The Acorns School

Overview plans for academic year 2023-2024

Subject: **Science** **Year group/cohort:** **KS3**

	Knowledge and Understanding	**Knowledge and Understanding**	**Skills**	**Skills**	**Assessment**	**Subject specific literacy**	**Cross curricular links**
	Components (Key concepts)	Composite (Bigger picture)	Components (Key concepts)	Composite (Bigger picture)	What is being assessed, how, and when?	Key Vocabulary	Including Personal Development and SMSC
Autumn Term 1	Understand that the human body is composed of structures called organs, which are organised into organ systems that carry out all of the key processes of life. Understand that these systems all require energy, which is contained in food and released in the cell by respiration. The organ systems are responsible for delivering food and	**Unit 1 – Human Body**	Using a light microscope Compare different foods energy values	**Practical - Microscopes** **Practical – Energy in Food**	Formative Assessment – Cells AFL 6 mark question – Specialised Cells Formative Assessment – Practical skills	Cell, cell membrane, cytoplasm, nucleus, genetic, tissues, organs, organ systems, enzymes, digestion, absorbed, pulse rate, respiration, pathogen, bacteria, virus, toxin, antibody, ingest, vaccination, drug, penicillin, additive, glands, hormones, menstrual cycle,	Links with PE – healthy diet and well being

	oxygen to the cells and taking away waste. A healthy body can be maintained by a balanced diet, exercise and a healthy lifestyle.		Testing for starch, glucose and protein Investigate the effect of exercise on pulse rate	**<u>Practical – Food Testing</u>** **<u>Practical – Pulse Rate</u>**	**<u>Check Point/Vocab builder</u>** AFL 6 mark question End of Unit Assessment	fertility, contraceptive	
Autumn Term 2	Understand that these key processes, including reproduction, are coordinated by the nervous system and a hormone system. Understand that health can be damaged by microbes, which can cause infectious diseases. The body can defend itself against most		Students investigate white blood cells	**<u>Practical - Microscopes</u>**		Cell, cell membrane, cytoplasm, nucleus, genetic, tissues, organs, organ systems, enzymes, digestion, absorbed, pulse rate, respiration, pathogen, bacteria, virus, toxin, antibody, ingest, vaccination, drug, penicillin, additive, glands, hormones,	Students have the opportunity to study the word of the famous scientist Edward Jenner and his contribution to vaccines

	diseases but will sometimes need drugs in order to alleviate the symptoms and speed recovery. Understand that several hormones are involved in the menstrual cycle of a woman and the uses of hormones in fertility treatment.				Checkpoint and Vocab Builder AFL 6 Mark Question – Menstrual Cycle Checkpoint and Vocab Builder **End of Topic Assessment**	menstrual cycle, fertility, contraceptive	
Spring Term 1	Understand that matter is composed of tiny particles called atoms and there are about 100 naturally occurring types of atoms called elements. Elements are shown in the periodic table and are either metals or non-metals. Atoms are the building blocks for all substances. Understand that when two or more elements combine	**Unit 3 Elements, Mixtures and Compounds**	Students investigate the reactivity of alkali metals in this demo Students investigate the reactions of metals with water and acid	**Practical – Alkali Metals** **Practical – Metals and Water** **Practical – Metals and Acids**	**Checkpoint and Vocab Builder**	Atom, particle, element, boiling point, liquid, gas, conduct, metals, melting point, solid, shiny, malleable, ductile, non-metals, brittle, compound, mixture, equation, kinetic theory, chromatography, crystallisation, filtration, distillation, solvent, ore, alloy, corrosion,	

	chemically a compound is produced. Different substances have different combinations of atoms joined together in different ways, which gives them different properties, such as whether they are solid, liquid or gaseous at room temperature.		Students investigate temperature change and changes of state	**Practical – Changes of State**	**AFL 6 mark Question – Compounds** **Checkpoint and Vocab Builder** **AFL 6 mark question – States of Matter**	polymer, biodegradable, incineration, microorganism, recycling.	
Spring Term 2	Many materials we use are mixtures. Understand that mixtures can be separated by processes such as filtration. Understand that mixtures can be separated by processes such as filtration. Understand the properties of metals and alloys. Understand how polymers are		Students investigate separation techniques Students make polymers	**Practical – Rock Salt** **Practical – Making Slime**	**AFL 6 mark Question – Mixtures** **Checkpoint and Vocab Builder**	Atom, particle, element, boiling point, liquid, gas, conduct, metals, melting point, solid, shiny, malleable, ductile, non-metals, brittle, compound, mixture, equation, kinetic theory, chromatography, crystallisation, filtration, distillation,	

	formed and there uses.				**End of Topic Assessment**	solvent, ore, alloy, corrosion, polymer, biodegradable, incineration, microorganism, recycling.	
Summer Term 1	Understand that energy can be transferred usefully, stored or dissipated, but cannot be created or destroyed. Understand that forces are pushes or pulls, and if a force causes an object to move then work is done and energy is transferred. Understand that a braking force will cause an energy transfer that makes a vehicle slow down and heats the brakes. The braking distance of a vehicle depends on many different things, such as the speed of the vehicle.		Students investigate energy transfers Students investigate the effect of friction Graph skills	**Practical – energy Circus** **Practical – Friction** **Analysing Motion Graphs**	**Checkpoint and Vocab Builder** **Checkpoint and Vocab Builder**	Energy, energy store, energy resource chemical energy, kinetic energy, elastic potential energy, thermal energy, nuclear energy, geothermal energy absorber, conductivity, dissipated, efficiency, emitter, lubrication, matt, shiny, radiation, thermostat, nuclear reactor, radioactive, renewable, non-renewable, turbine, alpha particle, beta particle, gamma ray, ionising radiation, nucleus,	

Summer Term 2	Understand that energy resources available to use may be divided into renewable and non-renewable. Understand that energy can also be released from atoms, which contain smaller particles such as neutrons and protons in the nucleus, because atoms can break down to emit particles or gamma rays				**AFL 6 mark Question – Energy** **Checkpoint and Vocab Builder** **End of Topic Assessment**	Energy, energy store, energy resource chemical energy, kinetic energy, elastic potential energy, thermal energy, nuclear energy, geothermal energy absorber, conductivity, dissipated, efficiency, emitter, lubrication, matt, shiny, radiation, thermostat, nuclear reactor, radioactive, renewable, non-renewable, turbine, alpha particle, beta particle, gamma ray, ionising radiation, nucleus,	

Subject Information including exam board details:

KS3 National Curriculum with Entry Level Science Content.

This is a mixed year group. Students access the National Curriculum and are prepared for return to mainstream.

Careers linked to this subject area:

Research

Medical

Nuclear Energy

Enrichment Opportunities:

Science in the News : Science News Explores | News from all fields of science for readers of any age (snexplores.org)

Seneca Learning Free Homework & Revision for A Level, GCSE, KS3 & KS2 (senecalearning.com)

BBC Bitesize KS3 Science - BBC Bitesize