Thomas Mills
High School & Sixth Form

CURRICULUM OVERVIEW: Biology

The intent of the Year 7 Biology curriculum is to introduce pupils to the fundamental building blocks of life and to develop a deep understanding of how living organisms function, grow, and interact with their environment. Pupils have opportunity to develop skills and knowledge that will provide the foundations required for studying GCSE Biology. We explore topics including cellular structure and the processes of diffusion and respiration. We later look at the human body, taking a more detailed look at the digestive, respiratory and muscular systems. Pupils also study the human reproductive systems, exploring the key events in the menstrual cycle and pregnancy. Throughout the two units studied in Year 7, there are practical and research opportunities to develop and embed analytical and practical skills.

We aim to:

- Instil curiosity about the natural world and how life is structured and sustained.
- Build foundational knowledge in key biological concepts such as cells, organ systems and reproduction.
- Develop pupils' ability to observe, question, and investigate living organisms using scientific methods.
- Encourage the use of correct scientific vocabulary to describe biological processes clearly and confidently.
- Lay the groundwork for future learning in biology by developing critical thinking and problem-solving skills.

Through engaging, practical lessons and real-world applications, pupils will begin to understand the relevance of biology to themselves, society, and the wider world.

Note: Due to the carousel-based teaching schedule within Science in Year 7 pupils will complete a total of 6 science units, 2 from Biology, Chemistry and Physics during their first year.

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Year 7

Term	Topic	Knowledge and Skills	Useful Links
1	**B1 – Cells, Respiration and Energy for Life**	**Knowledge:** In this unit, pupils explore cellular structure of plant and animal cells, to include the nucleus, mitochondria, chloroplasts, cytoplasm and cell membrane/wall. Pupils also learn about the chemical process of respiration and how passive diffusion occurs in organisms. They later look at the concept of a balanced diet and food groups. This is followed up by the structure of the human digestive system and the processes of physical and chemical digestion. **Skills:** Pupils develop practical skills by investigating the energy content in food, conducting an experiment to measure caloric values. This hands-on approach enhances their understanding of biological processes and scientific methods, fostering critical thinking and analytical skills.	KS3 Biology - BBC Bitesize Educake - Online Formative Assessment for Homework and Classwork Science, secondary, Year 7 - Lesson listing | Oak National Academy (Cells) Science, secondary, Year 7 - Lesson listing | Oak National Academy (Diffusion)
Assessments		A mid-unit low-stakes assessment and a more formal end-of-unit assessment are completed under exam conditions. Pupils are informed of these in advance with revision opportunities given for homework and in class, if time permits. These assessments are designed to check understanding of key concepts and identify areas for improvement. Pupils receive feedback on both assessments, with time allocated in class to review answers and address misconceptions. Checklists that breakdown learned criteria are also used in the unit to help pupils monitor their own progress and reflect on their understanding of the content.	

2	**B2 – Systems in the Body**	**Knowledge:** Pupils begin by exploring the human muscular and skeletal systems. They then explore the respiratory system in more detail, examining the structure of the system and the effects that drugs/cigarettes can have on its functionality and health. Later in the unit, pupils learn about the human reproductive systems, menstrual cycle, the process of fertilisation and the key events in a pregnancy. **Skills:** Pupils have the opportunity to carry out a practical investigation into forces applied by muscles, utilising maths skills. There are also research opportunities to find out the harm to the body caused by nicotine cigarettes and the notable developmental events in the foetus that occur between 0-40 weeks of gestation in pregnancy.	KS3 Biology - BBC Bitesize Educake - Online Formative Assessment for Homework and Classwork Science, secondary, Year 7 - Lesson listing | Oak National Academy (Muscular system)
Assessments		A mid-unit low-stakes assessment and a more formal end-of-unit assessment are completed under exam conditions. Pupils are informed of these in advance with revision opportunities given for homework and in class, if time permits. These assessments are designed to check understanding of key concepts and identify areas for improvement. Pupils receive feedback on both assessments, with time allocated in class to review answers and address misconceptions. Checklists that breakdown learned criteria are also used in the unit to help pupils monitor their own progress and reflect on their understanding of the content.	