MATERIALS 1

Index:

Name_____

Form_____

Materials

Material	Tick I know what this material looks like
aluminium	
brass	
bronze	
Graphite	
Some pottery (Ceramic)	
chalk	
clay	
copper	
cork	
cotton cloth	
expanded polystyrene	
glass	
granite	
hard wood	
iron	
lead (not on display)	

Material	Tick I know what this material looks like
leather	
limestone	
marble	
nylon	
paper	
Perspex	
polystyrene	
polythene	
PVC	
rubber	
slate	
soft wood	
steel	
wool	
zinc	

Pick three substances from the list that are **natural**	Pick three substances from the list that are **synthetic (man-made)**

Floating and sinking

Name……..

Test each of the following substances by putting them in water to see if they float or sink

Write the name of each substance in the correct column

WAX, WOOD, ALUMINIUM, BRASS, PLASTIC, POLYSTYRENE, GLASS, IRON

Try out any other materials yop like and write each down in the correct column

FLOAT	SINK

PROPERTIES

Name……..

Fill in a substance you know that has the property listed

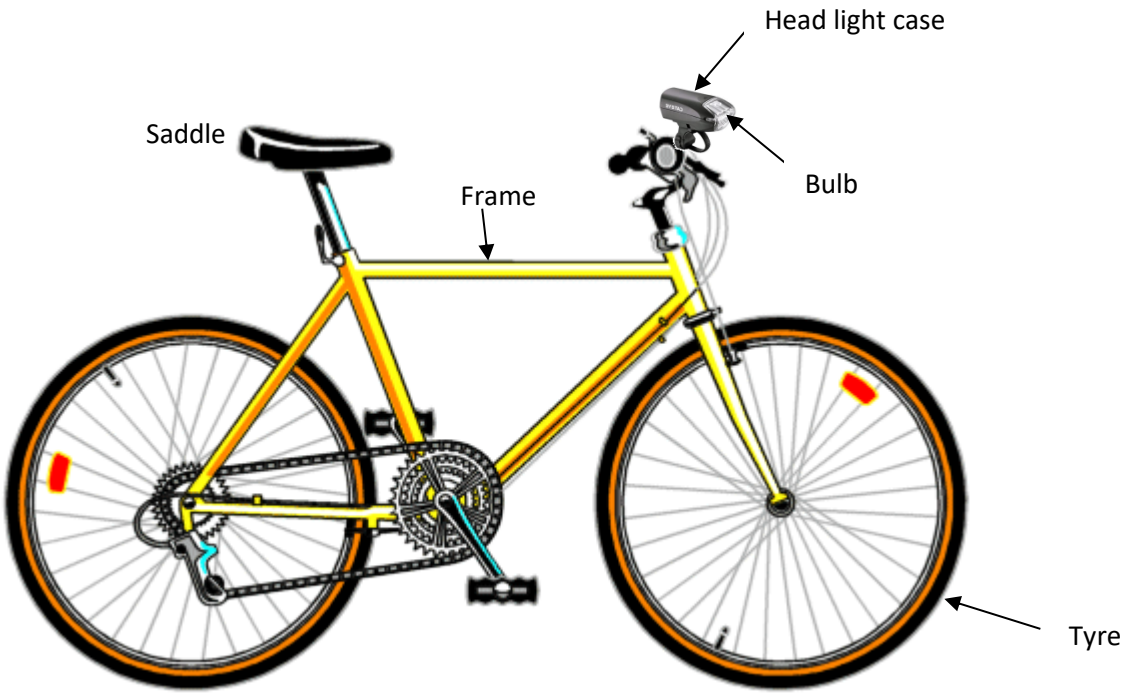
Property	**Name a substance that you know**
Hard	
Flexible (bendy)	
Brittle (snaps easily)	
Magnetic	
Transparent (lets light through)	
Opaque (Does not let light through it)	
Melts easily	
Elastic (can stretch)	
strong	
Floats	
Absorbent (soaks up water)	

Rubber, Sponge, Wood, Iron, Glass, Leather, Plastic

Join each word with its meaning by using a neat line

- Absorbent — Bendy
- Transparent — Snaps easily
- Elastic — Soaks up water
- Flexible — You can see through it
- Brittle — Stretchy

Parts of a bicycle



What are the tyres made from?.....

What is the frame made from?.....

The bulb is made of glass because glass is……..

The saddle made of leather because leather is……..

Metal Plastic Leather Glass Rubber

Transparent Flexible Strong

How many materials can you name that have been used to make the house in this picture?

……

……

……

……

……

Materials Assessment test

1. Fill in which material fits the properties

Material	Properties
	Strong
	Cheap and melts easily. Not very strong
	Flexible and strong.
	Elastic (stretchy) and soft
	Transparent and brittle.

Metal Plastic Leather Glass Rubber

2. **Match up each word with its meaning**

Elastic	Bendy
Absorbent	See-through
Flexible	Snaps easily
Transparent	Stretchy
Brittle	Soaks up water

3. Which of the substances, Metal Plastic Leather Glass Rubber

Would you use to make a washing up bowl?.....

I made this choice because ……

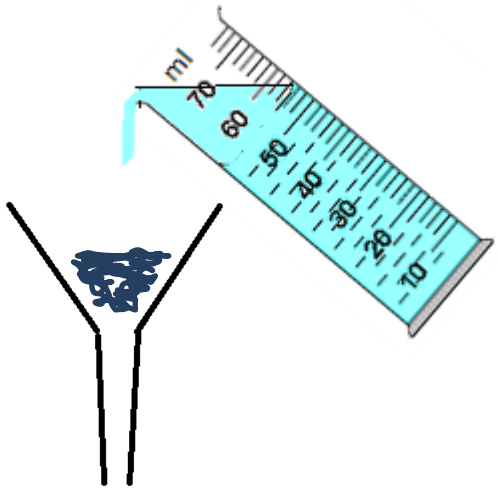
4. Which of the substances, Metal Plastic Leather Glass Rubber

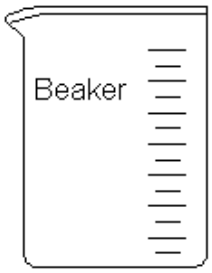
Would you use to make bridge? .....

I made this choice because ……

Experiment to see which kitchen towel is the most absorbent

I am going to pour 100 ml of water on to a piece of kitchen towel and measure the volume of water that drips through.





This is what I changed for each experiment

I kept this the same for each experiment

This is what I measured each experiment

These are my results

I started with …… ml of water

Type of towel	Volume of water that drips through the towel ml	Which towel soaks up the most water 1st , 2nd and 3rd
1.		
2.		
3.		

Conclusion:

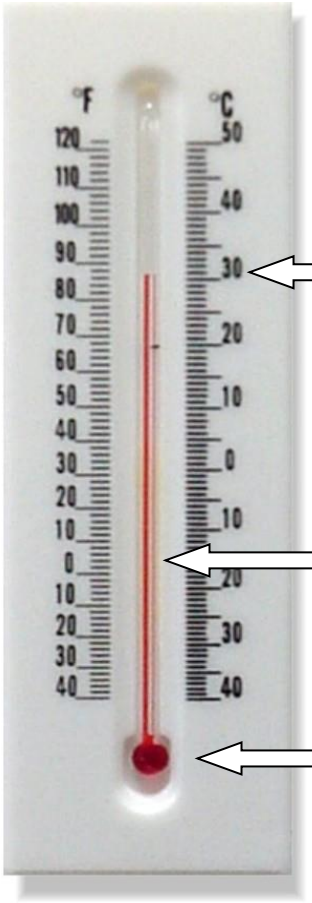
The towel that was the most absorbent is ……..

I know this because:……..

Thermometer

We measure temperature using a thermometer

Temperature is measured in degrees Celsius (°C)



Note

There are many different kinds of thermometer for measuring temperatures in different places

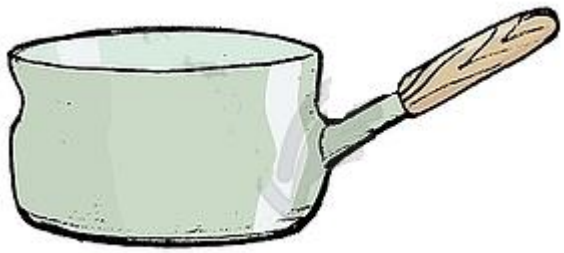
Some temperatures I measured

What I was measuring	**Temperature /** °C
The temperature of air in this room	
Cold water	
Warm water	
My body temperature	
Ice and water	
Boiling water (Dangerous….. done by a teacher)	

Conductors and insulators of heat

A material that lets heat pass through it easily is called a thermal **conductor**

A material that does not let heat pass through it easily is called a thermal **insulator**



The pan is made of metal because metals are good …… of heat.

The handle is made of plastic or wood because plastic and wood are both good

……

COOLING WATER EXPERIMENT

I wish to find out which materials make the best insulators

EXPERIMENT 1

I am going to put 100ml of hot water in a beaker and measure the temperature

I am going to measure the temperature again after 10 minutes

These are my results

Temperature at start	°C
Temperature after 10 minutes	°C
The water cooled down by	°C

How can I make the water cool down more slowly so after 10 minutes it is still hot?

Some different ideas:

1……..

2……..

Trying the experiment again to test my theory:

EXPERIMENT 2

This is what I changed from the first experiment:

……

These are my results

Temperature at start	°C
Temperature after 10 minutes	°C
The water cooled down by	°C

Which water cooled down the most, experiment 1 or experiment 2: ……..

Class results

Type of container	**How much did the water cool down**
Original beaker	

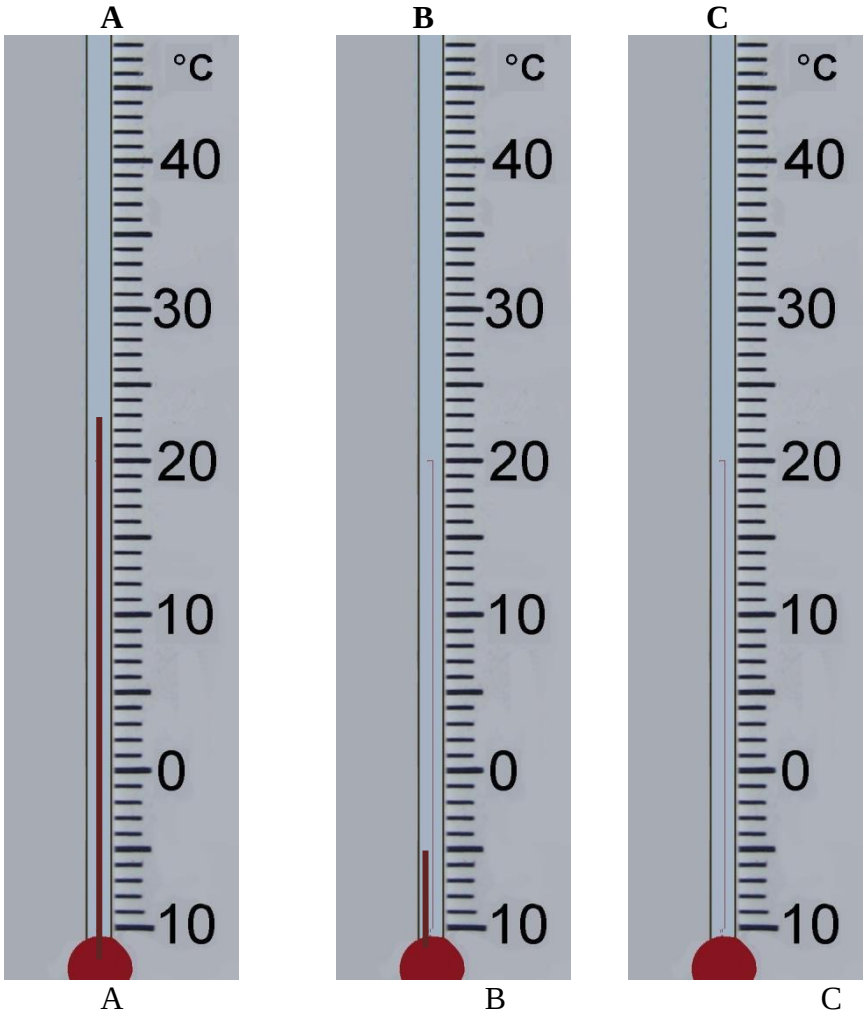
CONCLUSION

The beaker that kept the water warm the longest was:……..

I put this answer because:

……..……

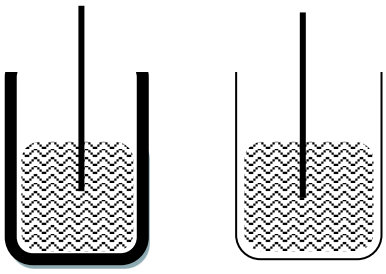
Measuring Temperature



1. Name the instrument we use to measure temperature……..
2. What is the temperature reading on thermometer A? .....
3. What is the temperature reading on thermometer B? .....
4. On thermometer C draw a line on the scale to show the temperature 15ºC
5. Write down the following temperatures
   a. Water boils at ……. ºC
   b. Water freezes at ……. ºC

c. Human body temperature is ……. ºC

6.



A B

A boy has two beakers, A and B
Beaker A is made of polystyrene and beaker B is made of plastic

He fills them both with hot water and places a thermometer in each.

He measures the temperature of the water at the beginning of the experiment and after 10 minutes.

Results:

	Temperature at the start	**Temperature after 10 minutes**	**How much did the water cool down?**
Beaker A (polystyrene)	60ºC	53ºC	7 ºC
Beaker B (plastic)	60 ºC	50ºC	

a) Fill in the table to show how much beaker B cooled down

b) Which beaker cooled down the most, A or B? ……..

c) Which material was the best thermal insulator Plastic or polystyrene
……..…

d) Write down one thing the boy must do to make this a fair test?

……..

7.

The Polar bear lives in the Arctic where it is very cold

How does the polar bear manage to keep warm?

Explain how this method works?