Lesson	Specification learning outcomes	Edexcel 360 Science Specification match	Edexcel 360 Science GCSE Science Students' Book page reference	Additional information [new content]
Lesson B1.1 **Classification**	**1.1, 1.2, 1.3**	B1a 1.11	B1a.1.10 Variation	The new specification also requires - amplification on the classification of viruses
Lesson B1.2 **Vertebrates and invertebrates**	**1.4, 1.5**	B1a 1.11	B1a.1.10 Variation	
Lesson B1.3 **Species**	**1.6, 1.7, 1.8, 1.9, 1.19**	B1a 1.11	B1a.1.10 Variation	The new specification also requires - defining the term species, hybridisation and ring species - how classification is used to target conservation efforts
Lesson B1.4 **Variation**	**1.8, 1.9, 1.10**		B2.4.4 Competition [biodiversity and competition defined]	
Lesson B1.5 **Variation practical**	**1.13, 1.14**	B1a 2.6	B1a.2.3 Variation B1a.2.5 Nature or nurture?	The new specification also requires - the terms continuous variation and discontinuous variation
Lesson B1.6 **Reasons for variety**	**1.11, 1.15, 1.16**		B1a.2.3 Variation B1a.2.5 Nature or nurture? B2.4.1 Extreme environments	The new specification also requires - normal distribution curves
Lesson B1.7 **Evolution**	**1.12, 1.17, 1.18**	B1a 1.2 B1a 1.7 B1a 1.10 B2 4.6	B1a.1.1 Competition for resources B2.4.1 Extreme environments B2.4.2 Interdependence and adaptation B1a.1.8 Natural selection B1a.1.9 The evidence for evolution	

Lesson B1.8 **Genes**	**1.20 1.21**	B1a 2.1 B1a 2.2 B1a 2.8	B1a.2.2 Genes and DNA B1a.2.3 Variation B1a.2.4 Dominant and recessive alleles	
Lesson B1.9 **Explaining inheritance**	**1.22, 1.23, 1.24**	B1a 2.4 B1a 2.6 B1a 2.8	B1a.2.4 Dominant and recessive alleles	The new specification also requires - the terms homozygous, heterozygous, phenotype, and genotype
Lesson B1.10 **Genetic disorders**	**1.25. 1.26**	B1a 2.9	B1a.2.6 It's in the genes	
Lesson B1.11 **Homeostasis**	**2.1, 2.2, 2.3, 2.4**			The new specification also requires - the term homeostasis
Lesson B1.12 **Sensitivity**	**2.19, 2.20, 2.21**	B1b 3.1 B1b 3.2 B1b 3.3 B1b 3.5	B1b.3.2 The nervous system B1b.3.4 Sense organs	The new specification also requires - knowledge of the structure and function of the nervous system, e.g. dendrons, axons
Lesson B1.13 **Skin sensitivity practical**	**2.22**			
Lesson B1.14 **Responding to stimuli**	**2.23**	B1b 3.5 B1b 3.6	B1b.3.2 The nervous system B1b.3.6 Reflexes B1b.3.7 The reflex arc	
Lesson B1.15 **Hormones**	**2.5, 2.6, 2.7**	B1b 3.8 B1b 3.13 B1b 3.14	B1b.3.8 Hormones	

Lesson B1.16 **Diabetes**	**2.8, 2.9, 2,10, 2.11, 2.12, 2.13**		B1b.3.8 Hormones B3.1.4 Eating well [covers calculating BMI and obesity]	The new also specification requires - more detailed coverage of Type 1 and Type 2 diabetes including the correlation between obesity and Type 2 diabetes.
Lesson B1.17 **Tropic responses practical**	**2.16**			
Lesson B1.18 **Plant hormones**	**2.14, 2,15, 2.17**	B2 2.11 B2 2.12	B2.2.7 Plant growth and hormones	
Lesson B1.19 **Uses of plant hormones**	**2.17, 2.18**	B2 2.13	B2.2.7 Plant growth and hormones	The new specification also requires - selective weed killers
Lesson B1.20 **Effects of drugs**	**3.1, 3.2**	B1b 4.3 B1b 4.4 B1b 4.5 B1b 4.6 B1b 4.8	B1b.4.7 Types of drugs B1b.4.8 Pain-relief	The new specification also requires - hallucinogens
Lesson B1.21 **Reaction times and drugs practical**	**3.3**	B1b 4.1 B1b 4.2	B1b.3.1 Reaction times	
Lesson B1.22 **The damage caused by smoking**	**3.4, 3.5**	B1b 4.1	B1b.4.10 Tobacco	
Lesson B1.23 **The effects of alcohol**	**3.6**	B1b 4.1 B1b 4.2	B1b.4.9 Drug misuse and abuse	

Lesson B1.24 **Ethics and transplants**	**3.7**		B1b.4.9 Drug misuse and abuse [mentions liver transplants for alcoholics] B1a.2.9 Clones and transgenic organisms [brief section on transplants]	The new specification also requires greater coverage of the ethics of transplant surgery including: - liver transplants for alcoholics - heart transplants for the clinically obese - the supply of organs
Lesson B1.25 **Pathogens and infection**	**3.8, 3.9**	B1b 4.9	B1b.4.3 Microorganisms and disease	The new specification also requires - the spread of athlete's foot
Lesson B1.26 **Antiseptics and antibiotics**	**3.10, 3.11, 3.12, 3.13, 3.14**	B1b 4.10 B1b 4.14	B1b.4.4 The first line of defence B1b.4.2 Controlling tuberculosis	The new specification also requires - coverage of how antiseptics can be used to prevent the spread of infection - the use of antibiotics and resistance to antibiotics is mentioned - coverage of antifungal drugs and how resistant strains of bacteria, including MRSA, can arise from the misuse of antibiotics
Lesson B1.27 **Antiseptics practical**	**3.15**			
Lesson B1.28 **Interdependence and food webs**	**3.16, 3.17, 3.18**	B1a 1.1 B1a 1.2 B1a 1.3 B1a 1.4	B1a.1.1 Competition for resources. B1a.1.5 Wheat versus meat	The new specification also requires - use of the term trophic level

Lesson B1.29 **Parasites and mutualists**	**3.19**			The new specification also requires - explanation of how the survival of some organisms may depend on the presence of another species -parasitism and mutualism
Lesson B1.30 **Pollution**	**3.20, 3.21, 3.22**	B1a 1.5 B2 4.3	B1a.1.3 Our influence on the environment [provides data on population growth and carbon dioxide levels]	The new specification also requires - explanation of how the increase in human population contributes to an increase in the production of pollutants, including phosphates, nitrates and sulfur dioxide
Lesson B1.31 **Polutants and plant growth practical**	**3.23**			
Lesson B1.32 **Pollution indicators**	**3.24, 3.25**	B2 4.7 B2 4.8	B2.4.8 Environment — the human effect B2.4.7 Recycling	
Lesson B1.33 **The carbon cycle**	**3.26**	B2 3.7	B2.3.6 Natural recycling — carbon	The new specification also requires - the term decomposers
Lesson B1.34 **The nitrogen cycle**	**3.27**	B2 3.8	B2.3.7 Natural recycling — nitrogen	

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Lesson B2.1 Plant and animal cells	**1.2, 1.3, 1.4**	B2 3.1	B2.3.1 Cells	
Lesson B2.2 Inside bacteria	**1.1**, **1.5**			
Lesson B2.3 DNA	**1.6, 1.7**	B2 1.1 B2 1.2	B2.1.1 DNA	
Lesson B2.4 DNA practical	**1.8**			
Lesson B2.5 DNA discovery	**1.9, 1.10**	B1a 2.3	B1a.2.7 The Human Genome Project	The new specification also requires - an understanding of how the structure of DNA was discovered, including the roles of Watson, Crick, Franklin and Wilkins
Lesson B2.6 Genetic engineering	**1.11, 1.12**	B1b 3.14 B3 1.20	B1b.3.8 Hormones [part] B3.1.8 Genetically engineered insulin	The new specification also requires - the disadvantages of genetic engineering to produce GM organisms, including a beta carotene in golden rice to reduce vitamin A deficiency in humans
Lesson B2.7 Mitosis and meiosis	**1.13, 1.14, 1.15, 1.16**	B2 2.1 B2 2.2 B2 2.3	B2.2.1 Cell division	
Lesson B2.8 Clones	**1.17, 1.18, 1.19**	B2 2.17	B2.2.9 Cloning mammals	The new specification also requires - the terms: diploid, enucleated and surrogate

Lesson B2.9 **Stem cells**	**1.19, 1.20, 1.21**	B2 2.6 B2 2.8 B2 2.9 B2 2.18	B2.2.4 The potential of stem cells	
Lesson B2.10 **Protein manufacture**	**1.22, 1.23**	B2 1.8 B2 1.9	B2.1.4 Making proteins B2.1.5 Protein synthesis	
Lesson B2.11 **Mutations**	**1.24, 1.25**	B2 1.8 B2 1.9	B2.1.5 Protein synthesis P2.11.8 How did Marie Curie die? [part — defines mutations]	The new specification requires a new context.
Lesson B2.12 **Enzymes**	**1.26, 1.27**			The new specification also requires - detailed coverage of enzymes
Lesson B2.13 **Enzymes practical**	**1.32**			
Lesson B2.14 **Enzyme action**	**1.28, 1.29, 1.30, 1.31**	C2 8.8	C2.8.7 Enzymes — the biological catalysts [part]	The new specification also requires - that enzymes can be denatured due to changes in the shape of the active site
Lesson B2.15 **Aerobic respiration**	**2.1, 2.2, 2.3, 2.4**	B2 1.10 B2 1.11	B2.1.6 Aerobic respiration	
Lesson B2.16 **Aerobic respiration practical**	**2.5, 2.6**			

Lesson B2.17 **Anaerobic respiration**	**2.6, 2.7, 2.8, 2.9, 2.10, 2.11**	B2 1.12 B2 1.13 B2 1.16 B2 1.17	B1.1.7 Measuring the effects of exercise B2.1.9 Anaerobic respiration and exercise	The new specification also requires - use of cardiac output equation
Lesson B2.18 **Photosynthesis**	**2.13, 2.14**	B2 3.2	B2.3.3 How plants make food	The new specification also requires - how the structure of a leaf is adapted for photosynthesis, including: a large surface area b contains chlorophyll in chloroplasts to absorb light c stomata for gas exchange (carbon dioxide, oxygen and water vapour)
Lesson B2.19 **Photosynthesis practical**	**2.16**			
Lesson B2.20 **Limiting factors**	**2.15**	B2 3.4	B2.3.4 Factors limiting food production	
Lesson B2.21 **Water transport**	**2.17, 2.18, 2.19, 2.20**			
Lesson B2.22 **Osmosis practical**	**2.20, 2.21**			

Lesson B2.23 **Organisms and their environments**	**2.22, 2.23**	B1a 1.5	B1a.1.2 Sampling and estimating populations [part]	The new specification also requires -sampling techniques including - pooters - sweep nets/pond nets - pitfall traps - quadrats -measurement of environmental factors including: - temperature - light intensity - pH
Lesson B2.24 **Populations and distributions practical**	**2.22, 2.23**			
Lesson B2.25 **Fossils and evolution**	**3.1, 3.2, 3.3**	B1a 1.7 B1a 1.8 B1a 1.9 B1a 1.10	B1a.1.9 The evidence for evolution	The new specification also requires - an understanding of how the anatomy of the pentadactyl limb provides evidence for evolution
Lesson B2.26 **Growth**	**3.4, 3.5, 3.6, 3.7**	B2 2.4	B2.2.2 What is growth? B2.2.3 Measuring growth	
Lesson B2.27 **Blood**	**3.8**			
Lesson B2.28 **Heart**	**3.9, 3.10**			

Lesson B2.29 **Circulatory system**	**3.9, 3.11**			
Lesson B2.30 **The digestive system**	**3.12, 3.13**			
Lesson B2.31 **Breaking down food**	**3.14, 3.15**			
Lesson B2.32 **Villi**	**3.16**			
Lesson B2.33 **Digestive enzymes practical**	**3.17**			
Lesson B2.34 **Probiotics and prebiotics**	**3.18**	B3 1.1 B3 1.4	B3.1.1 Functional foods [prebiotics and plant stanol esters]	The new specification also requires - probiotics

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Lesson B3.1 **Rhythms**	**1.31, 1.32**			
Lesson B3.2 **Plant defences**	**1.29, 1.30**			
Lesson B3.3 **Bacterial growth practical**	**1.26, 1.27, 1.28**			
Lesson B3.4 **Vaccines**	**1.20, 1.21, 1.22**	B1b 4.11 B1b 4.12	B1b.4.5 The second line of defence [part] B1b.4.6 The third line of defence [part]	The new specification also requires - Edward Jenner's contribution to the development of vaccines - the term memory lymphocytes
Lesson B3.5 **Antibodies**	**1.23, 1.24, 1.25**	B1b 4.6	B1b.4.6 The third line of defence [part]	
Lesson B3.6 **The kidneys**	**1.1, 1.2, 1.3, 1.4**			
Lesson B3.7 **Inside the kidneys**	**1.5, 1.6, 1.7, 1.8**			

Lesson B3.8 **The menstrual cycle**	**1.9, 1.10, 1.11, 1.12, 1.13**	B1b 3.9 B1b 3.10 B1b 3.11	B1b.3.9 Hormones and contraception [part]	The new specification also requires - understanding of the functions of; oestrogen, progesterone, LH and FSH. - function of the corpus luteum - how the menstrual cycle is controlled by a negative feedback mechanism
Lesson B3.9 **Fertilisation**	**1.14, 1.5, 1.16**	B1b 3.12	B1b.3.10 Hormones and fertility [fertility treatments] B3.1.15 Girl or boy? [part]	The new specification also requires - much greater detail on fertilisation.
Lesson B3.10 **Sex determination**	**1.17, 1.18, 1.19**	B3 1.15	B3.1.15 Girl or boy? [part]	The new specification also requires - how the sex of offspring is determined at fertilisation, using a genetic diagram - use of probabilities, ratios and percentages to explain how sex-linked genetic disorders are inherited, including haemophilia and colour blindness
Lesson B3.11 **Courtship and parenting**	**2.1, 2.2, 2.3, 2.4, 2.5**	B3 2.23 B3 2.24 B3 2.25 B3 2.26	B3.2.5 Courting behaviour B3.2.6 Mating systems and parental care	
Lesson B3.12 **Innate behaviour and imprinting**	**2.6, 2.12**	B3 2.1 B3 2.2 B3 2.3 B3 2.4 B3 2.5 B3 2.27	B3.2.1 Instinctive behaviour B3.2.3 Imprinting and habituation B3.2.2 Learned behaviour: conditioning B3.2.14 Humans and other apes [Fossey and Goodall]	The new specification also requires - an understanding of the work of ethologists, including: - Tinbergen, innate behaviour in gulls - Lorenz, imprinting in geese
Lesson B3.13 **Behaviour practical**	**2.6, 2.8**			

Lesson B3.14 **Learned behaviour**	**2.6, 2.7**	B3 2.1 B3 2.2 B3 2.3 B3 2.4 B3 2.5	B3.2.2 Learned behaviour: conditioning	The new specification also requires - humans can make use of conditioning when training captive animals for specific purposes, including: - sniffer dogs - police horses - dolphins
Lesson B3.15 **Animal communication**	**2.9, 2.10, 2.12**	B3 2.6 B3 2.7 B3 2.8 B3 2.9	B3.2.4 How do animals communicate?	
Lesson B3.16 **Plant behaviour**	**2.11, 2.13**			
Lesson B3.17 **Evidence for human evolution**	**2.14, 2.15**			
Lesson B3.18 **Human migration**	**2.16, 2.17, 2.18**			
Lesson B3.19 **Biotechnology**	**3.1, 3.2, 3.3**	B2 1.4 B2 1.5	B3.1 Introduction [defines biotechnology] B2.1.2 Fermentation B2.1.3 Using microorganisms	
Lesson B3.20 **Yeast growth practical**	**3.4**			

Lesson B3.21 **Microorganisms for food**	**3.5**, **3.6**, **3.7**	B2 1.6		The new specification also requires - how mycoprotein is manufactured is a new example
Lesson B3.22 **Yoghurt practical**	**3.8**, **3.9**	B3 1.1	B3.1.2 Making yoghurt and soy sauce [part]	
Lesson B3.23 **Enzyme technology**	**3.10**, **3.13**	B3 1.6 B3 1.5 B3 1.20	B3.1.3 More on microorganisms and food [chymotrypsin and invertase] 2.8.7 Enzymes — the biological catalysts [part — washing powders] B3.1.8 Genetically engineered insulin	The new specification also requires - the term recombinant DNA technology
Lesson B3.24 **Lactase practical**	**3.11**			
Lesson B3.25 **Pectinase practical**	**3.12**			
Lesson B3.26 **Global food security**	**3.14**, **3.18, 3.19**	B3 1.10 B3 1.9 C1b 7.14	B3.1.5 Feeding the world B3.1.6 Genetically modified plants C1b.7.6 Is there an alternative to oil? [biofuels and land use]	
Lesson B3.27 **A GM future?**	**3.15**, **3.16**, **3.17, 3.18**	B3 1.10 B3 1.11 B3 1.12 B3 1.13	B3.1.6 Genetically modified plants B3.1.7 Should GM crops worry us?	The new specification also requires - an understanding of the costs and benefits of genetic modification of crop plants in the context of developed and developing countries, including the introduction of flavonoids in the purple tomato