



Year 7 Curriculum Map

Faculty/Subject: SCIENCE

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic:	Topic:	Topic:	Topic:	Topic:	Topic:
Unit 1 W.S & Cells Safety Bunsen burners Variables Method writing Collecting data Drawing graphs Mid topic assessment Microscopes Animal cell Plant cell Specialised cells Diffusion Temperature affecting diffusion Osmosis Revision Unit 1 test Investigation Investigation Investigation Investigation DIRT Intent: What is science, what are the benefits of working scientifically and how do we work scientifically and safely? All living things are made of cells and so we must understand cells if we want to understand how complete living organisms function and live. This is an introduction to understanding cells	Unit 2 Particles and elements Pure substances and mixtures States of matter Melting and freezing Boiling point Condensation and evaporation Surface area affecting diffusion Mid topic assessment Elements and compounds Modelling the atom Periodic table (bingo!) Chemical formula Density Alpha, beta and gamma Revision Unit 2 test Investigation Investigation Investigation Investigation DIRT Intent: What is matter and how does it differ? Why is it easier to separate some things than others? Why are different substances different states at room temperature and how does this change and why? How do we organise these different substances and what has the periodic table got to do with it?	Unit 3 Forces and sound Types of force Squashing and stretching Hooke's law Drag and friction Friction practical Forces at a distance (gravity) Pressure Mid topic assessment Waves Sound and energy transfer Volume and pitch Detecting sounds Echoes and ultrasound Revision Unit 3 test Investigation Investigation Investigation Investigation DIRT Intent: Why do objects move, stay still, change direction or shape? Understanding forces can answer these questions. What is wave? And why are waves so useful? How does understanding the structure of a wave help me understand phenomena that is occurring around me (and inside me!)	Unit 4 Structure Function & Reproduction Levels of organisation Gas exchange - lungs Breathing Skeleton Joints and muscles Mid topic assessment Adolescence Reproductive systems Fertilisation and implantation Development of foetus The menstrual cycle STIs Infertility Flowers and pollination Fertilisation and germination Seed dispersal Revision Unit 4 test Investigation Investigation Investigation Investigation DIRT Intent: Our bodies are miraculous and incredible at helping us to live and function. What do different parts of our bodies do? How are they organised? Why are bees (and other insects) so important? And why do I look different but similar to my siblings. What happens during puberty and why?	Unit 5 Reactions & Acids and alkalis Chemical reactions Word equations Factors affecting rates of reaction Burning fuels Conservation of mass (dislike ppt) Exothermic and endothermic Thermal decomposition Electrochemistry Mid topic assessment Acids and alkalis pH scale and universal indicator Different indicators Neutralisation Using neutralisation/Extended wr Acids and carbonates Revision Unit 5 test Investigation Investigation Investigation Investigation DIRT Intent: What is a chemical reaction? How does it happen? And why is this so useful to know? What is an acid and a base? How do they interact? Why do I need to be careful with chemicals and what can I do if I have an accident with them?	Unit 6 Electricity & Energy Static electricity Modelling circuits and symbols Building circuits and current Potential difference Series circuits Parallel circuits Resistance in a wire Plugs and fuses Mid topic assessment Conduction Convection Radiation Evaporation Work and energy Energy and power Revision Unit 6 test Investigation Investigation Investigation Investigation DIRT Intent: Electricity is one of our most valued commodity- they power our mobiles, computers, homes etc. What is electricity and how does it help us to use these devices? Energy helps us to do stuff. How? And how come thermal energy can be transferred in 3 ways? Why does sweating help to cool us down when we are hot? What does energy have to do with my electrical appliances?



Year 8 Curriculum Map

Faculty/Subject: SCIENCE

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic:	Topic:	Topic:	Topic:	Topic:	Topic:
Unit 7 Ecosystems & Inheritance Photosynthesis Starch practical and uses of glucose Leaves Aerobic Respiration Anaerobic respiration Food chains and webs Disrupting food chains (ecosystem) Mid topic assessment Competition and adaptations Adapting to change Variation Continuous and discontinuous data Inheritance Hybrids and species Natural selection Extinction and fossils Revision Unit 7 test Investigation Investigation Investigation Investigation DIRT Intent: What happens to the energy in our food once we have eaten it? Why can I only do certain physical activities for a long time and others just for a few seconds? How does energy move between living organisms?	Unit 8 Separation techniques & Organic chemistry Mixtures Solutions Solubility writing a method Factors affecting solubility Filtration Evaporation Distillation Chromatography Mid topic assessment Types of bonding (don't draw!) Allotropes of carbon Hydrocarbons Polymers Alcohols and carbohydrates Ceramics Composites Revision Unit 8 test Investigation Investigation Investigation Investigation DIRT Intent: How can we separate mixtures of chemicals? Why doesn't one way work for all mixtures? How and why do atoms and molecules bond together? How can we use our knowledge of bonding to help us to create useful materials such as plastics, ceramics and composites?	Unit 9 Light & Earth and Space Light Investigating shadows Reflections Refractions Ray drawing lesson The eye & camera Colour Mid topic assessment Earth and atmosphere Carbon cycle and decay Climate change Recycling Days, months, years Stars, solar system and exploring Revision Unit 9 test Investigation Investigation Investigation DIRT Intent: How can we manipulate the laws of light for our own uses? How are our eyes like cameras? And how can we see the difference between different coloured light? Why is our Earth able to support life when many other planets cannot? How are humans affecting life on our planet? And how is our Earth affected by its position in the solar system?	Unit 10 Healthy lifestyle & Disease Nutrients Food tests Digestive system Absorption in small intestine Enzymes in digestion Unhealthy diet/deficiencies Drugs Caffeine Alcohol Smoking Mid topic test Unicellular organisms Useful unicellular organisms Pathogens and spreading disease Body's defences Vaccinations Antibiotics Revision Unit 10 test Investigation Investigation Investigation Investigation DIRT Intent: Why is it important to eat a balanced diet? What does our body do with the food we eat? How can other substances such as drugs affect our health and well being? Infectious pathogens are all around us yet we aren't constantly ill. Our body effectively protects us from these infections. What else can we do to help us when we do become infected?	Unit 11 Periodic table & Metals and acids Metals and non-metals Groups and periods Group 1 OR 7 OR 0 Mendeleev's table Periodic table games (Bingo) Mid topic test Metals and acids Metals and oxygen Metals and water Displacement Extracting metals (computer) Metals and catalysts Corrosion and alloys Revision Unit 11 test Investigation Investigation Investigation Investigation DIRT Intent: Why do some elements exist by themselves and others only exist bonded to other elements? This tour of the periodic table explores these differences Metals are a unique group of elements. What do they all have in common, and how do they differ? How can we purify and 'improve' them?	Unit 12 Motion and pressure Speed Distance time graphs Gas pressure Pressure on solids Moments Revision Unit 12 test Investigation Investigation Investigation Investigation DIRT Intent: Why do I cycle more slowly on a windy day? How does swimming 'work'? And how does my small can of body spray last for so many uses?



Assessment:

Mid topic assessments:

- These will be completed approximately midway through the topic
- These will be peer or self-assessed to ensure immediate feedback
- The intent is to assess how well students have understood the first half of the new topic
- This informs both the teacher and student of areas for improvement for revision prior to the Checkpoint Assessment.

End of Unit Assessment:

- These will be completed at the end of the topic
- These will be teacher marked with feedback **within 7 days**
- A DIRT lesson focusing on individuals' areas of weakness
- An indicative grade will be provided
- The intent is to assess how well students have understood the topic and to identify strengths and weaknesses across the year group.
- This informs both the teacher and student of areas for improvement before their end of Year Exams.