| **This 2-Year Scheme of Work offers a flexible approach for KS4. The suggested timings are based on five science lessons per fortnight (assuming a two week timetable of three lessons 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 in the second term of Year 11 to allow time for revision and GCSE examinations in the summer term.**  **Please note that some of these lessons only require partial coverage or are shorter than others and therefore sometimes there are more than five 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.** | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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 10 | 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 worksheet  Homework quiz  Slideshow |
| 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 worksheet  Homework quiz  Slideshow |
| 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 worksheet  Homework quiz  Video |
| 1/2 | 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 worksheet  Homework quiz |
| 1/2 | 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 worksheet  Homework quiz |
| Year 10 | Term 1 | 1/2 | 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 worksheet  Homework quiz  Slideshow  Video |
| 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 worksheet  Homework quiz |
| 3/4 | 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 worksheet  Homework quiz  Slideshow  Video |
| 3/4 | 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 worksheet  Homework quiz  Slideshow |
| 3/4 | 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 worksheet  Homework quiz  Slideshow |
| Year 10 | Term 1 | 5/6 | 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 worksheet  Homework quiz |
| 5/6 | 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 worksheet  Homework quiz  Slideshow  Video |
| 5/6 | 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 worksheet  Homework quiz |
| 5/6 | 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 worksheet  Homework quiz |
| 5/6 | 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 worksheet  Homework quiz |
| 7/8 | 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 worksheet  Homework quiz  Slideshow |
| Year 10 | Term 1 | 7/8 | 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 worksheet  Homework quiz  Slideshow |
| 7/8 | 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 worksheet  Homework quiz |
| 7/8 | 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 worksheet  Homework quiz  Slideshow  Video |
| 7/8 | **Assessments** | | End of chapter test Student Book  End of chapter test Collins Connect | | | |
|  | **Chapter 2: Scaling up (20 lessons)** | | | | |  |
| 9/10 | 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 worksheet  Homework quiz  Slideshow  Video |
| Year 10 | Term 1 | 9/10 | 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 worksheet  Homework quiz  Slideshow |
| 9/10 | 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 worksheet  Homework quiz  Slideshow |
| 9/10 | 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 worksheet  Homework quiz |
| 9/10 | 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 worksheet  Homework quiz |
| 11/12 | 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 worksheet  Homework quiz |
| Year 10 | Term 1 | 11/2 | 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 worksheet  Homework quiz |
| 11/2 | 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 worksheet  Homework quiz  Slideshow  Video |
| 11/12 | 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 worksheet  Homework quiz  Slideshow  Video |
| 11/12 | 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 worksheet  Homework quiz  Slideshow  Video |
| 11/12 | 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 worksheet  Homework quiz |
| Year 10 | Term 1 | 11/12 | **Assessment** | | End of teaching block test (chapter 1 and chapter 2.1-2.10) Collins Connect | | | |
| Term 2 | 1/2 | 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 worksheet  Homework quiz |
| 1/2 | 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 worksheet  Homework quiz  Slideshow  Videos |
| 1/2 | 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 worksheet  Homework quiz  Video |
| 1/2 | 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 worksheet  Homework quiz  Slideshow |
| 1/2 | 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 worksheet  Homework quiz |
| Year 10 | Term 2 | 3/4 | 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 worksheet  Homework quiz  Video |
| 3/4 | 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 worksheet  Homework quiz  Video |
| 3/4 | 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 worksheet  Homework quiz |
| 3/4 | 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 worksheet  Homework quiz  Slideshow |
| 5/6 | **Assessments** | | End of chapter test Student Book  End of chapter test Collins Connect | | | |
|  |  |  | **Chapter 3: Organism level systems (27 lessons)** | | | | | |
| Year 10 | Term 2 | 5/6 | 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 worksheet  Homework quiz |
| 5/6 | 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 worksheet  Homework quiz  Slideshow |
| 5/6 | 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 worksheet  Homework quiz  Slideshow |
| 5/6 | 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 worksheet  Homework quiz |
| 7/8 | 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 worksheet  Homework quiz  Video |
| 7/8 | 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 worksheet  Homework quiz  Slideshow |
| 7/8 | 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 worksheet  Homework quiz  Video |
| Year 10 | Term 2 | 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 worksheet  Homework 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 worksheet  Homework quiz |
| 9/10 | 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 worksheet  Homework 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 worksheet  Homework 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 worksheet  Homework quiz |
| Year 10 | Term 2 | 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 worksheet  Homework quiz |
| 9/10 | 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 worksheet  Homework 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 worksheet  Homework quiz |
| 11/12 | 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 worksheet  Homework quiz |
| 11/12 | 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 worksheet  Homework quiz |
| 11/12 | 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 worksheet  Homework quiz  Slideshow |
| Year 10 | Term 2 | 11/12 | 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 worksheet  Homework quiz |
| Term 3 | 1/2 | 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 worksheet  Homework quiz |
| 1/2 | 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 worksheet  Homework quiz  Slideshow |
| 1/2 | 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 worksheet  Homework quiz  Video |
| 1/2 | 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 worksheet  Homework quiz  Video |
| Year 10 | Term 3 | 1/2 | 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 worksheet  Homework quiz  Slideshow |
| 3/4 | 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 worksheet  Homework quiz |
| 3/4 | 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 worksheet  Homework quiz  Video |
| 3/4 | 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 worksheet  Homework quiz  Slideshow  Video |
| 3/4 | **Assessments** | | End of chapter test Student Book  End of chapter test Collins Connect  End 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)** | | | | |  |
| Year 10 | Term 3 | 5/6 | 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 worksheet  Homework quiz  Video |
| 5/6 | 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 worksheet  Homework quiz  Video |
| 5/6 | 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 worksheet  Homework quiz |
| 5/6 | 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 worksheet  Homework quiz  Slideshow  Video |
| 7/8 | 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 worksheet  Homework quiz  Slideshow |
| 7/8 | 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 worksheet  Homework quiz |
| Year 10 | Term 3 | 7/8 | 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 worksheet  Homework quiz  Slideshow |
| 7/8 | 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 worksheet  Homework quiz |
| 7/8 | 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 worksheet  Homework quiz  Video |
| 9/10 | 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 worksheet  Homework quiz  Slideshow  Video |
| 9/10 | **Assessments** | | End of chapter test Student Book  End of chapter test Collins Connect | | | |
|  | **Chapter 5: Genes, inheritance and selection (22 lessons)** | | | | |  |
| 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 worksheet  Homework quiz  Video |
| Year 10 | Term 3 | 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 worksheet  Homework quiz  Slideshow  Video |
| 9/10 | 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 worksheet  Homework quiz  Slideshow |
| 9/10 | 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 worksheet  Homework quiz  Video |
| 11/12 | 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 worksheet  Homework quiz  Video |
| Year 10 | Term 3 | 11/12 | 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 worksheet  Homework quiz  Slideshow  Video |
| 11/12 | 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 worksheet  Homework quiz  Slideshow  Video |
| Year 11 | Term 1 | 1/2 | 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 worksheet  Homework quiz  Slideshow  Video |
| 1/2 | 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 worksheet  Homework quiz |
| Year 11 | Term 1 | 1/2 | 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 worksheet  Homework quiz  Slideshow |
| 1/2 | 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 worksheet  Homework quiz  Video |
| 3/4 | 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 worksheet  Homework quiz  Slideshow  Video |
| 3/4 | 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 worksheet  Homework quiz  Video |
| 3/4 | 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 worksheet  Homework quiz |
| 3/4 | 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 worksheet  Homework quiz  Slideshow |
| Year 11 | Term 1 | 3/4 | 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 worksheet  Homework quiz |
| 5/6 | 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 worksheet  Homework quiz |
| 5/6 | 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 worksheet  Homework quiz |
| 5/6 | 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 worksheet  Homework quiz |
| Year 11 | Term 1 | 5/6 | 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 worksheet  Homework quiz |
| 5/6 | 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 worksheet  Homework quiz  Slideshow  Video |
| 7/8 | 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 worksheet  Homework quiz  Slideshow  Video |
| 7/8 | **Assessments** | | End of chapter test Student Book  End of chapter test Collins Connect  End of teaching block test (chapters 4 and 5) Collins Connect | | | |
|  | **Chapter 6: Global challenges (42 lessons)** | | | | | |
| 7/8 | 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 worksheet  Homework quiz |
| Year 11 | Term 1 | 7/8 | 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 worksheet  Homework quiz  Slideshow |
| 7/8 | 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 worksheet  Homework quiz  Videos |
| 9/10 | 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 worksheet  Homework quiz  Video |
| 9/10 | 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 worksheet  Homework quiz |
| 9/10 | 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 worksheet  Homework quiz  Slideshow  Videos |
| 9/10 | 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 worksheet  Homework quiz  Video |
| 9/10 | 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 worksheet  Homework quiz |
| Year 11 | Term 1 | 11/12 | 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 worksheet  Homework quiz  Videos |
| 11/12 | 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 worksheet  Homework quiz |
| 11/12 | 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 worksheet  Homework quiz |
| 11/12 | 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 worksheet  Homework quiz  Slideshow |
| 11/12 | 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 worksheet  Homework quiz |
| Year 11 | Term 2 | 1/2 | 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 worksheet  Homework quiz  Video |
| 1/2 | 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 worksheet  Homework quiz |
| 1/2 | 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 worksheet  Homework quiz |
| 1/2 | 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 worksheet  Homework quiz  Slideshow |
| 1/2 | 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 worksheet  Homework quiz |
| Year 11 | Term 2 | 3/4 | 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 worksheet  Homework quiz  Videos |
| 3/4 | 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 worksheet  Homework quiz |
| 3/4 | 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 worksheet  Homework quiz |
| 3/4 | 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 worksheet  Homework quiz  Slideshow |
| 3/4 | 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 worksheet  Homework quiz |
| 5/6 | 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 worksheet  Homework quiz  Slideshow |
| Year 11 | Term 2 | 5/6 | 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 worksheet  Homework quiz |
| 5/6 | 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 worksheet  Homework quiz |
| 5/6 | 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 worksheet  Homework quiz |
| 5/6 | 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 worksheet  Homework quiz |
| 7/8 | 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 worksheet  Homework quiz |
| 7/8 | 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 worksheet  Homework quiz  Slideshow  Video |
| Year 11 | Term 2 | 7/8 | 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 worksheet  Homework quiz |
| 7/8 | 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 worksheet  Homework 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 worksheet  Homework quiz  Slideshow |
| 9/10 | 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 worksheet  Homework quiz  Slideshow  Video |
| Year 11 | Term 2 | 9/10 | 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 worksheet  Homework quiz  Slideshow  Video |
| 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 worksheet  Homework 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 worksheet  Homework quiz  Slideshow  Video |
| 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 worksheet  Homework 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 worksheet  Homework quiz  Video |
| 11/12 | 6.40 | The Human Genome Project | * 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 worksheet  Homework 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 worksheet  Homework 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 worksheet  Homework quiz  Slideshow  Video |
| 11/12 | **Assessments** | | End of chapter test Student Book  End of chapter test Collins Connect  End of teaching block test (chapter 6) Collins Connect  End of course test Collins Connect | | | |