



E24



10-15 minutes

SINKING AND FLOATING



To develop understanding of the concepts of floating and sinking
To develop understanding of carrying out an experiment



- ❖ Pictures of different types of ship, from different angles



- ❖ A bowl of water (per child)
- ❖ Plasticine balls of the same size – about 3cm diameter (2 per child and 1 for you)
- ❖ A set of small objects (per child) – a piece of wood (e.g. a pencil), a stone, a metal paperclip, a metal thumbtack, a coin and a piece of paper or card
- ❖ 'I Saw a Ship A-Sailing' song (available on YouTube), or another song about a ship of your choice



Show your child one of the balls of plasticine, and ask them to predict if they think it will float or sink. Ask them to put it into their bowl of water. Establish that it doesn't float because it is heavy. Ask them to think of other objects that they think wouldn't float. Then remind them of inflatable toys that they have played with; talk about these toys floating because they have air inside them, and how air is light so the toys do not sink.

Explain that today they are going to perform an experiment; they are going to study some objects and find out for themselves which ones float and which ones sink. Give them a bowl of water and a small set of objects (stone, clip, thumbtack, coin, piece of wood and paper).

Ask your child to take each object in turn, predict whether they think it will float or sink, and then put the object into the water in their bowl. When they have finished, talk about the ones that floated because they are light (wood, paper) and the ones that sank because they are heavy (clips, thumbtacks, plasticine, stones).

Point out that the ones made of metal sink, as it is a heavier material. Then show the picture of an ocean liner. Discuss its great size, the number of passengers it can carry and the fact that it is made of metal – and therefore how heavy it must be.

Ask your child why the ship doesn't sink, and listen to their ideas (they may say that the waves hold it up).

Explain: *The ship floats because it is so cleverly built; it is built in a very special way. I am going to show you a special way of building ships and then you can then be a clever shipbuilder and make your own floating ship too. But we are not going to make huge metal ships; we are going to use plasticine for our ships. Remember how plasticine sinks? So if you want to make a plasticine ship that really floats, you will need to know the special way of making the ship. Watch carefully!*

CONTINUED ON THE NEXT PAGE



Your child can see that a ball of plasticine sinks but a ship made in the correct manner from the same amount of plasticine floats.
Your child can predict that the ball of plasticine will sink.
Your child can predict that the plasticine ship will float.
Your child can say that a plasticine ship floats because it is made in a special way; it has a bottom and sides that stop the water getting in.



KEY TO LEARNING
@HOME



E24

SINKING AND FLOATING – continued



Model how to make a small ship from plasticine – press out a flat piece about 2mm thick from about half of the ball. Then make sides for the ship of a similar thickness from the remaining plasticine. Then press the sides and base together, leaving no gaps. Fill any holes with little bits of plasticine to ensure it is well-sealed and watertight. Carefully put the ship onto the surface of the water and watch it float.

Ask your child to have a go at making their own plasticine ship from their other ball, and then to try floating it. Help them until they are able to do this successfully and it floats.

Talk about their ship and the fact that if it is made correctly in a certain way, it floats. Explain that ships need a bottom and some sides, so that the water doesn't come over the sides of the ship, to be able to float.

Ask them to remind you what happened when they put the first ball of plasticine into the bowl of water. Point out that they started with two identically sized balls of plasticine and while one ball sank, the other that was shaped into a ship floated. Demonstrate this once more by putting both the ball of plasticine and the plasticine ship onto the water at the same time.

Finally, ask your child to predict what would happen if there was a hole in the side of the ship. Then make a small hole in your ship and put it back on the water in the bowl. Watch it fill up with water and sink. Discuss why this happens and summarise that the walls and bottom of a ship or boat must not let the water in otherwise it won't float.

End the session by showing the other pictures of ships, discussing the different types, sizes and their uses, and then singing an appropriate song about ships, for example: 'I Saw a Ship A-Sailing'.



