

Key Stage 3 - Year 7 Autumn Term

Topic	Students should be able to	Useful links
Biology: Organisms Part 1 (Cells)	- Know what a cell is - Explain how to use a microscope to observe a cell - Match cell components to their functions - Compare the similarities and differences between plant and animal cells - Name and describe some examples of specialised cells - Suggest the type of cell or tissue a cell comes from, based on its features - Name some substances that move in and out of cells - Describe the process of diffusion - Identify structures in an amoeba and a Euglena - Describe what a uni-cellular organism is - Explain how unicellular organisms are adapted to carry out different functions	https://www.youtube.com/watch?v=5X6mow1AEXI https://www.bbc.co.uk/bitesize/articles/zbm48mn#zm33f82 https://www.youtube.com/watch?v=IH3kVOch9nU https://www.youtube.com/watch?v=MnrqVYVJp3E https://www.youtube.com/watch?v=MnrqVYVJp3E
Biology: Organisms Part 2 (Movement)	- State examples of tissues, organs and organ systems - State the order of hierarchy of organisation a multi-cellular organism - Explain why multi-cellular organisms need organ systems to keep them alive - Name the main parts in the skeleton - List the functions of the skeleton - Explain how the properties of bones link to their function in the body - State where joints are found in the body - Describe the structure and function of joints - Explain how to measure the force exerted by different muscles - State how antagonistic pairs of muscles create movement - Describe the function of major muscle groups - Use a diagram to predict the result of a muscle contraction or relaxation - Explain why some organs contain muscle tissue	https://www.youtube.com/watch?v=cz1_6axAa20&list=PLyf3QQ9ddzgngBzZiwWcEBuRoKU YaXS6N&index=7&t=0s https://www.bbc.co.uk/bitesize/articles/zrp3ydm#zm33f82 https://www.youtube.com/watch?v=iVTsIVya5Ws&list=PLyf3QQ9ddzgngBzZiwWcEBuRoKU YaXS6N&index=9&t=0s
Biology Key Words: Microscope, observation, nucleus, cell membrane, cytoplasm, mitochondria, respiration, cell wall, vacuole, chloroplast, structural adaptations, specialised cell, nerve cell, red blood cell, sperm cell,		

leaf cell, root hair cell, diffusion, concentration, un-cellular, amoeba, euglena, flagellum
Multi-cellular, cell, tissue, organ, organ system, circulatory system, respiratory system, reproductive system, digestive system, muscular skeletal system, immune system, bone, skeleton, bone marrow, joints, cartilage, ligament, tendons, antagonistic muscle pair

Topic	Students should be able to	Useful links
Chemistry: Matter Part 1 (The particle model)	- Describe simply what the particle model of matter is - Explain the properties of different materials based on the arrangement of particles and movement of their particles - Describe the properties of solids, liquids and gases using the particle model - Explain these properties - Describe simply how changes in state can be described in terms of particles transferring energy - Recognise the state of a substance in relation to its melting and boiling point - Draw before and after diagrams to explain observations about changes in state - Describe one difference between boiling and evaporation - Use the particle model to explain diffusion - Draw before and after diagrams of particles to explain observations about diffusion - Use words to explain gas pressure simply - Explain unfamiliar observations about gas pressure in terms of particles - Draw before and after diagrams to explain gas pressure - Describe what an atom is - Describe some differences between elements and compounds - Use diagrams to represent atoms and molecules of elements and compounds	https://www.bbc.co.uk/bitesize/topics/z9r4jxs https://www.youtube.com/watch?v=1zrBpVFvRbM&safe=active https://www.youtube.com/watch?v=2iOgv8btYBM&list=PLyf3QQ9ddzgngBzZiwWcEBuRoKUYaXS6N&index=16&t=0s&safe=active https://www.youtube.com/watch?v=2mFD9UNY3Ms&list=PLyf3QQ9ddzgngBzZiwWcEBuRoKUYaXS6N&index=17&t=0s&safe=active https://www.youtube.com/watch?v=YLBjx92mfr4&list=PLyf3QQ9ddzgngBzZiwWcEBuRoKUYaXS6N&index=18&t=0s&safe=active https://www.youtube.com/watch?v=BAAnIW6EF0Is&list=PLyf3QQ9ddzgngBzZiwWcEBuRoKUYaXS6N&index=19&t=0s&safe=active
Chemistry: Matter Part 2 (Separating mixtures)	- State the properties of a pure substance - Name four common substances that are mixtures - Explain how to use melting temperatures to identify pure substances - Describe solutions using key words - Explain how substances dissolve using the particle model	https://www.youtube.com/watch?v=nxRGahK7B48&safe=active https://www.bbc.co.uk/bitesize/guides/zgvc4wx/revision/1

	• Explain the meaning of solubility • Use solubility curves to explain observations about solutions • State why it is possible to separate mixtures State why filtration works to separate a mixture • Choose when to use filtration to separate mixtures • State why evaporation works to separate a particular mixture • Choose the most suitable technique Describe how chromatography separates substances • Use evidence from chromatography to identify unknown substances from mixtures	https://quizlet.com/43289245/year-7-separatingmixtures-test-revisionflash-cards/ https://www.youtube.com/watch?v=14BEh2EKrMO&list=PLyf3QQ9ddzgngBzZiwWcEBuRoKUYaXS6N&index=20&t=0s&safe=active https://www.youtube.com/watch?v=HHMuxploYFY&list=PLyf3QQ9ddzgngBzZiwWcEBuRoKUYaXS6N&index=23&t=0s&safe=active https://www.youtube.com/watch?v=tpueIGLkrKM&list=PLyf3QQ9ddzgngBzZiwWcEBuRoKUYaXS6N&index=24&t=0s&safe=active https://www.youtube.com/watch?v=WuC3HJkj6uo&list=PLyf3QQ9ddzgngBzZiwWcEBuRoKUYaXS6N&index=25&t=0s&safe=active https://www.youtube.com/watch?v=fLmbCnXaS88&list=PLyf3QQ9ddzgngBzZiwWcEBuRoKUYaXS6N&index=26&t=0s&safe=active https://www.youtube.com/watch?v=CK1KVYLIGRE&list=PLyf3QQ9ddzgngBzZiwWcEBuRoKUYaXS6N&index=27&t=0s&safe=active
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		https://www.youtube.com/watch?v=dBb0aWXhArk&list=PLyf3QQ9ddzgngBzZiwWcEBuRoKUYaXS6N&index=28&t=0s&safe=active
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Chemistry Key Words:

Material, particle, mixture, substance, property, particle model, density, solid, liquid, gas, states of matter, melt, change of state, freeze, melting point, boil, boiling point, evaporate, condense, sublime, diffusion, gas pressure, element, atom, molecule, compound

Pure substance, mixture, dissolve, solvent, solute, solution, saturated, solution, solubility, soluble, solubility curve, filtration, filtrate, residue, distillation, chromatography, chromatogram

Topic	Students should be able to	Useful links
Physics: Waves Part 1 (Speed)	- State the unit of a force - Describe what is meant by an interaction pair - Describe what happens when the resultant force on an object is not zero - Use a force diagram to describe situations involving gravity that are in equilibrium - State and use the formula for speed - Describe the link between speed and journey time - Describe how the speed of an object depends on the movement of the observer - State what a straight line or a curved line on a distance-time graph tells you about speed - Calculate speed from a distance -time graph - Illustrate a journey with changing speed on a distance-time graph, and label changes in motion	https://www.youtube.com/watch?v=9kMNtZvYmqQ&safe=active https://www.youtube.com/watch?v=511rdc8K_TU&safe=active https://www.bbc.co.uk/bitesize/topics/z4brd2p https://www.educationquizzes.com/ks3/science/forces-01/
Physics: Waves Part 2 (Gravity)	- State the value of g on Earth and on the moon - Describe the difference between mass and weight - Describe how gravitational force varies with mass and distance - Use the formula to calculate your weight on different planets and explain changes in weight - Explain why objects stay in orbit	https://www.bbc.co.uk/bitesize/topics/z4brd2p/articles/zr3xh39 https://www.bbc.co.uk/bitesize/guides/z8wx6sg/revision/3

Physics key words:

Push, pull, contact force, friction, air resistance, gravity, non-contact force, interaction pair, newtonmeter, newton (N), resultant force, balanced, equilibrium, unbalanced, driving force,

resistive force, speed, meters per second, average speed, relative motion, distance-time graph, acceleration

Gravitational force, field, weight, mass, kilogram, gravitational field strength