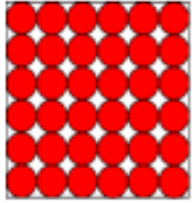


# Science Year 7 Knowledge Organiser: C1 Particles

**Overview of topic:** You will know the properties of solids, liquids and gases, describe and explain them changing state. You will also describe diffusion in terms of particles and explain what can effect diffusion. You will be able to state what gas pressure is and describe the particles in a gas to explain the changes in gas pressure

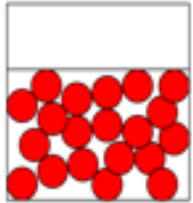
## Key content/ ideas/ concepts

### The 3 states of matter



#### SOLID

- Fixed shape
- Fixed volume
- Cannot be compressed



#### LIQUID

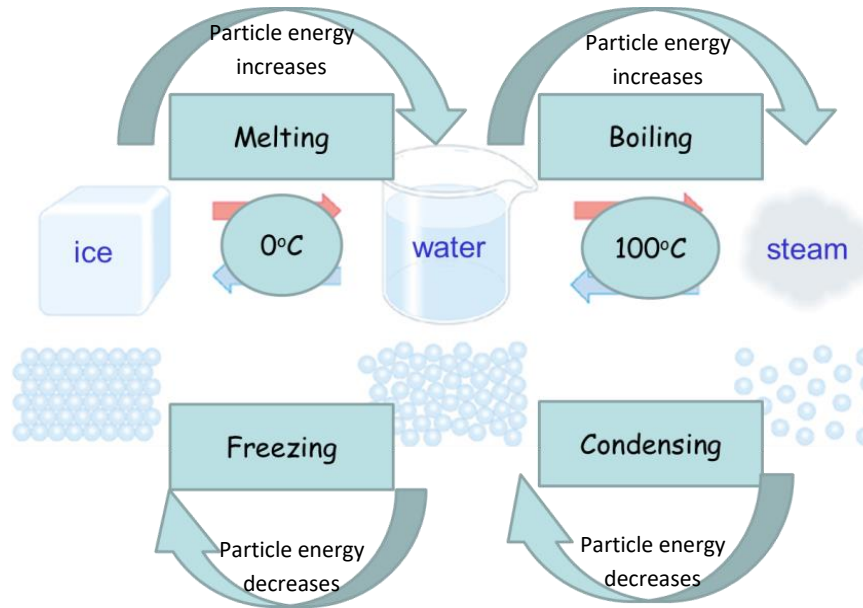
- Can flow
- Fixed volume
- Take the shape of the container
- Cannot be compressed



#### GAS

- Take the shape of the container
- Can be compressed
- Hard to store

### Changing state and energy changes



## Keywords/ Glossary

**Melting**= A solid turning into a liquid.

**Evaporation**= A liquid turning into a gas.

**Freezing** = a liquid turning into a solid.

**Condensing** = a gas turning into liquid.

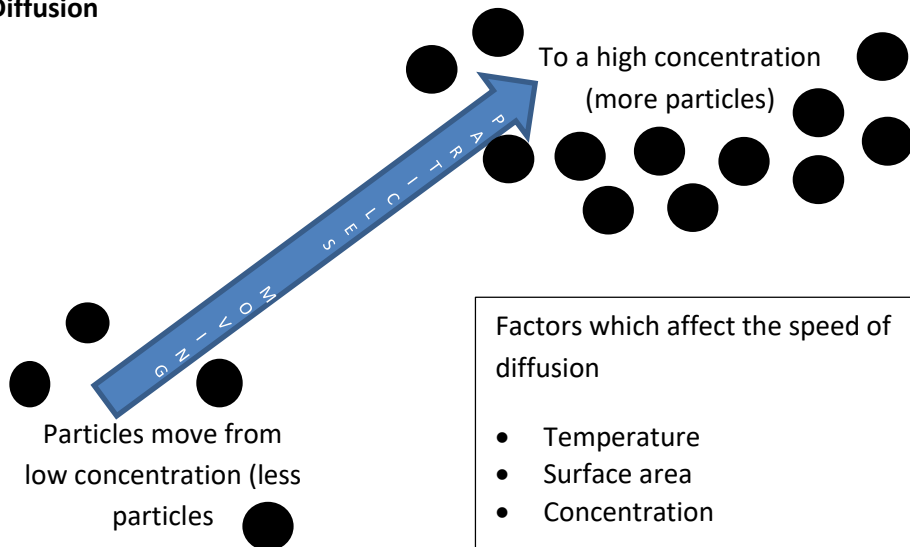
**Boiling** = the change of state from a liquid to a gas that occurs when bubbles in the substance in its gas state form throughout the liquid.

**Sublimation** = a solid turning into a gas.

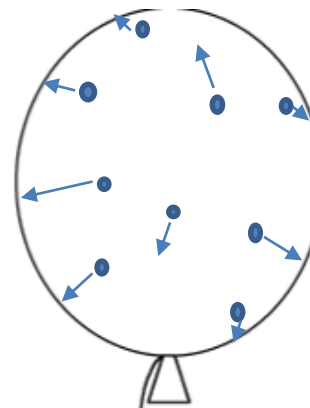
**Atom** = the basic unit of matter.

**Elements** = Substances that all other materials are made up of, made of one type of atom.

### Diffusion



### Gas pressure



The gas particles have lots of energy and can move freely. These push against the sides of the balloon

**Molecule** = Two or more atoms chemically joined together.

**Compound** = Two or more different atoms chemically joined together.

**Gas Pressure** = The force that a gas exerts on a container.

#### Wider reading

[http://www.bbc.co.uk/schools/gcse/bitesize/science/aqa\\_pre\\_2011/rocks/atomsrev1.shtml](http://www.bbc.co.uk/schools/gcse/bitesize/science/aqa_pre_2011/rocks/atomsrev1.shtml)

## Science Year 7 Knowledge Organiser: C1 Particles

KNOW IT	GRASP IT	THINK IT
1. What is an atom?	1. Describe the arrangement of particles in a solid	1. Explain whether you think slime is a solid or a liquid
2. What is an element?	2. Describe the arrangement of particles in a liquid	2. Explain how increasing the number of particles in a container increases the pressure
3. Identify the difference between a molecule and a compound.	3. Describe the arrangement of particles in a gas	3. Explain why higher temperature increases the rate of diffusion
4. Draw a model of a solid	4. Describe the movement of particles in a solid	4. What is the difference between evaporation and boiling
5. Draw a model of a liquid	5. Describe the movement of particles in a liquid	5. Research three examples of substances that sublime
6. Draw a model of a gas	6. Describe the movement of particles in a gas	6. Explain why particles in gaseous state diffuse quicker than those in a liquid state
7. Identify the name of the process when a solid turns to a liquid	7. Explain how gases exert pressure	7. Explain why placing an empty bottle with the lid on in a freezer makes it collapse?
8. Identify the name of the process when a gas turns to a liquid	8. Describe how particles move via diffusion	8. Explain how pressure increases with an increase in temperature
9. Identify the name of the process when a liquid turns to a gas	9. Explain how particles change state from solid to liquid with reference to energy	9. Explain why a balloon increases in size when you blow more air into it.
10. Identify the name of the process when a solid turns to a gas	10. Explain how particles change state from gas to liquid with reference to energy	10. Explain why race car technicians put a lower air pressure into their tyres before a race
Total score	Total score	Total score

## Science Year 7 Knowledge Organiser: C1 Particles