

Specification checklist

How to use: tick one box for each of the 71 spec points as you revise. Go back to the “Not yet” rows first, and keep going until every row is “Confident”.

The numbers are AQA's own spec references for 8464, and each note title links to its note on clockitwithsci.com. **Higher tier** only on the Higher tier papers. Foundation students can skip it.

Biology Paper 1 1 hour 15 minutes • 70 marks

1 Cell biology

Cell structure **Spec 4.1.1**

Spec	What to know (the note)	Not yet	Nearly	Confident
4.1.1.1	Eukaryotes and prokaryotes	☐	☐	☐
4.1.1.2	Animal and plant cells; Required practical 1: using a light microscope	☐	☐	☐
4.1.1.3	Cell specialisation	☐	☐	☐
4.1.1.4	Cell differentiation	☐	☐	☐
4.1.1.5	Microscopy	☐	☐	☐

Cell division **Spec 4.1.2**

Spec	What to know (the note)	Not yet	Nearly	Confident
4.1.2.1	Chromosomes	☐	☐	☐
4.1.2.2	Mitosis and the cell cycle	☐	☐	☐
4.1.2.3	Stem cells	☐	☐	☐

Transport in cells **Spec 4.1.3**

Spec	What to know (the note)	Not yet	Nearly	Confident
4.1.3.1	Diffusion; Surface area to volume ratio; Exchange surfaces	☐	☐	☐
4.1.3.2	Osmosis	☐	☐	☐
4.1.3.3	Active transport	☐	☐	☐

2 Organisation

Principles of organisation **Spec 4.2.1**

Spec	What to know (the note)	Not yet	Nearly	Confident
4.2.1	Cells, tissues, organs and organ systems; Size and scale	☐	☐	☐

Animal tissues, organs and organ systems **Spec 4.2.2**

Spec	What to know (the note)	Not yet	Nearly	Confident
4.2.2.1	The digestive system; Enzymes; Amylase, proteases and lipases; Bile; Required practical: food tests; Required practical: the effect of pH on amylase	☐	☐	☐
4.2.2.2	The heart and the double circulatory system; Controlling the heart rate; The lungs and gas exchange; Blood vessels	☐	☐	☐
4.2.2.3	Blood	☐	☐	☐
4.2.2.4	Coronary heart disease; Treating cardiovascular disease	☐	☐	☐
4.2.2.5	Health and disease; Handling data about disease	☐	☐	☐

Spec	What to know (the note)	Not yet	Nearly	Confident
4.2.2.6	Risk factors and causes; The effect of lifestyle on disease; The cost of non-communicable diseases; Using data about risk factors	☐	☐	☐
4.2.2.7	Cancer	☐	☐	☐

Plant tissues, organs and systems Spec 4.2.3

Spec	What to know (the note)	Not yet	Nearly	Confident
4.2.3.1	Plant tissues; The leaf as an organ	☐	☐	☐
4.2.3.2	Roots, xylem and phloem; Transpiration and stomata; Factors affecting the rate of transpiration	☐	☐	☐

3 Infection and response

Communicable diseases Spec 4.3.1

Spec	What to know (the note)	Not yet	Nearly	Confident
4.3.1.1	Communicable (infectious) diseases	☐	☐	☐
4.3.1.2	Viral diseases	☐	☐	☐
4.3.1.3	Bacterial diseases	☐	☐	☐
4.3.1.4	Fungal diseases	☐	☐	☐
4.3.1.5	Protist diseases	☐	☐	☐
4.3.1.6	Human defence systems	☐	☐	☐
4.3.1.7	Vaccination	☐	☐	☐
4.3.1.8	Antibiotics and painkillers	☐	☐	☐
4.3.1.9	Discovery and development of drugs	☐	☐	☐

4 Bioenergetics

Photosynthesis Spec 4.4.1

Spec	What to know (the note)	Not yet	Nearly	Confident
4.4.1.1	The photosynthetic reaction	☐	☐	☐
4.4.1.2	Factors that affect the rate of photosynthesis; Interacting factors and the inverse square law; Required practical: light intensity and the rate of photosynthesis	☐	☐	☐
4.4.1.3	Uses of glucose from photosynthesis	☐	☐	☐

Respiration Spec 4.4.2

Spec	What to know (the note)	Not yet	Nearly	Confident
4.4.2.1	Aerobic and anaerobic respiration	☐	☐	☐
4.4.2.2	Response to exercise	☐	☐	☐
4.4.2.3	Metabolism	☐	☐	☐

Biology Paper 2 1 hour 15 minutes • 70 marks

5 Homeostasis and response

Homeostasis Spec 4.5.1

Spec	What to know (the note)	Not yet	Nearly	Confident
4.5.1	What homeostasis is; Parts of a control system	☐	☐	☐

The human nervous system Spec 4.5.2

Spec	What to know (the note)	Not yet	Nearly	Confident
4.5.2.1	Structure and function of the nervous system; Reflex actions and the reflex arc; Required practical: reaction time	☐	☐	☐

Hormonal coordination in humans Spec 4.5.3

Spec	What to know (the note)	Not yet	Nearly	Confident
4.5.3.1	The human endocrine system	☐	☐	☐
4.5.3.2	Control of blood glucose concentration; Type 1 and Type 2 diabetes	☐	☐	☐
4.5.3.4	Hormones in human reproduction	☐	☐	☐
4.5.3.5	Contraception	☐	☐	☐
4.5.3.6	The use of hormones to treat infertility Higher tier	☐	☐	☐
4.5.3.7	Adrenaline, thyroxine and negative feedback Higher tier	☐	☐	☐

6 Inheritance, variation and evolution

Reproduction Spec 4.6.1

Spec	What to know (the note)	Not yet	Nearly	Confident
4.6.1.1	Sexual and asexual reproduction	☐	☐	☐
4.6.1.2	Meiosis	☐	☐	☐
4.6.1.4	DNA and the genome	☐	☐	☐
4.6.1.6	Genetic inheritance	☐	☐	☐
4.6.1.7	Inherited disorders	☐	☐	☐
4.6.1.8	Sex determination	☐	☐	☐

Variation and evolution Spec 4.6.2

Spec	What to know (the note)	Not yet	Nearly	Confident
4.6.2.1	Variation	☐	☐	☐
4.6.2.2	Evolution	☐	☐	☐
4.6.2.3	Selective breeding	☐	☐	☐
4.6.2.4	Genetic engineering	☐	☐	☐

The development of understanding of genetics and evolution Spec 4.6.3

Spec	What to know (the note)	Not yet	Nearly	Confident
4.6.3.4	Evidence for evolution	☐	☐	☐
4.6.3.5	Fossils	☐	☐	☐
4.6.3.6	Extinction	☐	☐	☐
4.6.3.7	Resistant bacteria	☐	☐	☐

Classification of living organisms Spec 4.6.4

Spec	What to know (the note)	Not yet	Nearly	Confident
4.6.4	The Linnaean system and binomial names; Developments in classification	☐	☐	☐

7 Ecology

Adaptations, interdependence and competition Spec 4.7.1

Spec	What to know (the note)	Not yet	Nearly	Confident
4.7.1.1	Communities	☐	☐	☐
4.7.1.2	Abiotic factors	☐	☐	☐
4.7.1.3	Biotic factors	☐	☐	☐
4.7.1.4	Adaptations	☐	☐	☐

Organisation of an ecosystem Spec 4.7.2

Spec	What to know (the note)	Not yet	Nearly	Confident
4.7.2.1	Producers, consumers and food chains; Sampling: distribution and abundance; Predator-prey cycles	☐	☐	☐
4.7.2.2	How materials are cycled	☐	☐	☐

Biodiversity and the effect of human interaction on ecosystems Spec 4.7.3

Spec	What to know (the note)	Not yet	Nearly	Confident
4.7.3.1	Biodiversity	☐	☐	☐
4.7.3.2	Waste management	☐	☐	☐
4.7.3.3	Land use	☐	☐	☐
4.7.3.4	Deforestation	☐	☐	☐
4.7.3.5	Global warming	☐	☐	☐
4.7.3.6	Maintaining biodiversity	☐	☐	☐