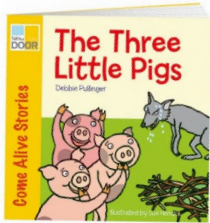



## Unit Plan: Which material is best? (6 weeks)

### Rationale

- To understand and explain everyday materials. To draw scientific conclusions. To discuss personal opinions and have reasons for their opinions.

Core Texts	Key Figures		Enrichment	
<p>The Three Little Pigs</p> 	<p>Charles Macintosh</p> 		<p>School environment: Material Hunt around school</p>	
			Written outcomes	
			<ul style="list-style-type: none"> <li>Create a new character and include in own version of story</li> <li>Scientist Study – Factfile</li> <li>Science Investigation: Write up</li> </ul>	
Science unit	RE unit	Oracy	Cross curricular Links	
<p>Everyday materials</p>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>D &amp; T</li> </ul>	<ul style="list-style-type: none"> <li>Science</li> <li>PSHE</li> </ul>

Lesson	Learning Challenge	Outcome	Adaptive teaching	Bubble Bee Room	Flashbacks
1. Science	Can I name and explore materials?	Twitter Tuff trays - different materials. Magnifying glasses. Vocab cards Pic collage for everyone of them exploring materials.	Vocab cards with the words metal, wood, plastic, glass, rock, fabric, rubber, liquid with a real image Encouraging talk. Speech bubbles capturing their comments. How does it feel? Cold, warm, hard, soft, smooth, rough, shiny, dull. Print on coloured paper.	Vocab cards with the words metal, wood, plastic, glass, rock, fabric, rubber, liquid with a real image Encouraging talk. Speech bubbles capturing their comments.	Day and night Image of Earth which side is day which is night. How do you know?
2. Science	Can I say where materials come from?	Where do materials come from? Wood - trees Metals - in the ground Plastic - man-made Glass - sand heated Rubber - tree Wool - sheep Silk - silk bug Cotton - plant Show videos.  Cut and stick to match where it comes from. Table - tree. Glass window - sand.  Challenge: Write a sentence e.g Glass comes from .....	Some things come out of the ground - metals and rocks. Look at rocks.  Materials come from - wool - sheep.  Wood and trees.  Cut and stick items to where they come from.  Less materials. Promote discussion.	Explore how the materials feel and personal preferences.  Do they like the feel of rough materials - bark, brick, sponge top.  Soft things - cotton wall ect.	Materials they look at yesterday - what were they called? Plastic, ect.
3. Science	Can I name and group materials I have found?	Go for a material hunt around school to find 6 items. 1. Climbing frame - metal 2. Pond - wood 3. Tyres - rubber 4. Water bottles - plastic	Group led with adult. Matching image with word. How do you know?	Show a material - can they find that in the room?  Metal - table legs.	Mini quiz - Where does wool come from? Where does wood come from? Ect. Matching activity on the board.

		<p>5. Coats - fabric 6. Rocks - rock</p> <p>Challenge - find something made of 2 and then 3 materials?</p>			
4. Science	Can I name and group materials?	<p>Get the children to sort and group materials how they like.</p> <p>Lots of materials get chn to suggest how to sort them.</p> <p>Small/ big hard/soft bendy/non-bendy see through/not see through</p> <p>Challenge - Venn diagram</p> <p>LA/MA - Sort images into groups. A3 paper -2 circles - images to put in.</p>	<p>2 hoops - make it a game.</p> <p>Lots of materials</p> <p>Chn sort them</p> <p>Hard/soft</p> <p>Rough/ smooth</p> <p>Big/ small</p> <p>Shiny/dull</p> <p>Take photos</p>	<p>Hoops and physical objects using opposing properties. Eg hard/soft</p> <p>Rough/ smooth</p>	<p>Vocab - Cold, warm, hard, soft, smooth, rough, shiny, dull, bendy, see through.</p>
5. Science	Can I say what transparent and non-transparent is?	<p>Teach what transparent and non-transparent means.</p> <p>See thorough, not see through</p> <p>Clear not clear</p> <p>LA/MA - do as a class. Pass around the items and get them saying the vocab.</p> <p>Why are things transparent and not?</p> <p>HA - group them on their tables</p> <p>Write a sentence next to each picture to say if they are transparent or not.</p> <p>Plenary - house. Would a transparent house be good? Why? Challenge: Windows, curtains.</p>	<p>Circle time.</p> <p>In the quiet room</p> <p>Pass the item around</p> <p>Can you see through it?</p> <p>Go on a walk to find transparent and not</p> <p>Why are they see through?</p>	<p>Explore things that are transparent and are not transparent.</p> <p>Consolidate the previous learning of naming materials.</p>	<p>What is light and dark?</p>
6. Science	Can you compare the properties of glass and rock? Can I understand the strengths and	<p>What is glass? What is rock? Glass in a tray - rock in a tray.</p> <p>Picture of glass and rock in their books. Children to</p>	<p>Same but in group.</p> <p>Explore the materials.</p> <p>Adult create the mind map with their suggestions</p> <p>What things are the same?</p>		<p>Discuss the seasons and how that links to the type of house we need.</p>

	<p>weaknesses of materials.</p>	<p>mind map around it the properties. Word bank created together on the board.          HA - rock and glass are the same because.....          Rock is different to glass because.....          Glass is different to rock because....          LA/Ma - What is the same? What is different?          Plenary: Stone house and glass house lego man. Which is the better house? Water over it, break it, shine a light inside.          Bubble: Do you think the house should be made out of rock or glass? Why?</p>	<p>What things are different? Which house would you pick image for them to circle?          Stone house and glass house lego man. Which is the better house? Water over it, break it, shine a light inside.          Plenary- Why did they chose that one?</p>		
<p>7. Science</p>	<p>Can you compare the properties of fabric and wood?           Can I understand the strengths and weaknesses of materials?</p>	<p>What is fabric? What is wood? Wood in a tray - fabric in a tray.          Picture of wood and fabric in their books. Children to mind map around it the properties. Word bank created together on the board.          What would each be good for making? Why?          LA/Ma - list of things: trousers, furniture, kite, tent, coat, table, shed, toys, fence, bench,          HA - less items but explain why.          Plenary - Tent and shed - which makes a better house?</p>	<p>Look at fabric and wood. Discuss the properties. Make a group mind map.           Test out the tent and shed. Which makes a better house?          Light - is it transparent?          Waterproof          Cold/hot</p>		<p>Which was the better house? Why?</p>

		Water can on it, shake it, light, what's the temperature like in there? Bubble - which makes a better. Tent or shed. Why?			
8. Science	Can you compare the properties of metal and plastic? Can I understand the strengths and weaknesses of materials	What is metal? What is plastic? Why should we all change to metal water bottles? (twitter) Which material makes the best bottle? Testing - strength, transparent, light, heavy, recyclable.  Design a metal water bottle - label with properties. Use tin foil to collage their poster. Why is it a better bottle. Strong, better for the environment. Word bank for LA  Back the posters to look good. Take a picture of them with poster. Stick up around the school.	Predict - which bottle is the strongest?  Practical - test out metal and plastic bottles. Discuss properties.  Create a big poster together using foil to make the metal. Group effort.		David Attenborough. Images of plastic pollution - why is plastic bad?
9. Science	Can I explain how Charles Mackintosh invented the waterproof material?	What came before? What did he invent? How did he invent it? What came next? What do you think could happen next?	Who is Charles Mackintosh? What did he invent? Why? Watch the video and discuss. Adult scribe		Materials which came first.
10. Science	Can I test waterproof and non-water proof materials?	Books create a sheet where pupils can predict which materials will/ won't be WP. HA - write LA - tick box of materials. Picollage the method.	Same within a group. Big Shared one.		Mini quiz - Who is Charles Mackintosh? Facts.

		<p>- Children to put different materials around their shoes and the children to jump into puddle. Simple chart with ticks and crosses.  HA - My material was waterproof because.  Draw a picture of their shoe. MA/LA - pictures of materials down the side. <b>Ask parents to bring in an extra pair of socks and carrier bag.</b> Tin foil, lolly sticks stuck to the bottom of a shoe. Paper and plastic bag. Cling film, socks, tin foil,</p> <p>Conclusion: Which one was and wasn't waterproof?</p>			
11. D and T	Can I design a model for the 4 <sup>th</sup> pigs house?	<p>Book - Purpose: New pig needs a safe house to live in. It must protect her from the wolf.</p> <ul style="list-style-type: none"> <li>- Strong</li> <li>- Waterproof</li> </ul> <p>Materials children will look at. Design of house given - children to label their house with material of their choice and why?</p>	Same but as a group.		Read the three little pigs. Introduce a new pig - 4 <sup>th</sup> pig.
12. D and T	Can I make a house?	Make the house using their chosen material.			
13. D and T	Can I evaluate?	Test their house? Was it strong? Was it waterproof?			
14. D and T	Can I record my results?	Reply to the 4 <sup>th</sup> pig telling her what you did.			
18 D & T	Can I create a simple mechanism (split pin pig)	Can you make a moveable character to use in your story?	Support with cutting and making the holes.		Read alternative stories for 3 little pigs.

		<p>Explore - how can you attach the parts to make them move.</p> <p>As a class, use glue, blue tac, sellotape, split pins.</p> <p>Which was the best? Why?</p> <ul style="list-style-type: none"> <li>- Cut out parts of the pig</li> <li>- Make the holes safely</li> <li>- Attach the split pin</li> <li>- Split the pin</li> <li>- Use the pigs / wolf</li> </ul> <p>Act out the story.</p>			
19. D & T	Can I evaluate my mechanism?	<p>Why were the other attachments ways not good?</p> <p>Image of their pig with them. Why is the split pin the best mechanism?</p> <p>Act out the story.</p>	Group evaluation. Scribe answers.		Seasons.
20 PSHE	Can I recognise what is fair and unfair, kind and unkind, right and wrong?	<p>Circle time/ twitter - feeling rugs/ happy and sad faces to show emotions.</p>	In class.		