

Year 1 Science – Forces

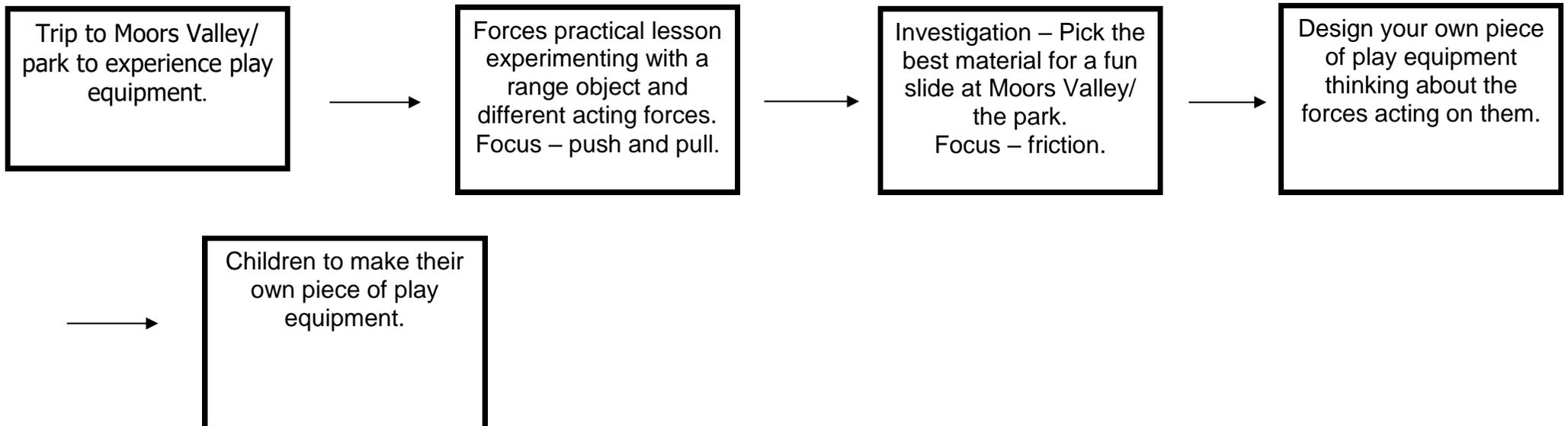
Teaching points

To understand that forces act on play equipment including push, pull, friction.
To identify the force that is acting.
To distinguish between forces and what happens when they are in action.

Vocabulary

Push
Pull
Friction
Gravity
Weight
Material
Smooth
Bumpy
Slippery
Rough
Momentum

Snapshot overview



Year 1 Science – Forces

Medium Term Planning

Year Group: 1

Term:

Topic: Forces

	Learning Objective	Input (including key questions and vocabulary)
Session 1	I can experience play equipment and comment on the forces acting on them.	Visit to Moors Valley Country Park. Explore a variety of play structures. Allow children to use them and discuss how they move in different ways on the equipment. Discuss what force is needed to make them move, speed up slow down. Try a range of equipment that shows push, pull and friction in action.

Year 1 Science – Forces

Session 2	<p>I can recognise examples of pushes and pulls.</p>	<p>A force is the push or pull that starts something moving.</p> <p>Read through an information book about forces. As you read children will practically experience each force.</p> <p>1 – push – children to work in pairs with a ball, pushing it to each other with their hands and feet. Ask children to stop the ball with their hands or feet and explain that you have used a push to stop the ball. Children will understand that you can use a push to stop and start movement. Then children to change the direction of the ball using a push e.g. the ball is coming towards the child and they change direction of it using their hand.</p> <p>I wonder how strong my push is?</p> <p>Have a set of kitchen scales lent against the wall. Children can push the scales against the wall and measure the force of their push. Can they push harder or lighter to change the level of force? Discuss.</p> <p>2 – pull – Loop a lightweight rope around the back of two chairs. Hang a something on the loop to send back and forth by pulling. Children will experiment with pulling the rope hard and then gently. What kind of pull moved the basket the furthest?</p> <p>Plenary – get children back together and discuss what they have learned and how this applies to the things they do.</p>
-----------	--	--

Year 1 Science – Forces

Session 3/4	<p>I can recognise how friction affects movement.</p>	<p>Discuss trip to Moors Valley and look at photos of the play equipment. Identify the forces that are active on each piece of equipment.</p> <p>Discuss how friction is also a force that we see in effect on different equipment. Ask children to slide across the carpet on their bottoms and spin around. Discuss how the surface allows them to move. Repeat this activity on plastic chair and again in the school hall. Discuss the differences e.g. it is easier to move on the hall floor because there is less friction and the surface is smooth.</p> <p>Moors Valley Country Park would like to build a new fun slide. They would like to know which material they should use to let children move in a fun way. In small groups explore a range of materials and allow children to add to these with their own ideas. Children to predict how they would move if the slide was made of that material. Relate this to the friction conversation earlier in the lesson.</p> <p>In groups children to discuss how they are going to test the materials e.g. will they slide a Lego man/ counter/ coin down it and what movement are they looking for to make it fun.</p> <p>In books children to sort materials into more or less friction to help them choose the material for their slide.</p>
-------------	---	---

Year 1 Science – Forces

		<p>Adult to encourage the discussion to be related to friction and how much of that force will be in evidence. Children to choose their favourite material.</p> <p>In books children to write a sentence to explain their choice e.g. I have chosen bumpy plastic because it is smooth so there will be less friction so I will move fast over the bumps.</p> <p>Can be extended to two sessions if necessary.</p> <p>Vocabulary – faster, slower, change of direction.</p>
Session 5/6	<p>I can design, make and evaluate a piece of play equipment. (Push, pull, friction)</p>	<p>Design your own piece of play equipment thinking about the forces acting on them.</p> <p>Think about trip to Moors Valley and look at pictures of play equipment and discuss. Remind ourselves of what forces will be acting on each piece of equipment. In books children to design their own playground and label what forces will occur on them.</p> <p>Children to make their own playground. In pairs share their work and identify the forces. Partner to write the forces on post it note and label their partners playgrounds. Do you agree with your partner?</p>

Impact

Children will be able to explain what a force is and name them.

Children will be able to recognise a force in action e.g. push, pull and friction.

Children will be able to exert a force on an object and explain what they have done.