Forces and Magnets: Magnetic Poles

Aim:
To describe magnets as having two poles and to predict whether two magnets will attract or repel each other, depending on which poles are facing by making a compass to hunt for treasure.

I can explore magnetic poles.

Success Criteria:
I can identify the poles of a magnet.

I can look at poles to say whether two magnets will attract or repel each other.

I can explain that a compass always points north-south.

Resources:
Lesson Pack

Bar magnets

Flat plastic lids

Plastic bowls

Water

'Treasure' for children to find *(e.g. pencils, erasers or chocolate coins are some ideas)*

Access to this **video.**

Key/New Words:
Magnet, pole, north, south, attract, repel, compass, direction.

Preparation:
Magnet Strength Activity Sheet - 1 per child

Magnetic Poles Activity Sheet - 1 per child

Make a Magnetic Compass Activity Sheet - 1 per child

Direction Cards - 1 per child

Hide 'treasure' for groups to find in certain directions around the edges of the playground.

Prior Learning: Children will have learnt about magnetic attraction in lessons 3 and 4.

Learning Sequence

	**Magnets and Their Invisible Force:** Introduce the 2 ends of a magnet and watch this **video** about magnetic poles. Discuss the questions and explanations on the Lesson Presentation.	
	**Attract and Repel:** Children explore the forces of attraction and repulsion by placing north and south poles together as described on the **Lesson Presentation.** Children complete the **Magnetic Poles Activity Sheet.** Look for children who can identify how like poles repel and opposite poles attract.	
	**Treasure Hunt:** Children follow the instructions on their **Make a Magnetic Compass Activity Sheet** to make a compass. Give each group a **Direction Card,** and children use their compasses in groups to find 'treasure' hidden in the playground.  Make a compass with 4 points. Find treasure hidden in the direction of one of the 4 main compass points.  Make a compass with 8 points. Find treasure hidden in the direction of one of the 4 intermediate compass points.	
	**Evaluation and Explanation:** Children discuss how their compass worked to enable them to find the treasure.	

Task*it*

***Explain*it:** Make a poster to explain how the magnetic poles attract and repel.

***Act*it:** Work in a group to act out the way like poles repel and unlike poles attract.

***Make*it:** Can you make a magnet float? You will need a test tube or measuring cylinder, and button magnets of a slightly smaller diameter than the tube or cylinder. Place one magnet in the tube, north pole facing up. Place the other magnet in the tube with the north pole facing down, towards the first magnet. The second magnet will be repelled by the first magnet, but will not be able to flip over in the narrow tube, so it will appear to float in the tube!