

Name:

Date:

MATTER

MOLECULES

Activity 1

Let's investigate molecules.

INVESTIGATING THE SIZE OF MOLECULES

A.- OBJECTIVE:

- To have an idea of how small molecules are.

B.- EQUIPMENT:

Tick them when you leave them on the table.

- A small jar



- Water



- Blotting paper



- Felt-tip pens



- Scissors



- Glue



- A ruler



C.- SAFETY:

Be careful when you use the scissors.

D.- HYPOTHESIS:

After reading the instructions below, tick the hypothesis that you think is correct or write down another hypothesis.

- 1.- I think I will be able to see one molecule.
- 2.- I think I will not be able to see one molecule.
- 3.-

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E.- INSTRUCTIONS AND DIAGRAM:

- 1.- Cut a strip of blotting paper 3 cm wide and 10 cm long.
- 2.- Draw two spots, each one of a different colour about 2 cm from the bottom of the paper.
Don't draw the circles too close to each other.
- 3.- Use the same two colours to draw a line above each colour at the top of the strip of paper.
These lines will help you to remember what colours you used.
- 4.- Put 1.5 cm of water into the jar.
- 5.- Hold the strip of paper in the water for a few minutes.
- 6.- Take the blotting paper out of the water when you see that the colours stop spreading.

Diagram

Why don't you try the same...

- ...but use some different black felt-tip pens?
- ...but use food colouring instead of the felt-tip pens?
- ...but use inks instead of the felt-tip pens?
- ...but use strips of white toilet paper instead of the blotting paper?
- ...but use strips of coffee filter paper?

Why don't you try:

- **For example...**
 - 1.- Cut out a square of blotting paper 15 cm each side.
 - 2.- Place the paper on a saucer.
 - 3.- Add a few candy-coated chocolates, all of the same colour, on the centre of the paper.
 - 4.- Put a few drops of water on the candy-coated chocolates.

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5.- Move the candy-coated chocolates around so that the colour mixes with the water.

6.- Leave the paper for a few minutes.

7.- Take the candy-coated chocolates out of the water when you see that the colours stop spreading.

• **For example...**

1.- Cut 4 strips of blotting paper 3 cm wide and 10 cm long.

2.- Mix different inks or food colouring.

3.- Put a different drop of each mixture on to different strips of paper about 2 cm from the bottom of the paper.

4.- Write the proportions used to prepare the mixture at the top of the strip of paper. They will remind you what proportions you used.

5.- Put 1.5 cm of water into 4 jars.

6.- Clip two clothes pegs to each strip of paper, one from each side, to set them on each jar.

7.- Take the blotting paper out of the water when you see that the colours stop spreading.

F.- RECORDING THE DATA:

Stick the strip of blotting paper here once it's dry.



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G.- OBSERVATIONS:

H.- CONCLUSIONS:



Activity 1

- G.-**
- The (*colour*) pigment has split into (*colour*) and (*colour*).
 - The (*colour*) pigment has moved further through the paper than the (*colour*) pigment.
- H.-**
- *I/We could/couldn't* see the pigment molecules.
 - Molecules *are made/aren't made* of atoms.