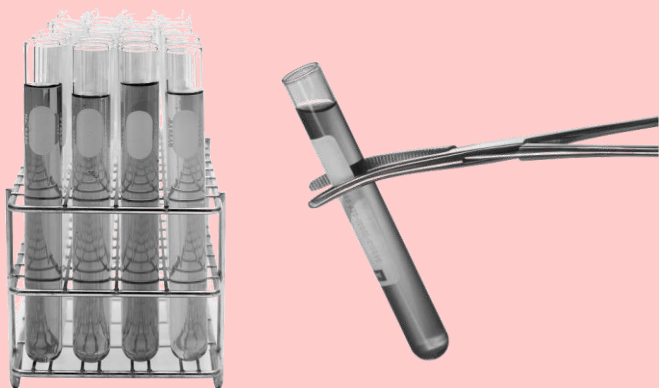


# Science Displays -

## Unit 2D: Grouping and Changing Materials



**SCHOOLS**  
 **LINKS**

[schoolslinks.co.uk](http://schoolslinks.co.uk)

A cartoon-style illustration of a wooden fence with six vertical posts and two horizontal rails. The posts are brown with a wood grain texture and pointed tops. A light blue sign with a wood grain pattern is attached to the fence, featuring the text "Grouping & Changing Materials" in bold black letters. The sign has a folded bottom-left corner.

**Grouping &  
Changing  
Materials**

*natural*

*manufactured*



wood



metal



**plastic**



**fabric**

**hard**

**soft**

**rough**

**smooth**

**shiny**

**dull**

**heavy**

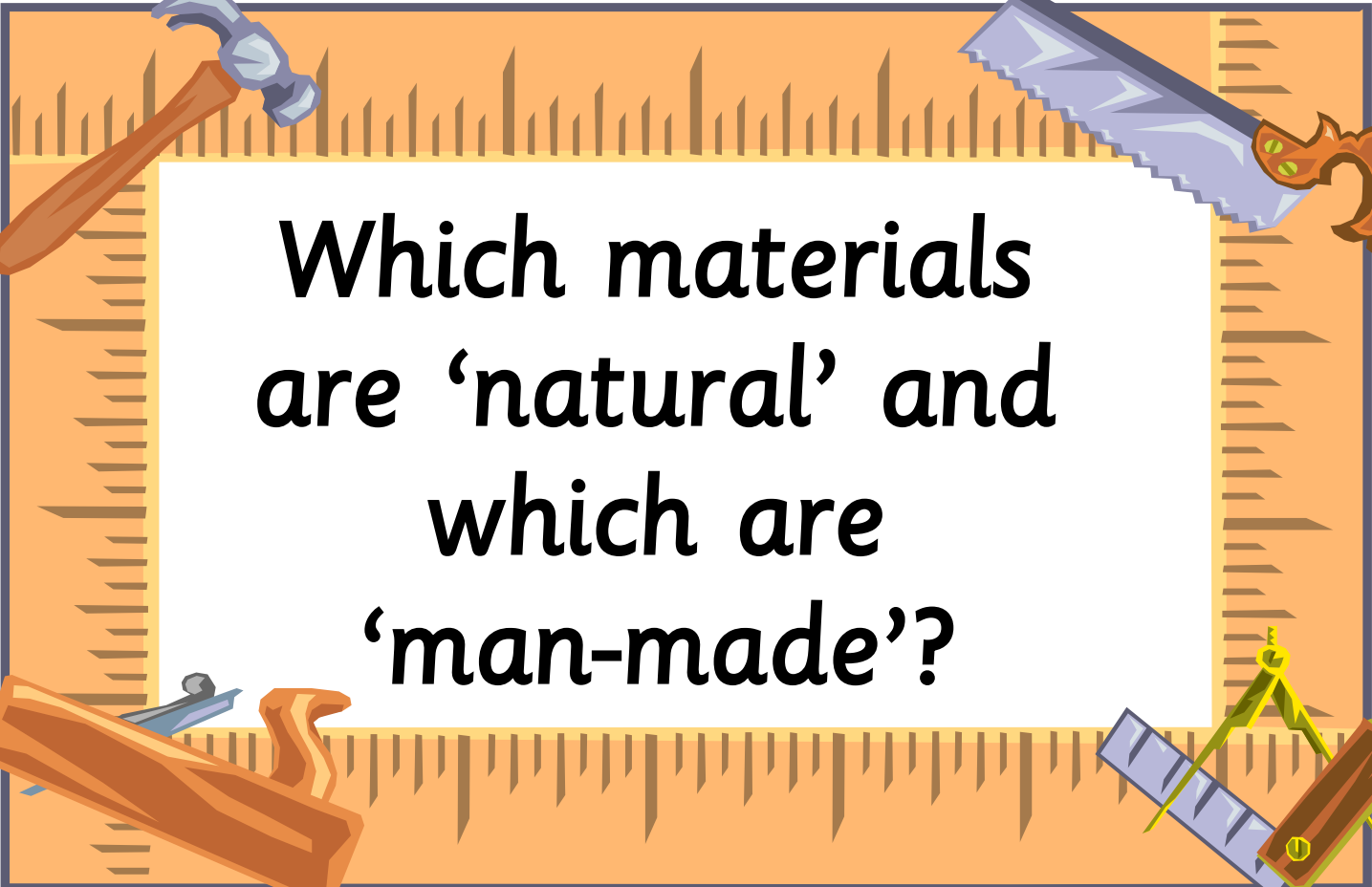
**light**

**sharp**

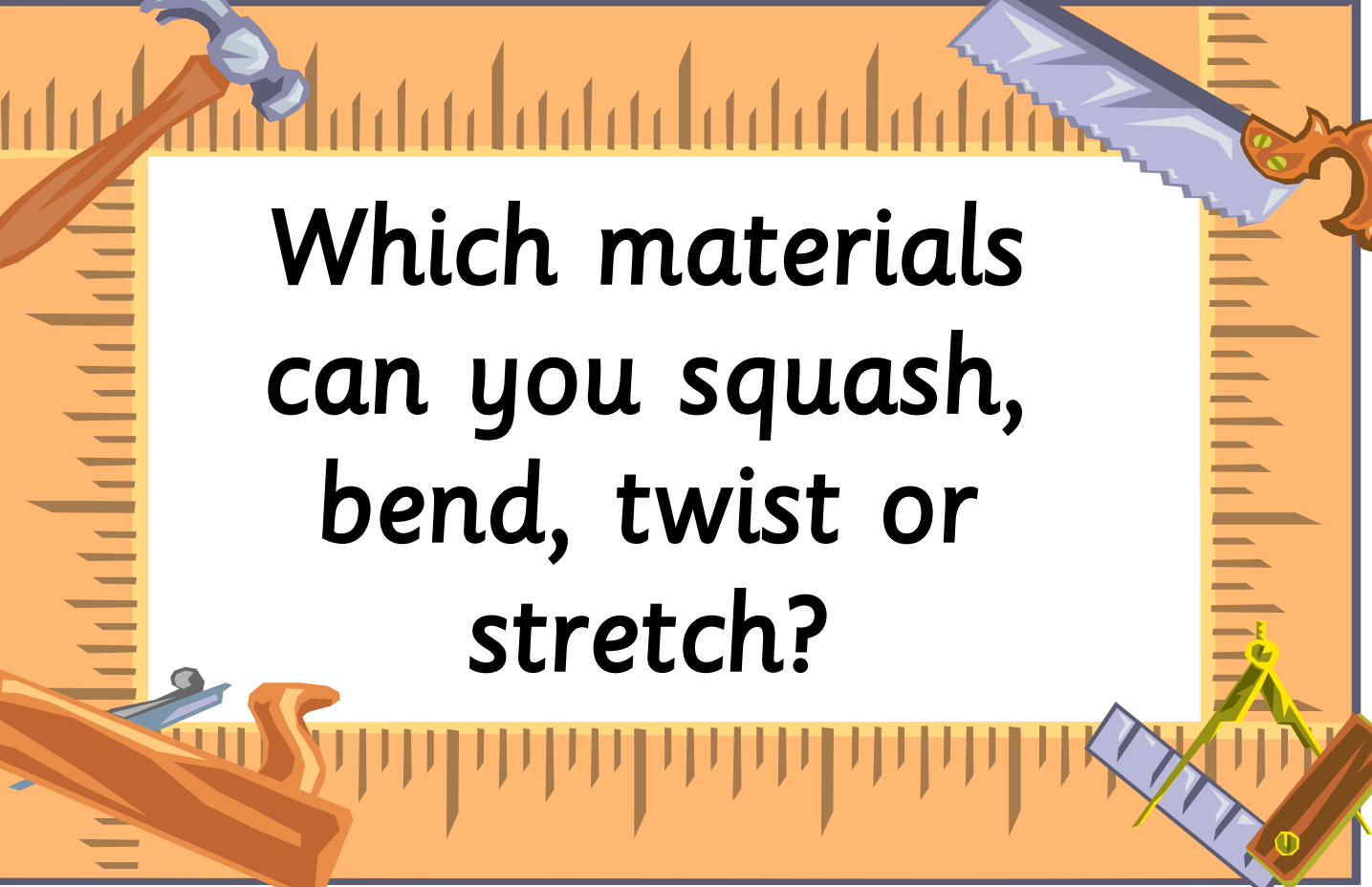
**squashy**

**stretchy**

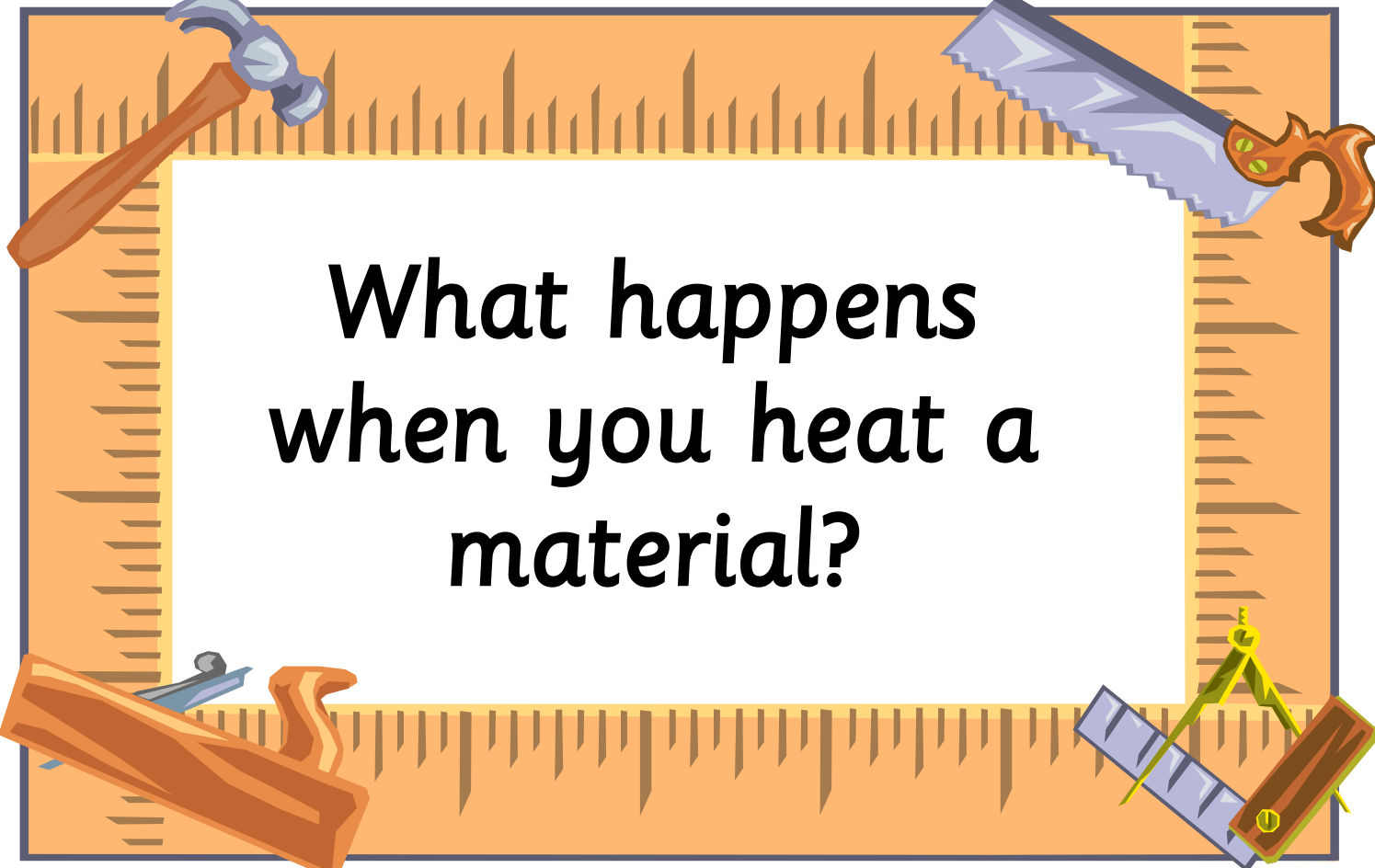
**see-  
through**



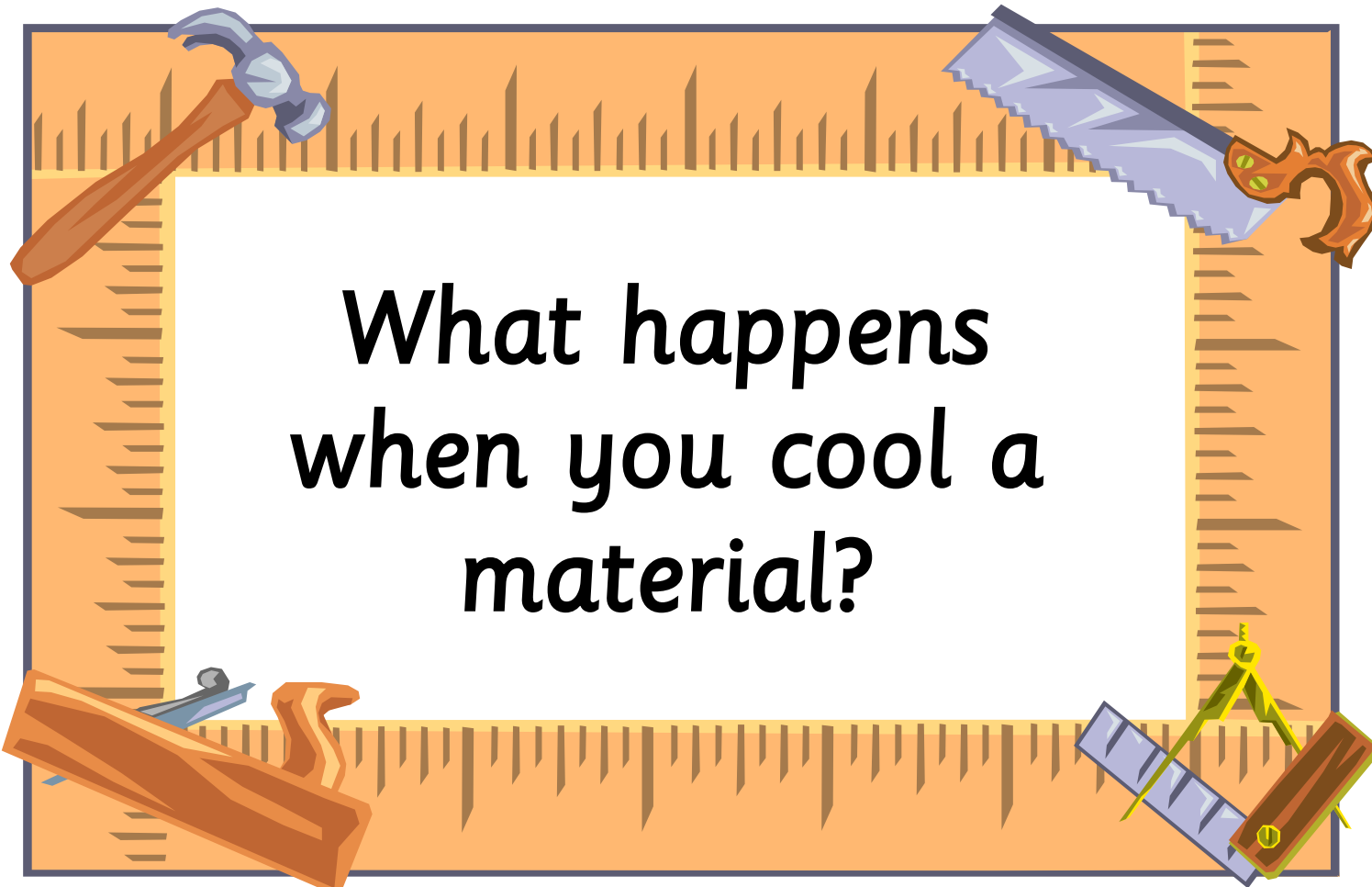
**Which materials  
are 'natural' and  
which are  
'man-made'?**



**Which materials  
can you squash,  
bend, twist or  
stretch?**

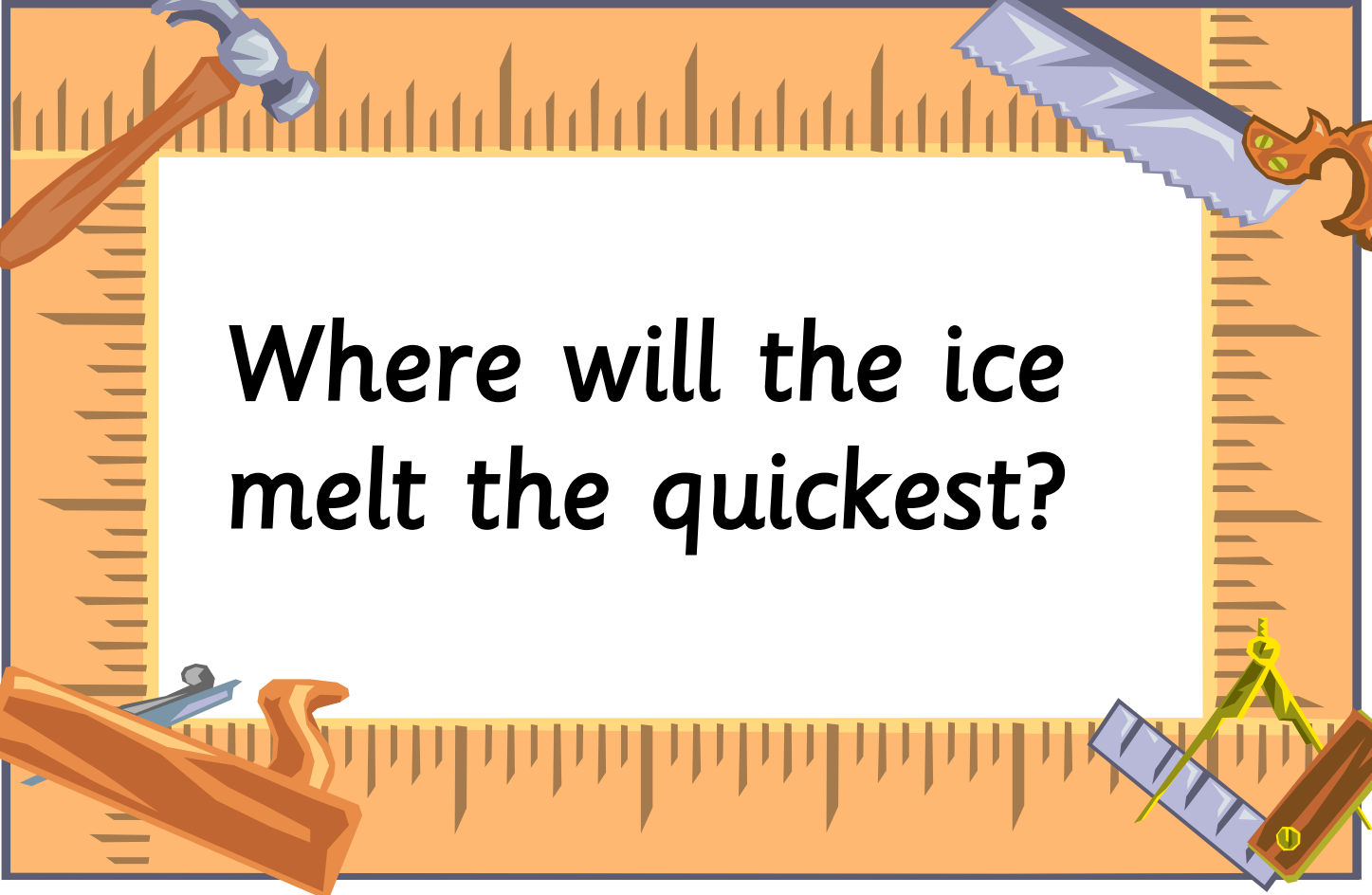


**What happens  
when you heat a  
material?**



**What happens  
when you cool a  
material?**





**Where will the ice  
melt the quickest?**



**What is steam?**

# 1. Sorting and Grouping Materials

Criteria:

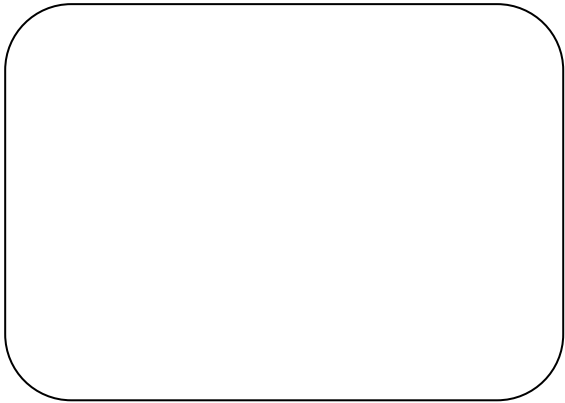


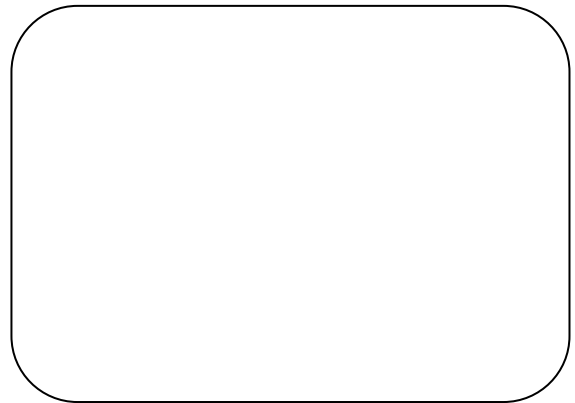
Criteria:

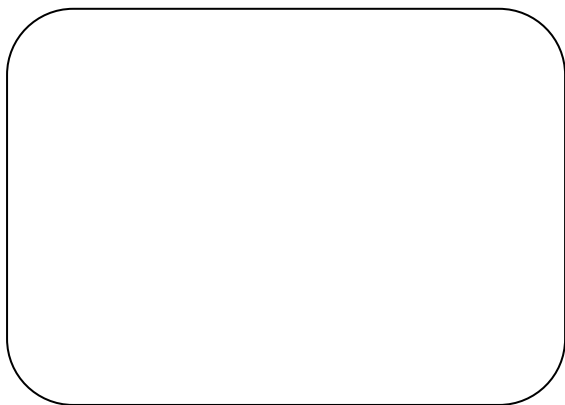


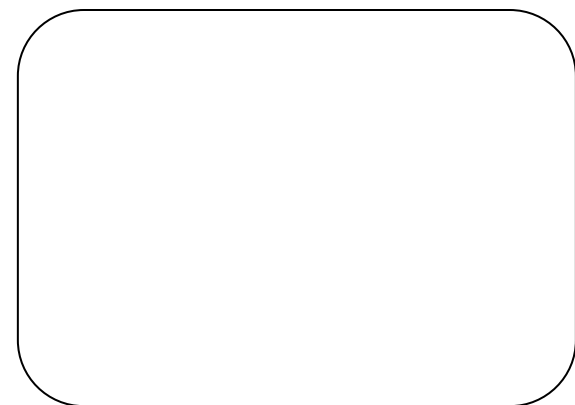
Present children with a collection of materials *eg wood, metal, leather, plastic, cotton* and ask children to sort them, using their own criteria, and to explain what the criteria are.

## 2. Describing Materials




**Pick a material or object and ask children to choose adjectives to describe its characteristics.**







### 3. Sorting and Grouping Materials

	<b>Natural Material</b>	<b>Manufactured Material</b>
<b>Natural Object</b>		
<b>Manufactured Object</b>		

Present children with a careful selection of materials ask them to sort the materials into those which are found naturally and those which are not. Also consider whether the object is natural or has been manufactured. Use the Carroll diagram above to sort the objects.



## 4. Changing the Shape of Materials

	twist	bend	stretch	squash
<p>pebble</p> 				
<p>plasticine</p> 				
<p>sponge</p> 				
<p>wooden pencil</p> 				
<p>rubber band</p> 				
<p>metal paper clip</p> 				

Give children a variety of materials to explore ask them to make a variety of shapes eg *by twisting, stretching, bending, or squashing the materials*. Ask them to draw or describe what happens.

## 5. Changing by Heating

	<b>Before Heating</b>	<b>After Heating</b>

Discuss materials that change when they are heated *eg clay, cake ingredients, bread to toast, frying or boiling eggs* and record the changes using the table above. Discuss with children whether the fired clay or cooked cake could be turned back into its original form.

## 6. Science Investigation: Melting Ice

Question:

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Results table:


Where will we put the ice?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

What will we keep the same?

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Method

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Prediction:

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Conclusion

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Children should make a suggestion of how to use ice to find the warmest place in the classroom. They should carry out an investigation based on their idea. They should record their results in a table.



## 7. Changing by Cooling

Ask children to suggest materials that might change when they are cooled and to think about and find out what happens when *eg soup, tomato sauce* is put in the freezer.

## 8. Comparing Materials

Ask children to suggest how they would make materials *eg butter, chocolate* become softer. Test their ideas and then ask them to predict what will happen if they leave the material to cool.

## 9. Water, Steam and Ice



Ask children to describe what happens when water is heated in a kettle. Demonstrate that when a cool surface is held near a steaming kettle, drops of water are seen on it. Talk with children about the idea that steam can be changed back to water by cooling.

