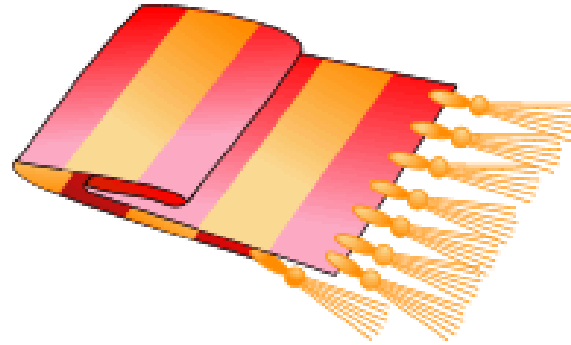
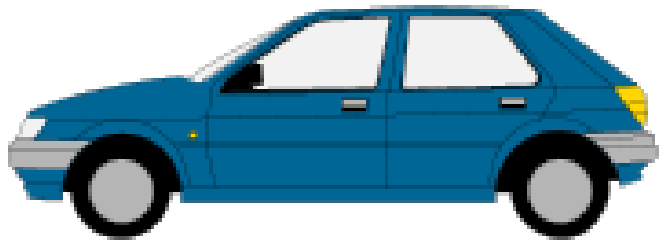


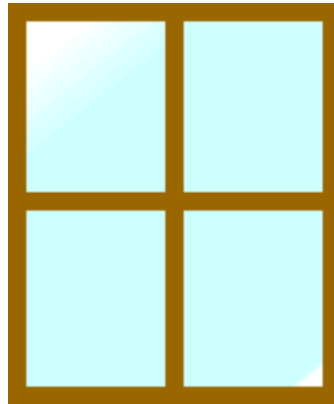
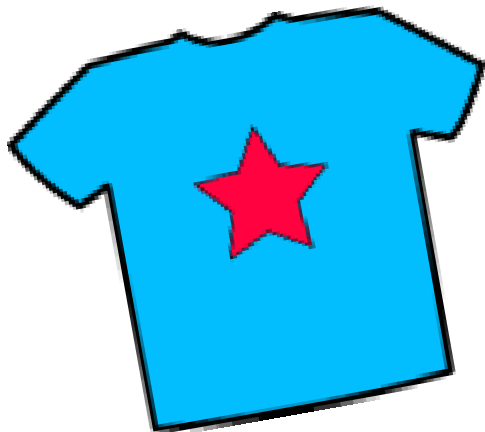
Unit 3C: Characteristics of Materials



Learnanywhere



Characteristics of Materials






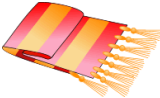




Strong	a strong material will not break easily
Hard	hard materials will not scratch easily
Flexible	a flexible material is bendy
Absorbent	an absorbent material will soak up liquid
Transparent	light will pass through a transparent material
Smooth	an example would be a table top
Shiny	shiny surfaces reflect light well
Dull	dull surfaces do not reflect light very well
Opaque	light cannot pass through opaque objects
Malleable	these materials can be bent into any shape


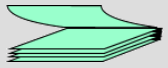






Find different objects around the classroom.

Write down the name of each one and what material it is made from

Name of object	Material it is made from

Wooden table	
Glass window	
Metal car	
Rubber toy	
Plastic ruler	
Wool scarf	
Cotton teeshirt	
Ceramic mug	

hard	strong	shiny	dull	transpa- rent	opaque	breaks easily	smooth	rough
✓	✓		✓		✓		✓	
✓		✓		✓		✓	✓	
✓	✓	✓			✓		✓	
	✓		✓		✓		✓	
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	✓		✓		✓			✓
	✓		✓		✓			✓
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Object	Material	Reason material is used
Spade 	Steel	strong, hard
Paper towels 	Paper	absorbent, flexible
Girder 	Steel	strong, hard
Jumper 	Wool	flexible, keeps heat in
Chair 	Wood	strong, hard
Knife & fork 	Stainless steel	strong, does not rust
Window 	Glass	transparent, hard
Shoe 	Leather	flexible, strong

An object is transparent if

light can pass through it

An object is opaque if

light cannot pass through it

An object that is hard

cannot be scratched easily

An object that is soft

can be scratched easily

An absorbent material will

soak up water well

An elastic material will

stretch and return to the original shape

A plastic material will

stretch and remain stretched

A flexible material

is bendy

A malleable material

can be bent into any shape

To test the hardness of a material we do the 'scratch' test



To do the scratch test we can use our fingernails or an iron nail. We want to test a number of surfaces to see which is the hardest.

The surfaces we will test are:

A metal sheet

Rolled out plasticine

A plastic sheet

A tile

A wooden surface

Test each surface for hardness using the 'scratch' test. Use your fingernail first and record your observations. Then use the nail and again record your observations

Surface	Fingernail test	Iron nail test
Tile	X	✓
Metal sheet	X	✓
Wooden surface	✓	✓✓
Rolled out plasticine	✓✓	✓✓
Plastic sheet	✓	✓✓

 No scratch
  Scratches a little
  Scratches a lot

- Was this a fair test?
- Rank the surfaces in order of hardness
- How did you ensure it was or what should you have done to make sure it was a fair test?
- If you were doing this investigation again would you do it differently?

You have to design and carry out an investigation to determine which is the best paper towel for soaking up water.

Look carefully at the towels you have to test. Which do you think will be best for soaking up water?

Why do you think this one will be the best?

How are you going to test the paper towels? Include a diagram with your plan and a blank results table.



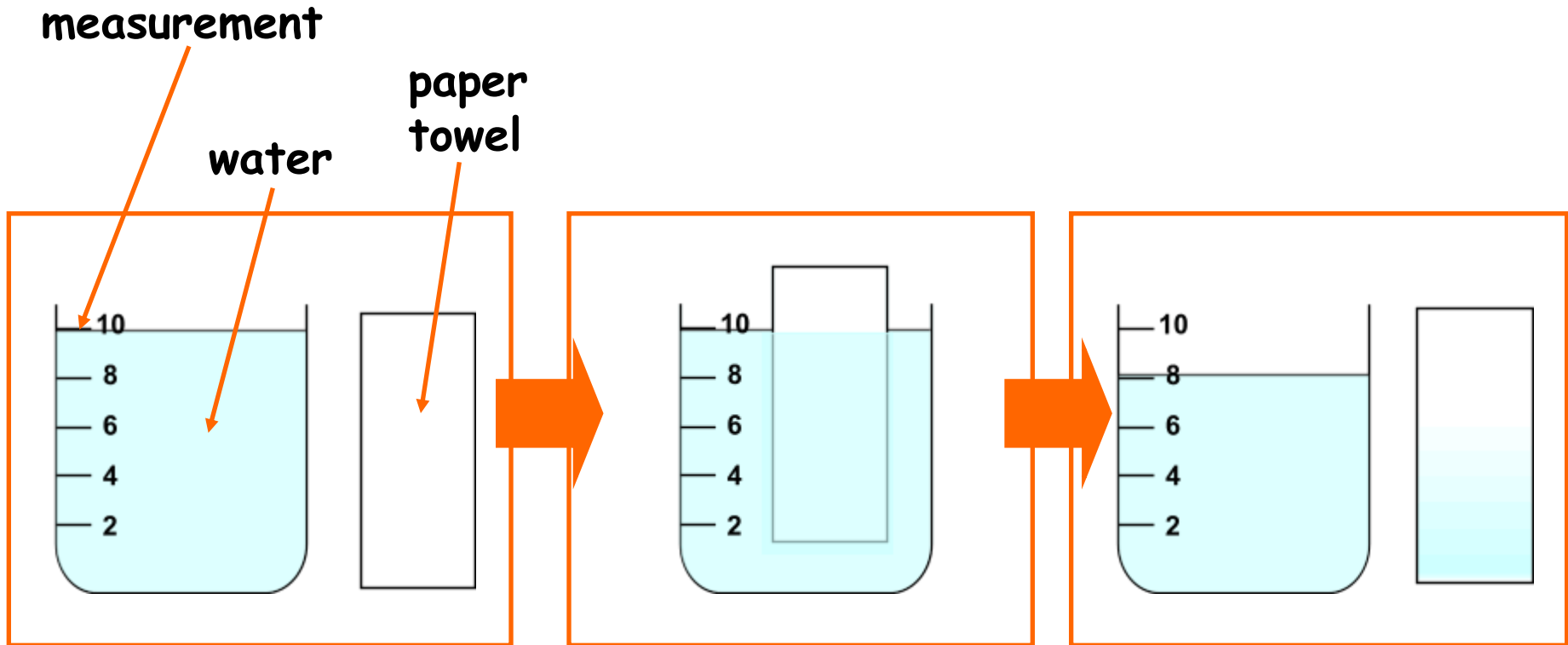
Which is the best paper towel for soaking up water?

Look carefully at the towels you have to test. Which do you think will be best for soaking up water?

Why do you think this one will be the best? Is it thicker? Does it have pockets?

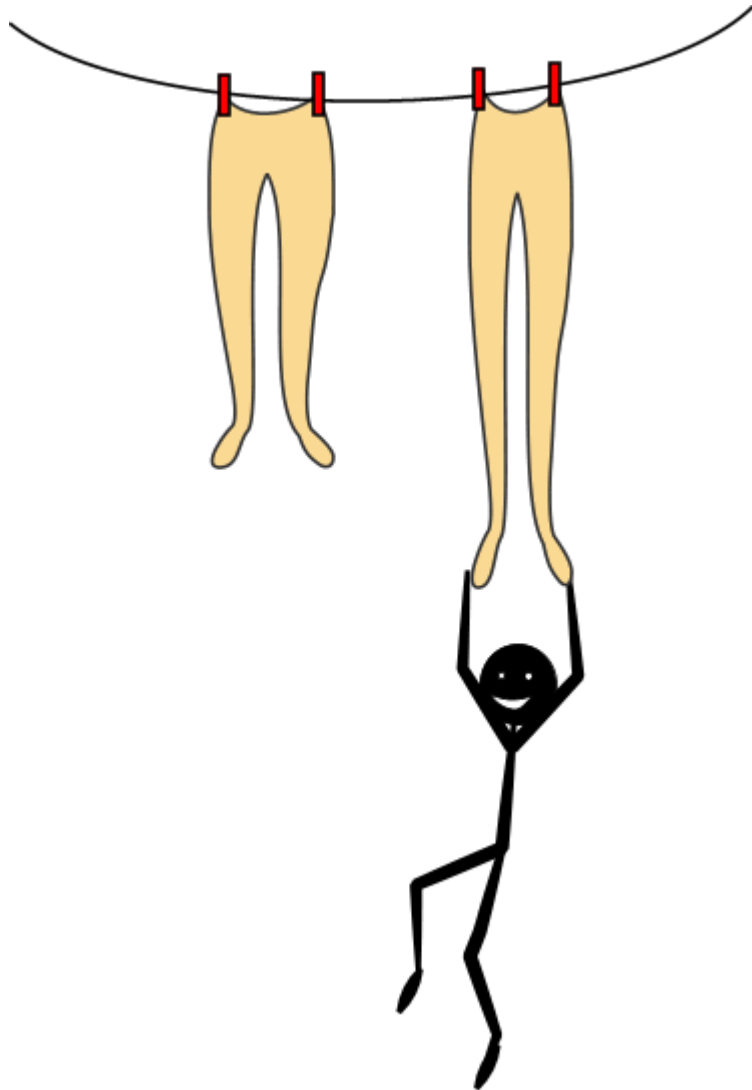
To test each towel we can measure the amount of water each one soaks up.





For each of the towels you are testing to see how much water is left in the beaker after you take the towel out.

How will you know which has absorbed the most?



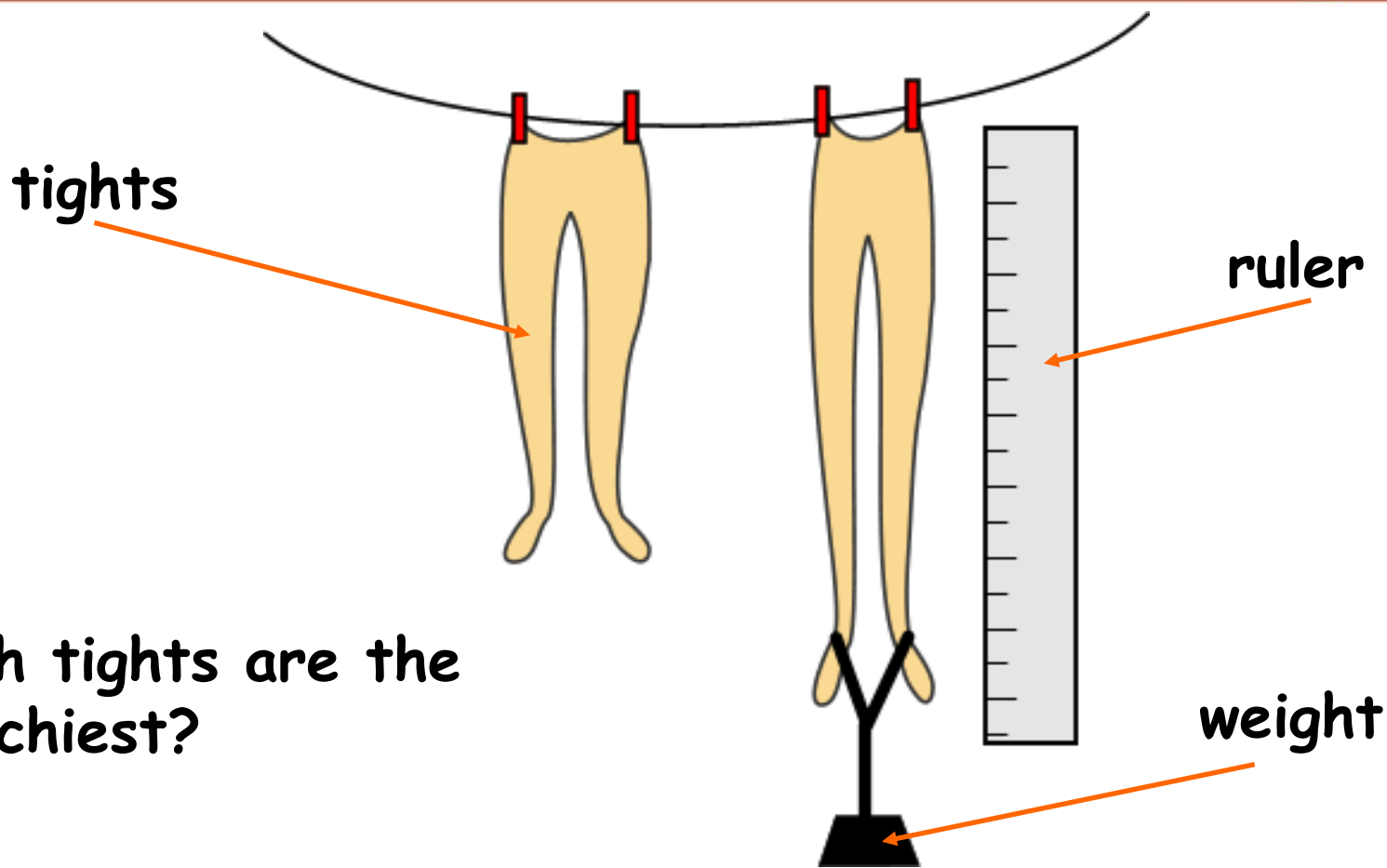
Which tights are the stretchiest?

How are you going to test this?

What will you change?

What will you keep the same?

What will you measure each time?



Which tights are the stretchiest?

Test different tights to see if they all stretch the same amount when a certain weight is hung from them

Record your results in a table

Which tights?	Amount stretched

