range of small objects with varying buoyancy.

Let's Experiment!

First take your bath toy, hold it in each hand, how heavy does it feel? What materials is it made from? Do you think it will float or sink? Why? Now take your metal object and ask yourself the same questions.

Now let's test it and record our results in a table like the one below.

OBJECT	DOES IT FLOAT? Yes / No
Bath toy	
Metal object	

Why did one float and the other sink?

What is different? Talk about it with someone at home.

We use the words buoyancy and density to describe why something floats or sinks. Let's watch this clip of a ship launching

<https://www.youtube.com/watch?v=M1K-izcTM68>

This is a huge and heavy object so we'd expect it to sink but it doesn't. Why not? It's weight is spread over a large area, it has lots of pockets of air in it, what other ideas can you think of?

Now take some plasticine, modelling clay or similar and make one solid ball and one boat-shaped object. Go back to your tub of water and test to see which floats and which sinks. Can you explain why?

Now go and find some more objects from around the house and test to see which float and which sink. You can add your results to the table you made earlier. When you have finished look at your results. What do they tell you about the characteristic or features of objects which float?

Wednesday 8 July

LF: We are learning how to use mechanisms when making boats

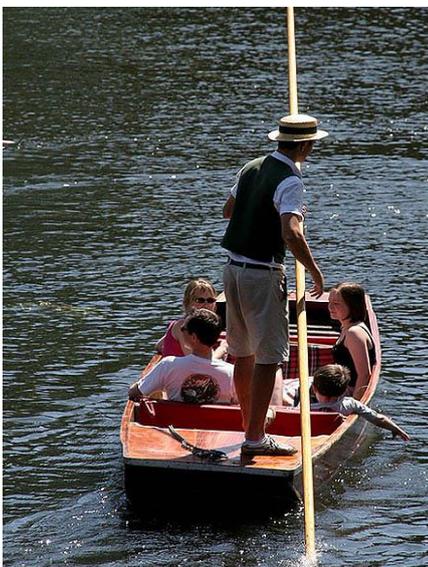
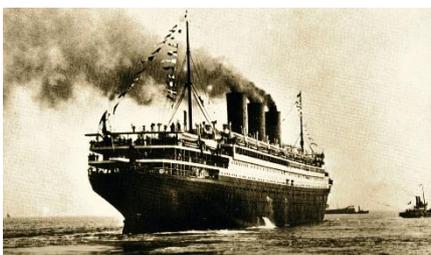
How are Boats Powered?

How do boats move in water?

You will need:

- A tub of water
- Balloons, pens, bendy straws, thin rubber bands, tape and some type of Styrofoam container (or similar)

Look at these pictures and talk about how each boat moves (i.e. wind power, human power, steam engine or diesel engine). For example, "We know this boat is wind powered because it has a sail".



Next sort the types of boat into a pictogram so you have a set of 'boat data'. Can you think of any other types of boat that would change the data?

Wind power



Human power



Steam engine power



Diesel engine power



Let's Experiment!

Now let's make a boat powered by a balloon.

Watch this clip, <https://www.sophie-world.com/crafts/balloon-boat> gather your materials and make a start. Does it float? Does the power source work well? Could you improve it? How?

DO NOT THROW AWAY YOUR BOAT!

Thursday 9 July

LF: We are learning how to use different power mechanisms when making a boat

How are Boats Powered?

Today let's make a boat powered by a rubber-band.

Watch this clip, <https://www.youtube.com/watch?v=Wy1RUskWxgk&feature=youtu.be> gather your materials and make a start. Does it float? Does the power source work well? Could you improve it? How?

DO NOT THROW AWAY YOUR BOAT!

Friday 10 July

LF: We are learning how to use different power mechanisms when making a boat

How are Boats Powered?

Today let's make a boat powered by wind.

Watch this clip, <https://www.redtedart.com/easy-cork-boat-craft-for-kids/> gather your materials and make a start. Does it float? Does the power source work well? Could you improve it? How?

To conclude our simple boat-making experiment, let's race the three boats. Which one won and why? Now have a think Which power source do you think is most effective? Is it the one which goes the fastest or the one which can last for longer or somewhere between the two? What is your opinion? Can you explain why?

DO NOT THROW AWAY YOUR BOAT!