

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 1: Observe, touch... different gases and then complete the table below. Use a tick (✓) or a cross (✗).

- Provide the children with tubes such as kitchen-roll tubes, toilet-roll tubes, straws... to help them to realize that gases can flow.
- Balloons can help the children to think about gases and they can be useful to develop activity 4.
- Tiny drops of chemicals are given off by foods. They are carried in the air to the smell detectors in our nose.