



Year 7 Science Medium Term Plan

Autumn Term 1

Learning Overview (Contents)	• Cells, tissues, organs, organ systems • Mixtures and separation • Energy
Assessment Opportunities	Assessments will occur at the end of each topic using exam style questions.
Textbooks Published Lesson Resources	Exploring Science Int Y7 SB 9781292294117 Pearson Science

Home Learning Resources	https://www.thenational.academy/teachers/programmes/science-secondary-ks3-l/units/cells-u2b1h4c/lessons?sid-0b2c1b=RCva_6wuoW&sm=0&src=3 https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/cells/lessons?sid-026747=UjLBUS2nfE&sm=0&src=3 https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/separation-techniques/lessons?sid-86dd4b=eJcZlyn7Kq&sm=0&src=3 https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/solutions/lessons/mixtures-and-solutions?sid-6581f6=1Pbx4hllul&sm=0&src=4 https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/forces/lessons/energy?sid-affe71=P-amFyaFvZ&sm=0&src=4
Knowledge organisers	Link to knowledge Organisers (look on the TES!)

Week Number	Learning Overview / objective (outlined above)	What should pupils know, understand and be able to do by the end of the week? (Use clear Success criteria)
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1	1. Introduction to secondary science 2. Lab Safety 3. Equipment	Recall lab safety rules and be able to draw scientific diagrams of essential apparatus
2	1. Doctors past and present 2. Life Processes 3. Organs 4. Medical Doctors	recall and describe the life processes, explain the differences between organisms and non-living things identify and locate important plant and animal organs, describe the functions of important plant and animal organs, describe what happens in photosynthesis
3	1. Tissues 2. Microscopes 3. Cells	identify and recall named tissues in human and plant organs, describe the functions of different tissues in an organ describe how to prepare a microscope slide, describe how to use a light microscope to examine a specimen identify the main parts of animal cells and plants cells and describe their functions
4	1. Organ Systems 2. Transplants 3. Revision 4. EOU Test	identify and recall the main organs in the plant water transport system, identify and recall the main organs in the human locomotor, digestive, circulatory, breathing, urinary, and nervous systems.
5	1. Mixtures and Separation 2. Forensic Science 3. Mixtures	Classify mixtures, describe how insoluble solids can be separated from a liquid
6	1. Solutions 2. Safety when heating 3. Evaporation 4. Chromatography	describe how solutions are made, identify the solute and solvent in a solution, describe the effects of temperature and solvent on solubility describe how a Bunsen burner is used, identify hazards and describe how to reduce risks describe how solutes can be separated from a solution by evaporation, describe differences between evaporation and boiling describe how chromatography can be used to identify substances in a mixture, explain how chromatography works
7	1. Distillation 2. Safe drinking water 3. Revision	explain how distillation can be used to separate a solvent from a solution, give examples of where distillation is used
8	1. EOU Test 2. Energy and changes 3. Energy from food	recall that our bodies need energy, which we get from food, explain why different people need different amounts of energy from food, recall that the units for measuring energy are joules or kilojoules

	4.Fair comparisons and ratios	make a fair comparison of results, calculate ratios
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Year 7 Science Medium Term Plan

Autumn Term 2

Learning Overview (Contents)	• Energy • Sexual reproduction in animals • Acids and alkalis • Current electricity		
Assessment Opportunities	Assessments will occur at the end of each topic using exam style questions.		
Textbooks Published Lesson Resources	Exploring Science Int Y7 SB	9781292294117	Pearson Science

Home Learning Resources	https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/forces/lessons/energy?sid-affe71=P-amFyaFvZ&sm=0&src=4 https://www.bbc.co.uk/bitesize/topics/zn6hvcw https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/acids-and-bases/lessons/acids-and-bases?sid-22dd40=AR3vu0SOsw&sm=0&src=4		
Knowledge organisers	Link to knowledge Organisers (look on the TES!)		

Week Number	Learning Overview / objective (outlined above)	What should pupils know, understand and be able to do by the end of the week? (Use clear Success criteria)
1	1. Energy transfers and stores 2. Fuels 3. Transporting goods	describe the different ways in which energy is transferred, describe different ways in which energy is stored, recall the law of conservation of energy describe what fossil fuels are and how they were made, explain why fossil fuels are described as non-renewable, name some renewable fuels

2	1. Other energy resources 2. Using resources 3. Making changes 4. Revision	give some examples of renewable energy resources, explain how the Sun is the original source of energy for most of our universe, recall which energy resources do not depend on the sun describe advantages and disadvantages of different energy resources, describe some ways of using less fossil fuel, explain what efficiency means
3	1. EOU Test 2. Escaped Zoo animals 3. The scientific method	state the purpose of and the common steps in the scientific method
4	1. Animal sexual reproduction 2. Reproductive Organs 3. Pregnancy 4. Gestation and birth	describe how egg cells are fertilised in animal sexual reproduction, compare fertilisation and offspring care in fish, birds, and mammals. name the parts of the female reproductive system and their jobs, explain how sperm and egg cells are adapted to their functions, state what happens at the menopause describe how an embryo is protected and cared for in the uterus explain how a pregnant woman should care for her foetus, recall the stages of birth and how a newborn baby is looked after
5	1. Endangered species 2. Growing up 3. The work of zoos	describe and explain what happens during adolescence, describe and explain what happens in the menstrual cycle
6	1. Revision 2. EOU Test 3. Chemistry in the home 4. Hazards	recognise some common hazard symbols, explain why hazard symbols are necessary, recognise some common acids
7	1. Controlling risks 2. Indicators 3. Acidity and alkalinity	plan and explain safety precautions, recognise hazards, and explain how the risks can be controlled name examples of indicators made from plants, describe how indicators can be used to test for acidic, alkaline, or neutral solutions name some common examples of acids and alkalis, describe the pH scale and how it is useful, describe how pH can be measured



Year 7 Science Medium Term Plan

Spring Term 1

Learning Overview (Contents)	Current electricity Muscles and bones The particle model
Assessment Opportunities	Assessments will occur at the end of each topic using exam style questions.
Textbooks Published Lesson Resources	Exploring Science Int Y7 SB 9781292294117 Pearson Science

Home Learning Resources	https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/series-circuits/lessons/electric-current?sid-9d1cf9=5IGSmFVQgR&sm=0&src=4 https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/human-skeleton-and-muscles/lessons?sid-a13098=ASxBifsuDZ&sm=0&src=3
Knowledge organisers	Link to knowledge Organisers (look on the TES!)

Week Number	Learning Overview / objective (outlined above)	What should pupils know, understand and be able to do by the end of the week? (Use clear Success criteria)
1	1. Neutralisation and neutralisation in daily life 2. Chemical industry 3. Danger at home	describe what happens during neutralisation, write word equations for neutralisation reactions, explain the pH changes taking place during neutralization describe some examples of everyday acids and bases, describe and explain some everyday neutralisation reactions
2	1. Revision 2. EOU Test 3. Discovering electricity	explain how switches work, describe what happens when the number of bulbs in a circuit is changed, describe what a current is and how it is measured

	4.Switches and current and models in science	identify when physical or abstract models are being used, identify what the parts of a physical model represent, plan an investigation to help evaluate a model
3	1. Models for circuits 2. series and parallel circuits 3. changing the current	explain why models are used, identify what the parts of a physical model represent, use a physical model to help explain electric circuits, evaluate a physical model, state what is meant by current state what is meant by a series circuit and a parallel circuit, explain how switches can control different kinds of circuit, describe how changing the number or type of components in a circuit affects the current, describe the differences in how current behaves in a series and parallel circuits describe how changing the number or type of components in a circuit affects the current, describe how a voltmeter is used, explain why the current increases when the voltage of the supply is increased, describe the relationship between resistance and current
4	1.building robots 2. using electricity and a world without electricity 3. Revision 4. EOU Test	explain some safety precautions to be followed when using electricity, describe the job that fuses and circuit breakers do, explain how a fuse works, recall how the different wires are connected in a plug
5	1. Fitness and muscles and breathing 2. Muscles and blood 3.Scientific questions and the skeleton	describe how muscles in the gas exchange system allow ventilation, describe what happens during gas exchange in the lungs describe the functions of the different parts of the human double circulatory system, describe the functions of the different parts of blood, and where cells are made describe the role of scientific questions in the scientific method, identify scientific, non-scientific and ethical questions describe the functions of the different bones in the skeleton, describe some different types of joint
6	1. Muscles and moving 2. Artificial limbs, drugs in sport 3. Revision 4.EOU Test	explain how antagonistic pairs of muscles operate and are controlled, to allow movement recall how different drugs affect the body



Year 7 Science Medium Term Plan

Spring Term 2

Learning Overview (Contents)	The Particle model Forces Ecosystems		
Assessment Opportunities	Assessments will occur at the end of each topic using exam style questions.		
Textbooks Published Lesson Resources	Exploring Science Int Y7 SB	9781292294117	Pearson Science
Home Learning Resources	https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/solid-liquid-gas-states-and-changes-of-state/lessons/particle-model-of-substances-in-the-gas-state?sid-b633b1=uvdLuUri1y&sm=0&src=4 https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/solid-liquid-gas-states-and-changes-of-state/lessons/melting-particle-model?sid-78d234=CxtfkLM5Vr&sm=0&src=4 https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/forces/lessons?sid-85c588=h7hZSz-UFE&sm=0&src=3 https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/forces/lessons/the-different-kinds-of-force?sid-02cf05=jYDPeKNM0K&sm=0&src=4 https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/ecosystems/lessons?sid-b60977=hu9OoEBhnu&sm=0&src=3 https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/ecosystems/lessons/ecosystems-and-habitats?sid-71a4b4=c3XB1JZ239&sm=0&src=4		
Knowledge organisers	Link to knowledge Organisers (look on the TES!)		

Week Number	Learning Overview / objective (outlined above)	What should pupils know, understand and be able to do by the end of the week? (Use clear Success criteria)
1	1. Sorting rubbish 2. Solids, liquids, and gases; hypotheses and theories 3. Particles and Brownian motion 4. Diffusion	describe and compare the properties of the three states of matter, state what is meant by density, and recall its unit identify scientific questions, hypotheses and predictions, describe how evidence I used to develop a hypothesis into a theory recognise that all matter is made up of particles, describe, draw and recognise the arrangement of particles in solids, liquids, and gases, use the particle theory to explain the properties of the three states of matter explain how Brownian motion supports the particle model, explain how scientific theories evolve, convert between nonemetres and metres state what is meant by diffusion and recall some of its effects, use the particle model to explain diffusion in liquids and gases, use the particle model to explain why diffusion is faster in some materials than in others
2	1. Air pressure and forecasting weather 2. Waste and Revision 3. EOU Test	say what is meant by gas pressure and recall some of its effects, describe the cause of gas pressure using particle theory
3	1. Forces, balanced and unbalanced forces, different forces 2. Springs 3. Friction, Pressure, and SI Units 4. Designing Structures, Safety standards, and revision	recall the effects of forces on an object, name forces and classify them as contact or non-contact forces, recall how to measure forces and masses and their units identify balanced and unbalanced forces, explain the effects of balanced and unbalanced forces explain why scientists use SI units, record numbers using suitable units describe how the extension of a spring depends on the force applied recall the effects of friction, explain some ways in which friction can be changed, identify situations in which friction is helpful or not helpful calculate pressure and recall its units, describe the effects of high and low pressure in simple situations
4	1. EOU Test 2. Exploring the world, variation, graphs and charts 3. Adaptations	recall what a species is, describe variation as continuous or discontinuous present information as bar charts and scatter graphs, identify relationships using scatter graphs

		identify and describe some adaptations for different habitats, describe how inherited variation is caused
5	1. Effects on the environment and Greener cities 2. Food chains and nomads 3. Revision 4. EOU Test	identify causes of environmental variation, describe adaptations to daily and seasonal changes describe ways in which organisms affect their habitats and communities, describe intra- and inter-specific competition, use a food web to make predictions use pyramids of numbers to describe how energy is lost in a food chain, explain why pesticides need to be used carefully



Year 7 Science Medium Term Plan

Summer Term 1

Learning Overview (Contents)	Atoms, elements and molecules Sound
Assessment Opportunities	Assessments will occur at the end of each topic using exam style questions.
Textbooks Published Lesson Resources	Exploring Science Int Y7 SB 9781292294117 Pearson Science

Home Learning Resources	https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/atoms-elements-and-compounds/lessons?sid-e015c0=Q6JqRge2VF&sm=0&src=3 https://www.bbc.co.uk/bitesize/topics/zstp34j https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/sound-light-and-vision/lessons?sid-d1411b=59umK4VEQZ&sm=0&src=3 https://www.thenational.academy/teachers/programmes/science-secondary-ks3/units/sound-light-and-vision/lessons/sound-vibrations?sid-6f16be=1LjP2kAKgj&sm=0&src=4
Knowledge organisers	Link to knowledge Organisers (look on the TES!)

Week Number	Learning Overview / objective (outlined above)	What should pupils know, understand and be able to do by the end of the week? (Use clear Success criteria)
1	1. Our material world 2. Sorting resource data 3. The air we breathe 4. Earth's elements	draw, use and interpret tables, bar charts, pie charts and scatter graphs, identify the best way to present different types of data recognise the difference between atoms and molecules, identify elements, mixtures and compounds from diagrams and particle diagrams

		recognise the difference between atoms and molecules, identify elements, mixtures and compounds from diagrams and particle diagrams use chemical symbols for common elements and explain why they are a international code, recall that different elements have different properties and uses, explain that our resources of elements are limited and can run out
2	1. Metals and non-metals 2. obtaining metals 3. Making compounds	describe and identify metals and non-metals by their properties, relate the use of an element to its properties describe changes that occur when compounds are formed, identify elements, compounds and mixtures from descriptions and particle diagrams, name simple compounds
3	1. Chemical reactions 2. Problems with elements 3. Revision 4. EOU Test	use and understand word equations for chemical reactions, describe examples and uses of decomposition reactions
4	1. Animal sounds, animals and noise 2. Making sounds 3. Moving sounds	explain what causes sounds and how to make louder sounds, explain the link between frequency and pitch describe how sound moves through materials, explain why sounds get fainter further from their source
5	1. Line graphs and scatter graphs 2. Detecting sounds 3. Using sound and working with sound 4. Comparing waves	present information as scatter graphs describe what line graphs and scatter graphs show, identify relationships using scatter graphs describe the parts of the ear and their functions, describe how microphones convert sound into electrical signals, recall that different animals have different hearing ranges describe some uses of ultrasound, explain how sonar and echolocation work compare longitudinal and transverse waves, recall that all waves can be reflected, explain what superposition is
6	1. Revision 2. Revision 3. EOU Test	



Year 7 Science Medium Term Plan

Summer Term 2

Learning Overview (Contents)	Project Work
Assessment Opportunities	Assessments will occur at the end of each topic using exam style questions.
Textbooks Published Lesson Resources	Exploring Science Int Y7 SB 9781292294117 Pearson Science
Home Learning Resources	Specific Links to Oak Academy (This will be shared with parents on <i>Teams</i> to help them supplement the classroom learning revision)
Knowledge organisers	Link to knowledge Organisers (look on the TES!)

Week Number	Learning Overview / objective (outlined above)	What should pupils know, understand and be able to do by the end of the week? (Use clear Success criteria)
1		
2		
3		
4		