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Science Year 8

ADVENT 1 Organisation Atomic Structure and the Periodic Table	ADVENT 2 Forces Energy	REVIEW OF LEARNING DIRT & Summative	LENT 1 Organisation & Bioenergetics Electricity and Magnetism Chemical Changes	LENT 2 Infection & Response Earth Science Forces	REVIEW OF LEARNING DIRT & Summative	PENTECOST 1 Bioenergetics Waves	PENTECOST 2 Ecology Energy Changes	REVIEW OF LEARNING DIRT & Summative
Intent Food and Digestion Healthy diet; deficiency diseases; drugs; digestive system; enzymes Practical: Food Tests Elements, Compounds and Mixtures Atoms; elements and compounds; atomic structure; periodic table structure; properties of group 1 and 7; chemical formulae.	Intent Forces and Motion Speed; Resistive forces; acceleration; pressure Energy Costs Calculating fuel uses and costs in the domestic context; energy as a quantity that can be quantified and calculated; the total energy has the same value before and after a change.	Assessments This includes 'Do It Now' Memory Retrieval with Interleaving & No Opt. Out Questions. EOU: Food & Digestion EOU: Elements EOU: Speed EOU: Energy Costs Reading 3-2-1 Inclusive of scientific content and the latest scholarship	Intent Respiration The structure and the function of the respiratory system; the effect of exercise Electricity and Magnetism Circuit symbols; series and parallel circuits; current magnetic poles; magnetic fields. Type of Chemical Reactions Chemical reactions as the rearrangement of atoms.; representing chemical reactions using formulae and equations; combustion, thermal decomposition, oxidation & displacement reactions	Intent Microbes and Disease Bacterial; viral; fungal and protist diseases; disease transmission and prevention; how pathogens make people feel ill; non- specific and specific defence systems in humans. CC Link – History (Pasteur and Germ Theory / Cholera) Rock Cycle and Earth Structure Formation of the Earth; different structures within the Earth; the rock cycle and different rock types. CC Link – Geography Link to Yr. 7 Acids	Assessments This includes 'Do It Now' Memory Retrieval with Interleaving & No Opt. Out Questions. EOU: Respiration EOU: Electricity EOU: Chemical Reactions EOU: Microbes & Disease EOU: Rock Cycle EOU: Deformation & Levers Reading 3-2-1 Inclusive of scientific content and the latest scholarship	Intent Photosynthesis Leaf structure and function; photosynthesis; factors affecting photosynthesis; transpiration Light and Sound Types of waves; auditory range; the ear; light; reflection; refraction; eclipses; colour; the eye.	Intent Plants and their Reproduction The interdependence of organisms in an ecosystem; the reproductive cycle of plants from pollination to seed dispersal and how this is important to human food security; how organisms affect, and are affected by, their environment, including the accumulation of toxic materials. Chemical Energy Endothermic and exothermic reactions; reaction profiles.	Assessments This includes 'Do It Now' Memory Retrieval with Interleaving & No Opt. Out Questions. EOU: Photosynthesis EOU: Light & Sound EOU: Ecology EOU: Chemical Energy End of Year 8 Summative Assessment Reading 3-2-1 Inclusive of scientific content and the latest scholarship

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Examples of Catholic Social Teaching

Biology

Food and Digestion: Dignity – Balanced diet and use of food banks. **Common good** – prevention of malnutrition. **Options for the poor** – reduce deficiency diseases. **Importance of a Healthy Body:** importance of access to healthcare and nutrition for all, options for the poor and vulnerable who may face challenges in maintaining good health.

Microbes and Disease: importance of global health initiatives and access to basic healthcare. This connects to the **option for the poor and vulnerable** who may lack access to resources for prevention and treatment.

Photosynthesis: foundation of most life on Earth, emphasizes the interconnectedness of living organisms and the delicate balance within ecosystems. This reinforces our responsibility towards all living things.

Plants and their Reproduction: Creation and the environment - Crop rotation, creation of wildflower meadows. **Common good** – improving farming practices and bee protection.

Chemistry

Solidarity / The Common Good – production of clean drinking water. Rock cycle and Earth structure - **Solidarity and environment:** acid rain. **Peace** – mining resources.

By fostering scientific literacy, students are better equipped to understand and participate in solutions for global challenges like climate change, food security, and resource depletion. This contributes to a more sustainable and just future for all.

Physics

Common Good - Sound Waves: advocate for noise reduction measures, contributing to a better living environment for all (noise pollution).

Peace – Energy Costs: The potential for oil to be a significant cause of conflict.

Option for the poor/common good -Energy Transfer: This connects to ensuring access to affordable and sustainable energy for all.

Light and Seeing: Learning about the science behind corrective lenses (glasses/contacts). This aligns with the principle of supporting those in need.

Careers

Biology

Food and Digestion: Nutritionist, Food Scientist, Dietician, Fitness Instructor.

Microbes and Disease: Pathologist, Clinical microbiologist or immunologist, Environmental microbiologist, Food or dairy microbiologist, public health microbiologist, Research scientist, Teacher, Doctor of medicine, Doctor of veterinary medicine, Doctor of pharmacy, Nurse, Surgeon.

Plants and their Reproduction: Botanist, Gardener. Ecologist

Chemistry

Chemical Reactions: Analytical Chemist

Rock Cycle and Earth Structure: Geologist, Glaciologist

Physics

Sound and Light: Sound and Acoustic Engineer.

Forces and Motion: Aerospace Engineer, Renewable Energy Specialist, Automotive Engineer, Builder, Electrician, Plumber, Engineer (Mechanical, Civil, Electrical), Vehicle Forensic Investigator, Stunt Coordinator, Motor Sport Engineer.

Energy Costs: Renewable Energy Consultant, National Grid Technician.