

Transport Week

Science Experiments

Below are two experiments to make with your child, one is a car and the other is boat.

Both will give your child the opportunity to think in a scientific manner when posed questions. Your child will also be able to think critically and when the thinking process happens alongside an adult, In early years this type of thinking is called 'Sustained shared thinking'.

Questions that may be appropriate for you to ask are:

'What will happen if...?'

'How can we do this?'

'What else could we do?'

'Could we do this?'

'What other materials have we got? What would this do?'

Other questions can be found on each task sheet.

Finally, please email me any pictures chloeledger@stmarymagdalenemk.co.uk

If you completed both of these experiments with your child you will cover the following areas of the EYFS

Physical development (fine motor skills and gross motor skills), **Personal and social development** (working together), **Communication and Language development** (following instructions and talking to each other; asking questions and listening; new vocabulary; speaking in sentences), **Numeracy** (talking about measurements), **Exploring the world** (scientific language), **Expressive Arts and Design** (textures and properties).

These activities will also promote STEM thinking and skills.

Science Experiment – Balloon Powered Car

Method

1. Insert the straw about 5cm into the balloon, then use sticky tape to secure the mouth of the balloon around the straw. Make sure that it is tightly sealed so that no air can escape along the join.
2. Using sticky tape, stick the straw onto the roof of the car. Make sure that the straw is pointing back towards the rear of the car. Trim the straw so it is not hanging too far past the car.
3. Inflate the balloon by blowing through the straw. Pinch the straw closed once it is blown up, to stop the air escaping. Keep hold of the end until you are ready to release the car.
4. Place the car on the ground, let go of the straw, and watch the car go.
5. Encourage the children to think about how far their car has gone. Help them to count the steps it takes to retrieve it. As the children play, challenge them to think about how to make their car travel different distances.

You will need:

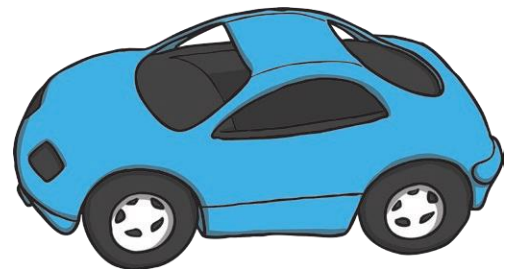
Toy car

Straw

Balloon

Sticky tape

Scissors



Questions

Can you blow up your balloon by blowing through the straw? Pinch the straw closed when you have blown up the balloon.

What happens when you let go of the straw?

How far did the car go? Can you count the footsteps it takes to reach it?

How could you make your car go further? How could you make your car go less far?

Boat Size and Strength – STEM Activity

Method

1. Tell the children that the boy and the penguin need to get to the South Pole.
2. Can they help the boy and the penguin by testing the boats for size and strength, to find the best one for their journey?
3. With the children, talk about size of boat they might need. Lead them to the idea that the boat needs to fit both the boy and the penguin in, but also not be too big.
4. Next, with the children, talk about other properties the boat might need. Talk with the children about how it needs to keep afloat with the boy and the penguin in, as well as being strong enough to hold its shape.
5. Give the children time to experiment with the different trays in the water trough. Allow them to test whether the boy and the penguin fit into the boat and if it stays afloat with them in.
6. Once the children have made their decision about which would be the best boat for the boy and the penguin to sail to the South Pole, ask them why they came to that decision.

You will need:

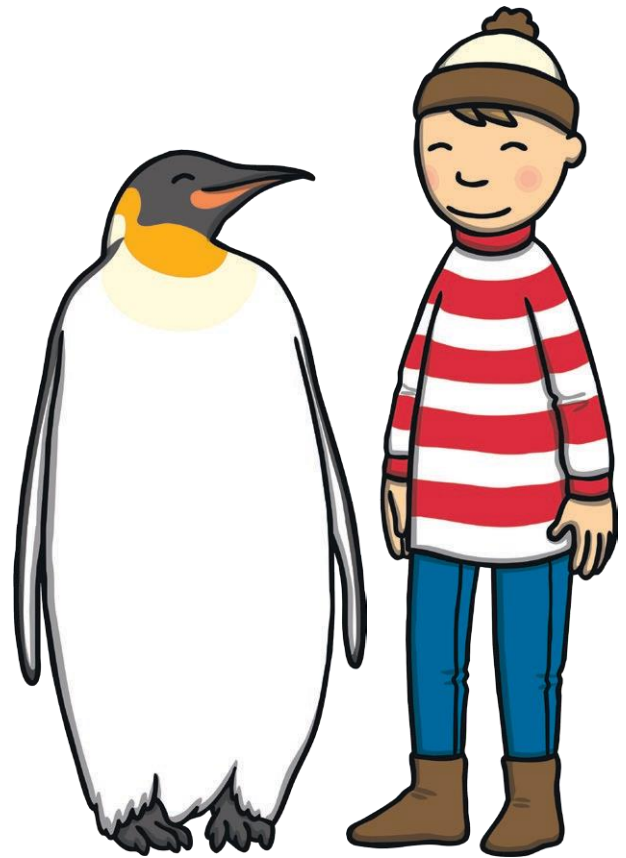
Selection of plastic and cardboard tubs and trays

Boy toy or model

Penguin toy or model

Cocktail umbrellas

Water trough/bath/sink



Questions

The boy and the penguin need to get to the South Pole. They need to test their boat for size and strength. Can you help them by making one? Can you test all of these boats to find the best one for the boy and the penguin? Which boats are big enough? Which boats are strong enough? Which boat did you choose? Why?