Key Stage 1

Learning objectives

- Can children sort materials into groups that are, or aren't, squashable?
  - Can children sort objects into groups according to their flexibility?

National Curriculum links: Sc3 (2a)

Procedures

Introduce the session by revisiting Forceful Words (Lesson 17) and establish that the language and actions have been internalised and that children can apply the words 'push' and 'pull' when explaining their predictions. It will be difficult for children to understand that flexibility is not only related to material but also shape as well.

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

Extension/Support

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

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Lesson 18

To Squash or Not to Squash

<table>
<thead>
<tr>
<th>Object</th>
<th>Twist</th>
<th>Bend</th>
<th>Stretch</th>
<th>Squash</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic ruler</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Learning objectives

- Sort them accordingly
- Can identify objects which can or cannot be squashed, bent, twisted or stretched and to

National Curriculum links: Sc3 (2a)

Procedures

Describe forceful actions in terms of words such as squash, twist, bend, stretch, and stretch. Illustrate the flash cards so that there is a pictorial association with the words and force. Encourage the children to select the words which describe the particular action which particular objects work on. Organise a range of objects of elastic, plastic, etc, and encourage the children to decide which word is appropriate for describing how they felt when selecting the objects. If possible, can provide a selection of words and ask if children can decide which word is appropriate for describing the forceful actions of elastic objects.

Forceful Words

Debate which cards go with the words and stretch, 'bend', 'stretch', 'twist', 'spring'.
Lesson Plans Set 7: Science KS1

Lesson 22
Gettin Electricity to Work

Lesson 21
Electrical Appliances

Learning Objectives

Getting Electricity to Work

- Be able to connect a bulb, buzzer or motor into a battery-powered circuit so it works.

National Curriculum links: Sc4 (1a)

Procedures

Introduce the session to the whole class by showing them the various components they are going to be working with. Demonstrate each one in turn so that children are clear about the best practice. When the children follow this demonstration up by making their own simple circuits, you will need to organise the class so that only one group is involved in circuit work at a time.

Extension/Support

The best extension and reinforcement for these initial circuit building activities is more similar ones in different contexts (e.g., fixing a light bulb to a picture of a familiar object that lights up).

Learning Objectives

Recognise that domestic/school power sockets provide electricity and are dangerous if misused. Recognise that batteries are sources of electricity. Recognise that many devices at home, at school and elsewhere work because they use electricity.

National Curriculum links: Sc4 (1a)

Procedures

Initiate the discussion using three or four hand-held, mains-powered appliances. Ask questions such as 'What are they for?' and 'How could I use them in a safe way?' leading to the question 'How could I use them in a safe way?'

Extension/Support

Pictures of electrical appliances from catalogues can be cut out, classified and mounted using different criteria to reinforce and extend this initial session. The pictures could be sorted into sound-makers, light sources, heaters, or movers. Alternatively, they could be sorted into battery-operated or mains-powered.

Procedures

Introduce the appliance using different criteria to compare and contrast the different appliances. Picture of a power plug should be included so that children are clear about the source of the power. Some of the children will be asked to explain the appliance they are interested in using different criteria to describe and compare the different appliances.

Learning Objectives

Recognise that domestic power sockets provide electricity and are dangerous if used improperly. Recognise that some devices work because they use electricity.

National Curriculum links: Sc4 (1a)
Learning objectives
Can describe the reverse process of melting as solidifying or freezing.

National Curriculum links: 5.3 (E)
Can draw together ideas regarding melting and solidifying using appropriate language.

Procedures

Concepts of melting and solidifying.

Extension/Support
Ice candle making: Suspend a string wick in a yoghurt pot as shown right. Surround it with ice cubes which should fill the pot. Pour melted, coloured wax over the ice to create a candle. Ice candle making: Suspended a string wick in a yoghurt pot. Pour melted, coloured wax over the ice to create a candle. When the ice has fully melted, pour away the water. If you want a ‘holy’ candle simply peel away the yoghurt pot! A multi-coloured candle can be made by painting melted wax on the outside of the yoghurt pot. Pour melted coloured wax over the ice cubes which are in the yoghurt pot and pour the melted wax into the gaps between the ice cubes.

Procedures

Concepts of melting and solidifying.

Extension/Support
Ice candle making: Suspend a string wick in a yoghurt pot. Pour melted, coloured wax over the ice to create a candle. When the ice has fully melted, pour away the water. If you want a ‘holy’ candle simply peel away the yoghurt pot! A multi-coloured candle can be made by painting melted wax on the outside of the yoghurt pot. Pour melted coloured wax over the ice cubes which are in the yoghurt pot and pour the melted wax into the gaps between the ice cubes.

Procedures

Concepts of melting and solidifying.

Extension/Support
Ice candle making: Suspend a string wick in a yoghurt pot. Pour melted, coloured wax over the ice to create a candle. When the ice has fully melted, pour away the water. If you want a ‘holy’ candle simply peel away the yoghurt pot! A multi-coloured candle can be made by painting melted wax on the outside of the yoghurt pot. Pour melted coloured wax over the ice cubes which are in the yoghurt pot and pour the melted wax into the gaps between the ice cubes.
Lesson 70
Plant Reproduction

Learning objectives
Can explain that seeds from one type of plant will produce new plants of the same type.

National Curriculum links: SC2 (3c)

Procedures
Introduce the session to the whole class and review their current understanding of how plants come from seeds. Remind them of the work done with seeds in the previous year and more recently with cress seeds. Let the children work with pictures of plants of the same species but different colors or types. Which seeds come from each seed type? A simple chart can help to organize their ideas.

Extension/Support
Children can work with pictures of plants of the same species but different color types. Can they predict what color flowers the new plants will have? Early experience will help the children to understand that characteristics are inherited from one generation to the next.

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Lesson 69
Plants and Light

Learning objectives
Can explain that plants need light for healthy growth.

National Curriculum links: SC2 (3a)

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 towards the idea that disease or poisons (such as weedkillers) would certainly have an effect, but lack of light could be equally damaging.

To demonstrate the effect of light deprivation, put a fairly young, healthy geranium in a cupboard. The timescale on this activity can be quite long before there are clear differences between unlit and lit plants. Children can see how plants move towards light by germinating some cress seeds on damp blotting paper and placing it in a closed shoe box with a slit cut in one end and the lid in place. Light is very important for some cells to survive. Cress plants are growing towards the light slit. Children can record their findings in a sequenced drawings diary.

Extension/Support
Children can work with pictures of plants of the same species but different color types. Can they predict what color flowers the new plants will have? Early experience will help the children to understand that characteristics are inherited from one generation to the next.

Lesson Plans Set 7: Science KS1

Lesson 69
Plants and Light

Learning objectives
Can explain that plants need light for healthy growth.