| **This 3-Year Scheme of Work offers a flexible approach for KS4. The suggested timings are based on three science lessons per fortnight (assuming a two-week timetable of one lesson one week and two lessons in the second) but can be tailored to suit the needs of a particular class or group of students. Lessons are assumed to be sessions of 40-60 minutes. The teaching scheme is scheduled to finish at the start of the Year 11 summer term to allow time for revision and GCSE examinations.** **Please note that some of these lessons only require partial coverage or are shorter than others and therefore sometimes there are more than three lessons in a fortnight. The maths skills spreads are numbered as the last spread in a chapter but can be used at any appropriate point according to the needs of your students.** |
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| **Year** | **Term** | **Week** | **Student Book spread number** | **Lesson title** | **Learning objectives** | **OCR specification reference** | **Lesson resources (on CD ROM)** | **Collins Connect resources** |
|  |  |  | **Chapter 1: Cell level systems (19 lessons)** |  |
| Year 9 | Term 1 | 1/2 | 1.1 | The light microscope | * Describe how to use a microscope.
* Observe plant and animal cells with a light microscope.
* Understand the limitations of light microscopy.
 | B1.1a | Worksheet 1.1; Practical sheet 1.1; Technician’s notes 1.1; PowerPoint presentation | Quick starter Homework worksheetHomework quizSlideshow |
| 1/2 | 1.2 | Looking at cells | * Describe the structure of eukaryotic cells.
* Recognise the order of magnitude of cells.
* Explain how the main sub-cellular structures are related to their functions.
 | B1.1b | Worksheets 1.2.1, 1.2.2 and 1.2.3; PowerPoint presentation | Quick starter Homework worksheetHomework quizSlideshow |
| 1/2 | 1.3 | Practical: Using a light microscope to observe and record animal and plant cells | * Apply knowledge to select techniques, instruments,

apparatus and materials to observe cells.* Make and record observations and measurements.
* Present observations and other data using appropriate

methods. | B1.1a; B1.1b | Worksheets 1.3.1 and 1.3.2; Practical sheets 1.3.1 and 1.3.2; Technician’s notes 1.3 | Quick starter Homework worksheetHomework quizVideo |
| 3/4 | 1.4 | Primitive cells | * Describe and explain the differences between prokaryotic cells and eukaryotic cells.
* Explain how the main sub-cellular structures of prokaryotic and eukaryotic cells are related to their functions.
 | B1.1b | Worksheet 1.4; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| 3/4 | 1.5 | Looking at cells in more detail | * Identify the differences in the magnification and resolving power of light and electron microscopes.
* Describe simply how electron microscopes work in comparison to light microscopes.
* Explain how electron microscopy has increased our understanding of sub-cellular structures.
 | B1.1c | Worksheet 1.5; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
|  |  | 3/4 | 1.6 | Maths skills: Size and number | * To make estimates of the results of simple calculations, without using a calculator.
* To use ratio and proportion to calibrate a microscope.
* To recognise and use numbers in decimal and standard form.
 | BM1.1i; BM1.1ii; BM1.1iii | Worksheets 1.6.1 and 1.6.2 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| 3/4 | 1.7 | The structure of DNA | * Describe the structure of DNA as repeating nucleotide units.
* Identify the four bases in DNA.
* Explain that the bases A and T, and C and G, are complementary.
 | B1.2a–c | Worksheets 1.7.1 and 1.7.2 Practical sheet 1.7; Technician’s notes 1.7 | Quick starter Homework worksheetHomework quiz |
| 5/6 | 1.8 | Proteins (Higher tier only) | * Describe how proteins are synthesised according to the DNA template of a gene.
* Explain that the genetic code of a gene specifies the protein to be made.
 | B1.2d; B1.2e | Worksheets 1.8.1 and 1.8.2 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| 5/6 | 1.9 | Explaining enzymes | * Describe what enzymes are and how they work.
* Explain the lock-and-key theory.
 | B1.2f; B1.2g | Worksheet 1.9; Practical sheet 1.9; Technician’s notes 1.9 | Quick starter Homework worksheetHomework quizSlideshow |
| 5/6 | 1.10 | Practical: Investigate the effect of pH on the rate of reaction of amylase enzyme | * Describe how safety is managed, apparatus is used and accurate measurements are made.
* Explain how representative samples are taken.
* Make and record accurate observations.
* Draw and interpret a graph from secondary data using knowledge and observations.
 | B1.2f; B1.2g; BM1.2i; BM1.2ii | Worksheets 1.10.1, 1.10.2 and 1.10.3; Practical sheet 1.10; Technician’s notes 1.10 | Quick starter Homework worksheetHomework quizSlideshow |
| Year 9 | Term 1 | 7/8 | 1.11 | Cells at work | * Explain the need for energy.
* Describe aerobic respiration as an exothermic reaction.
 | B1.3a; B1.3b | Worksheet 1.11; Practical sheet 1.11; Technician’s notes 1.11; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| 7/8 | 1.12 | Living without oxygen | * Describe the process of anaerobic respiration.
* Compare the processes of aerobic and anaerobic respiration.
 | B1.3c | Worksheet 1.12; PowerPoint presentation | Quick starter Homework worksheetHomework quizSlideshowVideo |
| 7/8 | 1.13 | Enzymes at work | * Explain how enzymes break down fats, proteins and carbohydrates.
* Name the sites of production and action of specific digestive enzymes.
* Interpret data about digestive enzymes.
 | B1.3d–f | Worksheet 1.13 | Quick starter Homework worksheetHomework quiz |
| 9/10 | 1.14 | Practical: Use qualitative reagents to test for a range of carbohydrates, lipids and proteins | * Suggest appropriate apparatus for the procedures.
* Describe how safety is managed and apparatus is used.
* Describe how accurate measurements are made.
* Interpret observations and make conclusions.
 | B1.3d–f | Practical sheets 1.14.1 and 1.14.2; Technician’s notes 1.14 | Quick starter Homework worksheetHomework quiz |
| 9/10 | 1.15 | Looking at photosynthesis | * Explain the importance of photosynthesis.
* Explain how plants use the glucose they produce.
 | B1.4a; B1.4b | Worksheet 1.15; Practical sheet 1.15; Technician’s notes 1.15 | Quick starter Homework worksheetHomework quiz |
| 9/10 | 1.16 | Explaining photosynthesis | * Identify the raw materials and products of photosynthesis.
* Describe photosynthesis by an equation.
* Recall that photosynthesis is a two-stage process that takes place in chloroplasts.
* Explain gas exchange in leaves.
 | B1.4b; B1.4c | Worksheet 1.16; Technician’s notes 1.16 | Quick starter Homework worksheetHomework quizSlideshow |
| Year 9 | Term 1 | 11/12 | 1.17 | Practical: Investigate the effect of light intensity on the rate of photosynthesis using an aquatic organism such as pondweed | * Identify and manage variables.
* Process data and identify outliers.
* Evaluate an experimental process.
 | B1.4d; B1.4e; BM1.4i; BM1.4iii | Worksheet 1.17; Practical sheets 1.17.1, 1.17.2 and 1.17.3; Technician’s notes 1.17 | Quick starter Homework worksheetHomework quizSlideshow |
| 11/12 | 1.18 | Increasing photosynthesis | * Identify factors that affect the rate of photosynthesis.
* Interpret data about the rate of photosynthesis.
* Explain the interaction of factors in limiting the rate of photosynthesis.
 | B1.4e; B1.4f | Worksheet 1.18; Technician’s notes 1.18 | Quick starter Homework worksheetHomework quiz |
| 11/12 | 1.19 | Maths skills: Extracting and interpreting information | * To extract and interpret information from tables, charts and graphs.
 | BM1.4ii; BM1.4iv; BM1.4v | Worksheets 1.19.1, 1.19.2 and 1.19.3 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| 11/12 | **Assessments** | End of chapter test Student BookEnd of chapter test Collins Connect |
|  |  | **Chapter 2: Scaling up (20 lessons)** |  |
| Term 2 | 1/2 | 2.1 | Key concept: Diffusion in living systems | * Use concentration gradients to explain the direction of diffusion.
* Apply the principles of diffusion to movement of different substances in plants.
 | B2.1a | Worksheets 2.1.1, 2.1.2 and 2.1.3; Practical sheet 2.1; Technician’s notes 2.1 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| Year 9 | Term 2 | 1/2 | 2.2 | Explaining water movement | * Describe how water moves by osmosis in living tissues.
* Identify factors that affect the rate of osmosis.
* Explain the term ‘partially permeable membrane’.
 | B2.1a | Worksheet 2.2; Practical sheet 2.2; Technician’s notes 2.2 | Quick starter Homework worksheetHomework quizSlideshow |
| 1/2 | 2.3 | Practical: Investigate the effect of a range of concentrations of salt or sugar solutions on the mass of plant tissue | * Use scientific ideas to develop a hypothesis.
* Plan experiments to test a hypothesis.
* Draw conclusions from data and compare these with hypotheses made.
 | B2.1a; BM2.1i | Worksheet 2.3; Practical sheets 2.3.1 and 2.3.2; Technician’s notes 2.3 | Quick starter Homework worksheetHomework quizSlideshow |
| 3/4 | 2.4 | Learning about active transport | * Describe active transport.
* Explain how active transport is different from diffusion and osmosis.
* Explain why active transport is important.
 | B2.1a | Worksheet 2.4; Technician’s notes 2.4 | Quick starter Homework worksheetHomework quiz |
| 3/4 | 2.5 | Cell division | * Describe the process of mitosis in growth, and mitosis as part of the cell cycle.
* Describe how the process of mitosis produces cells that are identical genetically to the parent cell.
 | B2.1b | Worksheets 2.5.1 and 2.5.2; Technician’s notes 2.5; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| 3/4 | 2.6 | Cell differentiation | * Explain the importance of cell differentiation.
* Describe how cells, tissues, organs and organ systems are organised to make up an organism.
* Understand size and scale in relation to cells, tissues, organs and body systems.
 | B2.1c | Worksheet 2.6; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| 5/6 | 2.7 | Stem cells | * Describe the function of stem cells in embryonic and adult animals.
* Discuss potential benefits and risks associated with the use
* of stem cells in medicine.
 | B2.1d–f | Worksheets 2.7.1 and 2.7.2; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| Year 9 | Term 2 | 5/6 | 2.8 | Key concept: Cell development | * Give examples of where mitosis is necessary to produce identical daughter cells.
* Understand the need for reduction division, meiosis.
* Describe the use and potential of cloned cells in biological research.
 | B2.1b–f | Worksheets 2.8.1 and 2.8.2; PowerPoint presentation | Quick starter Homework worksheetHomework quizSlideshowVideo |
| 5/6 | 2.9 | Key concept: Investigating the need for transport systems | * Describe the need for transport systems.
* Describe how the effectiveness of an exchange surface can be increased.
* Explain, in terms of surface area to volume ratios, the need for transport systems.
 | B2.2a; B2.2b | Worksheet 2.9; Practical sheet 2.9; Technician’s notes 2.9 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| 5/6 | 2.20 | Maths skills: Surface area to volume ratio | * Be able to calculate surface area and volume.
* Be able to calculate surface area to volume ratio.
* Know how to apply ideas about surface area and volume.
 | BM2.2i | Worksheet 2.20 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| 7/8 | 2.10 | Learning about the circulatory system | * Identify the parts of the circulatory system.
* Describe the functions of the parts of the circulatory system.
* Explain how the structure of each part of the circulatory system relates to its function.
 | B2.2c | Worksheets 2.10.1, 2.10.2 and 2.10.3; Practical sheets 2.10.1 and 2.10.2; Technician’s notes 2.10 | Quick starter Homework worksheetHomework quiz |
| 7/8 | **Assessment** | End of teaching block test (chapter 1 and chapter 2.1-2.10) Collins Connect |
| 7/8 | 2.11 | Investigating gaseous exchange | * Identify the parts of the human gaseous exchange system and know their functions.
* Explain how gaseous exchange occurs in humans.
* Explain the adaptations of the gaseous exchange surfaces.
 | B2.2c | Worksheet 2.11; Practical sheet 2.11; Technician’s notes 2.11 | Quick starter Homework worksheetHomework quiz |
| Year 9 | Term 2 | 9/10 | 2.12 | Exploring the heart | * Describe the structure and function of the heart.
* Identify the functions and adaptations of the parts of the

heart.* Explain the movement of blood around the heart.
 | B2.2d | Worksheets 2.12; Practical sheet 2.12; Technician’s notes 2.12 | Quick starter Homework worksheetHomework quizSlideshowVideos |
| 9/10 | 2.13 | Studying blood | * Identify the parts of the blood and their functions.
* Explain the adaptations of red blood cells.
* Explain how red blood cells and haemoglobin transport oxygen efficiently.
 | B2.2e | Worksheets 2.13.1 and 2.13.2 | Quick starter Homework worksheetHomework quizVideo |
| 9/10 | 2.14 | Investigating leaves | * Identify the internal structures of a leaf.
* Explain how the structure of a leaf is adapted for photosynthesis.
* Recall that chlorophyll pigments in chloroplasts absorb light energy for photosynthesis.
 | B2.2f | Worksheets 2.14.1, 2.14.2 and Technician’s notes 2.14 | Quick starter Homework worksheetHomework quizSlideshow |
| 11/12 | 2.15 | Learning about plants and minerals | * Describe how mineral ions from the soil help plants to grow.
* Explain how root hair cells are adapted for efficient osmosis.
* Describe the function of different mineral ions in a plant.
 | B2.2f | Worksheet 2.15 | Quick starter Homework worksheetHomework quiz |
| 11/12 | 2.16 | Looking at stomata | * Describe transpiration in plants.
* Explain the structure and function of stomata.
* Explain the relationship between transpiration and leaf structure.
 | B2.2g; B2.2i | Worksheet 2.16; Practical sheet 2.16; Technician’s notes 2.16 | Quick starter Homework worksheetHomework quizVideo |
| Year 9 | Term 2 | 11/12 | 2.17 | Moving water | * Describe the structure and function of xylem and roots.
* Describe how xylem and roots are adapted to absorb water.
* Explain why plants in flooded or waterlogged soil die.
 | B2.2g–i | Worksheets 2.17.1 and 2.17.2; Practical sheet 2.17; Technician’s notes 2.17 | Quick starter Homework worksheetHomework quizVideo |
| 11/12 | 2.18 | Moving sugar | * Describe the movement of sugar in a plant as translocation.
* Explain how the structure of phloem is adapted to its function in the plant.
* Explain the movement of sugars around the plant.
 | B2.2g; B2.2h | Worksheet 2.18; Technician’s notes 2.18 | Quick starter Homework worksheetHomework quiz |
| 11/12 | 2.19 | Investigating transpiration | * Describe how transpiration is affected by different factors.
* Describe how a potometer can be used to investigate factors that affect water uptake.
 | B2.2g–j; BM2.2ii; BM2.2iii; BM2.2iiv | Worksheet 2.19; Practical sheet 2.19; Technician’s notes 2.19 | Quick starter Homework worksheetHomework quizSlideshow |
| Term 3 | 1/2 | **Assessments** | End of chapter test Student BookEnd of chapter test Collins Connect |
|  |  | **Chapter 3: Organism level systems (27 lessons)** |
| Term 3 | 1/2 | 3.1 | The nervous system | * Explain how the nervous system is adapted to its functions.
* Describe the structure of the central nervous system and sensory, motor and relay neurones.
 | B3.1a; B3.1b | Worksheets 3.1.1 and 3.1.2; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| 1/2 | 3.2 | Reflex actions | * Explain the importance of reflex actions.
* Describe the path of a reflex arc.
* Explain how the structures in the reflex arc relate to their function.
 | B3.1b; B3.1c | Worksheets 3.2.1, 3.2.2 and 3.2.3; Practical sheet 3.2; Technician’s notes 3.2; PowerPoint presentation | Quick starter Homework worksheetHomework quizSlideshow |
| 3/4 | 3.3 | Practical: Investigating reaction time | * Select appropriate apparatus and techniques for the measurement of biological processes.
* Carry out physiological experiments safely.
* Use appropriate techniques in problem-solving contexts.
 | B3.1c; BM3.1i | Worksheets 3.3.1, 3.3.2 and 3.3.3; Practical sheet 3.3; Technician’s notes 3.3 | Quick starter Homework worksheetHomework quizSlideshow |
| Year 9 | Term 3 | 3/4 | 3.4 | The eye | * Relate the structures of the eye to their functions.
* Understand how the eye is adapted to seeing in colour and in dim light.
 | B3.1d | Worksheets 3.4.1, 3.4.2 and 3.4.3; Practical sheet 3.4; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| 3/4 | 3.5 | Seeing in focus | * Relate the structures of the eye to their functions.
* Understand how the eye is able to focus on near or distant objects.
 | B3.1d | Worksheets 3.5.1, 3.5.2 and 3.5.3; PowerPoint presentation | Quick starter Homework worksheetHomework quizVideo |
| 5/6 | 3.6 | Eye defects | * Understand that, in myopia and hyperopia, the eye cannot focus light rays on the retina.
* Demonstrate how techniques are used to correct eye defects.
 | B3.1e | Worksheets 3.6.1, 3.6.2 and 3.6.3; Practical sheet 3.6 | Quick starter Homework worksheetHomework quizSlideshow |
| 5/6 | 3.7 | The brain (parts are Higher tier only) | * Recall that the brain controls complex behaviour using billions of interconnected neurones.
* Identify the three main regions of the brain and describe their functions.
* Describe how the regions of the brain are mapped.
 | B3.1f–h | Worksheets 3.7.1 and 3.7.2 | Quick starter Homework worksheetHomework quizVideo |
| 7/8 | 3.8 | The endocrine system | * Recall that the endocrine system is made up of glands that secrete hormones into the blood.
* Know the location of the major endocrine glands.
* Understand why the pituitary gland is the ‘master gland’.
 | B3.2a | Worksheets 3.8.1 and 3.8.2 | Quick starter Homework worksheetHomework quiz |
| 7/8 | 3.9 | Negative feedback (Higher tier only) | * Explain the role of thyroxine in the body.
* Understand the principles of negative feedback, as applied to thyroxine.
 | B3.2b | Worksheet 3.9; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| Year 9 | Term 3 | 7/8 | 3.10 | Systems working together (Higher tier only) | * Describe the effects of adrenaline.
* Understand that automatic control systems may involve nervous responses and chemical responses.
* Understand that combinations of hormones work to produce a response.
 | B3.2b | Worksheet 3.10 | Quick starter Homework worksheetHomework quiz |
| 9/10 | 3.11 | Human reproduction | * Describe the roles of hormones in sexual reproduction.
* Explain how hormones interact in the menstrual cycle.
 | B3.2c; B3.2d | Worksheets 3.11.1 and 3.11.2 | Quick starter Homework worksheetHomework quiz |
| 9/10 | 3.12 | Contraception | * Understand that fertility can be controlled by different hormonal and non-hormonal methods of contraception.
* Evaluate the different methods of contraception.
 | B3.2e | Worksheets 3.12.1 and 3.12.2 | Quick starter Homework worksheetHomework quiz |
| 9/10 | 3.13 | Which contraceptive? | * Discuss the effectiveness of different hormonal and non-hormonal methods of contraception.
* Evaluate data on the different methods of contraception.
 | B3.2e | Worksheet 3.13 | Quick starter Homework worksheetHomework quiz |
| 11/12 | 3.14 | IVF (Higher tier only) | * Explain the use of hormones in technologies to treat infertility.
* Describe the technique of *in-vitro* fertilisation.
 | B3.2f | Worksheet 3.14; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| 11/12 | 3.15 | IVF evaluation (Higher tier only) | * Evaluate the processes involved in fertility treatments.
 | B3.2f | Worksheet 3.15 | Quick starter Homework worksheetHomework quiz |
| Year 10 | Term 1 | 1/2 | 3.16 | Auxins | * Recall that plants produce hormones to coordinate and control growth, and responses to light and gravity.
* Describe how unequal distributions of auxins cause unequal growth rates in plant shoots and roots.
 | B3.2g | Worksheets 3.16.1, 3.16.2 and 3.16.3; Practical sheet 3.16; Technician’s notes 3.16 | Quick starter Homework worksheetHomework quiz |
| 1/2 | 3.17 | Applications of auxins (some parts are Higher tier only) | * Explain how auxins coordinate and control responses to light and gravity.
* Explain that auxins act on ‘stem cells’ in plants called meristems.
* Describe some applications of auxins.
 | B3.2g; B3.2h | Worksheets 3.17.1, 3.17.2 and 3.17.3; Practical sheet 3.17; Technician’s notes 3.17 | Quick starter Homework worksheetHomework quiz |
| 1/2 | 3.18 | Practical: The effect of light and gravity on the growth of germinating seeds | * Describe how an experiment is planned for a specific purpose.
* Make and record observations and translate data from one form to another.
* Interpret observations and other data, identifying patterns and trends, make inferences and draw conclusions.
 | B3.2g; B3.2h | Worksheet 3.18; Practical sheet 3.18; Technician’s notes 3.18 | Quick starter Homework worksheetHomework quizSlideshow |
| 3/4 | 3.19 | Other plant hormones (Higher tier only) | * Recall that gibberellins are important in seed germination, and ethene in cell division and ripening of fruit.
* Explain the application of the plant hormones ethane and gibberellins.
 | B3.2h; B3.2i | Worksheet 3.19 | Quick starter Homework worksheetHomework quiz |
| 3/4 | 3.20 | Homeostasis | * Explain the importance of homeostasis in regulating internal conditions in the body.
* Recall that these control systems involve nervous or chemical responses.
* Describe how control systems involve receptors, coordination centres and effectors.
 | B3.3a | Worksheets 3.20.1 and 3.20.2; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| 5/6 | 3.21 | Controlling body temperature | * Understand the mechanisms by which body temperature is controlled when too hot or cold.
* Explain how body temperature can be controlled in a specific context.
 | B3.3b | Worksheet 3.21; Practical sheet 3.21; Technician’s notes 3.21; PowerPoint presentation | Quick starter Homework worksheetHomework quizSlideshow |
| Year 10 | Term, 1 | 7/8 | 3.22 | Controlling blood glucose | * Recall that blood glucose is monitored and controlled by the pancreas.
* Explain how insulin controls the blood glucose level.
* Understand how insulin works with another hormone – glucagon – to control blood sugar levels.
 | B3.3c; B3.3d; BM3.3i | Worksheets 3.22.1, 3.22.2 and 3.22.3 | Quick starter Homework worksheetHomework quizVideo |
| 7/8 | 3.23 | Diabetes | * Understand the causes of Type 1 and Type 2 diabetes.
* Compare Type 1 and Type 2 diabetes.
* Evaluate information on the relationship between obesity and diabetes, and make appropriate recommendations.
 | B3.3e; BM3.3i | Worksheets 3.23.1 and 3.23.2; PowerPoint presentation | Quick starter Homework worksheetHomework quizVideo |
| 7/8 | 3.24 | Diabetes recommendations | * Explain how Type 1 and Type 2 diabetes are treated.
* Evaluate information on the relationship between obesity and diabetes, and make appropriate recommendations.
 | B3.3e; BM3.3i | Worksheet 3.24 | Quick starter Homework worksheetHomework quizSlideshow |
| 9/10 | 3.25 | Water balance | * Recall the ways in which the body loses water.
* Explain why cells do not function efficiently if they lose or gain too much water.
* Explain how the body regulates water levels.
 | B3.3f; B3.3j | Worksheets 3.25.1, 3.25.2 and 3.25.3; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| Year 10 | Term 1 | 9/10 | 3.26 | The kidneys | * Recall that excess water, ions and urea are removed from the body by the kidneys in urine.
* Describe the structure of the kidney and kidney tubule.
* Explain how the hormone ADH regulates the amount of water in the urine, and therefore, in the body.
 | B3.3g–j | Worksheets 3.26.1 and 3.26.2; PowerPoint presentation | Quick starter Homework worksheetHomework quizVideo |
| 9/10 | 3.27 | Maths skills: The spread of scientific data | * Be able to use range bars on graphs.
* Understand how box and whisker plots can be used to show the spread of data.
* Understand how to use percentiles.
 | BM3.2i; BM3.2ii; BM6.1iii | Worksheets 3.27.1, 3.27.2 and 3.27.3 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| 11/12 | **Assessments** | End of chapter test Student BookEnd of chapter test Collins ConnectEnd of teaching block test (chapter 2.11-2.20 and chapter 3)Mid-course test (chapters 1 to 3) Collins Connect (end of year test) |
|  |  | **Chapter 4: Community level systems (10 lessons)** |  |
| Term 2 | 1/2 | 4.1 | Cycling materials | * Recall that many materials are recycled in nature.
* Explain the stages in the water and decay cycles.
* Explain the role of microorganisms in decomposition.
 | B1.4a; B4.1a–c | Worksheets 4.1.1 and 4.1.2; Practical sheet 4.1; Technician’s notes 4.1 | Quick starter Homework worksheetHomework quizVideo |
| 1/2 | 4.2 | Cycling carbon | * Recall that plants take in carbon as carbon dioxide.
* Explain how carbon is recycled.
* Interpret a diagram of the carbon cycle.
 | B4.1a; B4.1c | Worksheets 4.2.1 and 4.2.2; Practical sheet 4.2; Technician’s notes 4.2 | Quick starter Homework worksheetHomework quizVideo |
| Year 10 | Term 2 | 1/2 | 4.3 | Investigating decay | * Recall the factors needed for decay.
* Describe how different factors affect the rate of decay.
* Explain extracellular digestion.
 | B4.1d; BM4.1i | Worksheets 4.3.1, 4.3.2 and 4.3.3; Practical sheet 4.3; Technician’s notes 4.3 | Quick starter Homework worksheetHomework quiz |
| 3/4 | 4.4 | Key concept: Learning about ecosystems | * Describe what an ecosystem is.
* Explain the importance of high biodiversity.
* Explain what is meant by a self-supporting ecosystem.
 | B4.1e | Worksheets 4.4.1, 4.4.2 and 4.4.3 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| 3/4 | 4.5 | Changing abiotic factors | * Explain how abiotic and biotic factors can affect communities.
* Explain changes in the distribution of species in an ecosystem.
* Describe stable and unstable populations.
 | B4.1f | Worksheets 4.5.1, 4.5.2 and 4.5.3; Practical sheets 4.5.1 and 4.5.2; Technician’s notes 4.5 | Quick starter Homework worksheetHomework quizSlideshow |
| 3/4 | 4.6 | Investigating predator­–prey relationships | * Describe how changes in one population affect another.
* Explain interdependent relationships.
* Explain how predator–prey population cycles have cyclical changes.
 | B4.1g; BM4.1v | Worksheets 4.6.1 and 4.6.2; Practical sheet 4.6; Technician’s notes 4.6 | Quick starter Homework worksheetHomework quiz |
| 5/6 | 4.7 | Competing for resources | * Describe how competition impacts on populations.
* Explain why animals in the same habitat are in competition.
* Explain interspecific and intraspecific competition.
 | B4.1g | Worksheets 4.7.1, 4.7.2 and 4.7.3 | Quick starter Homework worksheetHomework quizSlideshow |
| 5/6 | 4.8 | Looking at trophic levels | * Explain trophic levels.
* Explain and construct pyramids of biomass.
* Explain the difficulties in constructing pyramids.
 | B4.1h | Worksheets 4.8.1, 4.8.2 and 4.8.3  | Quick starter Homework worksheetHomework quiz |
| 5/6 | 4.9 | Transferring biomass | * Identify how biomass is lost.
* Calculate the efficiency of biomass transfers between trophic levels.
* Explain the impact of biomass loss on the number of trophic levels in a food chain.
 | B4.1i; B4.1j; BM4.1iii | Worksheets 4.9.1, 4.9.2 and 4.9.3 | Quick starter Homework worksheetHomework quizVideo |
| Year 10 | Term 2 | 7/8 | 4.10 | Maths skills: Using graphs to show relationships | * To recognise direct proportionality in a graph.
* To calculate reaction rates in linear graphs.
* To use the gradient of a graph to calculate the rate.
 | BM1.2i; BM1.2ii; BM1.4i; BM4.1v | Worksheet 4.10 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| 7/8 | **Assessments** | End of chapter test Student BookEnd of chapter test Collins Connect |
|  |  | **Chapter 5: Genes, inheritance and selection (22 lessons)** |  |
| Term 2 | 9/10 | 5.1 | Genetics | * Understand and be able to use genetics terms, such as gamete, chromosome, gene, dominant, recessive, genotype, phenotype, homozygous and heterozygous.
* Know that some human conditions are caused by a recessive allele.
 | B5.1a | Worksheets 5.1.1, 5.1.2 and 5.1.3  | Quick starter Homework worksheetHomework quizVideo |
| 9/10 | 5.2 | DNA and genes | * Describe the genome as the entire genetic material of an organism.
* Describe a gene as a small section of DNA that codes for a protein.
 | B5.1b | Worksheet 5.2; Practical sheet 5.2; Technician’s notes 5.2 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| 11/12 | 5.3 | Asexual and sexual reproduction | * Understand that asexual reproduction involves just one parent and produces genetically identical offspring.
* Understand that sexual reproduction leads to variety in the offspring.
* Explain some advantages and disadvantages of asexual and sexual reproduction in a range of organisms.
 | B5.1f | Worksheets 5.3.1 and 5.3.2  | Quick starter Homework worksheetHomework quizSlideshow |
| Year 10 | Term 2 | 11/12 | 5.4 | Meiosis | * Explain how meiosis halves the number of chromosomes for gamete production.
* Explain how fertilisation restores the chromosome number.
* Understand that the four gametes produced by meiosis are genetically different.
* Describe sex determination in humans using a genetic cross.
 | B5.1g; B5.1h; B5.1k | Worksheets 5.4.1 and 5.4.2 | Quick starter Homework worksheetHomework quizVideo |
| Term 3 | 1/2 | 5.5 | Genetic crosses | * Use the terms dominant, recessive, genotype, phenotype, homozygous and heterozygous.
* Explain single gene inheritance, using examples of recessive and dominant conditions.
* Complete or construct a Punnett square to predict the outcome of a genetic cross.
 | B5.1i; B5.1j; BM5.1i; BM5.1ii | Worksheets 5.5.1, 5.5.2 and 5.5.3 | Quick starter Homework worksheetHomework quizVideo |
| 1/2 | 5.6 | Key concept: Genetics is simple – or is it? | * Explain how certain characteristics are controlled by a single gene.
* Understand that many characteristics are the result of multiple genes which interact.
* Describe the search for genes that are linked to disease.
 | B5.1i; B5.1l | Worksheet 5.6 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| 1/2 | 5.7 | Maths skills: Fractions, ratio, proportion and probability | * Understand and use fractions and percentages.
* Understand and use ratio and proportion.
* Understand and use probability when predicting the outcomes of genetic crosses.
 | BM5.1i; BM5.1ii; BM5.1iii | Practical sheet 5.7; Technician’s notes 5.7 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| Year 10 | Term 3 | 3/4 | 5.8 | Gregor Mendel | * Plan experiments to explore phenomena and test hypotheses.
* Describe how our understanding of genetics developed through the work of Gregor Mendel.
* Evaluate data in terms of reproducibility.
 | B5.1m | Worksheets 5.8.1, 5.8.2 and 5.8.3 | Homework worksheetHomework quizSlideshowVideo |
| 3/4 | 5.9 | Variation | * Recall that differences in the characteristics of individuals in a population is called variation.
* Describe examples of continuous and discontinuous variation.
* Understand the genetic and environmental differences leading to variation.
 | B5.1c; B5.2a | Worksheet 5.9; Practical sheet 5.9; Technician’s notes 5.9; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| 3/4 | 5.10 | The theory of evolution | * Recall that all species of living things have evolved from simple life forms.
* Explain how evolution occurs through natural selection,
 | B5.2c; B5.2d | Worksheets 5.10.1, 5.10.2 and 5.10.3; PowerPoint presentation | Quick starter Homework worksheetHomework quizSlideshow |
| 5/6 | 5.11 | The tree of life | * Describe how living things have been classified into groups using a system devised by Linnaeus.
* Describe how new models of classification have developed.
 | B5.2b | Worksheets 5.11.1, 5.11.2 and 5.11.3 | Quick starter Homework worksheetHomework quizVideo |
| 5/6 | 5.12 | Mutations (part is Higher tier only) | * Model changes to the base sequences of DNA to illustrate mutations.
* Describe the negative and, sometimes, positive effects of mutations.
* Describe how mutations can affect protein function.
 | B5.1e; B5.2c | Worksheet 5.12 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| Year 10 | Term 3 | 5/6 | 5.13 | The origin of species by natural selection | * Explain the evidence that led Darwin to propose the theory of evolution by natural selection.
* Describe the process of natural selection.
 | B5.2c; B5.2d | Worksheets 5.13.1 and 5.13.2; Practical sheet 5.13; Technician’s notes 5.13; PowerPoint presentation | Quick starter Homework worksheetHomework quizVideo |
| 7/8 | 5.14 | A new species | * Understand that when natural selection operates differently on populations, a new species is produced.
* Understand that during evolution, new species are formed when populations become so different that they can no longer interbreed.
 | B5.2d | Worksheets 5.14.1, 5.14.1 and 5.14.3; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| 7/8 | 5.15 | Evidence of natural selection and evolution? | * Understand how scientific theories develop over time.
* Plan experiments to test hypotheses
 | B5.2e | Worksheet 5.15; Practical sheets 5.15.1 and 5.15.2 | Quick starter Homework worksheetHomework quizSlideshow |
| 7/8 | 5.16 | Fossil evidence | * Understand how, and the situations in which, fossils are formed.
* Understand how fossils are used as evidence for evolution of species from simpler life forms.
 | B5.2e | Worksheets 5.16.1 and 5.16.2; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| 7/8 | 5.17 | How much have organisms changed? | * Understand why the fossil record is incomplete.
* Use the fossil record to understand how much, or how little, organisms have changed as life developed on Earth.
 | B5.2e | Worksheets 5.17.1, 5.17.2 and 5.17.3; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| Year 10 | Term 3 | 9/10 | 5.18 | Antimicrobial resistance | * Recall that bacteria develop that are resistant to antibiotics, which is evidence of evolution.
* Understand the mechanism by which antibiotic resistance develops.
* Understand the effects of the development of antibiotic resistance on the treatment of disease.
 | B5.2e | Worksheets 5.18.1, 5.18.2 and 5.18.3; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| 9/10 | 5.19 | Darwin and Wallace | * Recognise how Darwin and Wallace proposed, independently, the theory of evolution.
* Describe how Alfred Wallace gathered evidence for evolution, including warning coloration and mimicry.
 | B5.2e; B5.2f | Worksheets 5.19.1, 5.19.2 and 5.19.3; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| 9/10 | 5.20 | Evolution: fitting the pieces of the jigsaw | * Describe the work of Mendel, Darwin and Wallace.
* Explain how they contributed to the theory of evolution.
* Appreciate that many scientists have contributed to the gene theory.
 | B5.2c–f | Worksheets 5.20.1, 5.20.2 and 5.20.3  | Quick starter Homework worksheetHomework quiz |
| 11/12 | 5.21 | Extinction…or survival? | * List the causes of extinction.
* Explain how new predators, competitors and diseases can lead to extinctions.
 | B5.2f | Worksheets 5.21.1, 5.21.2 and 5.21.3; PowerPoint presentation | Quick starter Homework worksheetHomework quizSlideshowVideo |
| 11/12 | 5.22 | Maths skills: Using charts and graphs to display data | * Understand when and how to use bar charts.
* Understand how to show sub-groups on bar charts.
* Understand how to plot histograms.
 | BM6.1i | Worksheets 5.22.1 and 5.22.2 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| 11/12 | **Assessments** | End of chapter test Student BookEnd of chapter test Collins ConnectEnd of teaching block test (chapters 4 and 5) Collins Connect |
|  |  |  | **Chapter 6: Global challenges (42 lessons)** |  |
| Year 11 | Term 1 | 1/2 | 6.1 | Sampling techniques | * Describe how to use a number of sampling techniques to measure the abundance of organisms in a habitat.
* Interpret kite diagrams.
* Explain the capture–recapture technique.
 | B6.1a; BM6.1ii | Worksheets 6.1.1 and 6.1.2; Practical sheets 6.1.1 and 6.1.2; Technician’s notes 6.1 | Quick starter Homework worksheetHomework quiz |
| 1/2 | 6.2 | Practical: Measure the population size of a common species in a habitat | * Describe a suitable method to investigate a population.
* Estimate the size of a population.
* Explain the effect of sample size.
 | B6.1a | Worksheet 6.2; Practical sheet 6.2; Technician’s notes 6.2 | Quick starter Homework worksheetHomework quizSlideshow |
| 3/4 | 6.3 | Changing the environment | * Recall causes of environmental change.
* Describe the impact of environmental change.
* Evaluate the evidence for the impact of environmental changes.
 | B6.1b; B6.1d | Worksheet 6.3 | Quick starter Homework worksheetHomework quizVideos |
| 3/4 | 6.4 | Learning about land use | * Identify why land use has changed.
* Describe the effects of changing land use.
* Evaluate a change in land use.
 | B6.1b | Worksheets 6.4.1 and 6.4.2  | Quick starter Homework worksheetHomework quizVideo |
| 3/4 | 6.5 | Changing the landscape | * Identify the reasons for deforestation.
* Describe the impact of peat bog destruction and deforestation.
* Evaluate the destruction of peat bogs and forests.
 | B6.1b | Worksheets 6.5.1 and 6.5.2 | Quick starter Homework worksheetHomework quiz |
| 3/4 | 6.6 | Thinking about global warming | * Recall what global warming is.
* Describe the causes of global warming.
* Explain how global warming impacts on biodiversity.
 | B6.1b | Worksheet 6.6 | Quick starter Homework worksheetHomework quizSlideshowVideos |
| Year 11 | Term 1 | 3/4 | 6.7 | Looking at waste management | * Describe how waste production is linked to human population growth.
* Describe the impact of waste on ecosystems.
* Explain how waste impacts on biodiversity.
 | B6.1b | Worksheet 6.7 | Quick starter Homework worksheetHomework quizVideo |
| 3/4 | 6.8 | Investigating pollution | * Identify pollution levels using indicator species.
* Explain how indicator species measure pollution.
* Compare different methods of measuring pollution.
 | B6.1b | Worksheets 6.8.1 and 6.8.2; Practical sheet 6.8; Technician’s notes 6.8 | Quick starter Homework worksheetHomework quiz |
| 3/4 | 6.9 | Maintaining biodiversity | * Describe some conservation measures.
* Describe the impact of breeding programmes.
* Explain how habitats are regenerated.
 | B6.1c | Worksheets 6.9.1, 6.9.2 and 6.9.3 | Quick starter Homework worksheetHomework quizVideos |
| 5/6 | 6.10 | Learning about food security | * Identify factors affecting food security.
* Describe how different biological factors affect food security.
* Interpret data to evaluate food security.
 | B6.2a; BM6.2iv | Worksheets 6.10.1, 6.10.2 and 6.10.3  | Quick starter Homework worksheetHomework quiz |
| 5/6 | 6.11 | Maintaining food security | * Describe some intensive farming methods.
* Explain ethical issues related to intensive farming.
* Evaluate modern farming techniques.
* Describe methods to maintain sustainable fisheries.
 | B6.2b | Worksheet 6.11 | Quick starter Homework worksheetHomework quiz |
| Year 11 | Term 1 | 5/6 | 6.12 | Selective breeding | * Describe the process of selective breeding.
* Recall how selective breeding enables humans to choose desirable characteristics in animals.
* Explain how selective breeding can lead to inbreeding.
 | B6.2c | Worksheets 6.12.1 and 6.12.2; PowerPoint presentation | Quick starter Homework worksheetHomework quizSlideshow |
| 5/6 | 6.13 | Producing new plant varieties | * Describe the process of selective breeding.
* Recall how selective breeding enables humans to choose desirable characteristics in plants.
 | B6.2c | Worksheets 6.13.1 and 6.13.2; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| 7/8 | 6.14 | Genetic engineering (part is Higher tier only) | * Explain what is meant by the term genetic engineering.
* Give examples of how plant crops have been genetically engineered to improve products.
* Describe the main steps in the process of genetic engineering.
 | B6.2d; B6.2e | Worksheets 6.14.1 and 6.14.2; PowerPoint presentation | Quick starter Homework worksheetHomework quizVideo |
| 7/8 | 6.15 | Genetically modified crops: the science | * Explain the benefits of, and concerns about genetic modification.
* Explain the ethical concerns of genetic engineering.
 | B6.2f; B6.2g; BM6.2iv | Worksheet 6.15 | Quick starter Homework worksheetHomework quiz |
| 7/8 | 6.16 | Is genetic modification safe? | * Explain the concerns that people have about genetic modification.
* Explain the possible safety issues of genetic engineering in agriculture and medicine.
 | B6.2f; B6.2g | Worksheets 6.16.1 and 6.16.2; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| 7/8 | 6.17 | Ethically wrong, or essential? | * Explain the benefits of, and concerns about, genetic modification.
* Explain the ethical issues of genetic engineering in agriculture and medicine.
 | B6.2f; B6.2g | Worksheets 6.17.1, 6.17.2 and 6.17.3; PowerPoint presentation | Quick starter Homework worksheetHomework quizSlideshow |
| Year 11 | Term 1 | 9/10 | 6.18 | Learning about health | * Describe the relationship between health and disease.
* Describe communicable and non-communicable diseases.
* Describe the interactions between different types of disease.
 | B6.3a–c; BM6.3iv | Worksheets 6.18.1, 6.18.2 and 6.18.3; Practical sheet 6.18; Technician’s notes 6.18 | Quick starter Homework worksheetHomework quiz |
| 9/10 | 6.19 | Studying pathogens | * Explain how communicable diseases are spread.
* Explain how communicable diseases can be controlled.
* Distinguish between epidemics and pandemics.
 | B6.3d | Worksheets 6.19.1 and 6.19.2 | Quick starter Homework worksheetHomework quizVideos |
| 9/10 | 6.20 | Analysing and evaluating data | * Translate information between graphical and numerical forms.
* Use scatter diagrams to identify correlations.
* Evaluate the strength of evidence.
 | B6.3d; BM6.3i; BM6.3iii BM6.3iv | Worksheets 6.20.1, 6.20.2 and 6.20.3; Practical sheet 6.20; Technician’s notes 6.20 | Quick starter Homework worksheetHomework quiz |
| 11/12 | 6.21 | Learning about malaria | * Recall that malaria is a protist disease.
* Explain how malaria is spread.
* Evaluate control methods for the spread of malaria.
 | B6.3d–f | Worksheets 6.21.1 and 6.21.2 | Quick starter Homework worksheetHomework quiz |
| 11/12 | 6.22 | Learning about viral diseases | * Describe the symptoms of some viral diseases.
* Describe the transmission and control of some viral diseases, including HIV.
* Explain how some viral diseases are spread.
 | B6.3d–f | Worksheets 6.22.1, 6.22.2 and 6.22.3 | Quick starter Homework worksheetHomework quizSlideshow |
| 11/12 | 6.23 | Studying bacterial diseases | * Describe the symptoms of some bacterial diseases.
* Explain how some bacterial diseases are spread.
* Explain how some bacterial diseases can be controlled.
 | B6.3d–f | Worksheets 6.23.1, 6.23.2 and 6.23.3 | Quick starter Homework worksheetHomework quiz |
| Year 11 | Term 2 | 1/2 | 6.24 | Looking at fungal diseases | * Recall the name and symptoms of a fungal disease.
* Describe the transmission and treatment of rose black spot.
* Explain how rose black spot affects the growth of the plant.
 | B6.3d–f | Worksheet 6.24 | Quick starter Homework worksheetHomework quizSlideshow |
| 1/2 | 6.25 | Looking at plant diseases | * Recall the causes and symptoms of plant diseases.
* Describe how some plant diseases are spread and controlled.
* Describe how plant diseases can be detected and identified, both in the lab and in the field.
 | B6.3f; B6.3i | Worksheets 6.25.1, 6.25.2 and 6.25.3 | Quick starter Homework worksheetHomework quiz |
| 1/2 | 6.26 | Learning about plant defences | * Describe some physical plant defence responses.
* Describe some chemical plant defence responses.
* Explain how plant defence systems help them survive.
 | B6.3g; B6.3h | Worksheet 6.26 | Quick starter Homework worksheetHomework quiz |
| 3/4 | 6.27 | Protecting the body | * Describe how the body protects itself from pathogens.

Explain how the body protects itself from pathogens.* Explain how communicable diseases can be spread.
 | B6.3j; B6.3k | Worksheets 6.27.1, 6.27.2 and 6.27.3 | Quick starter Homework worksheetHomework quiz |
| 3/4 | 6.28 | Exploring white blood cells | * Describe phagocytosis.
* Explain how antibody production can lead to immunity.
* Explain how white blood cells and platelets are adapted to their functions.
 | B6.3j; B6.3l | Worksheets 6.28.1, 6.28.2 and 6.28.3 | Quick starter Homework worksheetHomework quiz |
| 3/4 | 6.29 | Investigating monoclonal antibodies (Higher tier only) | * Describe how monoclonal antibodies are produced.
* Describe some uses of monoclonal antibodies.
* Evaluate the use of monoclonal antibodies.
 | B6.3m; B6.3n | Worksheet 6.29 | Quick starter Homework worksheetHomework quiz |
| Year 11 | Term 2 | 5/6 | 6.30 | Building immunity | * Recall how vaccinations prevent infection.
* Explain how mass vaccination programmes reduce the spread of a disease.
* Evaluate the global use of vaccination.
 | B6.3o | Worksheets 6.30.1, 6.30.2 and 6.30.3 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| 5/6 | 6.31 | Using antibiotics and antivirals | * Describe the uses of antibiotics and antivirals.
* Explain how antibiotics and antivirals can be used to treat diseases.
* Explain the limitations of antibiotics.
 | B6.3o | Worksheet 6.31; Practical sheet 6.31; Technician’s notes 6.31 | Quick starter Homework worksheetHomework quiz |
| 5/6 | 6.32 | Growing microorganisms | * Describe the techniques used to produce uncontaminated cultures of microorganisms.
* Describe how bacteria reproduce by binary fission.
* Calculate the number of bacteria in a population.
 | B6.3p | Worksheet 6.32; Practical sheet 6.32; Technician’s notes 6.32; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| 7/8 | 6.33 | Practical: Investigating disinfectants | * Carry out experiments with due regard to health and safety.
* Present and process data, identifying anomalous results.
* Evaluate methods and suggest further investigations.
 | B6.3p; BM6.3v | Worksheet 6.33; Practical sheet 6.33; Technician’s notes 6.33 | Quick starter Homework worksheetHomework quizSlideshow |
| 7/8 | 6.34 | Making new drugs | * Recall some traditional drugs and their origins.
* Describe how new drugs are developed.
* Explain why ‘double-blind’ trials are conducted.
 | B6.3q | Worksheets 6.34.1 and 6.34.2; Practical sheet 6.34; Technician’s notes 6.34 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| Year 11 | Term 2 | 7/8 | 6.35 | Key concept: Looking at risk factors | * Recall the causes of some non-communicable diseases.
* Describe the impact of lifestyle on non-communicable diseases.
* Explain the impact of lifestyle on non-communicable diseases.
 | B6.3r; B6.3s; BM6.3i | Worksheets 6.35.1 and 6.35.2 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| 9/10 | 6.36 | Treating cardiovascular disease | * Describe the causes of symptoms of coronary heart disease.
* Describe medical and surgical treatments for cardiovascular disease.
* Evaluate different treatments for cardiovascular disease.
 | B6.3s | Worksheets 6.36.1 and 6.36.2 | Quick starter Homework worksheetHomework quiz |
| 9/10 | 6.37 | Cancer | * Describe cancer as a condition resulting from changes in cells that lead to their uncontrolled growth, division and spread.
* Explain the differences between the different types of tumour.
 | B6.3t; B6.3u | Worksheet 6.37.1; PowerPoint presentation | Quick starter Homework worksheetHomework quizSlideshowVideo |
| 9/10 | 6.38 | Cancer as a non-communicable disease | * Recall that non-communicable diseases are caused by the interaction of a number of different factors.
* Explain the impact of non-communicable diseases.
 | B6.3r; B6.3t; B6.3u; BM6.3iv | Worksheet 6.38; Practical sheet 6.38; Technician’s notes 6.38; PowerPoint presentation | Quick starter Homework worksheetHomework quiz |
| 11/12 | 6.39 | Stem cells in medicine | * Discuss potential benefits and risks associated with the use of stem cells in medicine.
 | B6.3v | Worksheet 6.39; PowerPoint presentation | Quick starter Homework worksheetHomework quizVideo |
| 11/12 | 6.40 | The human genome | * Describe the Human Genome Project.
* Explain the importance for medicine of our increasing understanding of the human genome.
* Understand that a large proportion of the human genome regulates gene expression.
 | B6.3x | Worksheet 6.40 | Quick starter Homework worksheetHomework quiz |
| Year 11 | Term 2 | 11/12 | 6.41 | Gene technology in medicine | * Describe the principles of gene technology.
* Explain some of the possible benefits of gene technology in medicine.
 | B6.3w | Worksheets 6.41.1 and 6.41.2 | Quick starter Homework worksheetHomework quiz |
| 11/12 | 6.42 | Maths skills: Sampling and scientific data | * Understand why sampling is used in science.
* Be able to explain different sampling techniques.
 | BM6.3iii | Worksheet 6.42; Practical sheet 6.42; Technician’s notes 6.42 | Quick starter Homework worksheetHomework quizSlideshowVideo |
| Term 3 | 1/2 | **Assessments** | End of chapter test Student BookEnd of chapter test Collins ConnectEnd of teaching block test (chapter 6) Collins ConnectEnd of course test Collins Connect |