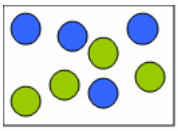
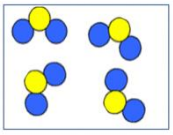
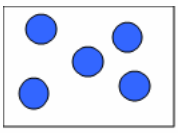
C3.2 Pre-Unit Quiz

1. Which of these represents a **mixture**? [1]
   Tick (✓) **one** box.

   (a)  ☐

   (b)  ☐

   (c)  ☐

2. Which of these is a compound **and** a molecule? [1]
   Tick (✓) **one** box.

   (a) Water (H_2O) ☐

   (b) Sodium chloride (NaCl) ☐

   (c) Oxygen (O_2) ☐

3. Which of these is **not** a sign that a chemical reaction has taken place? [1]
   Tick (✓) **one** box.

   (a) There was a change in state ☐

   (b) There was a colour change ☐

   (c) A gas was produced ☐

4. The chemical formula of sodium sulfate is Na_2SO_4. How many of each type of atom are present? [1]
   Tick (✓) **one** box.

   (a) 1 sodium atom, 2 sulfur atoms and 4 oxygen atoms ☐

   (b) 2 sodium atoms, 4 sulfur atoms and 4 oxygen atoms ☐

   (c) 2 sodium atoms, 1 sulfur atom and 4 oxygen atoms ☐

5. Which of these correctly states the products that would be formed from a reaction between potassium oxide and hydrochloric acid? [1]

Tick (✓) **one** box.

(a) Potassium chloride + hydrogen ☐

(b) Potassium chloride + water ☐

(c) Potassium chloride + water + carbon dioxide ☐

6. Which of these equations is balanced? [1]

Tick (✓) **one** box.

(a) $2\ H_2 + O_2 \rightarrow 2\ H_2O$ ☐

(b) $H_2 + O_2 \rightarrow H_2O$ ☐

(c) $2\ H_2 + 2\ O_2 \rightarrow 2\ H_2O$ ☐

7. Table salt (sodium chloride) is added to distilled water. Which row correctly identifies the solute, solvent and solution? [1]

Tick (✓) **one** box.

	Solute	Solvent	Solution
(a)	Sodium chloride	Salt water	Distilled water
(b)	Sodium chloride	Distilled water	Salt water
(c)	Distilled water	Sodium chloride	Salt water

8. The mass of a beaker including a reaction mixture is 128 g. After a chemical reaction has occurred the mass is 114 g. Which statement gives a possible explanation for this? [1]

Tick (✓) **one** box.

(a) Mass has been lost because some atoms must have been destroyed in the reaction ☐

(b) One of the products may have been a gas which escaped from the beaker ☐

(c) The elements in the products have a smaller mass than the elements in the reactants ☐

9. Which of these are isotopes of each other? [1]

i
12 C 6

ii
14 C 6

iii
14 N 7

Tick (✓) **one** box.

(a) i and ii ☐

(b) ii and iii ☐

(c) i and iii ☐

23 **Na** sodium 11

10. The atomic and mass numbers for sodium are shown above. Which statement is correct? [1]

Tick (✓) **one** box.

(a) Sodium has 11 neutrons and 11 protons ☐

(b) Sodium has 11 protons and 23 neutrons ☐

(c) Sodium has 11 protons and 12 neutrons ☐

Total = ___ /10