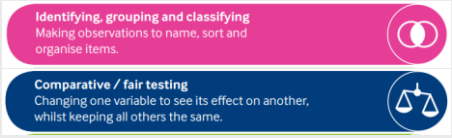
Mendell Primary School

Aspire Challenge Achieve

Medium Term Plan Science

<table>
<tr><td>Year Group: FS2</td><td>Term: Spring 1</td><td>Teacher: Mrs Eason</td><td>Subject lead: Sarah Bride</td><td colspan="2" rowspan="2">Overview: Forces

• Explore the natural world around them.
• Describe what they see, hear and feel whilst outside.

  </td><td rowspan="2">Key End Points: By the end of this unit children will be able to:

Explain that some objects float and some sink.
Explain that wind can move objects.
Explain that objects move differently in different liquids.
Explain that balls can bounce higher if pushed harder.</td></tr>
<tr><td colspan="2">Common Misconceptions:
Some children may think:
• all light objects float and all heavy objects sink
• objects made of the same material will always float or sink.</td><td colspan="2">Unit key Vocabulary:
Model and encourage children to use vocabulary such as:
• float, sink, up, down, top, bottom, surface, move, roll, drop, fly, turn, spin, fall, fast, slow, faster, slower, fastest, slowest, further, furthest, wind, air, water, blow
Expose children to supplementary vocabulary such as:
• force, rotate, solid, liquid, gravity</td></tr>
<tr><td>Links to other learning:</td><td>Prior Learning:
• Explore how things work. (Nursery)
• Explore and talk about different forces they can feel. (Nursery)
• Talk about the differences between materials and changes they notice. (Nursery)</td><td colspan="2">Future Learning:
• Compare how things move on different surfaces. (Y3 – Forces and magnets)
• Observe how magnets attract or repel each other and attract some materials and not others. (Y3 – Forces and magnets)
• Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. (Y3 – Forces and magnets)
• Describe magnets as having two poles. (Y3 – Forces and magnets)
• Predict whether two magnets will attract or repel each other, depending on which poles are facing. (Y3 – Forces and magnets)
• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. (Y5 – Forces)</td><td>High Quality Text:
Who sank the boat? by Pamela Allen

Traditional stories, songs and nursery rhymes
Billy Goats Gruff

Linked careers/ Role Play opportunities:
• Boat builder
• Aircraft engineer
• Rocket designer
• Engineer</td><td>Risk Assessment/Healthy and safety

Ensure bottles of liquid are securely closed before putting into provision area due to drinking risk.</td><td>Teacher CPD:

PLAN ASE EYFS Matrices</td></tr>
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		• Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. **(Y5 – Forces)**			

Provision:		**Water Tray:** continue to explore objects that float or sink and group them following lesson 1. **Outside provision:** exploring have different things move in the wind. Kites, bubbles, material etc… **Construction:** allow the children to explore how cars move down ramps.			
	Learning Intention	Lesson Outline (Key Questions in colour)	Resources	Vocabulary	Lowest 20% Adaptations
1	L.I. I can sort objects into those that float or sink.	**Big Question: What happens if I put different objects in water?** Show the children the container of water. **Ask them what they think the word float means?** Take feedback and demonstrate an object that floats. **What does sink mean?** Again take feedback and model an object that sinks to the bottom on the container. Encourage the use of vocabulary listed to support the children in describing the position of the object. Display a range of fruits and vegetables for the children to observe and feel. Together sort the fruit and veg into two groups one they predict with float and one they predict will sink. Test the children's predictions. Show the children an orange. **Did it float or sink? What might happen if I peel the orange? Do you think it will make a difference?** Predict then test together. Show the children an apple, **did it float or sink? What might happen if I cut it in half? Do you think it will make a difference?** Predict then test together. Repeat for a number of fruits or vegetables allowing the children to suggest different ways of changing them which could change whether they float or sink. Introduce plasticine. What different ways can we shape the plasticine that might help it float or sink? Allow the children to test their ideas. They can continue their experiments in provision.	Range of fruit and vegetables, plasticine or play dough. Water container or water tray.	**Float, sink, up, down, top, bottom, roll.**	
2	L.I. I can text how many cubes can fit different containers before they sink.	**Big Question: What happens if I put marbles in a container?** **Book stimulus:** Who sank the boat? Show the children a range of different sized foil containers which will be their boat. Model to the children that they all float. What happens if I add marbles/cubes (animals) to the container? Take feedback about the children's predictions. Ask the children to order the containers according to how many marbles each container could hold before sinking e.g. smallest to largest. Allow the children to predict how many marbles each might hold then test.	Water container, range of foil containers, marbles or cubes to act as animals.	**Float, sink, up, down, light, full, heavy.**	
3	L.I. I can compare how marbles	**Big Question: What happens if I put a marble in different liquids?**	Clear glue in plastic bottle, baby oil in plastic bottle, lemonade,	**Slow, fast, faster, slower, fastest,**	

	move different in liquids. 	Show the children the different bottles and explain the liquid inside. Ask them to think about and predict what might happen if we dropped a marble into the bottle. Take feedback. Starting with water allow the children to observe what happens. **Can they children describe this in their own words?** They may offer suggestions as to why this has happened. Next show them the glue bottle – **what do they predict the marble will do? Will it move in the same way? Why? Why not?** Allow them to observe the marbles movement and discuss why it is different to the water. With the remaining liquids encourage the children to order them according to their predictions of how the marble might move e.g. slowest to fastest or vis versa. Once all liquids have been tested order them again according to their results. **What happens if I use a larger marble? Smaller marble?** Demonstrate and discuss with the class, **why do they think this is happening?** The marble is lighter/heavier so can move faster/slower than the other marble**.** During explanations the children may talk about the thickness of the liquid and how it is harder for the marble to move through the thick liquid which is why it moves slower. Following discussions place the bottles in provision for the children to explore further e.g. shaking the bottles/ tipping them upside down etc to encourage further discussion on how the marble moves.	clear bubble bath or washing up liquid and water in bottle. Marbles the same size.	**slowest, thicker.**	
4	L.I. I can observe how wind helps things to move. 	**Big Question: What happens if I fly different sized paper aeroplanes?** Outside allow the children to explore balloons, bubbles, kites and material and see how they move. Ask the children what is moving the objects? Discuss how wind can make things move and see if they can suggest anything else that can move in the wind e.g. wind turbine, windmill, pinwheels, garden decorations. Back in class ask the children to make a paper aeroplane allowing them to choose the size of paper or material it is made from. Once complete allow the children to discuss the differences between their aeroplanes, size, shape and weight. **Predict:** will all the planes travel the same distance? Why? Why not? Ask the children how they will make their planes fly. Encourage discussions about them pushing the plane into the air and how the wind might help. Go outside to test their planes. Children to face towards the wind at first. **Ask them what way is the wind blowing? Will this help our planes?** Allow them to throw their plane and use their feet to measure how far their plane has travelled. This might be easier to complete in small groups rather than whole class. **Now ask the children to face the other way, which way is the wind blowing now? Will this help our plane fly further?** Test by throwing plans a second time and again measuring the distance using footsteps. **Did you plane fly further with the wind in front or behind you?** Explain that the wind helps move objects in the air.	Balloons, bubbles, kite, material, pin wheel.	**Blow, air, wind, move.**	
5	L.I. I can compare how different balls bounce. 	**Big Question: What happens if I bounce different balls?** **Links to prior learning**: Earth & Space - pulls, materials. In hall or outdoor space. In groups provide the children with a range of balls. Allow them to bounce the balls and observe what happens. **Which ball bounced the highest?** Allow the children to continue to observe each ball and see if they can sort them according to how high each ball bounced. Challenge the children to see if they can make their ball bounce higher. **Did anyone achieve this? Why do you think the ball bounced higher?** Encourage the children to think about how hard they pushed the ball towards the floor ask them to compare what happens when they push the ball	A range of balls – bouncy balls, basket balls, tennis balls, football, ping pong balls.	**Move, bounce, high, higher, lower, low, lightly, harder, push.**	

		lightly and then push the ball harder **what do they notice?** Can they complete the sentence stem when I push the ball harder it bounces… when I push the ball lightly it bounces… **Extension to learning:** Bounce the balls on different surfaces – what do you notice?			