



More about Dissolving & Reversible /Irreversible Changes Revision Worksheet (4)

Name: _____ YEAR 6... Date.....

1. Choose words from the brackets and fill in the blanks .

(solution, reversible, sugar, insoluble, soluble, cannot be changed back, can be changed back)

- i) A reversible change _____
- ii) An irreversible change _____
- iii) Boiling, evaporating, condensing and dissolving are all examples of _____ changes.
- iv) Some substances dissolve in water to make a _____.
- v) Substances like salt and _____ that dissolve in water are called _____ substances.
- vi) Substances that don't dissolve in water like sand are called _____ substances.

2. Draw lines to match the following:

Insoluble	Letting something warm up until it melts (turns from a solid into a liquid)
emulsion	When water is evaporated and then condensed to produce pure water.
Filtering	A liquid changing into a gas.
Solvent	A liquid which has a gas mixed with it, but the gas has not dissolved.
Dissolve	A substance which cannot dissolve (mix in a liquid)
Distillation	When liquids do not mix together completely. Small droplets of one liquid are formed in the other.
Solution	When two or more substances are mixed together.
Condensation	When a substance is pure there are no other substances mixed with it.
Pure	Mixing of a substance in a liquid. It seems to disappear but it stays in the liquid.
Evaporation	Separating un dissolved substances from a liquid by pouring it through filter paper.
Soluble	The liquid in the solution
Solute	The mixture formed when a substance dissolves in it
Mixture	A gas changing into a liquid.
Liquid foam	A substance which can dissolve (mix in a liquid)
thaw	Cooling something down until it becomes a solid.
freeze	A limit to how much solid will dissolve in a liquid(in terms of 'no much room')
Saturated solution	The substance that dissolves.

3. Linda had a piece of **red sandstone**. She hammered it into pieces and then ground them into a powder using a pestle and a mortar.

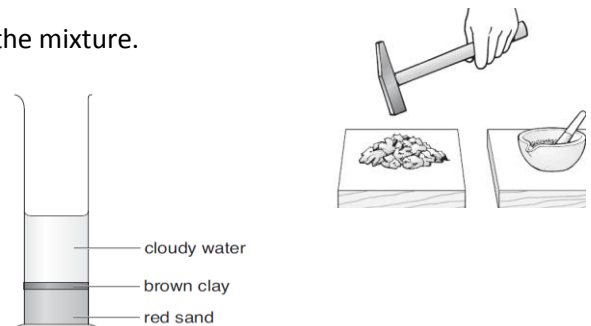
She put the powder into a measuring cylinder with water and shook the mixture.

The contents settled.





Linda said her results showed that sandstone is a mixture of two substances.

How could she tell, from her results, that **sandstone is a mixture of substances?**

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4. Seema and Alan are mixing materials. They put different materials in four clear plastic bags. They tie the top of each bag. They watch what happens and record their observations.

Mixture	Observations
Bag A: Brown sugar and water.	Water turns brown and cannot see the sugar after a while. 
Bag B: Oil and water.	Oil floats on top of the water. 
Bag C: Bicarbonate of soda and vinegar.	Lots of fizzing. It looks frothy. Bag puffs up. 
Bag D: Bicarbonate of soda and oil.	Bicarbonate goes in a lump at the bottom. 

- (a) Write the names of the **THREE** liquids that the children used.
 (i) (ii) (iii).....
- (b) In one bag dissolving was the only change. In which bag was dissolving the only change?
- (c) The mixture in Bag C fizzed and the bag puffed up.
 Why did Bag C puff up?.....
- Three of the mixtures can be separated to get the starting materials back again. One of the mixtures cannot be separated.
- (d) Which bag has a mixture that **cannot** be separated?.....

5. State whether the changes are **reversible** or **irreversible**.

Gas burns in a cooker	
Water in a freezer changes to a solid.	
Salt crystals disappear when you stir them in warm water.	
Soft clay turns hard when you heat it.	
A white powder fizzes when you put lemon juice on it.	
Candle wax melting	

6. Jane puts some green powder into water. Bubbles appear in the water and the powder disappears. The water turns green. Jane says that this is an irreversible change.

- i) Which observation shows Jane that this change is **irreversible**?

- ii) Explain why?.....
- iii) Write one reversible change that is caused by heating?.....
- iv) Explain why?.....

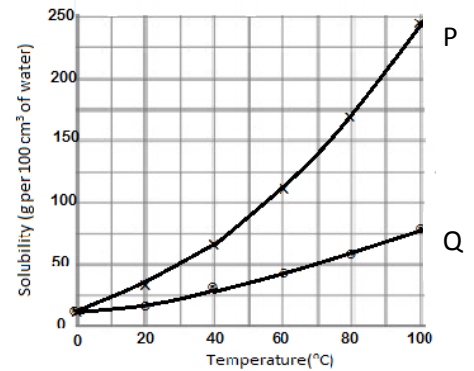
7. i) What is the material that is burning?
- ii) What new materials are made?.....,,



8. Observe the graph and answer the following questions.

- a) ----- g of solid 'P' dissolves in 100cm³ of water at 60°C.
- b) ----- g of solid 'P' in 200g of water at 60°C.
- c) Alan said , according to the graph solid 'P' is three times more than 'Y' at 100°C.

Is Alan right? Explain your answer.



9. Diana was finding out how quickly 5g of sugar dissolved in water at different temperatures. The line graph shows her results.

i) One of her results is probably wrong.

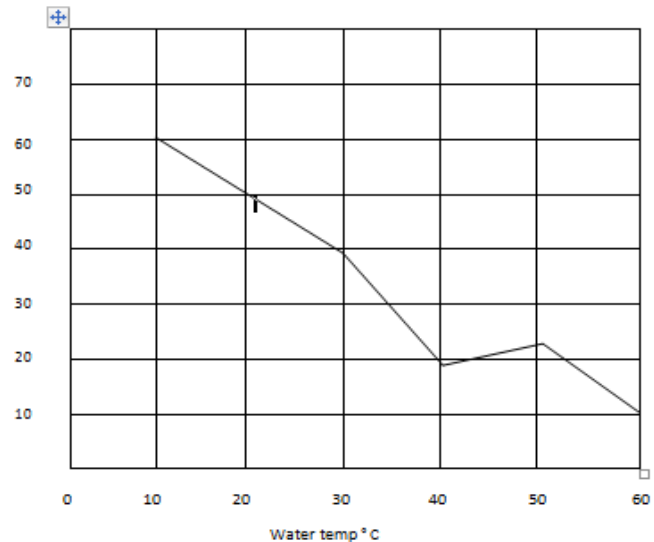
Circle this result.

ii) How does the temp. of the water affect the speed of dissolving?

iii) **Predict** how long 5g of sugar will take to dissolve at 5°C seconds.

iv) What would happen to the speed of dissolving if Diana had used sugar which was crushed into smaller pieces?.....

Time taken to dissolve (seconds)



10. Nathan did an experiment to see if some solids all dissolved equally well in water. He added 1g of a solid at a time until no more of the solid would dissolve. The table shows his results.

i) Write out a **step by step** instructions to tell someone how to do Nathan's experiment.

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Solid	Amount that dissolved in 20cm ³ of water.
Sodium bicarbonate	1
Epsom salt	5
sugar	40
salt	7

ii) Explain why this is a **fair test**.

iii) How do you think Nathan could tell that no more of a solid could dissolve?

iv) Draw a **bar line** of his results. **Label the axes**.

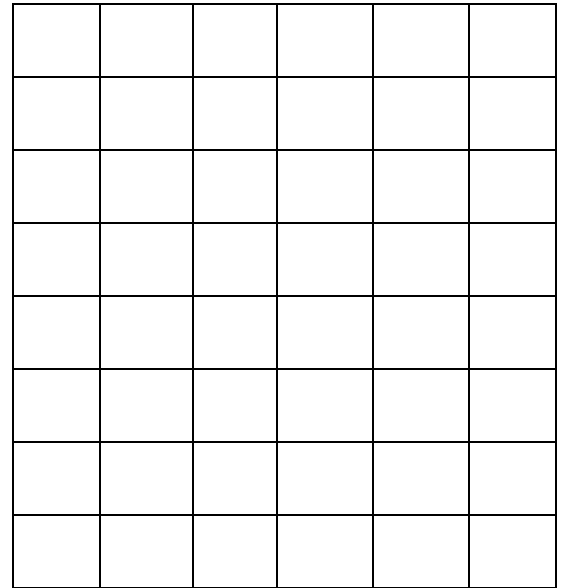
v) Do all the solids dissolve equally well?

vi) Put the solids in order of how they dissolved. Start with the one that dissolved best.

vii) How much Epsom salt can dissolve in **20cm³**?

viii) How much Epsom salt do you think dissolved in **50 cm³** of water?.....

ix) Explain how you worked this answer.
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11. Fiona was trying to separate a mixture of salt, water and gravel. Here is the apparatus she used.



i) What is this way of separating things called?

ii) What will collect in the conical flask?

iii) What will collect on the filter? Explain.
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12. Ahmed is investigating what happened to the mass of a candle as it burnt.

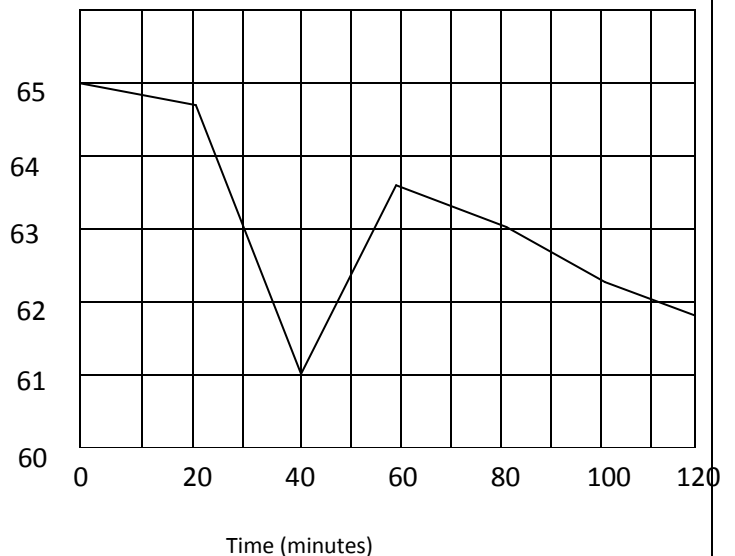
The graph shows his results.

i) Is the **burning** of a candle a reversible change?.....

ii) What happens to the mass of the candle as it **burns**?

iii) What was **the mass** of the candle at the start of Ahmed's investigation?
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Mass of candle (grams)



iv) One of Ahmed's measurements is probably wrong. **Put a circle** around this measurement on the graph.