

Specification checklist

How to use: tick one box for each of the 396 spec points as you revise. Go back to the “Not yet” rows first, and keep going until every row is “Confident”.

The numbers are Cambridge's own spec references for 0610, and each note title links to its note on clockitwithsci.com.

Supplement only for the Extended papers (2 and 4). Core students can skip it.

1 Characteristics and classification of living organisms

Characteristics and classification Spec 1.1, 1.2

Spec	What to know (the note)	Not yet	Nearly	Confident
1.1.1	The seven characteristics of living organisms	☐	☐	☐
1.2.1	Classification, species and binomial names	☐	☐	☐
1.2.2	Classification, species and binomial names	☐	☐	☐
1.2.3	Classification, species and binomial names	☐	☐	☐
1.2.4	Constructing and using dichotomous keys	☐	☐	☐
1.2.5	Classification, evolution and DNA Supplement	☐	☐	☐
1.2.6	Classification, evolution and DNA Supplement	☐	☐	☐
1.2.7	Classification, evolution and DNA Supplement	☐	☐	☐

Features of organisms Spec 1.3

Spec	What to know (the note)	Not yet	Nearly	Confident
1.3.1	Features of the animal and plant kingdoms	☐	☐	☐
1.3.2	Vertebrate and arthropod groups	☐	☐	☐
1.3.3	Vertebrate and arthropod groups	☐	☐	☐
1.3.4	The five kingdoms Supplement	☐	☐	☐
1.3.5	Ferns, monocots and dicots Supplement	☐	☐	☐
1.3.6	The five kingdoms Supplement	☐	☐	☐
1.3.7	Viruses Supplement	☐	☐	☐

2 Organisation of the organism

Cell structure Spec 2.1

Spec	What to know (the note)	Not yet	Nearly	Confident
2.1.1	Plant and animal cells	☐	☐	☐
2.1.2	Bacterial cells	☐	☐	☐
2.1.3	Plant and animal cells; Bacterial cells	☐	☐	☐
2.1.4	Plant and animal cells; Bacterial cells	☐	☐	☐
2.1.5	Specialised cells	☐	☐	☐
2.1.6	Specialised cells	☐	☐	☐
2.1.7	Cells, tissues, organs and organ systems	☐	☐	☐

Size of specimens Spec 2.2

Spec	What to know (the note)	Not yet	Nearly	Confident
2.2.1	Magnification and actual size	☐	☐	☐
2.2.2	Magnification and actual size	☐	☐	☐
2.2.3	Magnification and actual size	☐	☐	☐

3 Movement into and out of cells

Diffusion Spec 3.1

Spec	What to know (the note)	Not yet	Nearly	Confident
3.1.1	Diffusion	☐	☐	☐
3.1.2	Diffusion	☐	☐	☐
3.1.3	Diffusion	☐	☐	☐
3.1.4	Diffusion	☐	☐	☐
3.1.5	Investigating the factors that affect diffusion	☐	☐	☐

Osmosis Spec 3.2

Spec	What to know (the note)	Not yet	Nearly	Confident
3.2.1	Water and osmosis	☐	☐	☐
3.2.2	Water and osmosis	☐	☐	☐
3.2.3	Water and osmosis	☐	☐	☐
3.2.4	Investigating osmosis	☐	☐	☐
3.2.5	Investigating osmosis	☐	☐	☐
3.2.6	Water and osmosis	☐	☐	☐
3.2.7	Water potential Supplement	☐	☐	☐
3.2.8	Turgor, flaccid cells and plasmolysis Supplement	☐	☐	☐
3.2.9	Water potential Supplement	☐	☐	☐

Active transport Spec 3.3

Spec	What to know (the note)	Not yet	Nearly	Confident
3.3.1	Active transport	☐	☐	☐
3.3.2	Active transport	☐	☐	☐
3.3.3	Active transport	☐	☐	☐

4 Biological molecules

Biological molecules Spec 4.1

Spec	What to know (the note)	Not yet	Nearly	Confident
4.1.1	Carbohydrates, fats and proteins	☐	☐	☐
4.1.2	Carbohydrates, fats and proteins	☐	☐	☐
4.1.3	Food tests	☐	☐	☐
4.1.4	The structure of DNA Supplement	☐	☐	☐

5 Enzymes

Enzymes Spec 5.1

Spec	What to know (the note)	Not yet	Nearly	Confident
5.1.1	Enzymes as biological catalysts	☐	☐	☐
5.1.2	Enzymes as biological catalysts	☐	☐	☐
5.1.3	Enzymes as biological catalysts	☐	☐	☐

Spec	What to know (the note)	Not yet	Nearly	Confident
5.1.4	How enzymes work	☐	☐	☐
5.1.5	Investigating temperature and pH	☐	☐	☐
5.1.6	How enzymes work	☐	☐	☐
5.1.7	How enzymes work	☐	☐	☐
5.1.8	Temperature, pH and enzyme activity Supplement	☐	☐	☐
5.1.9	Temperature, pH and enzyme activity Supplement	☐	☐	☐

6 Plant nutrition

Photosynthesis **Spec 6.1**

Spec	What to know (the note)	Not yet	Nearly	Confident
6.1.1	Photosynthesis and chlorophyll	☐	☐	☐
6.1.2	Photosynthesis and chlorophyll	☐	☐	☐
6.1.3	Photosynthesis and chlorophyll	☐	☐	☐
6.1.4	Photosynthesis and chlorophyll	☐	☐	☐
6.1.5	Uses of the carbohydrates made	☐	☐	☐
6.1.6	Nitrate and magnesium ions	☐	☐	☐
6.1.7	Investigating the need for chlorophyll, light and carbon dioxide	☐	☐	☐
6.1.8	Investigating light, carbon dioxide and temperature	☐	☐	☐
6.1.9	Gas exchange in light and dark: hydrogencarbonate indicator	☐	☐	☐
6.1.10	Photosynthesis and chlorophyll	☐	☐	☐
6.1.11	Rate of photosynthesis and limiting factors Supplement	☐	☐	☐

Leaf structure **Spec 6.2**

Spec	What to know (the note)	Not yet	Nearly	Confident
6.2.1	Leaf structure and adaptations	☐	☐	☐
6.2.2	Leaf structure and adaptations	☐	☐	☐
6.2.3	Leaf structure and adaptations	☐	☐	☐

7 Human nutrition

Diet **Spec 7.1**

Spec	What to know (the note)	Not yet	Nearly	Confident
7.1.1	A balanced diet and the main nutrients	☐	☐	☐
7.1.2	A balanced diet and the main nutrients	☐	☐	☐
7.1.3	Vitamins, minerals, scurvy and rickets	☐	☐	☐

The digestive system **Spec 7.2, 7.3**

Spec	What to know (the note)	Not yet	Nearly	Confident
7.2.1	Organs of the digestive system	☐	☐	☐
7.2.2	Organs of the digestive system	☐	☐	☐
7.3.1	Physical digestion and teeth	☐	☐	☐
7.3.2	Physical digestion and teeth	☐	☐	☐
7.3.3	Physical digestion and teeth	☐	☐	☐
7.3.4	Physical digestion and teeth	☐	☐	☐
7.3.5	Physical digestion and teeth	☐	☐	☐
7.3.6	The stomach, acid and bile	☐	☐	☐

Spec	What to know (the note)	Not yet	Nearly	Confident
7.3.7	The stomach, acid and bile	☐	☐	☐
7.4.5	The stomach, acid and bile	☐	☐	☐
7.4.8	The stomach, acid and bile	☐	☐	☐

Chemical digestion Spec 7.4

Spec	What to know (the note)	Not yet	Nearly	Confident
7.4.1	Chemical digestion and digestive enzymes	☐	☐	☐
7.4.2	Chemical digestion and digestive enzymes	☐	☐	☐
7.4.3	Chemical digestion and digestive enzymes	☐	☐	☐
7.4.4	Chemical digestion and digestive enzymes	☐	☐	☐
7.4.6	Digesting starch and protein in detail Supplement	☐	☐	☐
7.4.7	Digesting starch and protein in detail Supplement	☐	☐	☐

Absorption Spec 7.5

Spec	What to know (the note)	Not yet	Nearly	Confident
7.5.1	Absorption in the small intestine and colon	☐	☐	☐
7.5.2	Absorption in the small intestine and colon	☐	☐	☐
7.5.3	Villi and microvilli Supplement	☐	☐	☐
7.5.4	Villi and microvilli Supplement	☐	☐	☐
7.5.5	Villi and microvilli Supplement	☐	☐	☐

8 Transport in plants

Xylem and phloem Spec 8.1

Spec	What to know (the note)	Not yet	Nearly	Confident
8.1.1	Xylem and phloem	☐	☐	☐
8.1.2	Xylem and phloem in roots, stems and leaves	☐	☐	☐
8.1.3	Xylem and phloem	☐	☐	☐

Water uptake Spec 8.2

Spec	What to know (the note)	Not yet	Nearly	Confident
8.2.1	Root hair cells and the pathway of water	☐	☐	☐
8.2.2	Root hair cells and the pathway of water	☐	☐	☐
8.2.3	Root hair cells and the pathway of water	☐	☐	☐
8.2.4	Investigating the pathway of water with a stain	☐	☐	☐

Transpiration Spec 8.3

Spec	What to know (the note)	Not yet	Nearly	Confident
8.3.1	Transpiration	☐	☐	☐
8.3.2	Transpiration	☐	☐	☐
8.3.3	Factors affecting the rate of transpiration	☐	☐	☐
8.3.4	Transpiration	☐	☐	☐
8.3.5	Transpiration pull and wilting Supplement	☐	☐	☐
8.3.6	Factors affecting the rate of transpiration	☐	☐	☐
8.3.7	Transpiration pull and wilting Supplement	☐	☐	☐

Translocation Spec 8.4

Spec	What to know (the note)	Not yet	Nearly	Confident
8.4.1	Translocation, sources and sinks Supplement	☐	☐	☐
8.4.2	Translocation, sources and sinks Supplement	☐	☐	☐
8.4.3	Translocation, sources and sinks Supplement	☐	☐	☐

9 Transport in animals**Circulatory systems** Spec 9.1

Spec	What to know (the note)	Not yet	Nearly	Confident
9.1.1	Single and double circulation	☐	☐	☐
9.1.2	Single and double circulation	☐	☐	☐
9.1.3	Single and double circulation	☐	☐	☐
9.1.4	Single and double circulation	☐	☐	☐

The heart Spec 9.2

Spec	What to know (the note)	Not yet	Nearly	Confident
9.2.1	Structure of the heart	☐	☐	☐
9.2.2	Structure of the heart	☐	☐	☐
9.2.3	Monitoring the heart and the effect of exercise	☐	☐	☐
9.2.4	Monitoring the heart and the effect of exercise	☐	☐	☐
9.2.5	Coronary heart disease	☐	☐	☐
9.2.6	Coronary heart disease	☐	☐	☐
9.2.7	Structure of the heart	☐	☐	☐
9.2.8	How the heart pumps blood Supplement	☐	☐	☐
9.2.9	Structure of the heart	☐	☐	☐
9.2.10	How the heart pumps blood Supplement	☐	☐	☐
9.2.11	Monitoring the heart and the effect of exercise	☐	☐	☐

Blood vessels Spec 9.3

Spec	What to know (the note)	Not yet	Nearly	Confident
9.3.1	Arteries, veins and capillaries	☐	☐	☐
9.3.2	Arteries, veins and capillaries	☐	☐	☐
9.3.3	The main blood vessels	☐	☐	☐
9.3.4	Arteries, veins and capillaries	☐	☐	☐
9.3.5	Arteries, veins and capillaries	☐	☐	☐
9.3.6	The main blood vessels	☐	☐	☐

Blood Spec 9.4

Spec	What to know (the note)	Not yet	Nearly	Confident
9.4.1	Components of blood	☐	☐	☐
9.4.2	Components of blood	☐	☐	☐
9.4.3	Components of blood	☐	☐	☐
9.4.4	White blood cells and blood clotting	☐	☐	☐
9.4.5	White blood cells and blood clotting	☐	☐	☐
9.4.6	White blood cells and blood clotting	☐	☐	☐
9.4.7	White blood cells and blood clotting	☐	☐	☐

10 Diseases and immunity

Pathogens and transmission Spec 10.1.1–10.1.5, 10.1.16–10.1.17

Spec	What to know (the note)	Not yet	Nearly	Confident
10.1.1	Pathogens and how they are transmitted	☐	☐	☐
10.1.2	Pathogens and how they are transmitted	☐	☐	☐
10.1.3	Pathogens and how they are transmitted	☐	☐	☐
10.1.4	Body defences	☐	☐	☐
10.1.5	Controlling the spread of disease	☐	☐	☐
10.1.16	Cholera Supplement	☐	☐	☐
10.1.17	Cholera Supplement	☐	☐	☐

Immunity Spec 10.1.6–10.1.15

Spec	What to know (the note)	Not yet	Nearly	Confident
10.1.6	Antigens, antibodies and active immunity Supplement	☐	☐	☐
10.1.7	Antigens, antibodies and active immunity Supplement	☐	☐	☐
10.1.8	Antigens, antibodies and active immunity Supplement	☐	☐	☐
10.1.9	Antigens, antibodies and active immunity Supplement	☐	☐	☐
10.1.10	Antigens, antibodies and active immunity Supplement	☐	☐	☐
10.1.11	Vaccination Supplement	☐	☐	☐
10.1.12	Vaccination Supplement	☐	☐	☐
10.1.13	Passive immunity Supplement	☐	☐	☐
10.1.14	Passive immunity Supplement	☐	☐	☐
10.1.15	Passive immunity Supplement	☐	☐	☐

11 Gas exchange in humans

Gas exchange in humans Spec 11.1

Spec	What to know (the note)	Not yet	Nearly	Confident
11.1.1	Features of gas exchange surfaces	☐	☐	☐
11.1.2	The breathing system	☐	☐	☐
11.1.3	Inspired and expired air	☐	☐	☐
11.1.4	Inspired and expired air	☐	☐	☐
11.1.5	Physical activity and breathing	☐	☐	☐
11.1.6	The breathing system	☐	☐	☐
11.1.7	The breathing system	☐	☐	☐
11.1.8	Breathing in and out (ventilation) Supplement	☐	☐	☐
11.1.9	Inspired and expired air	☐	☐	☐
11.1.10	Physical activity and breathing	☐	☐	☐
11.1.11	Protecting the breathing system Supplement	☐	☐	☐

12 Respiration

Respiration Spec 12.1, 12.2, 12.3

Spec	What to know (the note)	Not yet	Nearly	Confident
12.1.1	Respiration and the uses of energy	☐	☐	☐
12.1.2	Respiration and the uses of energy	☐	☐	☐
12.2.1	Aerobic respiration	☐	☐	☐

Spec	What to know (the note)	Not yet	Nearly	Confident
12.2.2	Aerobic respiration	☐	☐	☐
12.2.3	Aerobic respiration	☐	☐	☐
12.3.1	Anaerobic respiration	☐	☐	☐
12.3.2	Anaerobic respiration	☐	☐	☐
12.3.3	Anaerobic respiration	☐	☐	☐
12.3.4	Anaerobic respiration	☐	☐	☐
12.3.5	Anaerobic respiration	☐	☐	☐
12.3.6	Lactic acid and oxygen debt Supplement	☐	☐	☐
12.3.7	Lactic acid and oxygen debt Supplement	☐	☐	☐

13 Excretion in humans

Excretion in humans **Spec 13.1**

Spec	What to know (the note)	Not yet	Nearly	Confident
13.1.1	Excretion, the lungs and the urinary system	☐	☐	☐
13.1.2	Excretion, the lungs and the urinary system	☐	☐	☐
13.1.3	Excretion, the lungs and the urinary system	☐	☐	☐
13.1.4	Excretion, the lungs and the urinary system	☐	☐	☐
13.1.5	The kidney and the nephron Supplement	☐	☐	☐
13.1.6	The liver, deamination and urea Supplement	☐	☐	☐
13.1.7	The liver, deamination and urea Supplement	☐	☐	☐
13.1.8	The liver, deamination and urea Supplement	☐	☐	☐
13.1.9	The liver, deamination and urea Supplement	☐	☐	☐

14 Coordination and response

Nervous control **Spec 14.1**

Spec	What to know (the note)	Not yet	Nearly	Confident
14.1.1	The nervous system and neurones	☐	☐	☐
14.1.2	The nervous system and neurones	☐	☐	☐
14.1.3	The nervous system and neurones	☐	☐	☐
14.1.4	The nervous system and neurones	☐	☐	☐
14.1.5	Reflex actions and reflex arcs	☐	☐	☐
14.1.6	Reflex actions and reflex arcs	☐	☐	☐
14.1.7	Synapses	☐	☐	☐
14.1.8	Synapses	☐	☐	☐
14.1.9	Synapses	☐	☐	☐
14.1.10	Synapses	☐	☐	☐

Sense organs **Spec 14.2**

Spec	What to know (the note)	Not yet	Nearly	Confident
14.2.1	Sense organs and the eye	☐	☐	☐
14.2.2	Sense organs and the eye	☐	☐	☐
14.2.3	Sense organs and the eye	☐	☐	☐
14.2.4	The pupil reflex	☐	☐	☐
14.2.5	The pupil reflex	☐	☐	☐

Spec	What to know (the note)	Not yet	Nearly	Confident
14.2.6	Accommodation Supplement	☐	☐	☐
14.2.7	Rods, cones and the fovea Supplement	☐	☐	☐
14.2.8	Rods, cones and the fovea Supplement	☐	☐	☐
14.2.9	Rods, cones and the fovea Supplement	☐	☐	☐

Hormones **Spec 14.3**

Spec	What to know (the note)	Not yet	Nearly	Confident
14.3.1	Hormones and endocrine glands	☐	☐	☐
14.3.2	Hormones and endocrine glands	☐	☐	☐
14.3.3	Adrenaline	☐	☐	☐
14.3.4	Hormones and endocrine glands	☐	☐	☐
14.3.6	Adrenaline	☐	☐	☐

Homeostasis **Spec 14.4**

Spec	What to know (the note)	Not yet	Nearly	Confident
14.3.5	Controlling blood glucose	☐	☐	☐
14.4.1	Homeostasis and negative feedback	☐	☐	☐
14.4.2	Controlling blood glucose	☐	☐	☐
14.4.3	Homeostasis and negative feedback	☐	☐	☐
14.4.4	Controlling blood glucose	☐	☐	☐
14.4.5	Type 1 diabetes Supplement	☐	☐	☐
14.4.6	The skin and temperature control Supplement	☐	☐	☐
14.4.7	The skin and temperature control Supplement	☐	☐	☐
14.4.8	The skin and temperature control Supplement	☐	☐	☐

Tropic responses **Spec 14.5**

Spec	What to know (the note)	Not yet	Nearly	Confident
14.5.1	Phototropism, gravitropism and auxin	☐	☐	☐
14.5.2	Phototropism, gravitropism and auxin	☐	☐	☐
14.5.3	Investigating tropisms	☐	☐	☐
14.5.4	Phototropism, gravitropism and auxin	☐	☐	☐
14.5.5	Phototropism, gravitropism and auxin	☐	☐	☐

15 Drugs

Drugs **Spec 15.1**

Spec	What to know (the note)	Not yet	Nearly	Confident
15.1.1	Drugs and antibiotics	☐	☐	☐
15.1.2	Drugs and antibiotics	☐	☐	☐
15.1.3	Drugs and antibiotics	☐	☐	☐
15.1.4	Drugs and antibiotics	☐	☐	☐
15.1.5	Limiting antibiotic resistance Supplement	☐	☐	☐

16 Reproduction

Asexual and sexual reproduction **Spec 16.1, 16.2**

Spec	What to know (the note)	Not yet	Nearly	Confident
16.1.1	Asexual reproduction	☐	☐	☐

Spec	What to know (the note)	Not yet	Nearly	Confident
16.1.2	Asexual reproduction	☐	☐	☐
16.1.3	Asexual reproduction	☐	☐	☐
16.2.1	Sexual reproduction	☐	☐	☐
16.2.2	Sexual reproduction	☐	☐	☐
16.2.3	Sexual reproduction	☐	☐	☐
16.2.4	Sexual reproduction	☐	☐	☐

Sexual reproduction in plants **Spec 16.3**

Spec	What to know (the note)	Not yet	Nearly	Confident
16.3.1	Structure of an insect-pollinated flower	☐	☐	☐
16.3.2	Structure of an insect-pollinated flower	☐	☐	☐
16.3.3	Insect- and wind-pollinated flowers	☐	☐	☐
16.3.4	Insect- and wind-pollinated flowers	☐	☐	☐
16.3.5	Pollination and fertilisation	☐	☐	☐
16.3.6	Pollination and fertilisation	☐	☐	☐
16.3.7	Insect- and wind-pollinated flowers	☐	☐	☐
16.3.8	Germination	☐	☐	☐
16.3.9	Self-pollination and cross-pollination Supplement	☐	☐	☐
16.3.10	Self-pollination and cross-pollination Supplement	☐	☐	☐
16.3.11	Self-pollination and cross-pollination Supplement	☐	☐	☐
16.3.12	Pollination and fertilisation	☐	☐	☐

Sexual reproduction in humans **Spec 16.4**

Spec	What to know (the note)	Not yet	Nearly	Confident
16.4.1	The male and female reproductive systems	☐	☐	☐
16.4.2	The male and female reproductive systems	☐	☐	☐
16.4.3	Gametes and fertilisation	☐	☐	☐
16.4.4	Gametes and fertilisation	☐	☐	☐
16.4.5	Gametes and fertilisation	☐	☐	☐
16.4.6	Gametes and fertilisation	☐	☐	☐
16.4.7	Implantation, the fetus and the placenta	☐	☐	☐
16.4.8	Implantation, the fetus and the placenta	☐	☐	☐
16.4.9	Implantation, the fetus and the placenta	☐	☐	☐
16.4.10	Implantation, the fetus and the placenta	☐	☐	☐

Sex hormones in humans **Spec 16.5**

Spec	What to know (the note)	Not yet	Nearly	Confident
16.5.1	Testosterone, oestrogen and puberty	☐	☐	☐
16.5.2	The menstrual cycle and pregnancy hormones	☐	☐	☐
16.5.3	The menstrual cycle and pregnancy hormones	☐	☐	☐
16.5.4	The menstrual cycle and pregnancy hormones	☐	☐	☐

Sexually transmitted infections Spec 16.6

Spec	What to know (the note)	Not yet	Nearly	Confident
16.6.1	STIs and HIV	☐	☐	☐
16.6.2	STIs and HIV	☐	☐	☐
16.6.3	STIs and HIV	☐	☐	☐
16.6.4	STIs and HIV	☐	☐	☐
16.6.5	STIs and HIV	☐	☐	☐

17 Inheritance

Chromosomes, genes and proteins Spec 17.1

Spec	What to know (the note)	Not yet	Nearly	Confident
17.1.1	Chromosomes, genes and alleles	☐	☐	☐
17.1.2	Chromosomes, genes and alleles	☐	☐	☐
17.1.3	Chromosomes, genes and alleles	☐	☐	☐
17.1.4	Inheritance of sex	☐	☐	☐
17.1.5	How genes control proteins Supplement	☐	☐	☐
17.1.6	How genes control proteins Supplement	☐	☐	☐
17.1.7	How genes control proteins Supplement	☐	☐	☐
17.1.8	How genes control proteins Supplement	☐	☐	☐
17.1.9	Gene expression, haploid and diploid Supplement	☐	☐	☐
17.1.10	Gene expression, haploid and diploid Supplement	☐	☐	☐
17.1.11	Gene expression, haploid and diploid Supplement	☐	☐	☐
17.1.12	Gene expression, haploid and diploid Supplement	☐	☐	☐

Mitosis and meiosis Spec 17.2, 17.3

Spec	What to know (the note)	Not yet	Nearly	Confident
17.2.1	Mitosis Supplement	☐	☐	☐
17.2.2	Mitosis Supplement	☐	☐	☐
17.2.3	Mitosis Supplement	☐	☐	☐
17.2.4	Mitosis Supplement	☐	☐	☐
17.2.5	Stem cells Supplement	☐	☐	☐
17.3.1	Meiosis Supplement	☐	☐	☐
17.3.2	Meiosis Supplement	☐	☐	☐

Monohybrid inheritance Spec 17.4

Spec	What to know (the note)	Not yet	Nearly	Confident
17.4.1	Key genetic terms	☐	☐	☐
17.4.2	Key genetic terms	☐	☐	☐
17.4.3	Key genetic terms	☐	☐	☐
17.4.4	Key genetic terms	☐	☐	☐
17.4.5	Key genetic terms	☐	☐	☐
17.4.6	Key genetic terms	☐	☐	☐
17.4.7	Key genetic terms	☐	☐	☐
17.4.8	Key genetic terms	☐	☐	☐
17.4.9	Key genetic terms	☐	☐	☐

Spec	What to know (the note)	Not yet	Nearly	Confident
17.4.10	Genetic diagrams, Punnett squares and pedigrees	☐	☐	☐
17.4.11	Genetic diagrams, Punnett squares and pedigrees	☐	☐	☐
17.4.12	Genetic diagrams, Punnett squares and pedigrees	☐	☐	☐
17.4.13	The test cross Supplement	☐	☐	☐
17.4.14	Codominance and ABO blood groups Supplement	☐	☐	☐
17.4.15	Codominance and ABO blood groups Supplement	☐	☐	☐
17.4.16	Sex linkage and colour blindness Supplement	☐	☐	☐
17.4.17	Sex linkage and colour blindness Supplement	☐	☐	☐
17.4.18	Sex linkage and colour blindness Supplement	☐	☐	☐

18 Variation and selection

Variation **Spec 18.1.1-18.1.10**

Spec	What to know (the note)	Not yet	Nearly	Confident
18.1.1	Continuous and discontinuous variation	☐	☐	☐
18.1.2	Continuous and discontinuous variation	☐	☐	☐
18.1.3	Continuous and discontinuous variation	☐	☐	☐
18.1.4	Continuous and discontinuous variation	☐	☐	☐
18.1.5	Continuous and discontinuous variation	☐	☐	☐
18.1.6	Mutation and sources of genetic variation	☐	☐	☐
18.1.7	Mutation and sources of genetic variation	☐	☐	☐
18.1.8	Mutation and sources of genetic variation	☐	☐	☐
18.1.9	Mutation and sources of genetic variation	☐	☐	☐
18.1.10	Mutation and sources of genetic variation	☐	☐	☐

Adaptive features **Spec 18.2.1-18.2.3**

Spec	What to know (the note)	Not yet	Nearly	Confident
18.2.1	Adaptive features	☐	☐	☐
18.2.2	Adaptive features	☐	☐	☐
18.2.3	Hydrophytes and xerophytes Supplement	☐	☐	☐

Selection **Spec 18.3.1-18.3.6**

Spec	What to know (the note)	Not yet	Nearly	Confident
18.3.1	Natural selection and adaptation	☐	☐	☐
18.3.2	Selective breeding and artificial selection	☐	☐	☐
18.3.3	Selective breeding and artificial selection	☐	☐	☐
18.3.4	Natural selection and adaptation	☐	☐	☐
18.3.5	Antibiotic-resistant bacteria Supplement	☐	☐	☐
18.3.6	Selective breeding and artificial selection	☐	☐	☐

19 Organisms and their environment

Energy flow, food chains and food webs **Spec 19.1, 19.2.1-19.2.10**

Spec	What to know (the note)	Not yet	Nearly	Confident
19.1.1	Energy flow	☐	☐	☐
19.1.2	Energy flow	☐	☐	☐
19.2.1	Food chains and food webs	☐	☐	☐

Spec	What to know (the note)	Not yet	Nearly	Confident
19.2.2	Food chains and food webs	☐	☐	☐
19.2.3	Food chains and food webs	☐	☐	☐
19.2.4	Producers, consumers and decomposers	☐	☐	☐
19.2.5	Producers, consumers and decomposers	☐	☐	☐
19.2.6	Producers, consumers and decomposers	☐	☐	☐
19.2.7	Producers, consumers and decomposers	☐	☐	☐
19.2.8	Producers, consumers and decomposers	☐	☐	☐
19.2.9	Producers, consumers and decomposers	☐	☐	☐
19.2.10	Food chains and food webs	☐	☐	☐

Trophic levels and ecological pyramids Spec 19.2.11-19.2.19

Spec	What to know (the note)	Not yet	Nearly	Confident
19.2.11	Pyramids of numbers and biomass	☐	☐	☐
19.2.12	Pyramids of numbers and biomass	☐	☐	☐
19.2.13	Trophic levels	☐	☐	☐
19.2.14	Trophic levels	☐	☐	☐
19.2.15	Pyramids of energy Supplement	☐	☐	☐
19.2.16	Pyramids of energy Supplement	☐	☐	☐
19.2.17	Why energy transfer is inefficient Supplement	☐	☐	☐
19.2.18	Why energy transfer is inefficient Supplement	☐	☐	☐
19.2.19	Why energy transfer is inefficient Supplement	☐	☐	☐

Nutrient cycles Spec 19.3

Spec	What to know (the note)	Not yet	Nearly	Confident
19.3.1	The carbon cycle	☐	☐	☐
19.3.2	The nitrogen cycle Supplement	☐	☐	☐
19.3.3	The nitrogen cycle Supplement	☐	☐	☐

Populations Spec 19.4

Spec	What to know (the note)	Not yet	Nearly	Confident
19.4.1	Populations, communities and ecosystems	☐	☐	☐
19.4.2	Populations, communities and ecosystems	☐	☐	☐
19.4.3	Populations, communities and ecosystems	☐	☐	☐
19.4.4	Populations, communities and ecosystems	☐	☐	☐
19.4.5	The sigmoid population growth curve	☐	☐	☐
19.4.6	The sigmoid population growth curve	☐	☐	☐
19.4.7	The sigmoid population growth curve	☐	☐	☐

20 Human influences on ecosystems

Food supply Spec 20.1

Spec	What to know (the note)	Not yet	Nearly	Confident
20.1.1	How humans have increased food production	☐	☐	☐
20.1.2	Monocultures and intensive livestock production	☐	☐	☐
20.1.3	Monocultures and intensive livestock production	☐	☐	☐

Habitat destruction Spec 20.2

Spec	What to know (the note)	Not yet	Nearly	Confident
20.2.1	Biodiversity and habitat destruction	☐	☐	☐
20.2.2	Biodiversity and habitat destruction	☐	☐	☐
20.2.3	Biodiversity and habitat destruction	☐	☐	☐
20.2.4	Deforestation	☐	☐	☐

Pollution Spec 20.3

Spec	What to know (the note)	Not yet	Nearly	Confident
20.3.1	Sewage, fertiliser and eutrophication	☐	☐	☐
20.3.2	Non-biodegradable plastics	☐	☐	☐
20.3.3	Methane, carbon dioxide and climate change	☐	☐	☐
20.3.4	Sewage, fertiliser and eutrophication	☐	☐	☐

Conservation Spec 20.4

Spec	What to know (the note)	Not yet	Nearly	Confident
20.4.1	Sustainable resources: forests and fish stocks	☐	☐	☐
20.4.2	Sustainable resources: forests and fish stocks	☐	☐	☐
20.4.3	Endangered species and how to conserve them	☐	☐	☐
20.4.4	Endangered species and how to conserve them	☐	☐	☐
20.4.5	Sustainable resources: forests and fish stocks	☐	☐	☐
20.4.6	Sustainable resources: forests and fish stocks	☐	☐	☐
20.4.7	Reasons for conservation programmes Supplement	☐	☐	☐
20.4.8	Endangered species and how to conserve them	☐	☐	☐
20.4.9	Reasons for conservation programmes Supplement	☐	☐	☐

21 Biotechnology and genetic modification**Biotechnology** Spec 21.1, 21.2

Spec	What to know (the note)	Not yet	Nearly	Confident
21.1.1	Why bacteria are useful	☐	☐	☐
21.1.2	Why bacteria are useful	☐	☐	☐
21.2.1	Yeast: biofuels and bread	☐	☐	☐
21.2.2	Yeast: biofuels and bread	☐	☐	☐
21.2.3	Pectinase, biological washing powders and lactase	☐	☐	☐
21.2.4	Pectinase, biological washing powders and lactase	☐	☐	☐
21.2.5	Pectinase, biological washing powders and lactase	☐	☐	☐
21.2.6	Fermenters Supplement	☐	☐	☐
21.2.7	Fermenters Supplement	☐	☐	☐

Genetic modification Spec 21.3

Spec	What to know (the note)	Not yet	Nearly	Confident
21.3.1	What genetic modification is	☐	☐	☐
21.3.2	What genetic modification is	☐	☐	☐
21.3.3	How bacteria are modified to make a human protein Supplement	☐	☐	☐
21.3.4	GM crops: advantages and disadvantages Supplement	☐	☐	☐

22 Experimental skills

Practical skills Spec S1-S7

Spec	What to know (the note)	Not yet	Nearly	Confident
S1	Planning an investigation: variables, controls, range and repeats	☐	☐	☐
S2	Recording results: tables, units and the solidus	☐	☐	☐
S3	Drawing graphs and charts the Cambridge way	☐	☐	☐
S4	Biological drawings and measuring specimens	☐	☐	☐
S5	Evaluating experiments: errors, anomalies and improvements	☐	☐	☐
S6	Indicators and tests: limewater, hydrogencarbonate, universal indicator and litmus	☐	☐	☐
S7	Sampling: random sampling, sample size and avoiding bias	☐	☐	☐