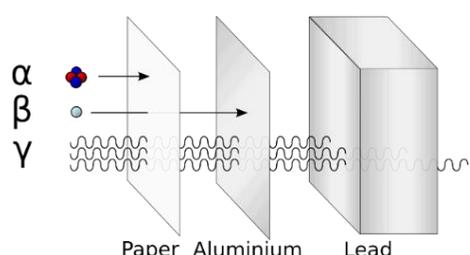


Biology		Chemistry	Physics
1	<b>Sexual reproduction</b> produces genetically different cells. – sexual reproduction is where genetic information from 2 organisms is combined to produce offspring which are genetically different to either parent.	The <b>Group 1 elements</b> have similar properties because of the electronic structure of their atoms - they all have one electron in their outer shell. In a reaction, an atom of a Group 1 element will form an ion with a single positive charge. The ions formed have a stable electronic structure, like a noble gas from Group 0.	Atoms of the same element have the same number of protons. Isotopes are different forms of the same element with the same number of protons (the same atomic number, and so the same charge on the nucleus, but a different number of neutrons. (a different mass number)
2	<b>Asexual reproduction</b> produces genetically identical cells. In asexual reproduction there's only one parent so the offspring are genetically identical to that parent. <b>Meiosis</b> produces cells which have half the normal number of chromosomes.	The non-metal elements in <b>Group 7</b> - known as the halogens - get less reactive as you go down the group. This is the opposite trend to that seen in the alkali metals in Group 1 of the periodic table. Fluorine is the most reactive element of all in Group 7. You can see the trend in reactivity if you react the halogens with iron wool.	Ionising Radiation <u>Alpha</u> – 2 protons, 2 neutrons (helium nucleus) <u>Beta</u> – High Speed Electron <u>Gamma Rays</u> – are EM Waves with a short wavelength
3	<b>DNA stands for deoxyribonucleic acid.</b> It is a chemical made up of two long molecules, arranged in a spiral. We refer to this as the double-helix structure. DNA carries genetic information. It has all the instructions that a living organism needs to grow, reproduce and function.	The extraction method used depends upon the metal's position in the reactivity series. In principle, any metal could be extracted from its compounds using electrolysis. However, large amounts of electrical energy are needed to do this, so electrolysis is expensive. If a metal is less reactive than carbon, it can be extracted from its compounds by heating with carbon.	<b>Ionising radiation</b> is radiation that knocks electrons of atoms, creating positive ions. Alpha particles are more ionising than beta particles and beta particles are more ionising than gamma rays.
4	A <b>gamete</b> is a sex cell. In humans, gametes are sperm and eggs. <b>Alleles</b> are different versions of the same gene. For example, the gene for eye colour has an allele for blue eye colour and an allele for brown eye colour.	During <b>electrolysis</b> :  at the cathode, aluminium ions gain electrons and form aluminium atoms at the anode, oxide ions lose electrons and form oxygen gas The oxygen reacts with the carbon anodes, forming carbon dioxide. So the anodes are gradually oxidised. They must be replaced frequently, adding to the cost of producing aluminium.	 <p>The diagram illustrates the penetration of three types of ionising radiation through different materials. On the left, three types of radiation are labeled: <math>\alpha</math> (alpha), <math>\beta</math> (beta), and <math>\gamma</math> (gamma). <math>\alpha</math> is represented by a red and blue cluster, <math>\beta</math> by a small blue dot, and <math>\gamma</math> by a wavy line. Three vertical barriers are shown: Paper, Aluminium, and Lead. Arrows indicate that <math>\alpha</math> radiation is stopped by Paper, <math>\beta</math> radiation is stopped by Aluminium, and <math>\gamma</math> radiation passes through both Paper and Aluminium but is stopped by Lead.</p>
5	<b>Homozygous</b> alleles are both identical for the same characteristic, for example AA or aa. <b>Heterozygous</b> alleles are both different for the same characteristic, for example Aa		Uses of radiation – radiation can be useful. Gamma sources are usually used in medical tracers. Radiotherapy – treating cancer with radiation.

# Quiz Time

## Week 1 Quiz

1. Define an isotope
2. Describe sexual reproduction
3. What is a similar property of group 1 elements?
4. The number of protons + number of neutrons =
5. What charge is an electron?

## Week 4 Quiz

1. Describe the process of electrolysis
2. Compare the penetration of ionising radiation
3. Define a gamete
4. Describe the difference between homozygous and heterozygous alleles
5. What is a use of radiation?

## Week 2 Quiz

1. Describe asexual reproduction
2. True or False group 7 elements get more reactive as you go down the periodic table?
3. What is an alpha particle?
4. What is a beta particle?
5. Compare sexual and asexual reproduction

## Week 5 Quiz

## Week 3 Quiz

1. What structure is DNA?
2. Describe ionising radiation
3. Which radiation penetrates furthest?
4. What is DNA? Where is it stored?
5. What charges are the particles of an atom?

## Week 6 Quiz