

Forceful Words Lesson 17







Learning objectives

Describe forceful actions in terms of words such as squash, bend, twist and stretch.

National Curriculum links: Sc3 (2a)

Procedures

straws, musical instrument strings, etc. Remind the children of the 'push' and 'pull words and ask the children to classify mimed or practised actions into columns headed and 'stretch'. Illustrate the flash cards so that there is a pictorial association with the describing which action (eg stretch/pull, squash/push) descriptions of force and encourage them to identify which word is appropriate for by each word. To support this, use elastic bands, springs, rubber balls, Plasticine, ar Introduce the session with display flash cards bearing the words 'twist', 'squash', 'bend

which objects. For example: recording sheet which allows the children to tick which particular actions worked on to alter the shape of the objects in as many ways as they possibly can. Provide a Organise a range of flexible or elastic objects on each table and encourage the children



Extension/Support

- of to their 'stretchability' or 'bendability'. Children can be encouraged to identify the material that objects are made out
- Children can be encouraged to make predictions as to whether an object will be 'squashable' or 'twistable'



To Squash or Not to Squash

Learning objectives

sort them accordingly Can identify objects which can or can't be squashed, bent, twisted or stretched and to

National Curriculum links: Sc3 (2a)

Procedures

a range of both flexible/elastic and inflexible/rigid objects. At this stage try to keep the shape as well difficult for children to understand that flexibility is not only related to material but have experienced the springy 'give' in PE planks indicating flexibility. It will be criteria clear. For example, a short piece of wood may appear inflexible, but children will either bent, twisted, squashed or stretched?' and qualify their responses by holding up language and actions have been internalised and that children can apply the words 'push' and 'pull' when explaining their actions. Pose the question 'Can all things be Introduce the session by revisiting Forceful Words (Lesson 17) and establish that the

stretchables/non-stretchables, and so forth sorting rings. One group could focus on squashables/non-squashables, another on Each group should then have the opportunity to work with a selection of objects and

experience to their thinking? For example, are they starting to relate material type, object purpose, previous Encourage the children to make predictions and, for some, to explain their predictions.

Extension/Support

- etc) Can children sort pictures of common objects according to their flexibility compressibility, etc (eg tall trees in the wind, bungee jumpers, steam-roller
- and 'never squashable' (eg sponge/metal [when in the form of a spring]/brick)? Can children sort materials that are 'always squashable', 'sometimes squashable'

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esson Plans Set 7: Science KS1	16 Le	Set 7: Science KS1	Lesson Plans
xtension/Support he best extension and reinforcement for these initial circuit building activities is more [•] the same, but in different contexts (eg fixing a light bulb to drawings of familiar ojects that light up such as a lighthouse).	양 승 ⊣ 泊	upport electrical appliances from catalogues, etc can be cut out, classified and ng different criteria to reinforce and extend this initial session. The pictures ted into sound-makers, light sources, heaters, movers. Alternatively, they ed into battery-powered or mains-powered.	Extension/S Pictures of mounted usi could be sor could be sor
he children could draw their circuits as a means of recording what they did and to help form the teacher about some of their initial ideas regarding electrical circuits.	∃ ⊣	cautious way of working with electricity is a good habit to develop, source of the power.	remember a whatever the
ther components involved to control the current. If a short does occur, the best that ou can expect is a very hot, flat battery! – see Appendix 7). The adult should also neourage the children to talk about what they are doing, developing appropriate nguage.	la er	a personal stereo, etc. Pupils can be told that batteries not only act as electricity in the same way as plug sockets, but they actually 'make' the is fair to say that the electricity produced by batteries is not as 'strong' or that provided by plug sockets and is 'safer' (not categorically safe) but	torch, a toy providers of electricity. I 'powerful' a
colour contractions of the addition of the contractions and to ensure that batteries are not contractions and to ensure that batteries are not contractions and to the contractions are not contracted up to the contractions and to the contractions and to the contractions are not contracted up to the contractions and to contract the contractions are not contracted up to the contractions and to contract the contract and contract the	ac di g	scussion with a worksheet snowing a range of appliances; some which are lowered, some which aren't. Can the pupils circle the electrical appliances? The class and reneat the exercise listing hattery-nowered appliances such as a	the initial d electrically-j Reassemble
When the children follow this demonstration up by making their own simple circuits, ou will need to organise the class so that only one group is involved in circuit work at time and that electrical group will need adult (or possibly an elder child from Year 5 to be able children with the involted product the contained at the balance with the involted product the contained at the balance with the involted product of the call the balance with the product of the call the balance with the product of the call the balance with the balance with the product of the call the balance with the product of the call the balance with the product of the call the balance with the product of the balance with the balance withe the product of the bala	2 ^a 'S S	the safety reaches built into the design of prugs and sockets is a good it. It is worth stating that the socket doesn't 'make' the electricity but is the end of a water pipe. The electricity is made somewhere else and sent to gh wires. Pictures of pylons would be useful to reinforce this fact. Reinforce	an the child starting poli like a tap at homes throu
emonstration. It is particularly important that children are shown how to use ocodile-clips if they happen to be the method used for connecting electric circuits in our school.	yc yc	ugged into a power socket and demonstrate that electrical appliances have surposes (light, heat, sound, movement, etc). Some of the children will be nains electricity is dangerous, however, it is vital to establish this fact with	need to be p a variety of j aware that n
troduce the session to the whole class showing them the various components they are bing to be working with, ensuring that the children know what each one is. The emonstrate each one in turn so that children know what each one does. Large cards with illustrations of each component and its name would help support the	≤ D ¹ 2 T	discussion using three or four hand-held, mains-powered electricity Ask questions such as 'What are they for?' and 'What makes them work?', e question 'How could I make them work here, today?'. Establish that they	Procedures Initiate the appliances. / leading to th
ational Curriculum links: Sc4 (1b) rocedures	<u>P</u> Z	rriculum links: Sc4 (1a)	National C
earning objectives e able to connect a bulb, buzzer or motor into a battery-powered circuit so it works nd to be able to describe what happens.	ar Br L	jectives nat domestic/school power sockets provide electricity and are dangerous if cognise that batteries are sources of electricity. Recognise that many devices chool and elsewhere work because they use electricity.	Learning ol Recognise tl misused. Re at home, at
Lesson 22 Getting Electricity to Work	\sim	Lesson 21 Electrical Appliances	top survey



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Learning objectives

Can describe the reverse process of melting as solidifying or freezing

National Curriculum links: Sc3 (2b)

Procedures

chocolate all harden when they cool down. Establish that the correct term for this wax has fully solidified. With the whole class, reinforce the idea that wax, water and candles the pupils have made can be removed by peeling away the yoghurt pot once the children: What makes the wax 'harden'?, How can we make it harden quicker? The of the yoghurt pot and pour melted wax around it to a depth of about 2 cm. Ask the side. Provide each child with a yoghurt pot and a wick. Place the wick disc in the centre of wax crayon or a dab of oil paint. Fish out the wicks and metal discs and keep to one night lights (one per child in group) in an old saucepan. It can be coloured using pieces Working in groups around the cooker or hotplate (adult supervision vital) melt way hardening is 'Solidifying' or 'Freezing the idea that a solid becomes a liquid on heating and that this process is called melting the words to annotate their drawings. This will help establish that they are clear about them to make drawings of their experiences during the Melting (Lesson 52) session using Provide the children with key word cards 'Melting', 'Heating', 'Solid' and 'Liquid'. Ask

Extension/Support

should fill the pot. Pour melted, coloured wax over the ice solidify?; Is the hot wax making the ice melt? Key questions might be: Is the cold ice making the way making sure that some ice still protrudes at the surface pot as shown right. Surround it with ice cubes which 'Ice candle' making: Suspend a string wick in a yoghurt

wax of a different colour into the gaps left by the ice peel away the yoghurt pot. A multi-coloured candle can be made by pouring melted When the ice has fully melted, pour away the water. If you want a 'holy' candle simply

Learning objectives

Can draw together ideas regarding melting and solidifying using appropriate language.

National Curriculum links: Sc3 (2b)

Procedures

whether making the jelly lumps smaller would make them melt quicker. ceramic bowl containing the solid jelly lumps into the water). Children could be asked bath to melt solid jelly lumps (half fill a saucepan of water, bring to the boil and put a children can observe the effect of slow cooling on a melted material. Use a hot water candles and reinforce the concepts with appropriate language. Working in groups Review the previous sessions on melting and solidifying. Let pupils display their

minutes after switching off the heat groups have a go but do it in exactly the same way? Repeat this a third time, ten repeat alongside. Ask children to predict whether this trail will be as long. Why/why way, it solidifies and stops leaving a jelly trail. Allow a measured five minute gap and and allow it to run down an inclined slope as shown below. After it has travelled some not? Should we always use the same measure of jelly? Why is it important that all the When melted, turn off the heat. The children need to draw off a teaspoonful of hot jelly

appropriate language allow each group to make a presentation of their slope with the trails. Measure the trails and Get the children to make a drawing of their findings encouraging them to use the

Extension/Support

provide some of the food for a class party. Remind the children that although they are moulds. Melted chocolate could be poured onto biscuits in fine trails. These could Use cooking sessions to allow groups to prepare different jellies using a variety of often told that sweet foods are 'bad' for them, there's no harm in the occasional treat!











Solidifying Lesson 53





Jelly Races Lesson 54

 Procedures Remind the children of the water investigation during the previous session (Lesson 68). Ask the children to think of other things which might affect plant growth. Lead them owards the idea that disease or poisons (such as weedkillers) would certainly have an affect, but lack of light could be equally damaging. To demonstrate the effect of light deprivation, put a fairly young, healthy geranium in cupboard. The timescale on this activity can be quite long before there are clear lifferences between unlit and lit plants. Therefore a 'Blue Peter here's one I put in the upboard three weeks ago' approach may be necessary. Geraniums will grow 'leggy show rather thin, elongated growth) and the leaves will blanch after a couple of weeks. Children must understand that the plant was watered on a daily basis despite being in cupboard and some may be able to explain why the test would not be valid if the plant ad been un-watered as well as unlit. Children can also see how plants move towards the ight slit. Children can record their findings in the cress plants are growing towards the ight slit. Children can record their findings in sequenced drawings diary. Xatension/Support Xatension/Support Xatension/Support Xatension/Support Xatension/Support 	tional Curriculum links: Sc2 (3a)	Lesson 69 Plants and Light arning objectives n explain that plants need light for healthy growth.
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