CHANGING STATES (teacher's notes)

About the activities:

Throughout this unit the idea of the importance of the increase or decrease in temperature to change a state is reinforced.

About changing states:

- These changes are physical changes because they don't produce a new substance.
- When we heat a solid the molecules vibrate faster and when they reach melting point the solid melts into liquid.
- Substances have their own melting and boiling points. Pressure and the addition of other substances change the melting and boiling points, for example on a mountain water boils at less than 100º C or salt water boils at a higher temperature than 100º C.
- Not all solids have a melting point, an example could be wood.
- We can say frozen carbon dioxide or dry ice.
- We exhale carbon dioxide (CO_2) when we breathe.
- When water becomes cold it contracts up to 4º C, but if it becomes colder the water begins to expand because the ice molecules increase the distance from each other because they arrange themselves in a hexagonal pattern. So ice is less dense than water and for this reason ice floats. Due to this fact life in lakes… doesn't die when low temperatures freeze the water (the ice is just at the top).

Activity 5: You've seen condensation a lot of times.

The water vapour or steam, a gas, returns to a liquid state when it cools because the vapour comes into contact with the cold lid. So, the decrease in temperature is important in this process.