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| Subject: Science Year 10 Curriculum Map 2022-2023 |
| Terms | **Topics covered** and **core knowledge and skills** | Links to careers | Links to the Knowledge organiser and other additional resources |
| Term 1 | **Physics Fundamental 1*** Energy as stores
* Conservation of energy
* Efficiency
* Reducing unwanted energy
* Internal energy
* Specific heat capacity
* Specific heat capacity
* Magnetic poles
* Magnetic fields
* Earth as a compass & Magnetic materials
* Electromagnetism
* Electromagnetism Practical
* Uses of electromagnets

**Biology Fundamental 2*** Human defence
* Growing Bacteria
* Health issues
* Communicable diseases
* Non-Communicable diseases
* Risk Factors
* Bacterial diseases
* Cancer
* Classification
* Communities
* Levels of organisation
* Adaptations
* Quadrats
* Quadrats
* Abiotic & biotic factors
* Evolution
* Fossils
* Extinction
 | [Careers using magnets](https://careertrend.com/list-7498014-jobs-use-electromagnets.html)[Clinical scientists](https://www.prospects.ac.uk/job-profiles/clinical-scientist-immunology) | <https://maritime.rivoagency.com/admin/wp-content/uploads/sites/20/2022/10/PF1-KO.pdf><https://maritime.rivoagency.com/admin/wp-content/uploads/sites/20/2022/10/BF2-KO.pdf> |
| Term 2 | **Chemistry Fundamental 2*** Hydrocarbons
* Properties of hydrocarbons
* Fractional Distillation
* Alkenes
* Cracking
* Exothermic & endothermic reactions
* Reaction profiles & activation energy
* (HT) Strong & weak acids
* Neutralisation reactions
* RP Temperature change
* RP Temperature change
* Metals & acids
* Naming salts
* Soluble Salts
* Making insoluble salts
* RP Making salts
* The reactivity series
* Metal Extraction

**Physics Fundamental 2*** Distance & Displacement
* Speed
* Velocity as vectors
* Newtons first law
* Resultant forces
* Terminal velocity
* Newtons second law
* RP Acceleration
* RP Acceleration
* Newtons third law

**Biology Core 1*** Human digestive system
* Enzymes in the digestive system
* Factors effecting enzymes
* RP Effect of pH on Amylase
* RP Testing for starch & glucose
* RP Testing for protein & fats
* Exchange surfaces
* Blood & blood vessels
* The structure of the heart.
* Structure of the lungs
* Aerobic & anaerobic respiration
* Response to exercise
* Human Nervous system
* Human Nervous system
* Human endocrine system
* Hormones in reproduction
* Hormones in reproduction
 | [Careers in Oil & gas](https://www.prospects.ac.uk/jobs-and-work-experience/job-sectors/energy-and-utilities/jobs-in-the-oil-and-gas-industryhttps%3A/www.prospects.ac.uk/jobs-and-work-experience/job-sectors/engineering-and-manufacturing/5-exciting-careers-in-engineering)[Careers in physics](https://www.emaze.com/%40ALIRFQOR)[Cardiologist](https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/medicine/cardiology) | <https://maritime.rivoagency.com/admin/wp-content/uploads/sites/20/2022/10/CF2-KO.pdf><https://maritime.rivoagency.com/admin/wp-content/uploads/sites/20/2022/10/CF1-KO.pdf><https://maritime.rivoagency.com/admin/wp-content/uploads/sites/20/2022/10/PF2.pdf><https://maritime.rivoagency.com/admin/wp-content/uploads/sites/20/2022/10/BC1.pdf> |
| Term 3 | **Chemistry Core 1*** States of matter
* Metals & non-metals
* Covalent bonding
* Simple covalent Structures
* Giant covalent structures
* Graphene & fullerenes
* Ionic bonding
* Ionic compounds
* Properties of ionic substances
* Metallic bonding
* Properties of metals
* Metals as conductors
* Electrolysis
* Using electrolysis to extract metals
* RP Electrolysis of aqueous solutions
* (HT) Oxidation, reduction and Half equations
* Polymers

**Physics Core 1*** Circuit fundamentals
* Standard circuit symbols
* Current
* Potential difference
* Electrical charge
* Series circuits
* Parallel circuits
* Resistance
* Ohms law
* Ohmic conductors
* Non-ohmic conductors
* Power
* National & global energy
* Non-renewable energy
* Renewable energy
* Energy transfers in everyday life
* Mains electricity
* The national grid
 | [Electrical engineer](https://www.prospects.ac.uk/job-profiles/electrical-engineer)[Chemistry Careers research scientist](https://www.prospects.ac.uk/job-profiles/research-scientist-physical-sciences) | <https://maritime.rivoagency.com/admin/wp-content/uploads/sites/20/2022/10/CC1.pdf><https://maritime.rivoagency.com/admin/wp-content/uploads/sites/20/2022/10/PC1.pdf> |