Curriculum Intent, Implementation and Impact 2019-20

Subject (include exam board if examination subject): AS and A Level Biology A - H020, H420

Year group: 12

Periods per fortnight: 8

INTENT:

Vision

Engagement, Discovery and Success

Mission Statement

In the Buckingham School Science Department, we will teach lessons that are fun and **engaging**. Students will be encouraged to develop the curiosity they need to **discover** new concepts for themselves. Lessons will be taught with student **engagement** in mind and where possible we will use practical activities. Questioning will be encouraged, in particular why and how?

Student effort and will be rewarded and students will be aware of how their learning is progressing and are proud of their **success**. At the end of the course students will be well prepared for a career in science should they wish or should be able to use the scientific skills they have acquired in whatever they choose to do in the future.

In year 12 Biology students will develop relevant practical skills alongside essential knowledge and understanding of a range of biological concepts and scientific methods. Biological mathematics and problem-solving skills will be fully integrated into teaching and learning. The lessons will be taught using a range of different techniques, including practical and written tasks.

The school virtues will be encouraged throughout the teaching of the topics and embedded into schemes of learning.

Ambition – Science careers will be discussed as part of the 'big-picture' section of our teaching. Students will be taught how what they are doing applies to the outside world.

Confidence – Students will develop the confidence to carry out practical tasks and written work. Success will be rewarded within the department and will be encouraged to make mistakes.

Respect – Students will be taught to be respectful of each other and of their environment. Every student's opinions will be given equal weighting and students will be given the chance to have their views heard.

Empathy – Within science empathy is a very important skill. It is important to be able to put yourself into someone else's shoes in order to see how a particular scientific advancement might affect them. We often refer to other people's beliefs and ethics within the curriculum.

Resilience – Resilience is very important within science. Students will be encouraged to discover new ideas for themselves, make hypotheses and potentially make mistake. Mistakes are as important in science as being correct. Students will develop these skills by being encouraged to come up with their own ideas and then test them.

Integrity – Integrity in science will be taught by encouraging key scientific principles of objectivity, clarity and reproducibility. Scientific studies must be carried out without bias and this is a key skill we will address in our teaching of the practical aspect of the course.

Curiosity – We will develop curiosity through the discovery aspect of the lessons. Students will be encouraged as much as possible to discover new concepts for themselves through practical tasks. They should make their own conclusions about the world around them.

IMPLEMENTATION:

Term	Topics studied	Extended learning opportunities	How parents could support students
Autumn Term	Module 1 – Development of practical skills in biology 1.1.1 Planning 1.1.2 Implementing 1.1.3 Analysis 1.1.4 Evaluation Module 2 – Foundations in biology 2.1.1 Cell structure 2.1.2 Biological molecules 2.1.3 Nucleotides and nucleic acids 2.1.4 Enzymes 2.1.5 Biological membranes 2.1.6 Cell division, cell diversity and cellular organisation	Extended Learning: - Practice exam style questions - Produce flash cards/diagrams with the content of each section - Research and complete specific assignments - Read books and scientific magazines	Ensure students have the correct equipment for the course. Motivate their children to revise regularly, preferably following a revision timetable. Ask their children about what they are learning and discuss the subjects with them. Incentivise their children to use websites for studying and read around the subject.
Spring Term	Module 3 – Exchange and transport 3.1.1 Exchange surfaces 3.1.2 Transport in animals 3.1.3 Transport in plants	Extended Learning: - Practice exam style questions - Produce flash cards/diagrams with the content of each section - Research and complete specific assignments - Read books and scientific magazines	Ensure students have the correct equipment for the course. Motivate their children to revise regularly, preferably following a revision timetable. Ask their children about what they are learning and discuss the subjects with them. Incentivise their children to use websites for studying and read around the subject.
Summer Term	Module 4 – Biodiversity, evolution and disease 4.1.1 Communicable diseases, disease prevention and the immune system 4.2.1 Biodiversity 4.2.2 Classification and evolution.	Extended Learning: - Practice exam style questions - Produce flash cards/diagrams with the content of each section - Research and complete specific assignments - Read books and scientific magazines	Ensure students have the correct equipment for the course. Motivate their children to revise regularly, preferably

			following a revision timetable. Ask their children about what they are learning and discuss the subjects with them. Incentivise their children to use websites for studying and read around the subject.

IMPACT:

By the end of year 12 students be well versed in biological concepts. The students will have developed essential knowledge and understanding of different areas of the subject and how they relate to each other. The students will also be displaying the school virtues within their science lessons, as well as being **engaged**, developed a love for **discovery** and have shown **success** in their curriculum.

The students will be assessed through their assignments as well as ongoing questioning within the class.