**TNHA Curriculum Planning Document** Subject: Science Year: 7

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| **Timescale** | **Autumn** | | | **Spring** | | | **Summer** | | |
| **Prior Learning (from KS2/3)** | KS2: States of matter | KS2: Earth and space | KS2: Forces | KS2: Living things and their habitats  KS2: Evolution and inheritance | KS2: States of matter  KS2: Properties and changes of materials | KS2: Human reproduction  KS2: Animals, including humans  KS2: Evolution and inheritance | KS2: Animals, including humans | KS2: Earth and space | KS2: Living things and their habitats |
| **Topic/ Unit title** | Being a Scientist  Learning: Safety, Neutralisation, Acids/ Alkali/ Data presentation | Earth  Learning:  Earth structure, rocks, magnets and magnetic fields. | Cars  Learning:  Forces, Friction and distance time graphs. | Dinosaurs  Learning: Adaptation, extinction, Evolution and plant reproduction. Fossils and Fossil fuel production | Ocean  Learning:  Particles, states of matter, separation techniques and solubility. | What am I  Learning:  Animal cells, microscope use, DNA, variation and human reproduction | Sports  Science  Learning:  Heart structure, Blood, transport and alcohol/drugs. Endo and Exothermic reactions | Space  Learning:  Seasons, Night/Day, Solar system and satellites and gravity | Zoo  Learning:  Classification, Species and variation. Venomous and poisonous animals. |
| **SMSC/Cultural Capital/Character/FBV- outline specific areas that are covered in this unit** | Group work. Importance of safety.  Responsibility for safety. | Group work.  Opinion/stories of creation.  How the compass affected the Chinese culture.  The importance of carbon monoxide detectors in the home. | Group work.  Streamlining – Formula 1 cars- engineering careers. Understanding speed limits of roads. | Group work.  Evolution and how it relates to humans.  How humans affect habitats.  The impact of Bee extinction | Group work.  The impacts of plastics on the oceans. | Group work.  The use of microscopes in medicine.  The ethical implications of DNA testing.  Ethics of IVF/Contraception. | Group work.  The effect of drugs/alcohol on the human body and whether performing enhancing drugs should be allowed. | Group work.  The creation of the world- big bang theory and links to religion.  Is there life on another planet? | Group work.  Should we keep animals in zoos.  The importance of conservation. |
| **Assessment Opportunities** | Each unit is assessed by an end of topic test.  During the year students will be assessed on their Working Scientifically skills.  These include: Graph drawing, practical planning, error identification, Conclusion writing. | | | | | | | | |
| **Links to other units in KS3/4.** | Yr 8 – CSI  Yr 9- Atoms  Yr 10- Chemical reactions | Yr 11- Electromagnetism  Yr 11- Earth | Yr 8 - Theme  Yr 10 - Forces | Yr 8- Power  Yr 9- Organisation  Yr 10- Inheritance, variation & evolution | Yr 7 – Scientist  Yr 8- Disco  Yr 8- CSI  Yr 9- Atoms  Yr 10- Reactions  Yr 10- Rates | Yr 8- Farm  Yr 8-Chef  Yr 9- Cells  Yr 9- Organisation  Yr 10 - Inheritance, variation & evolution | Yr 8- CSI  Yr 8- Hospital  Yr 9- Organisation  Yr 10- Rates of reaction | Yr 7 – Cars  Yr 8- Theme  Yr 10 -Force | Yr 8- Hospital  Yr 11- Ecology |

**TNHA Curriculum Planning Document** Subject: Science Year: 8

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| **Timescale** | **Autumn** | | | **Spring** | | | **Summer** | | |
| **Prior Learning (from KS2/3)** | KS2: Animals, including humans | KS2: Electricity | KS2: Living things and their habitats  KS2: Evolution and inheritance | KS2: Properties and changes of materials | KS2: Sound and Light | KS2: Animals, including humans |  | KS2: Forces | KS2: Working scientifically |
| **Topic/ Unit title** | Hospital  Learning:  Smoking, drugs and alcohol. Lifestyle and infectious diseases.  Variation | Power Learning:  Electricity and electrical circuits. Electrical cost.  Fossil fuels, power stations and alternative energy resources. | Farm  Learning: Structure of plant cells. Photosynthesis, Selective breeding, evolution and food chains. Predator and Prey relationships | CSI  Learning:  The periodic table and atoms including group 1 and 7.  Separation techniques & flame tests. | Disco  Learning:  Waves and their properties.  Light, EM Spectrum & structure of the eye and ear | Chef  Learning:  Nutrients. digestive system including enzymes. Surface area | Famous  Learning:  Science has changed through history and how it has shaped the world around us | Theme  Learning:  Forces including floating and elastic potential energy. resultant force and be able to calculate work done. Acceleration, moments and levers and energy transfers | Projects  Learning:  How to conduct a full scientific experiment including variables, method and conclusion |
| **SMSC/Cultural Capital/Character/FBV- outline specific areas that are covered in this unit** | Diet and exercise and consequences of this not being balanced  Group work. | The consequences of different energy source usage from renewable energies  Group work. | Group work.  Is selective breeding ethical? | Group work.  Should everyone have their fingerprints taken? | Group work  The use of parts of the EM spectrum in the NHS. | Diet and exercise and consequences of this not being balanced  Group work | Group work.  Look at how people's beliefs can be influenced by others and how science is needed to sometimes demonstrate fact over people's opinions. | Group work.  The importance of energy efficiency. | Group work.  Team work. |
| **Assessment Opportunities** | Each unit is assessed by an end of topic test.  During the year students will be assessed on their Working Scientifically skills.  These include: Graph drawing, practical planning, error identification, Conclusion writing. | | | | | | | | |
| **Links to other units in KS3/4.** | Yr 7- Zoo  Yr 7- What am I  Yr 10- Biological Reaction  Yr 9 – Infections  Yr 11- Ecology | Yr 7- Dinosaurs  Yr 9 – Energy  Yr 9- Electricity  Yr 10- Radiation  Yr 11-Electromagnetism | Yr 7- Dinosaurs  Yr 7- Zoo  Yr 7- What am I  Yr 9- Cells  Yr 9- Organisation  Yr 10- Biological Reaction  Yr 10 Inheritance, variation & evolution | Yr 7 – Ocenas  Yr 7- Scientists  Yr 9 – Atoms  Yr 10- Chemical Reactions  Yr 10- Radiation  Yr 11- Analysis | Yr 7- Ocean  Yr 10- Waves  Yr 11- Electromagnetism | Yr 7- What am I  Yr 7- Ocean  Yr 9 – Cells  Yr 9- Organisation | Yr 9 – Biological reactions  Yr 10- Radiation | Yr 7- Cars  Yr 7- Space  Yr 10- Forces | Practical skills from all previous KS3 modules.  Linked to GCSE req practical skills |

**TNHA Curriculum Planning Document** Subject: Science Year: 9

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| **Timescale** | **Autumn** | | | **Spring** | | | **Summer** | | |
| **Prior Learning (from KS2/3)** | Yr 7- What am I | Yr 7- Ocean  Yr 8- CSI | Yr 8 –Power | Yr 7 - Sports Science  Yr 7- Dinosaurs  Yr 8- Hospital  Yr 8- Chef  Yr 8 – Farm | Yr 7- Oceans  Yr 8- CSI | Yr 7- Dinosaurs  Yr 8- Power | Yr 7 What am I  Yr 8- Hospital | Yr 8- CSI | Yr 7- Ocean  Yr 8- CSI |
| **Topic/ Unit title** | **Biology**  Cell Biology  Cell structure, Transport, Mitosis and Stem Cells. | **Chemistry**  Atoms and Periodic Table  Atomic structure, periodic table and relative atomic mass | **Physics**  Energy  Energy stores, transfers and conservation. power | **Biology**  Organisation  Enzymes, Digestion, Circulatory system, Plant organisation, Cancer | **Chemistry**  Bonding  Covalent, ionic and metallic bonding | **Physics**  Electricity and Circuits  Electrical circuits, the national grid, current, potential difference and resistance. | **Biology**  Infections  Immune system, disease transmission, Pathogens | **Chemistry**  Amounts in Chemistry (Quantitative)  Relative formula mass  Conservation of mass | **Physics**  Matter  Changes of state  Latent heat  Specific heat capacity  Density |
| **SMSC/Cultural Capital/Character/FBV- outline specific areas that are covered in this unit** | How we function or life around us and how it functions alongside the impacts of our interactions with this life.  Group work. | Disproving evidence.  Understanding what everything is made of.  Group work. | The importance of fossil fuels to human society and the impact their usage is having  The consequences of different energy source usage from renewable energies | The impact of diet, exercise and drugs on our health.  Group work. | The importance of diamonds / how their structure makes them suitable for a variety of industrial purposes.  Group work. | Electrical safety.  Group work. | Importance of hand washing.  Implications of vaccines- listening to others opinions.  Group work. | Group work. | Group work.  Understanding the energy required to cook food. |
| **Assessment Opportunities** | Each unit is assessed by an end of topic test.  During the year students will be assessed on their Working Scientifically skills.  These include: Graph drawing, practical planning, error identification, Conclusion writing. | | | | | | | | |
| **Links to other units in KS3/4.** | Yr 7- What am I  Yr 10 - Inheritance, variation & evolution | Yr 7- Ocean  Yr 8- CSI  Yr 9- Bonding  Yr 9- Quantitative chemistry  Yr 10- Chemical Reactions  Yr 10- Rates of Reaction  Yr 10 – Radiation | Yr 8 –Power  Yr 9- Electrivity  Yr 10- Biological reactions  Yr 10- Rates of reactions | Yr 7 - Sports Science  Yr 7- Dinosaurs  Yr 8- Hospital  Yr 8- Chef  Yr 8 – Farm  Yr 10- Biological reactions  Yr 11- Ecology | Yr 7- Oceans  Yr 8- CSI  Yr 9- Atoms  Yr 9- Quantitative chemistry  Yr 10- Chemical reactions  Year 10 – Rate of reaction  Yr 10- Organic chemistry | Yr 7- Dinosaurs  Yr 8- Power  Yr 11- Electromagnetism | Yr 7 What am I  Yr 8- Hospital  Yr 9 – Cells  Yr 9= Organisation | Yr 8- CSI  Yr 9 Bonding  Yr 10 – Chemical reactions  Yr 10- Rates of reaction | Yr 7- Ocean  Yr 8- CSI  Yr 9- Atoms |