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Year 9 Overview 2025-26 – *Biology*

Date	Wk	Week	Units Studied & Learning Outcomes	Key Concepts & Assessment
8 weeks (8 lessons) (38Days)				
Tues 2-Sep Tues Y7 only Wednesday-whole school	A	1	**Overview of unit:** Pathogens & disease (5 lessons) Vaccinations & antibiotics (3 lessons) **Sequence of Unit-Pathogens** 1.Pathogens (1 lesson) 2-3. Diseases caused by pathogens (1-2 lesson) 4. Malaria (1 lesson) 5. Defending against pathogens (1 lesson) 6. Vaccination and Immunity (1 lesson) 7. Painkillers and Antibiotics (1 lesson) **Learning Outcomes:** • GW: State the four types of pathogens and the diseases they cause • BI: Describe ways to reduce/ prevent the effects of pathogens. • EW: Evaluate the role of medical testing in this prevention. Recall of knowledge, application of knowledge, identify patterns from observations, and interpret data. **Prior (Y8):** Year 8- Health Topic **Now (Y9):** Understand Pathogens and disease. **Next (Y12):** Year 12 – Cell recognition and the Immune system **Common misconceptions** • Vaccines cure disease, malaria is carried by all mosquitoes.	**Foundational Concepts** Infection and response **Outcomes:** • Define a pathogen and list the four types of pathogens • Understand the diseases caused by certain pathogens and the symptoms of these diseases. • Understand the life cycle of Malaria within the Human body and the reproductive cycle in the environment. • Understand how our bodies prevent and fight pathogens. • Understand how vaccines work to provide Immunity. • Define a painkiller and list examples. Understand the role of Antibiotics in fighting bacterial disease. • Understand the stages of drug development and the importance of these stages. **Tier 2/3 Vocabulary** • Glossaries, quick quizzes, within exam questions, PowerPoints. **KW**: Bactria, Virus, Fungi, Protist, Plasmodium, Vector, White blood cell, Antibodies, Phagocytosis, Vaccine, Placebo, double blind trial. **Links to root words (etymology):** • Vaccine come from the Latin for Cow pox **vaccinia.** Malaria comes from Italian which means 'bad air' **Links to history & culture:** • History – development of germ theory by handwashing to prevent transmission (Semmelweiss), history of variolation and smallpox vaccine (Jenning) • Cultural/historical – Development of different techniques to develop immunity over the years • Development of antibiotics • Anti-vaccination sentiments and its growing visibility with links to Dr Andrew Wakefield Lancet study • Thalidomide development **Careers links:** • infectious disease specialists, marketing, pharmaceutical industry, **EDI:** • role of women in early inoculations, discussion of equal access to vaccinations • ***Equality Diversity and Inclusion (EDI) links?*** *Parent and Carers month/Black History month* *World afro day* *International day of sign languages* *world mental health day* *world teachers day* *World cerebal palsy day* • **Assessment**
8-Sep	B	2		
15-Sep (INSET Friday)	A	3		
22-Sep	B	4		
29-Sep	A	5		
6-Oct	B	6		
13-Oct	A	7		
20-Oct	B	8		

<table>
<tr><td></td><td></td><td></td><td></td><td>Assessment- Quick quiz, Exam questions, end of topic tests, Long answer questions.
•</td></tr>
<tr><td>Half-Term</td><td colspan="4">7 weeks (7 lessons) (35 Days)</td></tr>
<tr><td>3-Nov
10-Nov
17-Nov
24-Nov
1-Dec
8-Dec
15-Dec</td><td>A
B
A
B
A
B

A</td><td>9
10
11
12
13
14

15</td><td><u>Overview of Unit:</u>
Medical testing (2 lessons)
Health & disease (5 lessons)

<u>Sequence of Unit-Health and Disease</u>
8-9. Medical testing (1-2 lessons)
10. What is health? - Communicable and non-communicable disease (1 lesson)
11. Cancer (1 lesson)
12.The effects of Alcohol on the body and society (1 lesson)
13.The effects of Smoking on health (1 lessons)
14.Diet and exercise (1 lesson)

<table><tr><th>Prior (Y8)</th><th>Now (Y9)</th><th>Next (Y12)</th></tr><tr><td>Year 8- Health topic</td><td>Understand lifestyle can contribute to disease</td><td>Year 12 – N/A</td></tr></table>
• GW: Describe ways to stay healthy and recall what is meant by non-communicable diseases.
• BI: Describe the effects of specific diseases on the health of individuals.
• EW: Explain how most non communicable disease can be linked to lifestyle and evaluate data relating to this.

• Recall of knowledge, application of knowledge, identify patterns from observations and interpret data.

Misconceptions- health is not linked to lifestyle choices</td><td>Foundational Concepts
Infection and Response
Outcomes:
• Understand that diseases can be communicable or non-communicable.
• Understand the risk factors for cancer and the differences between benign and malignant tumours.
• Understand the effects of alcohol on the body and society (long/short term)
• Describe the 3 main substances in cigarettes and evaluate their effects.
• Describe what makes us healthy and analyse data on health in different populations. Including BMI, blood pressure and CHD.

Tier 2/3 Vocabulary
• Glossaries, quick quizzes, within exam questions, PowerPoints.

KW: Communicable, non-communicable, benign, malignant, mutation, proliferation, cirrhosis, foetal alcohol syndrome, coronary heart disease, plaque.

Links to root words (etymology):
• Malignant- stems from Latin meaning "virulent, tending to produce death,"

History & Culture:
• Different cultural/geographical incidence of non-communicable disease, origins of tobacco and its prevalence in society – links to legality if only introduced in modern times, development of cancer treatments and the changes in survival, cultural differences in alcohol consumption and impacts

Careers: oncology, dieticians, physical therapy

EDI: Impact of medical testing – thalidomide and recognition of equality for victims.
Assessment- Quick quiz, Exam questions, end of topic tests, Long answer questions.

• Equality Diversity and Inclusion (EDI) links
Mens health awareness month/disability confident month
Diwali
Remembrance Sunday
Transgender awareness week
World Diabetes Day
World AIDS day</td></tr>
</table>

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<table>
<tr><td></td><td></td><td></td><td></td><td>Christmas Day
Assessment: Quick quiz, Exam questions, end of topic tests, Long answer questions.</td></tr>
<tr><td colspan="2">Christmas Holiday</td><td colspan="2">6 weeks (6 lessons) (30 Days)</td><td></td></tr>
<tr><td>5-Jan</td><td>B</td><td>16</td><td rowspan="7"><u>Overview of unit:</u>
Revision, Exam & Cells (6 lessons)

<u>Sequence of Unit-Cells and Microscopy</u>
15-16. Revision (1-2 lesson)
17. Complete exam (1 lesson)
18. Go through exam (1-2 lesson)
19.Plant and Animal cells (1 Lesson)

<table><tr><th>Prior</th><th>Current</th><th>Next</th></tr><tr><td>Year 7- Cells, tissue, organs</td><td>Understand organisation within organisms</td><td>Year 12-</td></tr></table>
GW: Recall the characteristics of living things, identify different specialised cells
BI: Pupils can state the parts that are found in an animal and plant cell, Pupils can state the function of different types of cells & their roles
EW: Pupils can explain the roles of each cell organelles, Relate structure of a cell to its function

Common misconceptions

The nucleus is the brain of the cell, the mitochondria are powerhouses.</td><td rowspan="7">Foundational Concepts
Cell biology

Outcomes:
• State the organelles present in plant and animal cells and describe the role of these organelles.
• Describe how certain specialised cells are adaptation to function.
• Understand how prokaryotes differ from eukaryotes.
• Understand that living organisms are made up of cell, tissues and organs. Recall examples of each in plants and humans.
• Understand what stem cells are and how they are used.
• Understand how to prepare a wet slide and to use a microscope.
• Understand the differences between light and electron microscopes and evaluate their roles in looking at cells.
• Understand how to use a microscope to look at cells
• Understand how to prepare a wet slide

Tier 2/3 Vocabulary
• Glossaries, quick quizzes, within exam questions, PowerPoints.

KW: Stage, Objective lens, eyepiece lens, meristem, umbilical, embryonic, palisade, xylem, phloem, plasmid.

Links to root words (etymology):
• Embryonic from Greek embryon "a young one,

LGBT+ History month
Holocaust memorial day

World Hijab Day
Children's mental health week.
Safer internet day
Chinese New Year
Assessment (Quiz/Tests/application tasks/ ST: Including foundational concepts, wider disciplinary knowledge, key content.)</td></tr>
<tr><td>12-Jan</td><td>A</td><td>ST1</td></tr>
<tr><td>19-Jan</td><td>B</td><td>ST1</td></tr>
<tr><td>26-Jan</td><td>A</td><td>19</td></tr>
<tr><td>2-Feb</td><td>B</td><td>20</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>9-Feb</td><td>A</td><td>21</td></tr>
<tr><td colspan="2">Half-Term</td><td colspan="2">6 weeks (6 lessons) (28 Days)</td><td></td></tr>
<tr><td>23-Feb</td><td>B</td><td>22</td><td rowspan="6"><u>Overview of unit</u>
Cells and microscopy (6 lessons)

<u>Sequence of Unit-Cells and Microscopy</u>
20 -21.Specialised Cells (1-2 lessons)
22.Prokaryotes and Eukaryotes (1 lessons)
23.Microscopy- calculating IAM (1 lessons)
24.Types of microscope (1 lessons)
25-26. Microscopy required practical (2 lessons)

<table><tr><th>Prior</th><th>Current</th><th>Next</th></tr></table></td><td rowspan="6">Foundational concepts:
Cell Biology

Outcomes:
• State the organelles present in plant and animal cells and describe the role of these organelles.
• Describe how certain specialised cells are adaptation to function.
• Understand how prokaryotes differ from eukaryotes.</td></tr>
<tr><td>2-Mar</td><td>A</td><td>23</td></tr>
<tr><td>9-Mar</td><td>B</td><td>24</td></tr>
<tr><td>16-Mar</td><td>A</td><td>25</td></tr>
<tr><td>23-Mar</td><td>B</td><td>26</td></tr>
<tr><td>30-Mar
(finish Wednesday 1st April)</td><td></td><td></td></tr>
<tr><td></td><td>A</td><td>27</td></tr>
</table>

Prior	Current	Next
Year 7- Cells, tissue, organs	Understand organisation within organisms	Year 12- cells & microscopy

GW: Recall the characteristics of living things, identify different specialised cells
BI: Pupils can state the parts that are found in an animal and plant cell, Pupils can state the function of different types of cells & their roles
EW: Pupils can explain the roles of each cell organelles, Relate structure of a cell to its function

Recall of knowledge, application of knowledge, identify patterns from observations, interpret data.

Common misconceptions

IAM triangle – confusion over image and actual

- Understand that living organisms are made up of cell, tissues and organs. Recall examples of each in plants and humans.
- Understand what stem cells are and how they are used.
- Understand how to prepare a wet slide and to use a microscope.
- Understand the differences between light and electron microscopes and evaluate their roles in looking at cells.

Key words:
Stage, Objective lens, eyepiece lens, meristem, umbilical, embryonic, palisade, xylem, phloem, plasmid.

Tier 2/3 vocabulary:
- Glossaries, quick quizzes, within exam questions, PowerPoints.

Links to root words (etymology):
- Embryonic from Greek embryon "a young one,

History & Culture:
- Development of the microscope, understanding of cellular structures,

Careers:
- Biotechnologist, forensic scientist, pharmacologist, research scientist.

Women's history month
Ramadhan begins
World Down Syndrome day
Transgender day of visibility
Assessment (Quiz/Tests/application tasks/ ST: Including foundational concepts, wider disciplinary knowledge, key content.)

Easter Holiday			5 weeks (5 lessons) (24 Days)	
20-Apr	B	28	**Overview of unit** Cells and microscopy continued (3 lessons) Exam preparation (1-2 lessons) **Sequence of Unit-Cells and Microscopy** 27. Stem cells (1 lesson) 28. Mitosis (1 lesson) 29. Organisation, Cells. Tissues, Organs (1 lesson) 30-31. Revision (1-2 lessons)	**Outcomes:** • Understand how to prepare a wet slide and to use a microscope. • Understand the differences between light and electron microscopes and evaluate their roles in looking at cells. • Understand how to use the IAM triangle • Understand stem cells • Describe how new cells are made **Key words:** Stage, Objective lens, eyepiece lens, **Tier 2/3 vocabulary:** Glossaries, quick quizzes, within exam questions, PowerPoints **History & Culture:** Development of the microscope, understanding of cellular structures **Careers:** • Biotechnologist, forensic scientist, pharmacologist, research scientist.
27-Apr	A	29		
4-May (Bank holiday Mon)	B	30		
11-May	A	31		
18-May	B	32		

Prior	Current	Next
Year 7- Cells, tissue, organs	Understand organisation within organisms	Year 12- cells & microscopy

GW: Identify sources of stem cells, describe why the body needs new cells, You can state what tissues, organs and systems are.
BI: You can give examples of tissues and organs, describe what a stem cell is, Describe stages in the cell cycle

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<table>
<tr><td></td><td></td><td></td><td>EW: You can identify organs within organ systems and describe the jobs of the organ system, evaluate the use of stem cells, Explain the importance of studying the cell cycle

Common misconceptions
IAM triangle – confusion over image and actual</td><td>Good Friday
Easter Sunday
Autism and stress awareness month.
World Malaria Day
Lesbian visibility day
UK national walking month.
Deaf awareness week
Assessment (Quiz/Tests/application tasks/ ST: Including foundational concepts, wider disciplinary knowledge, key content.)</td></tr>
<tr><td colspan="2">Half-Term</td><td colspan="2">7 weeks (7 lessons) (35 Days)</td></tr>
<tr><td>1-Jun</td><td>A</td><td>33</td><td rowspan="9"><u>Overview of unit</u>:
Exam and preparation (3 lessons)
Respiration and exercise (4 lessons)

<u>Sequence of unit – Respiration and Exercise</u>
32. Revision (1 lesson)
33. Complete exam (1 lesson)
34. Complete exam feedback (1 lesson)
35. Aerobic respiration (1 lesson)
36. Anaerobic Respiration (1 lesson)
37. Respiration and Exercise (1 lesson)
38.Metabolism (1 lesson)

GW:, Identify the types of respiration, Describe how anaerobic respiration is different to aerobic, identify which organs in the body respond to exercise, define metabolism

BI: Describe what respiration is needed for, Describe the products of anaerobic respiration in plants and animals, mention some long and short term effects that occur within the body in response to exercise, explain the role of metabolism

EW: Compare the types of respiration, Evaluate the use of anaerobic respiration in industrial processes, analyse and compare graphs of changes in the body during exercise. give examples of metabolic reactions

<table><tr><th>Prior</th><th>Current</th><th>Next</th></tr><tr><td>Year 8- Respiration topic</td><td>Understand Respiration</td><td>Year 12 – Biological molecules and mass transport</td></tr></table>
• GW: Identify the main differences between Aerobic and Anaerobic respiration</td><td rowspan="9">Foundational concepts
Bioenergetics

Overview:
• Understand Aerobic Respiration
• Understand Anaerobic Respiration in yeast, plants and animals (oxygen debt HA)
• Gas exchange surfaces
• Understand effects of exercise on the body
• Understand Metabolism

Tier 2/3 Vocabulary
• Glossaries, quick quizzes, within exam questions, PowerPoints.

KW: Aerobic, Anaerobic, Anabolic, Catabolic, lactic acid, oxygen debt, fermentation.

Links to root words (etymology): Catabolic- late 19th century: from Greek katabolē ‘ throwing down’

Careers: athletic trainers, physiotherapist, exercise physiologist, occupational therapist, radiation therapist, nurse, radiation therapist

History:
• Cellular respiration (aerobic and anaerobic respiration) was discovered by Sir Thomas Adams.
• The first controlled experiments in human metabolism were published by Santorio Santorio in 1614 in his book ''Ars de statica medecina''.

LGBTQ+ pride month.
Gypsy, Roma and Traveller history month.
world day against child labour
autistic pride day
World refugee day
Assessment (Quiz/Tests/application tasks/ ST: Including foundational concepts, wider disciplinary knowledge, key content.)
Week 38</td></tr>
<tr><td>9-Jun</td><td>B</td><td>ST2</td></tr>
<tr><td>16-Jun</td><td>A</td><td>ST2</td></tr>
<tr><td>23-Jun</td><td>B</td><td>36</td></tr>
<tr><td>30-Jun</td><td>A</td><td>37</td></tr>
<tr><td>7-Jul</td><td>B</td><td>38</td></tr>
<tr><td>14-Jul</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td></td><td>A</td><td>39</td></tr>
</table>

			• BI: Explain the role of respiration in humans and plants EW: Link to other topics such as diffusion and bioenergetics as a whole **Common misconceptions-** respiration and breathing are the same thing.	
(Total: 190 Days)				

Prompt Questions

Now that the revised curriculum has been taught, please consider the Implementation and Impact of the curriculum you taught. What changes might need to be made to the Curriculum Intent (See Curriculum Map and Overviews) in light of this year's experiences?

Please revisit the prompts from last year:

- What are the Key concepts for this unit?
- How will it link to wider disciplinary knowledge/cultural capital: history, culture, authentic artefacts, music, art, literature?
- How does it build on prior knowledge and link to other units, concepts, years, GCSE?
- What is it intended students will have learned?
  - For each Unit? By the end of the Year?
    - GW: ; BI: ; EW
- Is it worth summarising in a knowledge organiser?
- **Assessment: how do you know they have learned the foundational concepts, curriculum and wider disciplinary knowledge? Does assessment look like GCSE light? Should it?**
- Skills used/learned
- Tier 2/3 vocabulary ((Etymology e.g. of Greek/Latin)
- How will you assess students understanding?
- How will written feedback be given?
- How can lessons be adapted?

Overview of Year 9	
Based on your Flight Path *(E.g. Targets 1L – 4L)*	**By the end of Year 9, students will have learned**
GW:	• State the four types of pathogens and the diseases they cause • Describe ways to stay healthy and recall what is meant by non-communicable diseases. • Recall the main reasons for medical testing and drug trials. • Recall the main effects of drugs on the body • Recall the characteristics of living things, identify different specialised cells • State how to use a light microscope. • State what we mean by Aerobic and anaerobic respiration
BI:	• Describe ways to reduce/ prevent the effects of pathogens. • Describe the effects of specific diseases on the health of individuals. • Describe the stages of vaccination • Describe the role of the White blood cells in preventing disease. • Use equations to calculate magnification, image and actual size of a cell. • Pupils can describe the parts that are found in an animal and plant cell and list the function of different types of cells & their role

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	• Describe the reactants and products of aerobic and anaerobic respiration. • Describe fermentation and the conditions needed for it to occur.
EW:	• Evaluate data in relation to non-communicable diseases. • Evaluate the role of medical testing in this prevention. • Explain how most non communicable disease can be linked to lifestyle and evaluate data relating to this. • Compare light and electron microscopes and their uses limitations. • Pupils can explain the roles of each cell organelles, Relate structure of a cell to its function • Evaluate the effects of respiration on exercise and recovery.