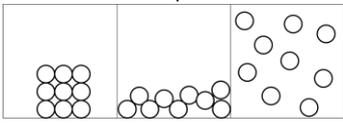
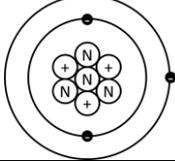


## Knowledge Organiser Questions – Can be found at <https://bit.ly/3dneNhP>

KQ.1. A change affecting the appearance of a substance but not its chemistry e.g. any change in state?	Physical change
KQ.2. The reason why stones sink in water?	More dense (not heavier)
KQ.3. The reason why hot air rises?	Less dense than surroundings
KQ.4. Draw the particle diagram for a solid, liquid and gas? (9 particles in each)	<p style="text-align: center;">Solid      Liquid      Gas</p>  <p style="text-align: center;">Same number of particles. All particles same size.</p>
KQ.5. What do we call a region where there are no particles at all?	Vacuum
KQ.6. Describe the particle arrangement in a solid?	Very close; repeating pattern, cannot flow
KQ.7. Describe the particle arrangement in a liquid?	Very close; random pattern; can flow
KQ.8. Describe the particle arrangement in a gas?	Far apart; random pattern; can flow
KQ.9. What two states of water exist at its melting point of 0°C?	Solid and liquid
KQ.10. What two states of water exist at its boiling point of 100°C?	Liquid and gas
KQ.11. Freezing and melting point of pure water?	0 °C
KQ.12. Boiling point of pure water?	100 °C
KQ.13. What equipment do you use to work out the volume of an irregular shaped object?	Eureka (displacement) can
KQ.14. How do you work out the density of an object?	Mass ÷ volume
KQ.15. Density is...	The amount of mass in a given volume
KQ.16. What happens to particles when the substance gets hotter?	They move faster
KQ.17. What normally happens to the volume of substance when it gets hotter but does not change state?	It expands (gets larger)
KQ.18. Change of state from solid → liquid?	Melting
KQ.19. Change of state from liquid → gas?	Boiling (or evaporation)
KQ.20. Change of state from gas → liquid?	Condensing
KQ.21. Change of state from liquid → solid?	Freezing
KQ.22. Change of state from solid → gas without becoming liquid?	Sublimation
KQ.23. Change of state from liquid → gas <u>at any temperature</u> ?	Evaporation
KQ.24. A nucleon with mass of 1 and a charge of 0?	Neutron
KQ.25. A nucleon with mass of 1 and a charge of +1?	Proton
KQ.26. A particle with mass of almost 0 (negligible) and a charge of -1?	Electron

KQ.27. How many electrons can atoms have in each of the first three shells?	1 <sup>st</sup> shell = 2; 2 <sup>nd</sup> shell = 8; 3 <sup>rd</sup> shell = 8
KQ.28. Draw an atom of Lithium ( ${}^7_3\text{Li}$ )	
KQ.29. A list of all the elements known to human kind?	Periodic table
KQ.30. A chemical with only one type of atom?	Element
KQ.31. More than one type of element chemically bonded together?	Compound
KQ.32. More than one atom chemically bonded together?	Molecule
KQ.33. Different substances not chemically bonded together?	Mixture
KQ.34. How many protons does an atom of Beryllium ( ${}^9_4\text{Be}$ ) have?	4
KQ.35. How many neutrons does an atom of Beryllium ( ${}^9_4\text{Be}$ ) have?	5 (9 nucleons minus 4 protons)
KQ.36. How many electrons does an atom of Beryllium ( ${}^9_4\text{Be}$ ) have?	4 – same as number of protons
KQ.37. A liquid mixture?	Solution
KQ.38. A liquid in which a solute is dissolved?	Solvent
KQ.39. The substance that is dissolved in a solvent?	Solute
KQ.40. A substance that will not dissolve?	Insoluble
KQ.41. A solution that cannot dissolve any more solute?	Saturated
KQ.42. What happens to mass of solution as solute is added?	It increases
KQ.43. How might we separate oil floating on top of water?	Decanting
KQ.44. How might we separate iron filings from sand?	Magnets
KQ.45. How we might separate sand from water?	Filtration
KQ.46. How we might separate salt from water?	Evaporation
KQ.47. How we might separate water from salt water?	Distillation
KQ.48. How we might separate different pigments from ink?	Chromatography
KQ.49. What happens to solubility of a liquid as temperature increases?	It increases
KQ.50. What happens to rate of dissolving as surface area of solute increases?	It increases (gets faster)