Year 9 – Kemnal Keys Term 6

Biology	Chemistry	Physics
Biodiversity - The variety of living organisms within an ecosystem. **Community** - Made up of the populations of different species living in a habitat. **Deforestation** - The removal and destruction of trees in forest and woodland.	**Conservation of Mass** No atoms can be created or made during a chemical reaction, so the mass of the reactants will equal the mass of the product. Reactions can be shown as a word or symbol equation. magnesium + oxygen → magnesium oxide Mg + O → MgO Symbol equations should also be balanced; they should have the same number of atoms on each side. $2Mg + O_2 \rightarrow 2MgO$	**Half-Life** - The time it takes for the number of nuclei of the isotope in a sample to halve, or the time it takes for the count rate (or activity) from a sample containing the isotope to fall to half its initial level.
Adaptations - Are specific features of an organism which enable them to survive in the conditions of their habitats. An animal or plant will not 'adapt' to its environment in its lifetime it does not physically change. Natural variation within species happens when a mutation (change in the DNA) occurs. Some organisms will have features that make them more advantageous to the environment and are **more likely to survive.**		**Alpha Scattering Experiment** (Golf foil) - The experiment that suggested that the mass of an atom was concentrated in the centre (nucleus) and that the nucleus was charged. The experiment led to the nuclear model of the atom, which replaced the **plum pudding model.**
Structural Adaptations - are features of the organism's body. Colour for camouflage. **Behavioural** Adaptations - are how the organism behaves. Migration to a warmer climate during winter months. **Functional** Adaptations - are the ways physiological processes work in the organism. Lower metabolism to preserve energy.	**Relative Formula Mass** The relative formula mass (M_r) is the sum of all the relative atomic masses (A_r) of the atoms in the formula. **Examples:** **HCl** A_r of H = 1 A_r of Cl = 35.5 M_r of HCl =1 + 35.5 = 36.5 **H_2SO_4** A_r of H = 1 A_r of S = 32 A_r of O = 16 M_r of H_2SO_4 = (1 × 2) + 32 + (16 × 4) M_r of H_2SO_4 = 2 + 32 + 64 M_r of H_2SO_4 = 98	**Irradiation** - The process of exposing an object to nuclear radiation. **Contamination** - The unwanted presence of materials containing radioactive atoms on other materials.
Deforestation - Trees absorb Carbon Dioxide for photosynthesis, so as they are cut down and removed, less carbon dioxide is taken from the atmosphere. Furthermore, when the trees are burned, they release carbon dioxide back into the atmosphere. The excess carbon dioxide can lead to global warming and the changes to the ecosystem cause reduced biodiversity.		**Plum Pudding Model** - Thomson's model of the atom that suggested that the atom is a ball of positive charge with negative electrons embedded in it.

Quiz Time

Week 1 Quiz

1. Define biodiversity.
2. What is the law of conservation of mass?
3. What is an isotope?
4. Describe what half-life is.

Week 2 Quiz

1. Using an example, describe what an adaptation is.
2. Balance the following equation:

   $Ca + O_2 \rightarrow CaO$
3. What is an alpha particle?
4. What did the gold foil experiment prove about the structure of the atom?

Week 3 Quiz

1. Give an example of a structure adaptation.
2. Give an example of a behavioural adaptation.
3. Give an example of a functional adaptation.
4. Define relative formula mass.
5. What is the relative formula mass of CO_2?
6. Compare irradiation and contamination.

Week 4 Quiz

1. What process do trees use to take in carbon dioxide?
2. Describe how deforestation leads to a reduction of biodiversity.
3. Calculate the relative formula mass of HNO_3.
4. Compare the plum pudding model to the nuclear model.

Week 5 Quiz

Week 6 Quiz