


Material World – Stage 2

Material World Strand

Term	1	2	3	4	Weeks	1	2	3	4	5	6	7	8	9	10	11
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Outcome	Lesson Sequence – Overview	Resources	Word Wall
<p>ST2-7MW-T investigates the suitability of natural and processed materials for a range of purposes</p> <ul style="list-style-type: none"> discuss the properties of materials explore how the properties of materials relate to their use. <p>ST2-1WS-S questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representations</p> <ul style="list-style-type: none"> contribute to discussions about properties and uses of materials understand the purpose and features of an annotated drawing develop scientific vocabulary about materials and properties 	<p>Lesson 1 <u>Curious clothes – Lesson focus p9</u></p> <ul style="list-style-type: none"> To capture students' interest and find out what they think they know about how natural and processed materials have a range of physical properties, and how these properties can influence their use. To elicit students' questions about the properties of materials and uses of materials in everyday life. <p>Session 1 Fanciful fiction <u>Students:</u></p> <ul style="list-style-type: none"> use a narrative and discussion to explore the relationship between properties of materials and their uses construct a snapshot of what they know about the properties of materials and their uses. <p>Session 2 Gripping gloves <u>Students:</u></p> <ul style="list-style-type: none"> identify the uses of different gloves explore the materials used to make different types of gloves. 	<p>Session 1 For the class</p> <ul style="list-style-type: none"> class science journal word wall narrative text – <i>Animals Should Definitely Not Wear Clothing</i> or <i>Mr Tuggle's Trouble</i> (see 'Preparation') 1 piece of clothing (see Lesson step 4) 1–2 large sheets of cardboard <p>For each student</p> <ul style="list-style-type: none"> several self-adhesive notes <p>Session 2 For the class</p> <ul style="list-style-type: none"> class science journal word wall class materials snapshot from Lesson 1, Session 1 1 enlarged copy of 'Glove guide' (Resource sheet 1) collection of different gloves (eg, woollen, ski, gardening, evening, rubber (dishwashing), latex, see 'Preparation') large box (see 'Preparation') 	<p><i>absorbency</i></p> <p><i>biodegradable</i></p> <p><i>capacity</i></p> <p><i>clothes</i></p> <p><i>comparison</i></p> <p><i>compost</i></p> <p><i>container</i></p> <p><i>cool</i></p> <p><i>decomposition</i></p> <p><i>efficient</i></p> <p><i>fabric</i></p> <p><i>fair test</i></p> <p><i>heavy</i></p> <p><i>insulation</i></p> <p><i>investigation</i></p>

<ul style="list-style-type: none"> record ideas about materials and properties in a science journal. 		<ul style="list-style-type: none"> <i>optional</i>: 1 enlarged copy of 'Information note for families' (Resource sheet 2) <i>optional</i>: 1 enlarged copy of 'Bags at home' (Resource sheet 3) <p>For each student</p> <ul style="list-style-type: none"> science journal 1 copy of 'Glove guide' (Resource sheet 1) <i>optional</i>: 1 copy of 'Information note for families' (Resource sheet 2) <i>optional</i>: 1 copy of 'Bags at home' (Resource sheet 3) 	<i>journal</i> <i>leak</i> <i>light</i> <i>materials</i> <i>natural</i> <i>plastic</i> <i>positives</i> <i>prediction</i>
<p>ST2-7MW-T investigates the suitability of natural and processed materials for a range of purposes</p> <ul style="list-style-type: none"> identify the features of a fair test identify variables to investigate make predictions about the decomposition of materials and give reasons for their predictions test materials for decomposition. <p>ST2-1WS-S questions, plans and conducts scientific investigations,</p>	<h2>Lesson 2</h2> <p>What a rotter! – Lesson focus p20</p> <ul style="list-style-type: none"> To provide students with hands-on, shared experiences of fair testing and the decomposition of materials. <p>Session 1 That's not fair!</p> <p><u>Students:</u></p> <ul style="list-style-type: none"> <i>consider the 'fairness' of a dress-up relay</i> <i>record their ideas about fair testing in their science journals.</i> <p>Session 2 Rot or remain?</p> <p><u>Students:</u></p> <ul style="list-style-type: none"> <i>make predictions about decomposition of materials</i> <i>investigate the decomposition of materials showing an awareness of the need for fair testing.</i> 	<p>Session 1</p> <p>For the class</p> <ul style="list-style-type: none"> class science journal word wall collection of clothes (eg, jumpers, gloves, hats, scarves, dresses, aprons, shirts, see 'Preparation') 3 markers for a relay (eg, witches hats, cones, see Lesson step 2) <p>For each student</p> <ul style="list-style-type: none"> science journal <p>Session 2</p> <p>For the class</p> <ul style="list-style-type: none"> class science journal word wall team roles chart team skills chart 	<i>processed</i> <i>properties</i> <i>negatives</i> <i>opaque</i> <i>recycle</i> <i>reduce</i> <i>repel</i> <i>reuse</i> <i>rigidity</i> <i>sample</i>

<p>collects and summarises data and communicates using scientific representations</p> <ul style="list-style-type: none"> contribute to discussions about fair testing and the decomposition of materials develop scientific vocabulary about decomposition describe the purpose and features of a table record ideas in a science. 		<ul style="list-style-type: none"> 3 cm x 3 cm material sample (eg, newspaper) 1 marking pen 1 clear plastic container, at least 10 cm deep (eg, a takeaway food container) <i>optional</i>: digital camera <p>For each team</p> <ul style="list-style-type: none"> role wristbands or badges for Director, Manager and Speaker each team member's science journal 3 or more 3 cm x 3 cm material samples (eg, paper, plastic and fabric bags, see 'Preparation') 1 marking pen 1 clear plastic container, at least 10 cm deep (eg, a takeaway food container) 1 apple core soil, enough to fill a plastic container 10 cm deep 	<p><i>science</i></p> <p><i>soak</i></p> <p><i>stretch</i></p> <p><i>suitability</i></p> <p><i>synthetic</i></p> <p><i>tear</i></p> <p><i>tensile strength</i></p> <p><i>thermal</i></p> <p><i>transparent</i></p> <p><i>use</i></p> <p><i>warm</i></p>
<p>ST2-7MW-T investigates the suitability of natural and processed materials for a range of purposes</p> <ul style="list-style-type: none"> describe the elements of a fair test make predictions about the absorbency of materials 	<p>Lesson 3</p> <p>Leak, soak or repel? Lesson focus p28</p> <ul style="list-style-type: none"> To provide students with hands-on, shared experiences of the absorbency of materials. <p>Students:</p> <ul style="list-style-type: none"> <i>explore the absorbency of materials</i> <i>conduct a fair test about absorbency</i> 	<p>For the class</p> <ul style="list-style-type: none"> class science journal word wall team roles chart team skills chart class materials snapshot from Lesson 1, Session 1 1 enlarged copy of 'Leak, soak or repel?' (Resource sheet 4) food colouring (to colour 1 cup of water for each team) coloured water 	

- plan and conduct a test of the absorbency of materials
- interpret results by identifying uses for materials.

ST2-1WS-S

questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representations

- use oral, written and visual language to report observations on the absorbency of materials
- develop scientific vocabulary about the absorbency of materials
- use a table to record predictions and observations



- 15 cm x 15 cm square of tissue paper
- 1 eye-dropper
- 1 transparent container (eg, plastic cup)
- 1 cup of coloured water
- 1 elastic band
- *optional*: 1 can waterproofing spray (eg, shoe or lounge spray)

For each team

- role wristbands or badges for Director, Manager and Speaker
- each team member's science journal
- 1 copy 'Leak, soak or repel?' (Resource sheet 4) per team member
- 4 or more 15 cm x 15 cm material samples of similar thickness (eg, paper, plastic and fabric bags, see 'Preparation')
- 1 eye-dropper
- 1 transparent container (eg, plastic cup)
- 1 cup of coloured water
- 1 elastic band

ST2-7MW-T
investigates the suitability of natural and processed materials for a range of purposes

- make predictions about the tensile strength of materials
- plan and conduct a test of the tensile strength of materials
- record results in a table and interpret findings

ST2-1WS-S
questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representations

- contribute to discussions about tensile strength of materials
- use a table to record predictions and observations
- develop scientific vocabulary about tensile strength.

Lesson 4

Snap, tear or stretch? Lesson focus p36

- To provide students with hands-on, shared experiences of the tensile strength of materials.

Students:

- explore the tensile strength of materials
- plan and conduct a fair test of tensile strength of materials
- record results in a table and interpret findings.



For the class

- class science journal
- word wall
- team roles chart
- team skills chart
- class materials snapshot from Lesson 1, Session 1
- 1 enlarged copy of 'Snap, tear or stretch?' (Resource sheet 5)
- 1 large clothes peg
- 1 cm x 15 cm strip of newspaper (see 'Preparation')

For each team

- role wristbands or badges for Director, Manager and Speaker
- each team member's science journal
- 1 copy of 'Snap, tear or stretch?' (Resource sheet 5) per team member
- several large clothes pegs
- 4 or more 1 cm x 15 cm strips of material (see 'Preparation')
- 1 magnifying glass

<p>ST2-7MW-T investigates the suitability of natural and processed materials for a range of purposes</p> <ul style="list-style-type: none"> describe and compare the properties of materials explain how the properties of materials make them suitable for different uses describe the positives and negatives of using certain types of materials for certain uses. <p>ST2-1WS-S questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representations</p> <ul style="list-style-type: none"> use oral and written language to represent their understanding of how the properties of materials relate to use record observations and explanations 	<h2>Lesson 5</h2> <p><u>Choosey consumers – Lesson focus p42</u></p> <ul style="list-style-type: none"> To support students to represent and explain their understanding of the properties of materials and how they relate to use, and to introduce current scientific views. <p>Session 1 Bags of fun</p> <p><u>Students:</u></p> <ul style="list-style-type: none"> <i>select suitable bags based on the properties of their materials to transport particular objects</i> <i>identify properties of materials and how they relate to use.</i> <p>Session 2 Puzzling plastics</p> <p><u>Students:</u></p> <ul style="list-style-type: none"> <i>explore the results of the decomposition investigation</i> <i>read a factual text about the properties of plastics</i> <i>explain their understanding of the properties and uses of plastic materials through role-play.</i> 	<p>Session 1</p> <p>For the class</p> <ul style="list-style-type: none"> class science journal word wall team roles chart team skills chart 1 enlarged copy of 'Carrying dilemma' (Resource sheet 6) 5 different bags (eg, calico, thick plastic, paper, thick fabric, thin plastic, see 'Preparation') <p>For each team</p> <ul style="list-style-type: none"> role wristbands or badges for Director, Manager and Speaker each team member's science journal 1 copy of 'Carrying dilemma' (Resource sheet 6) per team member <p>Session 2</p> <p>For the class</p> <ul style="list-style-type: none"> class science journal word wall team roles chart team skills chart 1 enlarged copy of 'Puzzling over plastics' (Resource sheet 7) factual texts about plastics (see the PrimaryConnections website for suggestions) <p>For the team</p>	
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<p>about the decomposition of materials</p> <ul style="list-style-type: none"> • read a factual text about the properties of plastics • understand the features and purpose of role-plays and factual texts • use scientific vocabulary appropriately in their writing and talking. 		<ul style="list-style-type: none"> • role wristbands or badges for Director, Manager and Speaker • each team member's science journal • material samples buried in Lesson 2 • tray to hold samples • 1 copy of 'Puzzling over plastics' (Resource sheet 7) per team member 	
<p>ST2-7MW-T investigates the suitability of natural and processed materials for a range of purposes</p> <ul style="list-style-type: none"> • plan an investigation into the thermal insulation capacity of materials, showing an awareness of the need for fair testing • describe the features of fair testing • record findings in a table and interpret results as a graph • identify which materials are the best thermal insulators • generate explanations about the thermal insulation capacity of materials. 	<p>Lesson 6 <u>Investigating insulation – Lesson focus p53</u></p> <ul style="list-style-type: none"> • To support students to plan and conduct an investigation of the thermal insulation capacity of materials. <p><u>Students:</u></p> <ul style="list-style-type: none"> • <i>measure water temperature to investigate the thermal insulation capacity of materials</i> • <i>observe, record and interpret results.</i> 	<p>For the class</p> <ul style="list-style-type: none"> • class science journal • word wall • 1 enlarged copy of 'Keeping it warm investigation planner' (Resource sheet 8) • 200 mL hot water (<50°C) <p>For each team</p> <ul style="list-style-type: none"> • role wristbands or badges for Director, Manager and Speaker • each team member's science journal • 1 copy of 'Keeping it warm investigation planner' (Resource sheet 8) per team member • 3 identical metal containers (eg, tins or cans to hold 200 mL warm water, see 'Preparation') 	

ST2-1WS-S
questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representations

- use language and visual representations to design and record an investigation into the thermal insulation capacity of materials
- use a table and a graph to record and represent findings
- identify the features and purpose of a graph
- participate in discussions about the thermal insulation capacity of materials.



- 3 different materials (eg, wool, cotton and plastic, see 'Preparation')
- 1 thermometer
- 600 mL hot water (<math><50^{\circ}\text{C}</math>)
- 1 x 200 mL measuring cup
- 1 funnel
- elastic bands
- 1 timing device (eg, a stopwatch or a watch with a second hand)

<p>ST2-7MW-T investigates the suitability of natural and processed materials for a range of purposes</p> <ul style="list-style-type: none"> describe the properties and uses of everyday materials explain why the properties of a material make it suitable for a particular use. <p>ST2-1WS-S questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representations</p> <ul style="list-style-type: none"> contribute to discussions about materials, their properties and uses use scientific vocabulary appropriately create an annotated drawing to represent what they know about the properties of materials and how they relate to use 	<p>Lesson 7 <u>Material matters- Lesson focus p63</u></p> <ul style="list-style-type: none"> To provide opportunities for students to represent what they know about how natural and processed materials have a range of physical properties, how these properties can influence their use, and to reflect on their learning during the unit. <p>Students:</p> <ul style="list-style-type: none"> <i>review the unit using the science journal, word wall and other resources developed during the unit</i> <i>represent their understanding of the properties of materials by creating a page for a class design catalogue</i> <i>reflect on their learning during the unit.</i> 	<p>For the class</p> <ul style="list-style-type: none"> class science journal word wall 1 enlarged copy of 'Material matters' (Resource sheet 9) <p>For each student</p> <ul style="list-style-type: none"> each team member's science journal 1 copy of 'Material matters' (Resource sheet 9) magazines that can be cut up 	
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- reflect on their learning in a science journal entry.

