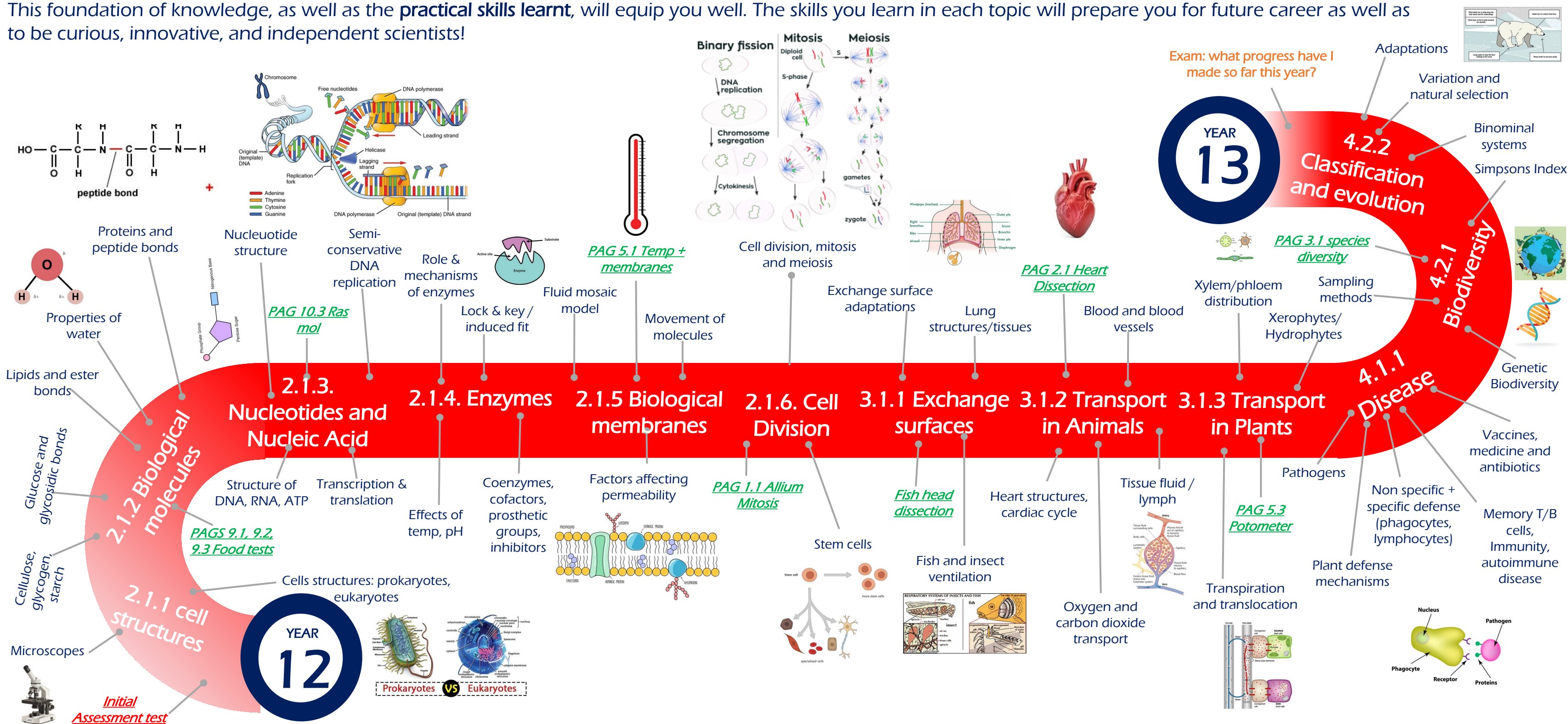


# What will you be learning in Year 12 Biology?

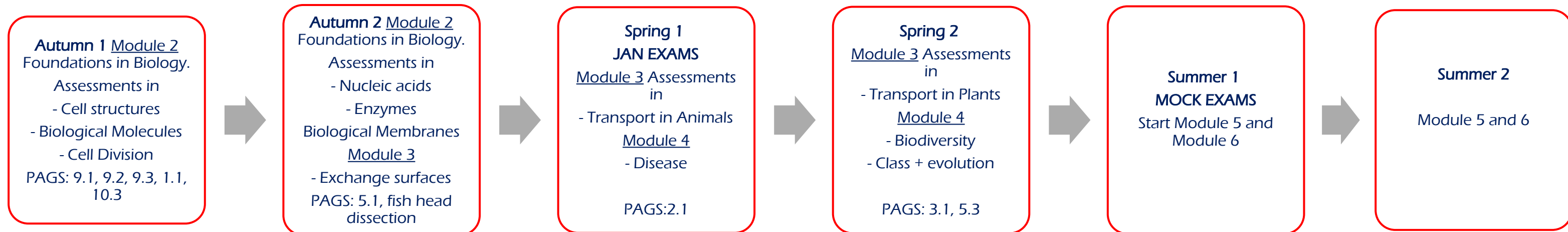


The topics you will study in Year 12 build on your **knowledge** and **understanding** of the **GCSE** content to provide the foundations and principles for further study in science.

This foundation of knowledge, as well as the **practical skills learnt**, will equip you well. The skills you learn in each topic will prepare you for future career as well as to be curious, innovative, and independent scientists!



**Keeping a track of your progress:** Your teacher will be assessing your progress informally every lesson. Your folder should be brought to every lesson, and this will be checked every half term for evidence of work and consolidation. You will have home-works on mathematical skills, projects and will be expected to consolidate every lesson. Record of assessments:

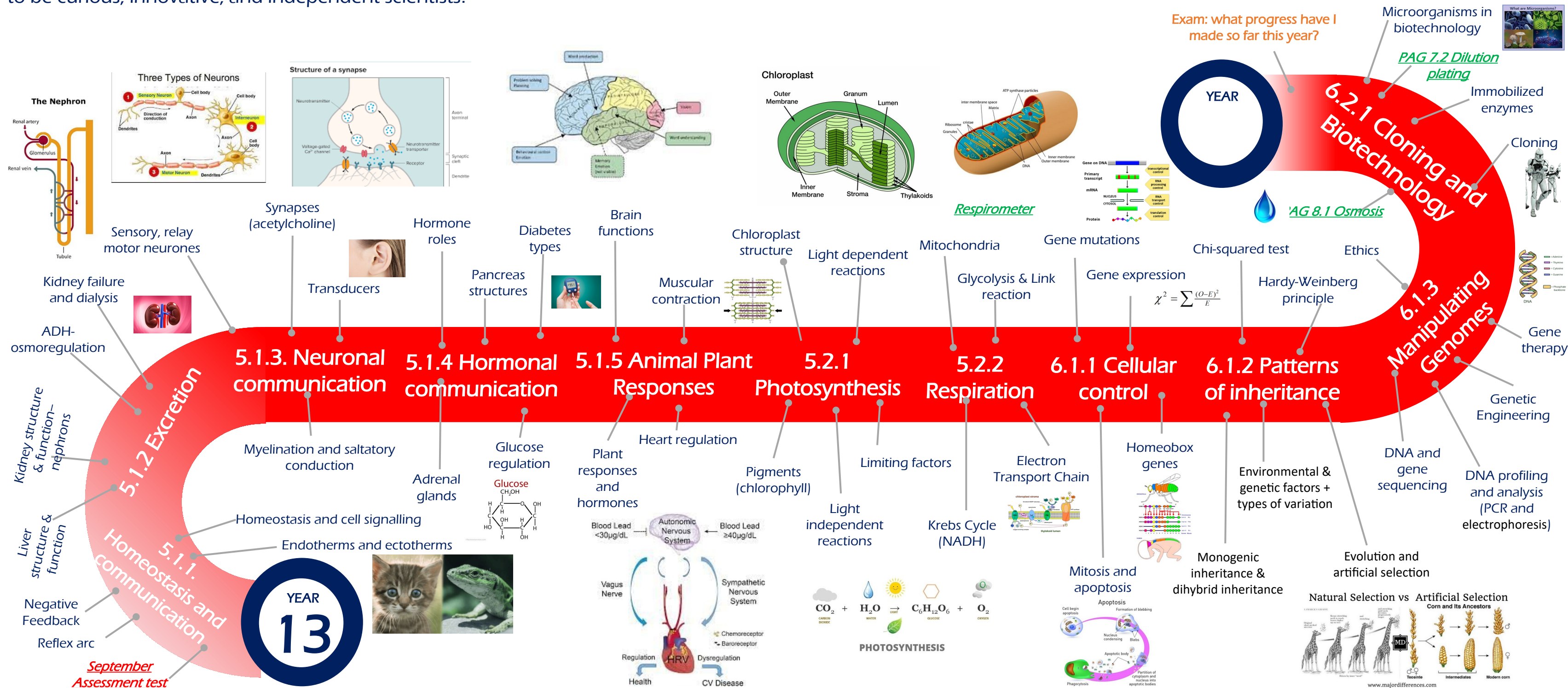


# What will you be learning in Year 13 Biology?

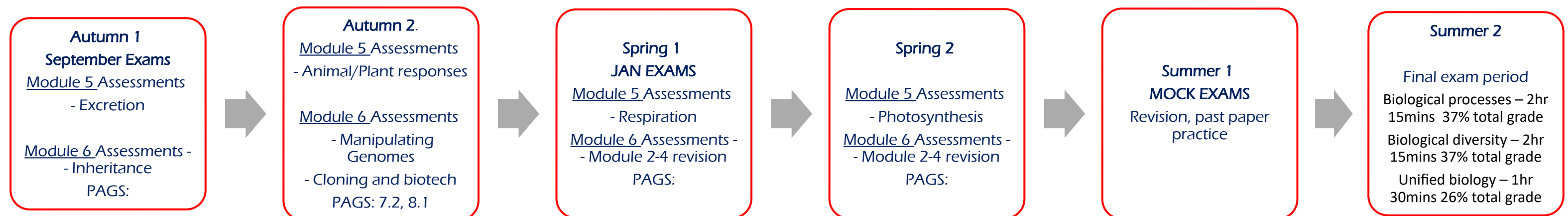


The topics you will study in Year 13 build on your **knowledge** and **understanding** of the GCSE content and Year 12 work to provide the foundations and principles for further study in science.

This foundation of knowledge, as well as the **practical skills learnt**, will equip you well. The skills you learn in each topic will prepare you for future career as well as to be curious, innovative, and independent scientists!



**Keeping a track of your progress:** Your teacher will be assessing your progress informally every lesson. Your folder should be brought to every lesson, and this will be checked every half term for evidence of work and consolidation. You will have home-works on mathematical skills, projects and will be expected to consolidate every lesson. Record of assessments:



## Scheme of Learning Year Overview

**The Big Picture—Intent:** The first year of A level study provides students with a broad and balanced overview of the fundamental ideas and concepts in Biology. The course aims to develop a love of learning by discussing the detailed explanations of how biological organisms function. Deep dives into specific concepts are covered throughout the course.

## Year 12 Biology

| Content / Units                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Skills                                                                                                                                                                                                                                                                                                                                                                                      | Knowledge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Prior—KS4                                                                                                                                                                         | Next—Year 13                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OCR A Biology<br>H020<br>Development of practical skills<br>Foundations in biology<br>Exchange and transport<br>Biodiversity, evolution and disease                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | AO1: develop knowledge and understanding of practical skills, cellular components, biological molecules, exchange surfaces and transport in plants and animals. Communicable diseases, biodiversity and evolution. Maths skills including statistical tests.<br>A02 : Application of knowledge and understanding<br>A03: evaluation of data, practical methods, conclusions, graphical data | Develop knowledge and understanding of: Practical skills (planning, implementing, analysis and evaluation), Foundations of biology, which includes: cell structure, biological molecules, nucleotides and nucleic acids, enzymes, biological membranes, cell division, cellular diversity and cellular organisation. Exchange and transport, which includes: exchange surfaces, transport in animals and transport in plants. Biodiversity, evolution and disease, which includes: communicable diseases, biodiversity, classification and evolution.                                                                                                                                                                                    | Students have studied:<br>Cells biology<br>Organisation<br>Infection and response<br>Bioenergetics<br>Homeostasis and response<br>Inheritance, variation and evolution<br>Ecology | Topics coming up:<br>Communication and homeostasis, excretion, neuronal communication, hormonal communication, plant and animal responses, photosynthesis, respiration, cellular control, patterns of inheritance, manipulating genomes, cloning and biotechnology, ecosystems, populations and sustainability.        |
| Implementation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                             | Marches Futures Links                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                   | Summative Assessment                                                                                                                                                                                                                                                                                                   |
| Five 55 minute lessons per week, split between two teaching staff – one three times, the other, twice.<br>Most tasks are completed independently, but there are opportunities for class discussions, paired discussions and small group practical work. Lessons and homework tasks also build initiative, research skills, retrieval practice, organisation, mathematical and literacy skills.<br>Practical sessions are completed to help consolidate understanding, and to develop new skills and techniques. Many of these are PAG tasks and so count towards the practical endorsement at the end of the full A level course.<br>Past paper questions are used throughout the topics to assess understanding. Mark schemes are also used to help stress the need to use A level specific terminology.<br>A01 and A02 are embedded within the lessons with A03 tasks and discussions are covered as appropriate. |                                                                                                                                                                                                                                                                                                                                                                                             | Links to careers and further studies are signposted throughout the course.<br>These include university degrees in medical, health, veterinary, ecology subjects, also nursing and midwifery.<br>Apprenticeship opportunities in health and social care, dental nursing, veterinary nursing, ecology.<br>Practical work and PAGs give students opportunities to work collaboratively and develop their LORIC skills.<br>There are explicit links throughout the course for students to evaluate how the subject matter relates to society and enables them to understand contemporary issues as responsible citizens.<br>Independent study enables students to develop research skills and become responsible for closing knowledge gaps. |                                                                                                                                                                                   | Each topic has an end of unit test which contains a mixture of multiple choice, short and long answer questions. The tests are made using past paper questions and contain a range of AO1, AO2 and AO3 questions.<br>Students can sit the AS papers: Breadth in biology and depth in biology, each paper is 1.5 hours. |
| <b>Impact:</b><br>By the end of the Year students will be confident with the fundamental and more complex principles, knowledge and application of this knowledge .<br>They will be able to understand what they need to do in response to all exam style questions and LOR questions; they will be able to revise effectively as they head towards studying Science degrees. Thinking will have developed from GCSE level and links between any prior knowledge made with have been developed upon.                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                        |

| The Big Picture—Intent: The second 60% of the Biology course builds on the foundations of the first year. It provides students with detailed knowledge and understanding of some more challenging concepts and through these explanations students develop a love of Biological concepts and refine their questioning skills taking a deep dive into communication, homeostasis, energy, genetics and ecosystems.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                 | Year 13<br>Biology                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Content / Units                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Skills                                                                                                                                                                                                                                       | Knowledge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Prior— Year 12                                                                                                                                                                                                                  | Next                                                                                                                                                                                                                                                                                                                                            |
| OCR A Biology<br>H420<br>Communication, homeostasis and energy.<br>Genetics and ecosystems.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | AO1: develop knowledge and understanding of practical skills;..<br>Maths skills including statistical tests.<br>A02 : Application of knowledge and understanding<br>A03: evaluation of data, practical methods, conclusions, graphical data. | Develop knowledge and understanding of: Practical skills (planning, implementing, analysis and evaluation),<br>Communication, homeostasis and energy which includes: excretion, neuronal and hormonal communication, plant and animal responses, photosynthesis and respiration.<br>Genetics and ecosystems which includes:<br>Cellular control, genetics, manipulating genomes, cloning and biotechnology, ecosystems and populations and sustainability.                                                                                                                                                                                                                                                                            | Pupils studied practical skills, cellular components, biological molecules, exchange surfaces and transport in plants and animals. Communicable diseases, biodiversity and evolution. Maths skills including statistical tests. | Degree courses<br>Apprenticeships<br>Work                                                                                                                                                                                                                                                                                                       |
| Implementation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                              | Marches Futures Links                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                 | Summative Assessment                                                                                                                                                                                                                                                                                                                            |
| Five 55 minute lessons per week, split between two teaching staff – one three times, the other, twice.<br>Most tasks are completed independently, but there are opportunities for class discussions, paired discussions and small group practical work. Lessons and homework tasks also build initiative, research skills, retrieval practice, organisation, mathematical and literacy skills. Practical sessions are completed to help consolidate understanding, and to develop new skills and techniques. Many of these are PAG tasks and so count towards the practical endorsement at the end of the full A level course.<br>Past paper questions are used throughout the topics to assess understanding. Mark schemes are also used to help stress the need to use A level specific terminology.<br>A01 and A02 are embedded within the lessons with A03 tasks and discussions are covered as appropriate. |                                                                                                                                                                                                                                              | Links to careers and further studies are signposted throughout the course. These include university degrees in medical, health, veterinary, ecology subjects, also nursing and midwifery.<br>Apprenticeship opportunities in health and social care, dental nursing, veterinary nursing, ecology.<br>Practical work and PAGs give students opportunities to work collaboratively and develop their LORIC skills.<br>There are explicit links throughout the course for students to evaluate how the subject matter relates to society and enables them to understand contemporary issues as responsible citizens.<br>Independent study enables students to develop research skills and become responsible for closing knowledge gaps. |                                                                                                                                                                                                                                 | Each topic has an end of unit test which contains a mixture of multiple choice, short and long answer questions. The tests are made using past paper questions and contain a range of AO1, AO2 and AO3 questions.<br>Three exams: Biological processes (2 hr 15 mins), Biological diversity (2hrs 15 mins) and Unified biology ( 1 hr 30 mins). |
| Impact:<br><br>By the end of the Year students will be confident to pursue a Biology degree and relevant career areas. Practical skills and fundamental knowledge of the subject will be secure and they will have developed into complete Biologists.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                 |