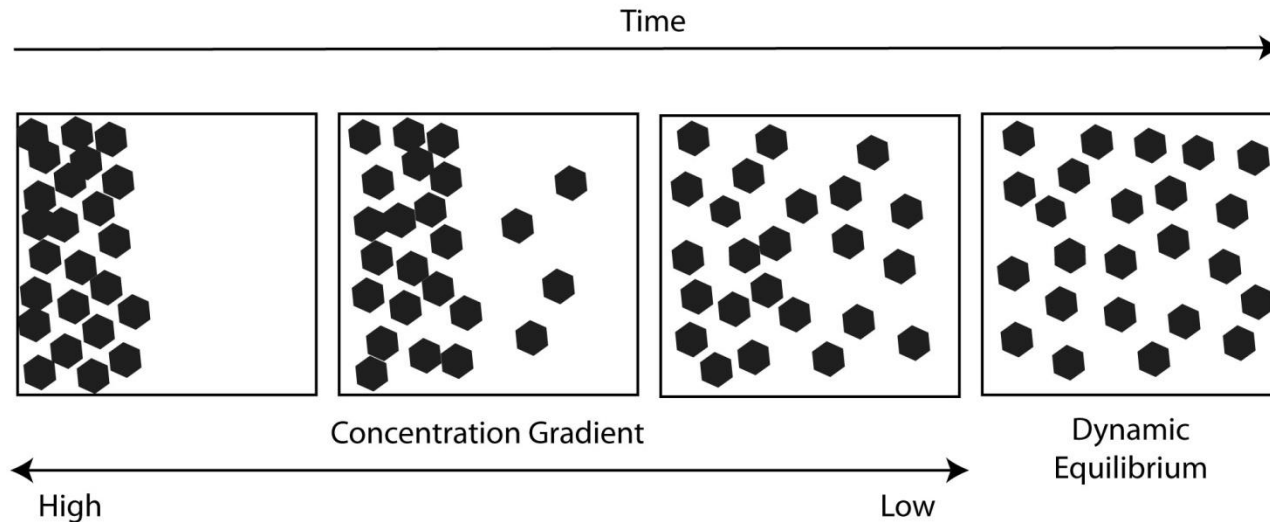




DIFFUSION

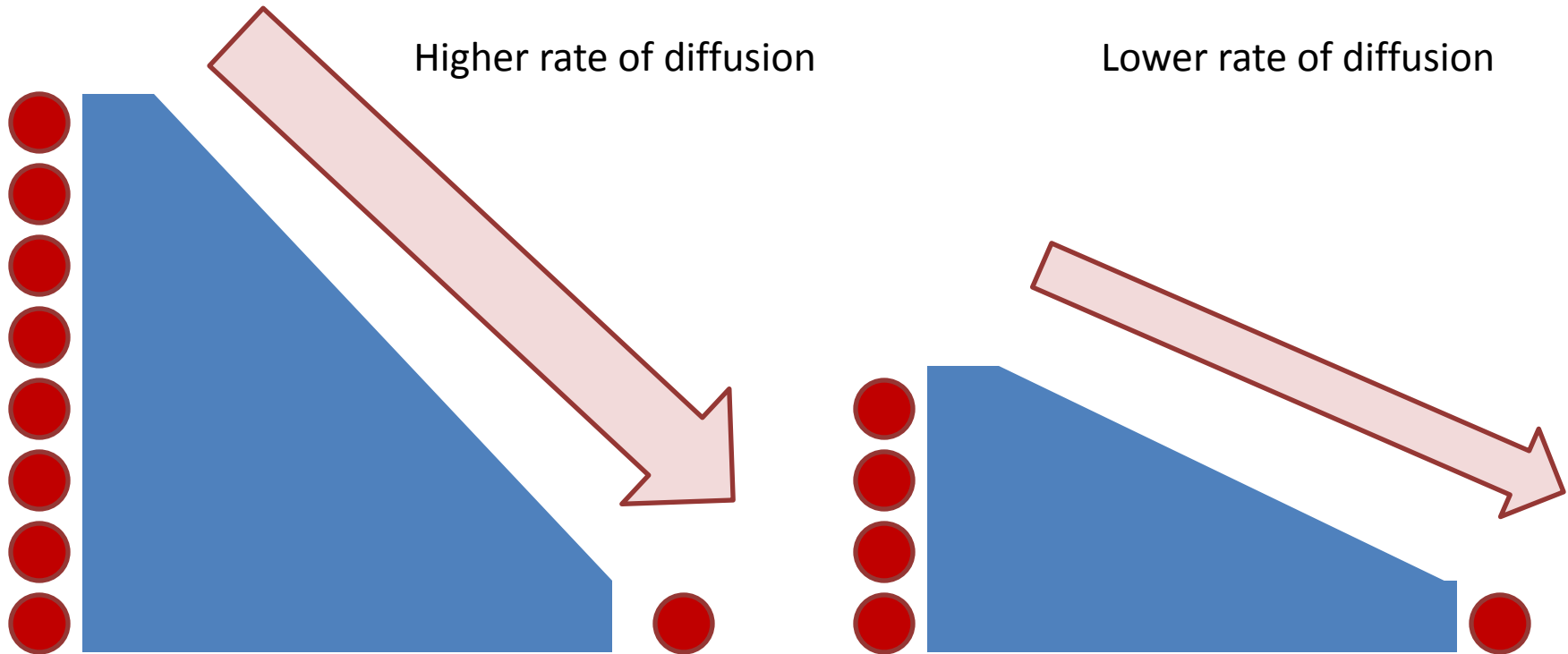
Diffusion



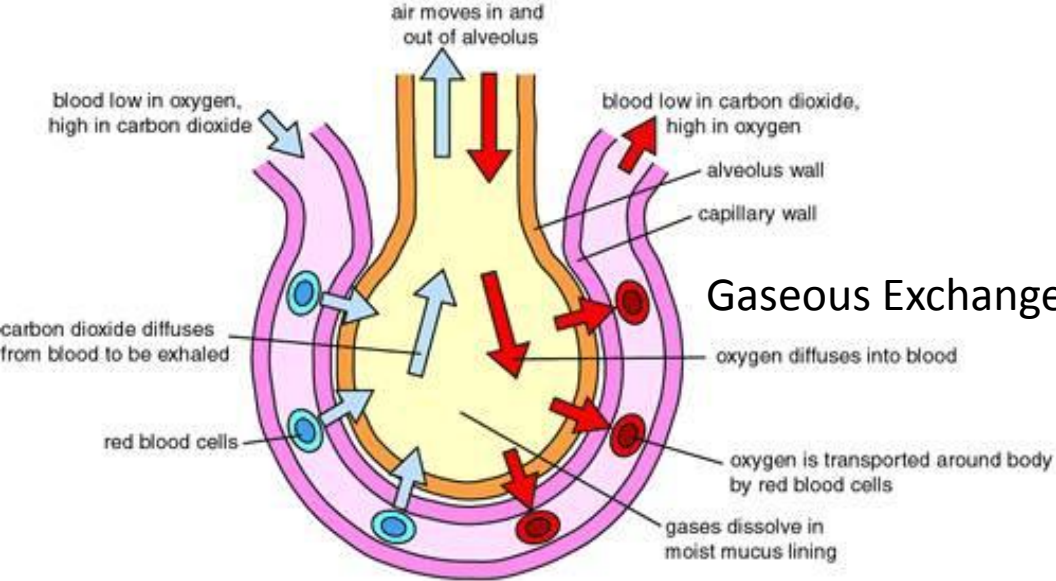
- ❖ All gaseous and particles in solution have kinetic energy (they move).
- ❖ This means that they move from an area of high concentration to low concentration.
- ❖ This continues until they are evenly spread out.
- ❖ The greater the concentration gradient, the greater the rate of diffusion (we ventilate our lungs to maintain a high concentration gradient).
- ❖ Things diffuse faster in air than in solution.
- ❖ Raising the temperature increases the rate of diffusion.

Concentration Gradient

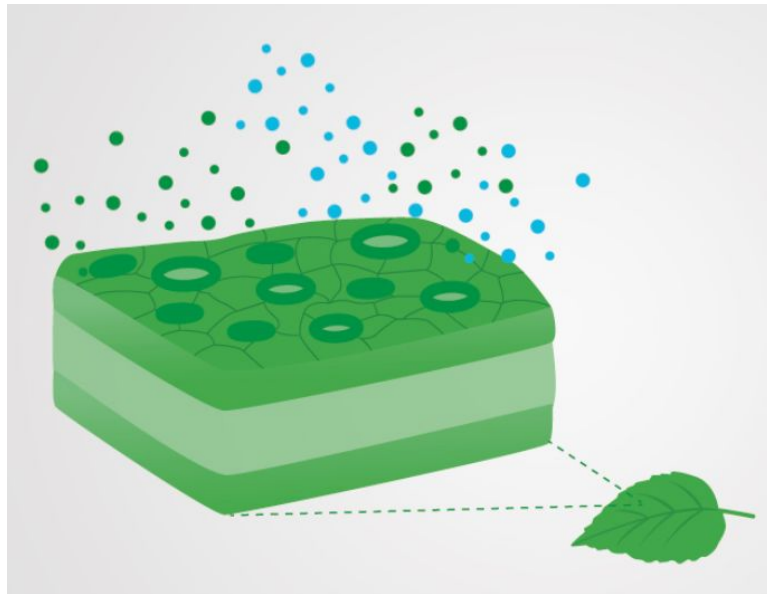
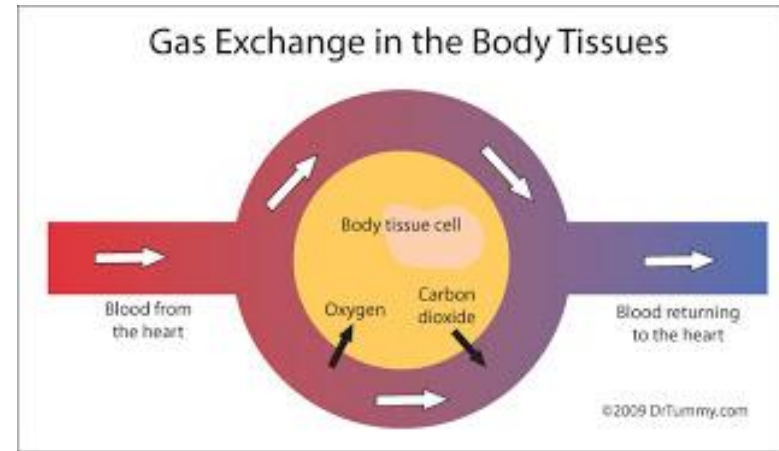
A ball rolls faster down a steeper slope. Similarly, particles diffuse faster down a high concentration gradient.



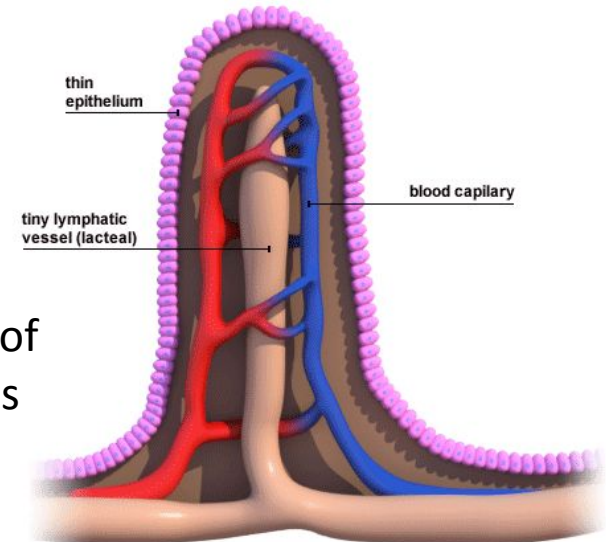
Examples



Gaseous Exchange in the lungs

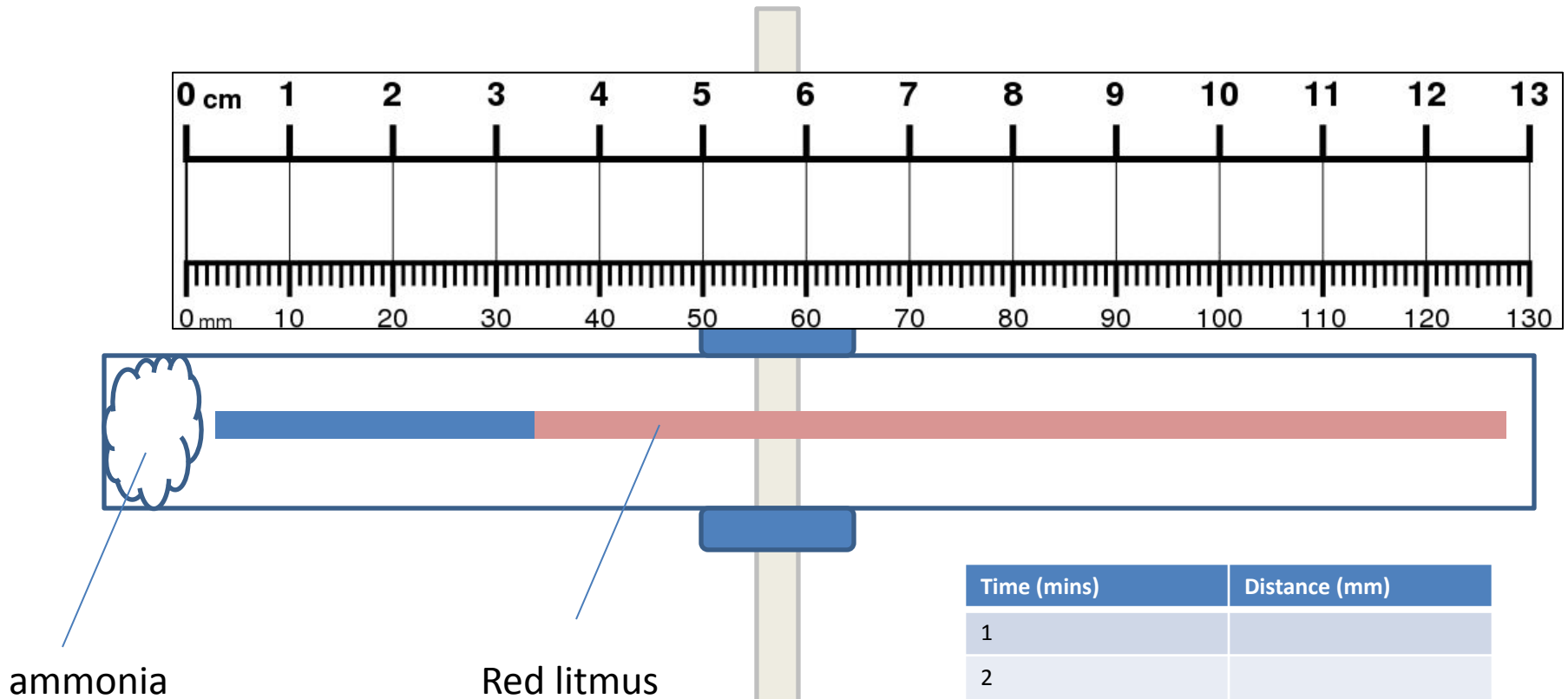


Gaseous exchange between leaves and the atmosphere



Absorption of the products of digestion

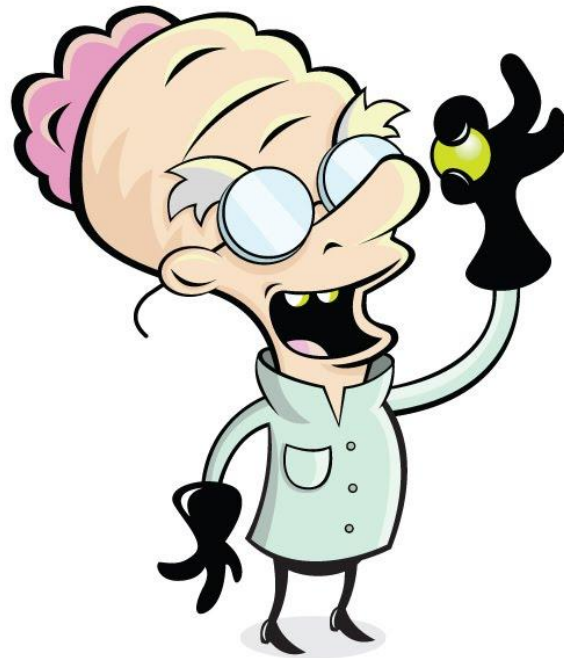
Investigating Diffusion Method 1



Time (mins)	Distance (mm)
1	
2	
3	
4	
5	
6	
7	

Write A Title

This should outline the purpose of your experiment. What are you trying to find out?



Write A Title

- State the aim
- Include a hypothesis



Write The Method

- Give a series of instructions.
- State how you control the variables.
- Include safety precautions



Present Your Results In A Neat Table

- Draw all the borders to the columns.
- Enter headings to the columns with the units.
- Be consistent with the number of decimal places.

Time (mins)	Distance (mm)
1	
2	
3	
4	
5	
6	
7	

Draw a graph

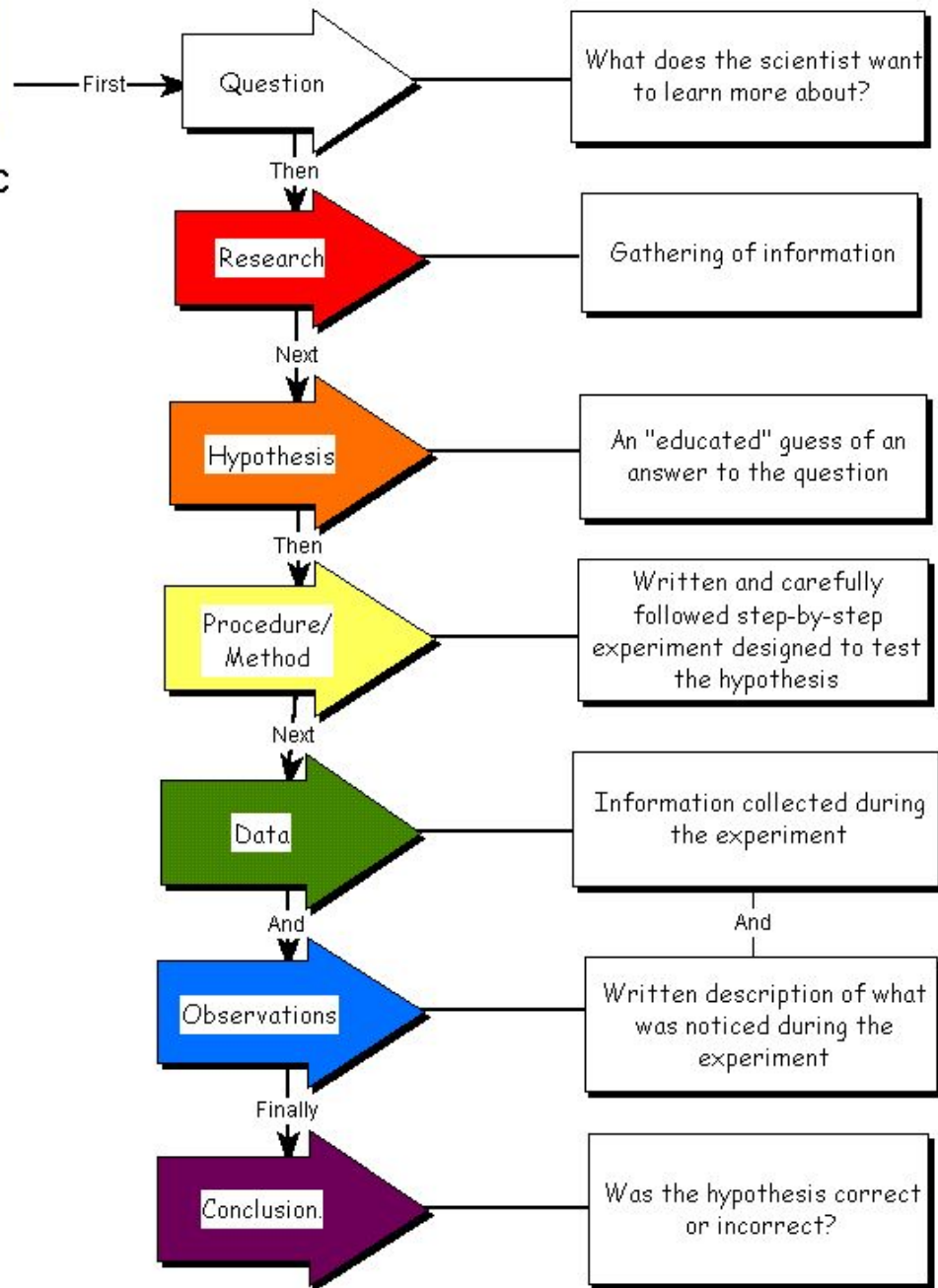
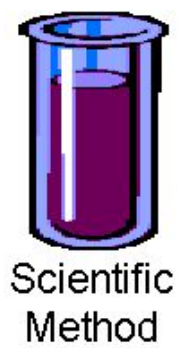
- Use graph paper.
- Use a pencil and ruler.
- Label the axes, including the units



Write A Discussion

- Write a conclusion. Relate it to the hypothesis.
- Comment on the reliability of the results.
- Suggest possible improvements

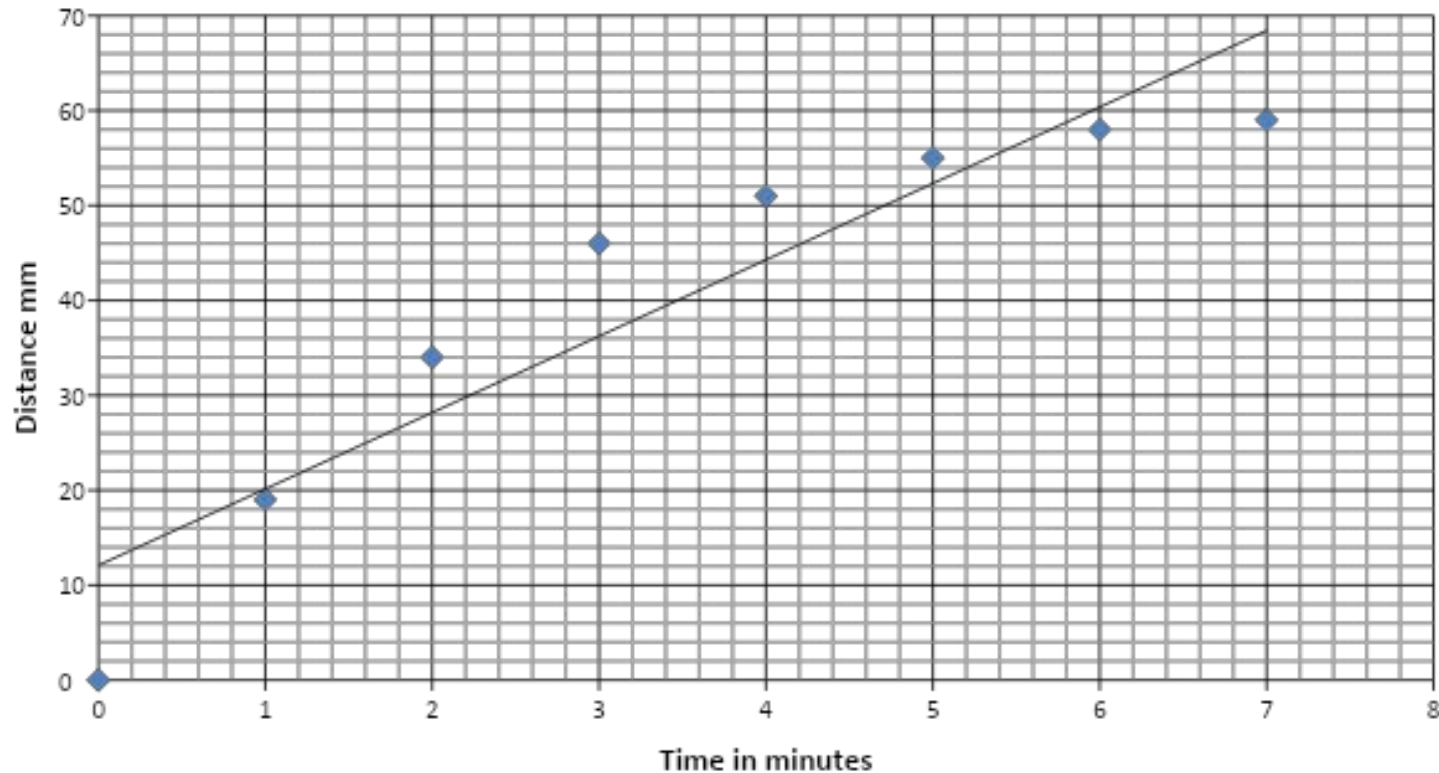




Results

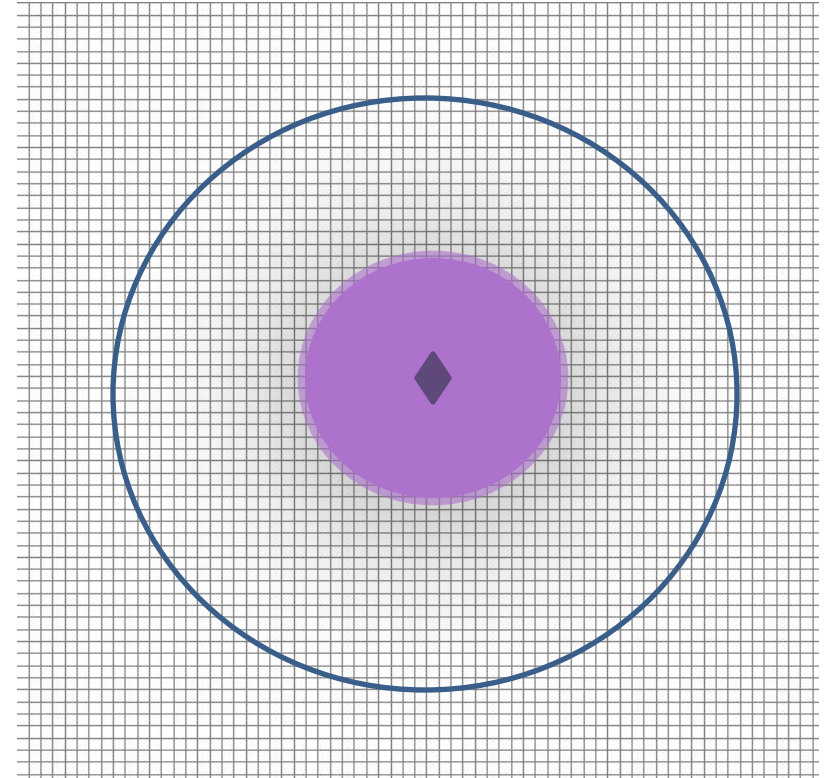
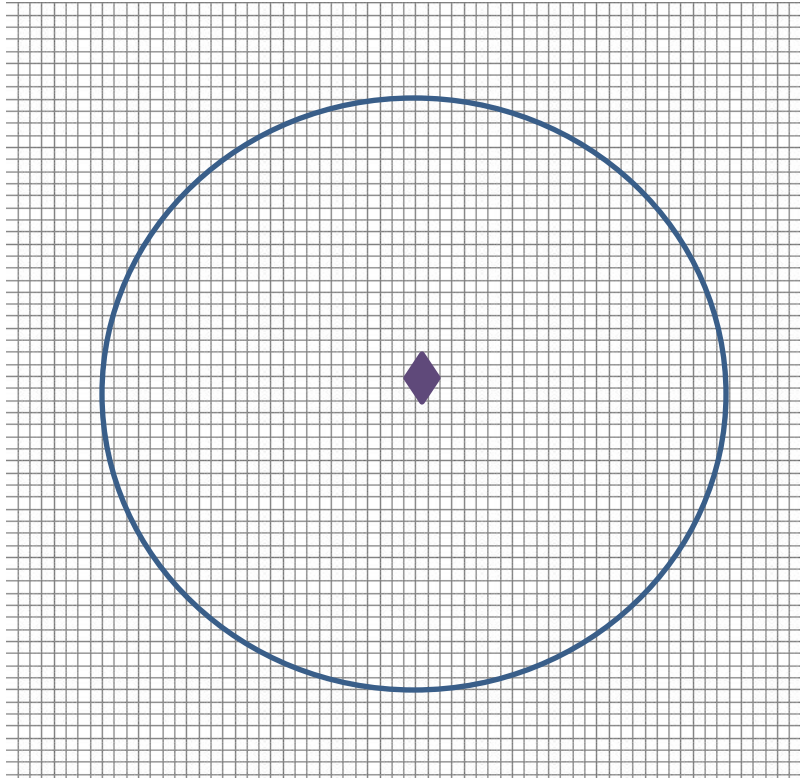
Time (mins)	Distance (mm)
1	19
2	34
3	46
4	51
5	55
6	58
7	59

Graph showing the length of red litmus that has turned blue (distance that the ammonia has diffused) against time



The gradient of the curve indicates the rate of diffusion. At the start, the concentration gradient was high and the rate of diffusion was high. As the ammonia spread out, the concentration gradient decreased resulting in a lower rate of diffusion.

Investigating Diffusion Method 2



1. Place a crystal of potassium permanganate in the centre of a Petri dish containing water.
2. Measure the radius of the coloured area at regular time intervals.
3. Investigate the effect of changing the temperature of the water.

Deadline for submitting your lab report is Thursday 19 September