

THE WINTERTON FEDERATION MEDIUM TERM PLAN SCIENCE Spring 1 YEAR 2

Material Monsters	Learning Objective	Activity – Switched On Science	STEM Activities	Success Criteria
Session 1	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	What do children know about materials such as can they sort them according to the name of each material and which properties of materials do children recognise. Use PowerPoint Slide 5 to start discussions. Put out a wide range of objects made from different materials to explore. Explore the materials, to think about what they already know about different materials, and ask them what else they can find out. E.g., are they hard, soft, transparent and what are they used for? Provide a word mat or a working wall with vocabulary so that they have prompts and spellings. You could use PowerPoint Slide 3. Ask children to ‘feed’ the Materials Monster as many different words as they can about materials. The more the children feed the Materials Monster the happier it will be. You could give children blank cards to write words and name different materials, such as rock, pottery, wood, fabric, metal, plastic, glass. Then write anything known about materials, such as some materials stretch, are flexible, are hard etc.		I can identify and sort materials according to properties.
Session 2	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	In this activity children sort a range of objects for the Materials Monster according to the materials that they are made from. Include in the collection: cardboard fabric paper pottery rocks wood glass plastic. Include the same kind of objects, e.g. mugs, rulers, spoons, that are made from different materials, to support children’s understanding that the same object can be made from different materials. Give children labels such as plastic, brick, paper so that they can label their sets. When children have created their sets they could then be given postcards or sticky notes so that they can say why the object is made from that material e.g. cup is made from plastic because it can hold water or is waterproof. If children need to be reminded of properties that they learned in Year 1 you could use PowerPoint Slides 6–10. Children could then ‘post’ these into the mouth of the Materials Monster. To help children to learn to spell words use PowerPoint Slide		I can name and say why some materials are used. I can name and sort materials

		18 and get children to collect, write and spell correctly the material and find words that rhyme.		
Session 3	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	<p>Give different groups of children a specific set of materials, e.g. metal, ceramics, wood, plastic and ask them to use their senses (except taste) to find out about that material. Ask them to find out as much as they can using their senses: Is it cold or warm to touch? Is it flexible? Is it hard or soft? Does it make a ringing sound when tapped (e.g. metals and pottery)? Is it rough or smooth? Can it be squashed, stretched or twisted? Is it shiny or dull? Children could complete the record sheet (Activity Resource 2.1) to record their explorations. When children have completed this activity bring the class together to help the children draw some conclusions about what different materials are like. Ask children to make their own rules about how to tell one material from another. E.g.: Metal is cold to the touch, hard, shiny and makes a ringing sound when tapped. Pottery is less cold to touch, hard, can be shiny or dull and also makes a ringing sound when touched. Plastic is less cold to touch, can be flexible or hard and does not make a ringing sound when tapped. Fabric is usually less cold to touch, flexible, does not make a ringing sound when touched and can be soft. Wood is less cold to touch, does not make a ringing sound when touched, is hard and is not shiny (unless it has been polished). Ask children to think about how they can tell the Materials Monster about each of the different materials. E.g. they could make a mini-Materials Monster book or create a display of the objects with captions about the materials. You could use PowerPoint Slides 11 and 12 as the starting point for a home school activity where children work with someone at home to find out about where the material wool comes from, its properties and what its used for.</p>		I can identify and classify materials and record observations
Session 4	Identify and compare the suitability of a variety of everyday	<p>This session takes the Monster Materials outside. Before going out you could show children PowerPoint Slide 13 showing the different materials used in building a house. Challenge the children to think of a way that they could record the materials that they find so that they can share</p>		

	materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	what they have found out with Materials Monster. Children might suggest that they: Take photographs using a digital camera, a smart phone or a tablet Use a video camera Use a grid Use an Easi-Speak™ microphone. Back in the classroom, share what children have found, display any photographs etc. Ask the children to share what they have found out with another group and talk about the most common materials used, e.g. bricks, plastic, wood, etc. Discuss with children any common materials, particularly if they are specific to the local region, e.g. sandstone, slate.		
Session 5	Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Offer a collection of objects made from materials that can be squashed, squeezed, twisted and bent, such as, cotton wool pipe cleaners dough socks paper card sponges tights fabric wire wool plastic Discuss with children what they already know about materials, e.g. the names of materials, the properties e.g. transparent, translucent, waterproof and introduce the idea that some materials can be squashed, bent, twisted and stretched. Explain that they are going to find out which materials on their table can be squashed etc. The key learning here is for children to: know what the words mean be able to say which materials (not the object) can be squashed etc. to know that some materials can be both bent and twisted to know that some materials e.g. metal can be bent and sometimes be rigid and not be able to be bent. Place the key words on each table so that children could use them for identifying and classifying materials according to these properties. Children could identify the material the object is made from and then say whether it can be squashed etc. Ask children to think about how they could record this e.g. take a photograph of or draw the object, then annotate with the name of the material and whether it can be squashed etc. Topic 4 contains more activities around changing materials by squashing, bending, twisting and stretching.		I can find objects to prove ideas e.g. plastic can be squashed and rigid depending on the kind of plastic. I can test objects according to bend, squash
Session 6	Identify and compare the suitability of a variety of everyday materials,	Finally, children make their own Materials Monster using recycled materials. Explain that they should use as many different materials as possible to make their Materials Monster. They should also think about the properties of the materials. E.g., where, would they want to use materials that are transparent, opaque, translucent? Where would		I am able to say why the materials used for my own materials monster and their friends. I can apply knowledge and understanding to offer

	<p>including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p>	<p>you use materials that are soft, rough or flexible? You could use PowerPoint Slide 15 as a starting point for discussion. Give children the opportunity to design their Materials Monster first and annotate their design with labels and captions as well as samples of the materials stuck onto their design. When children have constructed their Materials Monster, ask them to compare it with their design. What was different from their original design and why did they change their idea? Give children the opportunity to look at each other's model and make comments, about, e.g.: What did you like about the Materials Monster? How many different kinds of materials did your friend use? Could they have improved anything? How? Allow each child to take a photograph of their Materials Monster to go alongside their design work. The children then think about what they could have improved and why.</p>		<p>alternatives to the materials used.</p>
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