

Pioneer Federation
Medium term plan
Ks1- Cycle 2, Term 6
Science



Subject: Science	
Key Concept/ Theme: Materials part 2	
Prior Learning links: Year 1 learning cycle 2 term 4. <ul style="list-style-type: none"> • Distinguish between an object and the material from which it is made. • Identify and name a variety of everyday materials, including wood, plastic, glass, water and rock. • Describe the simple physical properties of a variety of everyday materials. • Compare and group together a variety of everyday materials on the basis of their physical properties. 	
Vocabulary: Types of materials: wood, plastic, glass, metal, water, rock, brick, fabric, sand, paper, flour, butter, milk, soil Properties of materials: hard/soft, stretchy/not stretchy, shiny/dull, rough/smooth, bendy/not bendy, transparent/not transparent, sticky/not sticky Verbs associated with materials: crumble, squash, bend, stretch, twist Senses: touch, see, hear, smell and taste	
Individual schools: <i>Use local area and school grounds to see how materials have been used for different purposes.</i>	
1.	Deeper learning question for the term: Do all materials have a purpose? Prior learning reconnection (year group, cycle & term): Cycle 1 t4 cycle 2 t4 LO: Let's learn to apply our knowledge of scientific vocabulary. (assessment session) Activity: Children to recap what they learnt in T4. Give children concept cartoons with different scenarios to understand their knowledge gained. Children to take part in sorting/grouping activities to apply the vocabulary they have learnt and identify any misconceptions. Use this task for pre teaching of language. Future learning links: next year in cycle 2 t4 and then into ks2
2.	Deeper learning question: How can wood be used in our world? Reconnection: Recap on the scientific vocabulary need for the term and what the word 'purpose/suitable' means. LO: Let's learn about the properties and uses of wood. Enquiry skill: concluding/so what? Activity: Take the children for a walk in and out of the school. Discover how many things are made from wood. The children could suggest reasons why wood was chosen in each of the cases. Set up a rotation of activities to test out the suitability and uses for wood. Link to the topic- what could they use wood for in castles? Page 10 Kent planning 1. Strength

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	<p>2. How easy it is to put push pins into it 3. Weight. 4. How hard it is. 5. Using secondary sources.</p>
3	<p>Deeper learning question: Do all materials do the same job? Reconnection: What are the purposes of different materials including wood. LO: Let's investigate the different properties of materials and identify how they can be used to solve a problem. Enquiry skill: Predict, conclusion/so what? Activity: Simple test – Which material is best for blocking a hole in a bucket? Show the children a container with a hole in the bottom. Ask them to suggest materials that would be good at preventing water from leaking through the hole. Ask them also to think about how they could find out which is the best material for doing this. In small groups the children could find out which material plugs the hole the best. They could measure the amount of water that goes into the container, and then measure the amount of water that passes through the hole. Materials for plugging holes in the flowerpot; Blu Tack, Plasticene, clay, wax, straw. Link to topic with a context of bucket needed for a castle task.</p>
4	<p>Deeper learning question: Why do engineers need to think about the properties of materials when designing and making? Reconnection: To understand what the meaning of suitability means. LO: Let's compare the suitability of different materials. Enquiry skill: predicting, fair testing, concluding Activity: Children to investigate which material lets the most light in. See page 13-14 Kent planning. Use results for the children to talk about and decide where the errors might be. Children to retest the investigation creating their own set of results predicting using science knowledge.</p>
5	<p>Deeper learning question: Why would scientists need to repeat their investigations? Reconnection: Why do engineers think about the properties of materials when making? Why would they need the knowledge of materials to help them? LO: Let's investigate how materials affect the surface a car travels on. Enquiry skill: concluding and improving Activity: Children to investigate which surface is the best for a car to travel on. The children could be encouraged to think about how they should perform the test; how high the ramp should be each time, the type of car to use, how many surfaces need to be tested, how many tests on each surface, how they will 'measure' the distance travelled, and how they could show their results. Measuring distance: <ol style="list-style-type: none"> 1. The cars could travel along lengths of cheap wallpaper paper, and the distance travelled could be recorded with different colour sticky dots. 2. The children could measure in number of cubes, straws, etc. The more able children could measure in standard units – i.e. centimetres. Recording Support the children with recording their results in a table.</p>

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1. Look at what happened to how far the car travelled when placed on different ramps. Ask the children to suggest why some of the ramps did not allow the cars to travel very far. Using a digital microscope show pictures on the IWB of the surfaces magnified.

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Deeper learning question:
Reconnection: Why do scientists repeat a set of results and repeat their investigations?
LO: Let's investigate and compare how shapes change shape.
Enquiry skill: so what

Activity:

Exploring – How well can we change the shapes of some solid objects

Begin by discussing with children what they think the term 'solid' means. Establish that a solid has a definite shape that remains the same unless a force is acting upon it.

Home-made goo– Using only salt, plain flour, water and cooking oil the children can make their own stretchy material. Ask them to make a variety of shapes e.g. by twisting, stretching, bending, or squashing the materials.

Ask children to try to do the same with other objects e.g. Plasticene, Blu Tack, elastic bands, foam sponges, soft rubber ball, paper, fabric, metal/wooden spoon, and to describe what happens.

Children compare the materials and rate according to how bendy, squashy, able to be stretched, able to be twisted, etc.

Quiz

End points:

To know that some materials can change shape and some are solid.

To know the names of materials: wood, metal, plastic, fabric, rubber, glass, cardboard, paper, water and rock.

To compare and identify the properties of materials.

To name the material and its properties.

To predict when investigating and draw conclusions linking back to their predictions.

To apply their knowledge from their conclusions to the real world around them

To know why and how to improve their investigations.

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