By the end of Spring 1 you will know:

Chemical Reactions:

1. Name 3 sub-atomic particles and state their individual charges and masses.
2. Draw and label the structure of the atom.
3. What is the centre of an atom called?
4. What does the atomic number tell us about an element?
5. Calculate the number protons, neutrons and electrons in an atom of aluminium.
6. Why are atoms neutral?
7. Draw the electron structure of a beryllium atom.
8. What is a chemical reaction?
9. What is a physical change?
10. Give an example of a physical change.
11. What happens to atoms during a chemical reaction?
12. Identify the reactants and products in the reaction: Oxygen + fuel → carbon dioxide + water.
13. How do we represent a chemical reaction?
14. Give an example of a chemical reaction?
15. Define conservation of mass.
16. What is the relationship between the total number of atoms of reactants and the total number of atoms of products?
17. What piece of equipment is used to measure mass of chemicals in the lab?
18. Calculate the mass of oxygen (O_2) formed if 150g of H_2O_2 breaks down into 118g of $H_2O + O_2$.

By the end of Spring 2, you will know:

Chemical Reactions:

1. Name 3 sub-atomic particles and state their individual charges and masses.
2. Draw and label the structure of the atom.
3. What is the centre of an atom called?
4. What does the atomic number tell us about an element?
5. Calculate the number protons, neutrons and electrons in an atom of aluminium.
6. Why are atoms neutral?
7. Draw the electron structure of a beryllium atom.
8. What is a chemical reaction?
9. What is a physical change?
10. Give an example of a physical change.
11. What happens to atoms during a chemical reaction?
12. Identify the reactants and products in the reaction: Oxygen + fuel → carbon dioxide + water.
13. How do we represent a chemical reaction?
14. Give an example of a chemical reaction?
15. Define conservation of mass.
16. What is the relationship between the total number of atoms of reactants and the total number of atoms of products?
17. What piece of equipment is used to measure mass of chemicals in the lab?
18. Calculate the mass of oxygen (O_2) formed if 150g of H_2O_2 breaks down into 118g of $H_2O + O_2$.
19. What gas is needed for combustion?
20. What gas is released during complete combustion?
21. Write the chemical word equation for complete combustion of methane.
22. What gas is released in incomplete combustion?
23. What is the difference between complete and incomplete combustion?
24. What is control variable in the practical?
25. What is the independent variable?
26. What is the dependent variable?
27. What piece of equipment is used for measuring time?
28. What does decomposition mean in chemistry?
29. What does lime water test for?
30. What colour does lime water turn for a positive test?
31. Write a word equation when calcium carbonate ($CaCO_3$) thermally decomposes to calcium oxide (CaO) and carbon dioxide (CO_2). Write a symbol equation for this reaction (H)

Periodic table

1. Name 3 metals from Group 1 of the Periodic Table.
2. What side of the periodic Table is Group 1?
3. What name is given to metals in Group 1?
4. What is the trend in reactivity down group 1?
5. Write a word equation for the reaction between water and sodium.
6. Write the metals in Group 1 in order of reactivity in water.
7. How are Group 1 metals stored?
8. Write the halogens in order of reactivity.
9. In what group are halogens found in the Periodic table?
10. Where are halogens located in the Periodic table?
11. What is the trend in reactivity down Group 7?
12. What is the trend of boiling points as you go down Group 7?
13. Write a word equation for the reaction between Potassium Bromide and Fluorine.
14. Name 3 noble gases
15. In what group are noble gases found in the Periodic Table?
16. Name 2 uses of noble gases
17. What does inert mean?
18. Why are noble gases considered unreactive?
19. Name 2 metals and 2 non-metals.
20. Define the terms: Malleable, Sonorous, Ductile, Dense
21. List 3 properties of metals and non-metals.
22. What is a polymer?
23. What is a natural polymer?
24. Give 2 examples of natural polymers.
25. What is a synthetic polymer?
26. Give 2 examples of synthetic polymers.

Rocks

1. What are the different parts of the Earth's structure?
2. What are the features of the mantle?
3. What are the features of the crust?
4. What is the crust made of?
5. What are minerals?
6. What is the core made of?
7. What state is the outer core?
8. What state is the inner core?
9. Give 3 examples of sedimentary rock.
10. What are the main properties of sedimentary rock?
11. What is weathering?
12. What is erosion?
13. What is deposition?

14. What does porous mean?
15. What are strata?
16. Name an igneous rock and a metamorphic rock.
17. Give 2 properties of igneous rock.
18. What causes different crystal sizes in igneous rock?
19. What is the difference between lava and magma?
20. What causes metamorphic rock to form?
21. What are the main features of metamorphic rock?
22. What are the three types of rock?
23. What is the rock cycle?
24. List the main stages in the rock cycle.
25. Name the 3 types of weathering.
26. What is a ceramic material?
27. What are the properties of ceramics?
28. What are two examples of ceramic materials?
29. What are three examples of uses for ceramic materials?