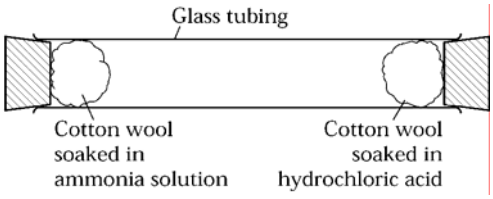
Speeds of diffusion

In this experiment you will investigate what happens when two different gases diffuse through the air.

Hydrogen chloride and ammonia will react together to give a white solid.
When the two gases meet, this appears as white smoke in the air.
Particles of hydrogen chloride are about twice as heavy as particles of ammonia.

Prediction

1 Copy the diagram.



2 How do you think the particles will move? Discuss your ideas with a partner.

3 Where in the tube do you think the two gases will meet? Put a cross on the diagram to show your prediction.

4 Explain your prediction in terms of the movement of particles.

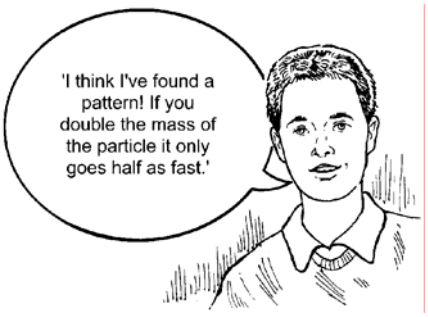
Recording your results

5 When your teacher puts the cotton wool in the tube, start timing. Look carefully to see when the white smoke ring appears. As soon as you see the smoke, stop timing. Measure how far each gas has traveled.

Considering your results/conclusions

6 Which gas moved faster? Did this agree with your prediction?

7 Do you think your original explanation was correct, or have you changed your ideas?



8 Do you think that your results would support this conclusion?

9 Have you got enough results to be sure?

10 If this pattern worked, what result would you expect if you did an experiment where one gas was three times as heavy as the other?