Subject	Term	Unit
Science- Year 2	Autumn	Everyday materials

Intent
At Hurst Hill, we nurture young scientists by fostering curiosity and developing strong scientific knowledge and enquiry skills. Children learn to investigate, observe and evaluate confidently, understanding how science shapes the past, present and future while building firm foundations for lifelong scientific learning.

Prior knowledge	National Curriculum
• distinguish between an object and the material from which it is made • identify and name a variety of everyday materials, including wood, plastic, glass, metal, 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 simple physical properties.	• identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

What?	To understand the suitability of different materials for different purposes.
Why?	To support the children in understanding materials and how they can be used. This will help them with other areas of the curriculum such as DT.
How?	Through observation and measurement. Through discussion and collection of information.

Vocabulary	
Absorbent	Material That Easily Soaks Up Liquid.
Bendy	An Object That Bends Easily Into A Curved Shape
Elastic	A Rubber Material That Stretches When You Pull It and Returns To Its Original Size When Let Go.
Fabrics	Cloth Or Other Material Produced By Weaving together Cotton, Wool, Or Other Threads.
Man-made	Things Which Are Created By People.

Natural	Things That Exist In Nature That Are Not Man-made.
Opaque	An Object Or Substance You Cannot See Through.
Properties	The Qualities Or Features That Belong To something And Make It Recognisable.
Recyclable	Waste Or Materials Which Can Processed And used Again.
Rough	Uneven And Not Smooth
Shiny	Bright And Reflect Light
Smooth	No Roughness, Lumps Or Holes.
Soft	Not Rough Or Hard.
Squash	Pressed Or Crushed With Force That Something loses Its Shape.
Stiff	Firm And Doesn't Bend Easily.
Stretchy	Slightly Elastic
Transparent	An Object You Can See Through.
Twist	Turn Something To Make A Spiral Shape.
Waterproof	Does Not Let Water Pass Through It.

Learning	
Objective	**Learning**
Can I identify materials for a particular purpose?	**Pattern seeking** · Materials are used for different purposes based on their properties. · For e.g., wood is used to make furniture and floors. · Metal can be used to make coins, cars and cutlery. · Glass can be used to make windows. Glass, metal, rock, plastic, wood, brick., paper, cardboard. Have a range of objects to look at, identify and sort. What is the object and what is the material. Be really explicit on teaching the material. Recap on properties from Year 1. Record in Venn diagrams, tables, charts etc.
Can I explain the properties of materials? *What materials have been used to*	**Identifying and classifying** You can compare other places at home, journey to school, on visits, in stories, rhymes and songs. Go on a walk around school and discuss the materials and where they have been used. Talk about the properties of the materials and begin to think why they have been used in

build your house and school?	certain places. Use ipads/ Chromebooks to take photographs.
Can I compare materials? Which material would be best for the roof of the little pig's house?	**Comparative** Look at a variety of materials and decide on the best material for making the roof of the pigs house. Think about the property we want the house to have: Choose one- **transparent/ opaque**. Transparent, waterproof, opaque, stiff, soft, shiny, rough, absorbent, bright, bendy, stretchy, hard, smooth, dull. smooth, dull. Using the scientific enquiry boards think about what we will observe and what we will measure. Give children premade tables to complete with their observations.
Can I compare materials? Which material would be best for the roof of the little pig's house?	**Comparative** Look at a variety of materials and decide on the best material for making the roof of the pig's house. Think about the property we want the house to have: Choose one- f**lexible/rigid.** Transparent, waterproof, opaque, stiff, soft, shiny, rough, absorbent, bright, bendy, stretchy, hard, smooth, dull. smooth, dull. Using the scientific enquiry boards think about what we will observe and what we will measure. Begin to think about what we are keeping the same. Give children premade tables to complete with their observations.
Can I compare materials? Which ball is the bounciest?	**Comparative** A variety of balls, preferably of fairly similar size, e.g. tennis, sponge, rubber, ping pong (try to avoid large balls like footballs and basketballs), tape measure. (Children could bring in their own balls), large sheets of paper and pens for recording the bouncing, squared paper and rulers for creating bar charts. Use the scientific enquiry boards to talk about what we are changing and what we are measuring. Make a class prediction. Children record a sentence to say which ball was the bounciest and what they have found out.
Which materials are best to make bridges?	**Pattern seeking** Images of bridges and vocabulary cards from resource, a selection of materials for each group, What makes a good bridge? What properties does the bridge need to have?

	Use materials including lengths of wood, metal, plastic, card (Make them similar lengths: you could use plastic, metal and wooden rulers), small weights (100g), tape, string. Create their bridge using one material. Different materials for different groups. Which material is the most rigid?
Can I compare materials? Why are the properties of these materials suitable for these items?	**Comparative** Why are they suitable what would they be unsuitable for? Have lots of objects and ask the children to think about why they are made of the material they are made from. E.g. metal saucepan. Record their ideas using pictures. Why would be not make a saucepan out of wood? Etc.
Can some items be made by more than one material?	**Observing and classifying** Investigate spoons. Look a wide variety of spoons- metal, plastic, wood, (Make some spoons out of inappropriate materials) Ask the children to work in groups to choose a spoon and explain why it is the best spoon for the job- pick a job that it could be used for e.g. eating a salad (maybe link to DT cooking)
Can I understand why some materials are more flexible than ithers? How the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching?	**Comparative** Variety of Materials that stretch and twist children to compare how they are different. What is special about the material. Can they describe it's properties? Complete a Venn diagram to show. Make it clear that it is the material and not the object.
Can I understand how some materials may be changed?	**Comparative** Investigate what all these things are using playdough. Sort different materials into ones that do these things. Which materials fit into more than one category. Use a

	chart to record which materials have these properties. Make it clear that it is the material and not the object.
Can I identify which materials can be recycled? Why is it important that we recycle substances?	**Research** Group items into recyclable and non recyclable. Is there anything that they notice about those that are recyclable or non recyclable. Look at the recycling process.
Can I explore? *Charles Mackintosh adapted his coats and how has this helped us in the future?*	**Ideas over time** Charles Mackintosh Waterproof coat- look at what he did to improve his coats. How has this helped us today?

Websites

[Year 2: Uses of Everyday Materials | STEM]
[Primary Teaching Resources - BBC Teach]
[Everyday materials - KS1 Science - BBC Bitesize]

Recommended Reads