Subject
Year 7: Cells

Assessment Opportunities	Literacy/Reading opportunities	CEIAG Links
• Regular low stakes quizzing of AO1- self marked. • In class past paper questions where – self / peer marked • Extended writing is teacher marked with personalised feedback provided. • End of unit assessment self & teacher marked with collective feedback provided.	**Reciprocal reading:** **Key vocab is highlighted in the SOL**	**Spotlight on careers:** Genetic counsellor Other careers: • Cell biologist • Molecular biologist • Immunologist • Cytotechnologists • Stem cell researcher

Curriculum vision:

KS3 Cells "Our aim is to deliver a curriculum that is inclusive, relevant and progressive for all learners."

Big Picture:
This unit on cells provides students with a foundational understanding of living organisms as they explore the microscopic world of cells and how each cell component contributes to the overall function of living organisms. Introducing light microscopes allows them to see these tiny structures firsthand, fostering a sense of wonder and curiosity. This hands-on experience not only reinforces theoretical knowledge but also develops critical thinking and scientific skills, as students learn to observe, hypothesize, and draw conclusions based on their microscopic observations.

Lesson sequence	**Learning outcomes / Key knowledge (including NC KS3)** Interleave / review Scaffold	**Skills development:** Reading / writing / data / numeracy / graph work	**Spec / book reference**
1. **TBAT**: Engage with a scientific article	**Introduction to Cells as the Fundamental Unit of Living Organisms** • Basic life processes of living organisms • Overview of cell theory. • Explanation of why cells are considered the basic unit of life. • Importance of cells in the structure and function of all living organisms.	Recipricol reading	Spec NC pos here pg 5 Boost book 1
2. **TBAT:** Describe features of basic animal cells	**Cell Structures and Their Functions** • Features of animal cells • Functions of organelles of animal cells • Focus on functions of nucleus, cell membrane and cytoplasm • Recognise features of specialised animal cells	• **Identify:** Organelles of basic animal cells • **Describe:** functions of animal cell organelles • **Compare:** features of basic animal cells and specialised animal cells	Spec NC pos here pg 5 Boost book 1 pg 12-17
3. **TBAT:** Describe features of basic plant cells	**Cell Structures and Their Functions** • Features of plant cells • Functions of plant cell organelles • Focus on cell wall, cytoplasm and vacuole. • Recognise features of specialised plant cells	• **Identify:** Organelles of basic plant cells • **Describe:** functions of plant cell organelles • **Compare:** features of basic plant cells and specialised plant cells	Spec NC pos here pg 5 Boost book 1 pg 12-17

4. **TBAT:** Compare plant and animal cells	**Cell Structures and Their Functions** • Comparison of chloroplasts in plant cells and their absence in animal cells. • Similarities between plant and animal cells. • Key differences, particularly in structure and function. • Visual comparison using diagrams and microscope slides	• **Draw:** Produce a Venn diagram • **Compare:** cell features of plant and animal cells	Spec NC pos here pg 5 Boost book 1 pg 12-17
5. TBAT: Engage with a scientific article	**Structural adaptations of unicellular organisms** • Study of unicellular organisms and their adaptations for survival. • Examples of specialised structures in unicellular organisms (e.g., cilia, flagella). • How these adaptations support life processes. • Observation of unicellular organisms using a microscope	• **Name: E**xamples of unicellular organisms • **Identify:** Features of unicellular organisms • **Explain:** Link features of unicellular organisms to life processes	Spec NC pos here pg 5 Boost book pg 22
6. **TBAT:** Describe cells, tissues and organs	**Hierarchical Organization of Multicellular Organisms** • Explanation of cellular organization from cells to tissues to organs to systems. • Examples of each level of organization. • Importance of this hierarchy in complex organisms.		Spec NC pos here pg5 Boost book 1
7. **TBAT:** Use the light microscope to view cells	**Observing Cells Using a Light Microscope** • Introduction to the light microscope. • How to prepare and observe cell specimens. • Techniques for interpreting and recording cell structures.	• **Produce:** Specimens of animal cells using cheek cells • **Identify:** Cell structures under the light microscope • **Practical:** Follow a standard procedure	Spec NC pos here pg5 Boost book 1 pg 9

Vocab	**Links to previous learning / interleaving**	**Assessment & homework**

L3 Vocab Respiration Reproduction Sensitivity Growth DNA Nucleus Cytoplasm Cell membrane Vacuole Mitochondria Ribosomes	Cell wall Chloroplast Microscope Organelle Unicellular Multicellular Flagella	**L2 Vocab** Specialised Focus Resolution Specialised Feature Hierarchy Movement Nutrition	**Command words focus** Label Plot Measure Predict Identify Estimate Observe Justify Evaluate Compare construct	**KS2** ○ Living things and their habits ○ Plants ○ Life processes of living organisms		• Regular low stakes quizzing of AO1 • In class assessment of AO1, AO2, AO3 using past paper questions where appropriate • Written word is assessed with personalised feedback provided. • End of unit assessment marked with collective feedback provided. Homework is set weekly and is outlined in the half-termly homework booklet. Homework includes • online quizzes on Carousel • Learning of content for in-class quizzes • Completion of written questions.
Independent learning BBC Bitesize KS3 – what are cells What are plant and animal cells? - BBC Bitesize BBC Bitesize KS3 – Specialised animal cells Specialised animal cells - Living organisms - KS3 Biology - BBC Bitesize CBBC - KS3 Curriculum Bites, Want 2Tlk Science, Parts of plant and animal cells						**Misconceptions / common errors** • Cells Are the Same in All Living Organisms • All Cells Have a Nucleus • Plant and Animal Cells Are Identical • Mitochondria Are Only Found in Animal Cells • All Cell Structures Are Visible Under a Light Microscope • Magnification and Resolution Are the Same • Unicellular Organisms Are Simple and Less Important