

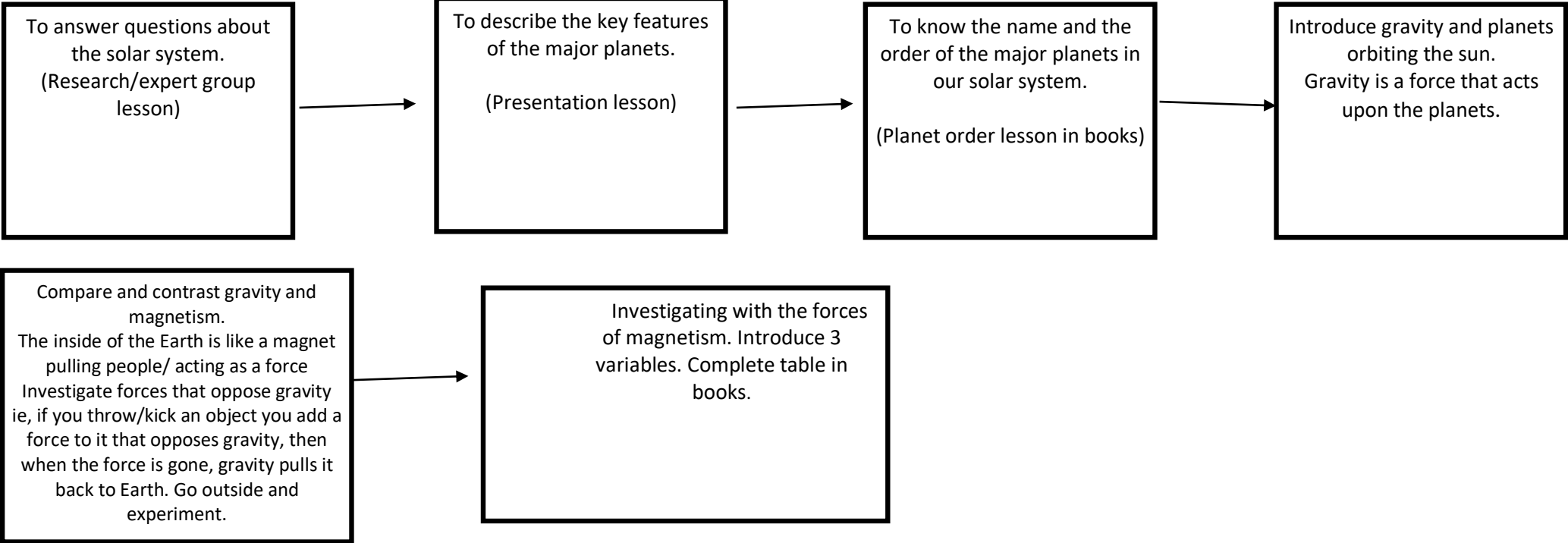
National Curriculum
Knowledge and skills:

- To know the name of the major planets in the solar system
- To know the key features of the major planets in the solar system
- To the order the planets
- To understand that the sun's gravity keeps the planets in orbit
- To understand gravity as a force that is acting on objects on Earth
- To understand magnetism as a force that acts on different objects

Vocabulary

Space, planets, orbit, gravity, magnetism, gas, magnetic, forces, "acting on", solar system, predict, experiment, test, evaluate, oppose

Snapshot overview



Medium Term Planning

Year Group: 2 **Term:** Autumn 1 **Topic:** Solar system and forces

	Learning Objective	Input (including key questions and vocabulary)	Task including scaffold and differentiation	How will the learning be assessed?
Sess ion 1	I can answer questions about the solar system.	<p>Starter - refer to vocab wall - what do these words mean?</p> <p>Google Earth- Look at the UK and find where we live, then start zooming out. What can we see? How is our view changing? What colour can we see and what are they? Keep zooming out until you can see the whole planet then rotate Earth around. What is out there that we can't see?</p> <p>TA to record children's ideas on sugar paper (edit these as you learn more).</p> <p>Use clips from BBC learning zone class clips- look at all the clips which tell you about the 9 planets.</p> <p>Discussion points-</p> <ul style="list-style-type: none"> ● What is our planet called? ● What is a solar system? ● Why is it called the solar system? ● Are all the planets the same? ● Why are all the planets arranged around the sun? ● Why do they stay where they are? ● Why do we not fall off the earth? 	<p>Cutaway support to revisit vocab</p> <p>Mixed ability groups</p> <p>Challenge: create own mnemonic to help others with the order of the solar system.</p>	Discussion Questioning

		<p>Teach children a mnemonic to remember the order of the planets.</p> <p>TA to record what they find out from clips and add on to children info from earlier- display.</p> <p>Split the children into 9 expert groups- True/False cards. Each group has one planet and true/false cards. Read the information and decide if it is true/false relating to that planet and place the true info on the picture of the planet.</p> <p>Visit the other tables and evaluate true/false statements.</p> <p>Plenary- feedback one fact you have learnt. Test each other on order of the planets using mnemonic.</p> <p>Questioning</p>		
<p>Session 2</p>	<p>I can describe some of the features of the planets in the solar system.</p>	<p>Starter - refer to vocab wall - what do these words mean?</p> <p>Recall learning from last week; mnemonic to order the planets. Can they remember the order? Can they say the order to another child?</p> <p>Tell them they will give a short presentation to feedback to the rest of the class on their given planet. Give children fact sheets about their planet to record key information on sugar paper. They will describe their planet and identify key features.</p> <p>Each group to feedback for 2 to 3 minutes- TA to add their info to the info already gathered. Other children to ask questions to the groups about their planet. Children</p>	<p>Cutaway support to revisit vocab</p> <p>Mixed ability groups</p>	<p>Questioning Presentation</p>

		<p>to be given opportunities to find out the answers to their questions eg on Google/teacher can facilitate this.</p> <p>Plenary: planets quiz. Questioning</p>		
Session 3	I can say the order of the major planets in the solar system and can describe some of their features.	<p>Starter - refer to vocab wall - what do these words mean?</p> <p>Recap previous learning.</p> <p>In groups, children are given print-outs of planets and together they should order them correctly.</p> <p>Children then work in books to order planets correctly. They are given clues to help them order the planets e.g. the third planet is where we live (in resource file).</p> <p>Write a key fact for each planet drawing on what they have learnt from the previous lessons.</p> <p>Questioning</p>	<p>Cutaway support to revisit vocab</p> <p>Support – word banks/TA support for planet names and facts</p> <p>Extension/challenge – making a planet quiz in your book</p> <p>Challenge- Can you make a quiz for your partner using planet clues. E.g. Which planet is the furthest away? Which planet is the coldest?</p>	Written work Questioning
Session 4	I can explain that gravity is a force that acts upon the planets orbiting the sun.	<p>Starter - refer to vocab wall - what do these words mean?</p> <p>Recap previous learning.</p> <p>Take children outside. Give 8 children a planet print-out to hold and 1 child the sun. Discuss how they should be arranged and discuss how they move around the sun. Why do the planets stay in position? What keeps them there?</p>	<p>Cutaway support to revisit vocab</p> <p>Cutaway support group to carry out orbit task with TA</p>	Discussion Questioning

		<p>Show how the sun's gravitational pull keeps the planets in orbit. Use a skipping rope to demonstrate the sun acting as a pull force on the planets one by one. Allow all children to have a go. Discuss their findings. What did this show us?</p> <p>Plenary: What have we learnt? Did anything surprise you? Edit working wall with findings.</p> <p>Questioning & investigating Presenting and interpreting evidence</p>		
Session 5	I can understand that gravity is a force that acts upon objects on Earth.	<p>Starter - refer to vocab wall - what do these words mean?</p> <p>https://theskylive.com/3dsolarsystem</p> <p>Show children the above simulator of solar system orbit. Discuss how planets are kept in orbit by gravity. Ask how gravity affects us on earth. Key question: what would happen if we didn't have gravity? Children to discuss in groups and gather ideas.</p> <p>Compare and contrast gravity and magnetism. The inside of the Earth is like a magnet pulling people/ acting as a force</p> <p>Investigate forces that oppose gravity ie, if you throw/kick an object you add a force to it that opposes gravity, then when the force is gone, gravity pulls it back to Earth. Go outside and experiment using different objects/activities e.g. bouncing a ball, throwing a hoop, dropping heavy and light objects, jumping up and down. Children to present their findings in their own way to the class using appropriate scientific language – orally/drawings.</p> <p>Questioning, predicting, investigating, presenting</p>	Cutaway support to revisit vocab	Discussion Questioning Observation

		evidence.																		
Session 6	I can carry out an investigation into the forces of magnetism.	<p>Children to experiment with magnets in groups, with a variable at each group. Children to have a proforma to record their predictions and observations.</p> <p>Variables:</p> <ol style="list-style-type: none"> 1. Distance between 2 magnets/magnet and other object (use measuring skills – relate to maths learning) 2. Size of magnets (use measuring equipment e.g. scales, rulers) 3. Different object in between the magnets (different materials) <p>Set up 3 different tables where 3 different groups can test these variables and record their findings. Children to interpret their evidence and evaluate their findings. Was their prediction right? What do their findings show? Could you change anything?</p> <table border="1"> <thead> <tr> <th>Variable</th> <th>Prediction</th> <th>Observation</th> <th>Conclusion</th> </tr> </thead> <tbody> <tr> <td>Distance</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Size</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Materials</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Variable	Prediction	Observation	Conclusion	Distance				Size				Materials				<p>Support: adult guidance/questioning</p> <p>Mixed ability group</p> <p>Challenge: Can you suggest any other variables? e.g. water, temperature.</p>	<p>Prediction, testing and findings</p> <p>Questioning</p> <p>Discussion</p> <p>Observation</p>
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		<p>stick in proforma with predictions, observations and evaluations.</p> <p>Children to write some findings in books e.g. compare prediction with findings, write something they learnt. Prediction, investigating, presenting evidence, interpreting evidence, evaluating. Challenge: Can you suggest any other variables? e.g. water, temperature.</p>		
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To be able to name planets in the solar system

To be able to describe the key features of the major planets in the solar system

To be able to order the planets

To explain that the sun's gravity keeps the planets in orbit

To explain that gravity as a force that is acting on objects on Earth