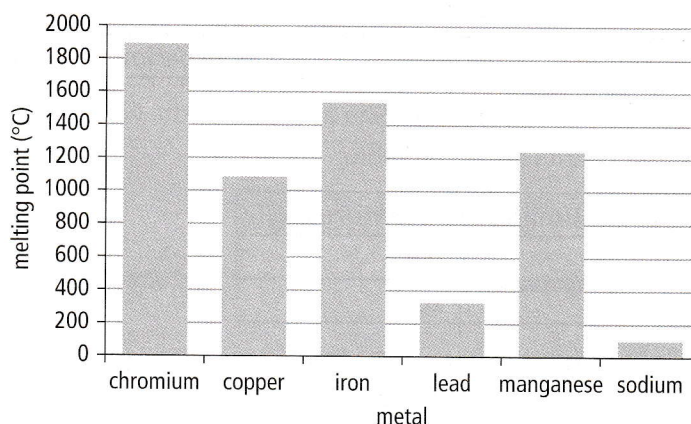


1. Highlight the correct word or phrase in each **bold** pair in the paragraph below.

When a substance melts, it changes state from **solid / liquid** to **solid / liquid**. During melting, the particles **move into/move out of** a regular pattern. The particles start to **vibrate on the spot / move around**. In both the solid and liquid state, the particles **are close to each other but do not touch / touch each other**. A substance has a high melting point if its particles hold together **weakly / strongly**.

- TWS 2. The bar chart shows the melting point of six metals.



- a. Name the substance in the bar chart with the lowest melting point. ....
- b. List the substances in the bar chart in order of increasing melting point (lowest first).

.....

.....

- c. A scientist measures the melting point of an unknown metal as 1050 °C. Which metal on the bar chart is it most likely to be? .....

### Extension

TWS The table gives melting points and boiling points of some substances.

Substance	Melting point (°C)	Boiling point (°C)
water	0	100
chlorine	-101	-34
bromine	-7.3	58
mercury	-39	357
ethanol	-114	78

- a. i. Name the substance in the table with the highest melting point. ....
- ii. Name the substance in the table with the highest boiling point. ...
- b. Draw a horizontal temperature scale for the temperatures in the table. Make sure the divisions on the scale are equal, and that the highest and lowest temperatures will fit.
- c. Mark the melting points and boiling points of the substances on your scale.
- d. i. Give the state of chlorine at 30 °C.
- ii. Give the state of ethanol at 20 °C.
- TWS iii. Name the substance that is in the liquid state for the greatest temperature range.

## 2.1 Elements and the periodic table

1. Write **T** next to the statements that are true. Write **F** next to the statements that are false. Then write corrected versions of the **three** false statements.

- Everything in the universe is made from the particles of one or more elements
- An element is a substance that can be split up to make other substances.
- There are about 1000 elements.
- Each element has its own type of particle.
- In the periodic table, metals are on the right of the stepped line.

**Corrected versions of false statements:**

.....

.....

.....

2. The list below gives the names of some materials. Underline the names of the elements in the list. Use the periodic table on page 37 of the Student Book to help you.

wood	brass	bronze	glass	ruby	gold
copper	vanadium	iodine	oxygen	chlorine	salt

3. Write the names of the elements below in the correct column of the table.

lithium	manganese	nickel	oxygen	phosphorus	rhodium
sulfur	tungsten	vanadium	xenon	yttrium	zirconium

Metals	Non-metals

- SIC** 4. Use information from pages 36–37 of the Student Book to give the names of:
- The two most common elements in the universe. ....
  - The most common element in the atmosphere. ..
  - An element that is in every living thing. ....
  - An element that is used to make jewellery. ....
  - An element that is used to make tools. ...

### Extension

Use the Internet or a book to find out about two elements. For each element, explain how its properties make it suitable for its uses. If you are using the internet, search for *RSC periodic table* and then click on any of the elements shown.

### Thinking and working scientifically

1. In each list below, highlight the **one** chemical symbol that is written correctly.

- a. MG    mg    mG    Mg  
 b. Be    BE    bE    be  
 c. fE    FE    Fe    fe

2. Write the chemical symbol for each element in the table.

Name of element	chemical symbol
hydrogen	
helium	
lithium	
beryllium	
boron	
carbon	
nitrogen	
oxygen	
fluorine	
neon	

3. Write the names of the elements represented by the chemical symbols in the table.

Chemical symbol	Name of element
Na	
Mg	
Al	
Si	
P	
S	
Cl	
Ar	
K	
Ca	

4. Write the chemical symbols of each of the elements below. Then read the sentence.

Re ✓ I Si O N I S Ne Ce S  
 rhenium, vanadium, iodine, silicon, oxygen, nitrogen, iodine, sulfur, neon, cerium, sulfur,  
 sulfur, argon, yttrium

### Extension

Write down:

- The Japanese chemical symbol for phosphorus.
- The chemical symbol used by Chinese scientists for chlorine.
- The chemical symbol used by Latvian scientists for beryllium.