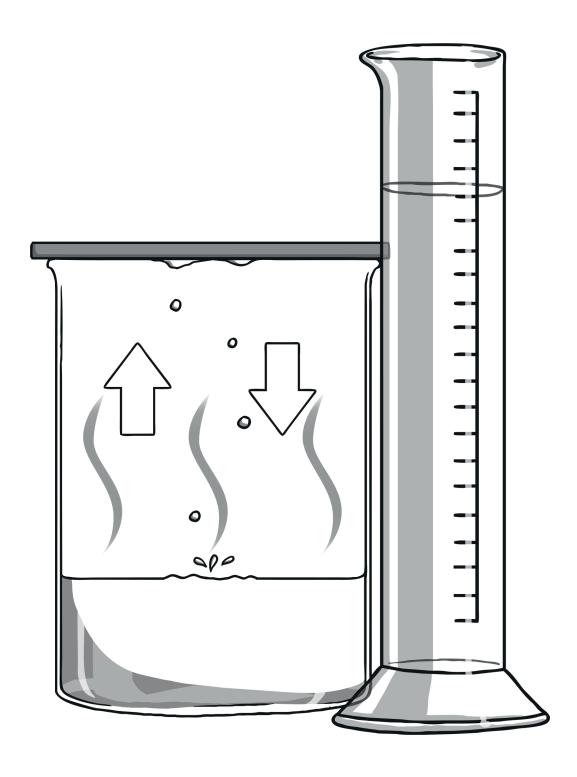
Changing and Separating Materials



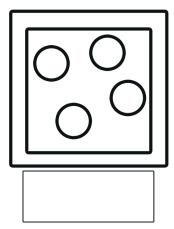




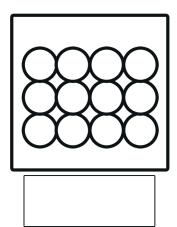
Solid, Liquid or Gas?

Label the diagrams below as solid, liquid or gas.

Draw a line from the diagrams to the correct descriptions below.

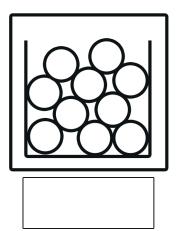


The molecules are held together with strong bonds. They don't move very easily so they can keep their own sh.ape and size.



The molecules are free to move around. They can spread around an open space quickly and freely.

They can't keep their shape unless they are kept in a sealed container.



The molecules have weaker bonds. They can move around slightly so they can flow. They can't keep their shape unless they're in a container.





Soluble or Insoluble

Will the materials in the table below dissolve in water? Test the materials and complete the table.

		ı
Material	Does it dissolve?	What does solubl
sand		
chalk		
flour		
rice		
coffee granules		
sugar		
salt		
gravy		

What	does	soluble	e mear	ι?	
What	does	insolul	ole me	an?	

Classify the materials you tested into the correct category:

Soluble	Insoluble





Heating: Reversible or Irreversible?

Description before heating

Heat the materials below and complete the tables below.

Material

Material	Description <u>before</u> heating	reversible?
chocolate		
wax		
cheese		
plasticine		
butter		
egg		
Material	Description <u>after</u> heating	Was the change reversible?
Material chocolate	Description <u>after</u> heating	Was the change reversible?
	Description <u>after</u> heating	Was the change reversible?
chocolate	Description <u>after</u> heating	Was the change reversible?
chocolate	Description after heating	Was the change reversible?
chocolate wax cheese	Description after heating	Was the change reversible?





Will the change be

Saturation

Add one spoonful of sugar to some water and stir. Add one spoonful of salt to some water and stir. Continue adding spoonfuls of sugar/salt until no more will dissolve. Record your results below. How many spoonfuls dissolved in the water? spoonfuls of sugar dissolved in the water spoonfuls of salt dissolved in the water When the water dissolved the sugar it made _____ When the water dissolved the salt it made _____ When water cannot dissolve any more sugar or salt we say that it is ______ The water dissolved more ______ than _____before it became ____ solution salt saturated sugar





Temperature and Dissolving

Does the temperature of water affect the speed of dissolving?

Put 3 spoonfuls of sugar in a jar of cold/warm/hot water and time how long it

takes to dissolve. Carry out 3 tests, one for each temperature and time how long it takes for the sugar to dissolve.

Which temperature water do you think will dissolve the sugar fastest?







cold water

warm water

hot water

cold water °C	warm water °C	hot water °C

Repeat the tests to make the results more reliable.

cold water °C	warm water °C	hot water °C

Find the average time for each temperature.

cold water °C	warm water °C	hot water °C

Conclusion

How does the temperature of the water affect the time it takes the sugar to dissolve?



Separating Mixtures

Draw a line from the process to its correct description.

Separates insoluble solids Evaporating and Condensing from liquids Separates two liquids which Decanting have different 'weights' different Magnetism Separates sized solids Separates soluble solids from Filtering liquids Separates iron and steel from Sieving non=magnetic materials

Write in the process used to separate each mixture.

Mixture	Process
salt + water	
sugar + water	
rice + pasta shapes	
sand + water	
flour + rice	
paperclips + sawdust	





What I Know About Changing and Separating Materials



