Oasis Academy Brislington: Curriculum

Curriculum Intent

We want our students to be knowledgeable, curious learners who are able to apply their learning to the real world. We want our students to be able to use scientific language confidently, plan and run investigations to test scientific theories and be able to critically analyse data and evidence provided to them. Our curriculum prepares our learners to better understand the world they live in and make informed and wise choices. The Oasis Science Curriculum prepares students with the fundamental knowledge needed to pursue a range of careers from medicine, to engineering, from astrophysics to careers in geo science.

Programme of study – Year 7

Subject: Science

Year 7						
Rationale/ narrative	This is the first year of secondary school science that students will study. We hope to teach them the fundamental skills and knowledge that they need to be successful in their Science education whilst also inspiring them about the wonder of our world and the organisms that live within it.					
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Topic	**Particles**	**Types of reaction**	**Forces**	**Energy**	**Interdependence and cells**	**Reproduction and variation**
Content	Scientific equipment Hazards and risks Using Bunsen burners Particle model – states of matter Brownian motion (EXT) Particle model- advantages and disadvantages (EXT) Changes of state Melting and Boiling points Expansion and contraction (EXT) Diffusion, osmosis, active transport Atoms and elements Compounds and mixtures Symbols and formulae Structure of an atom	Physical and Chemical reactions Solubility Rates of dissolving Filtration Crystallisation (linking to evaporation) Simple Distillation Chromatography Acids and Alkalis Indicators Neutralisation	Identifying forces – contact vs non contact Balanced and unbalanced forces Resultant force Newton's Laws (EXT) Hooke's Law- practical and graph skills (EXT) Friction- advantages and disadvantage Streamlining- everyday examples and linked to particles Moments (EXT) Speed calculations Distance- time graph Velocity-time graph Gravity, weight and mass Solar system Day and night Seasons Galaxies and universe Light year	Different types of energy stores Energy transfers Sankey diagrams (EXT) Efficiency calculations Conduction, convection and radiation Preventing heat loss- practical skills Renewable and non-renewable Renewables- advantages and disadvantages Nuclear energy Calculations: power and energy costs	Living things: MRS NERG 5 Kingdoms and classes Classification and keys Food chains Food webs Pyramids of numbers Pyramids of biomass (EXT) Environment and habitats Competition Sampling techniques (EXT) Animal cells Plant cells Prokaryotic vs eukaryotic Microscopes Microscope calculations (EXT) Specialised cells Stem cells Cells, tissues, organs, systems	Male and female reproductive organs in humans and plants Gametes – humans and plants Fertilisation in humans Pregnancy and gestation (EXT) Menstrual cycle (EXT) Genetic and environmental variation Genetic cross diagrams (EXT) Genetic diseases and sexual determination (EXT) Adaptation Natural Selection Selective Breeding Endangered species and extinction Biodiversity (EXT) Extremophiles (EXT)
Assessment	End of topic assessment	AP1 assessment	End of topic assessment	AP2 assessment	End of topic assessment	EOY exam