

## STATES OF MATTER (teacher's notes)

### GASES

#### About gases:

#### Gases in general:

- Gas molecules are further apart and move even more freely than molecules in liquids. The gas molecules make contact with one another because as they don't stop moving they hit into each other.
- Some gases such as the yellowish-green chlorine are visible.
- Some gases smell, such as hydrogen sulphide, which smells of rotten eggs.
- Gases have no set shape or volume.

#### Air:

- You can find air everywhere: in water (if you leave a glass of water in a warm place for a few hours, you will see tiny bubbles full of air), objects, living beings (humans, animals and plants).
- Air is light, invisible and odourless.
- Air is about 78 % nitrogen, about 21 % oxygen, less than 1 % carbon dioxide and other gases.
- Water vapour is an invisible gas.

#### Hot air balloons:

- A burner heats the air inside hot air balloons and hot air rises because it is lighter than the air outside.

#### **Activity 4: Let's investigate if the air that we breath can be weighed.**

D) The inflated balloon is heavier than the other, for this reason the inflated balloon weighs down the ruler at one end.

E) We need the scales to know how many grams the balloon weighs, but help them notice that they have to find out just what the air weighs and not the balloon as well.