Worthing College

Getting Ready For ***Human Biology***		
Your Name		
Human Biology AAQ	Cytology assignment	Summer 2025

We are delighted you have chosen to study Human Biology at Worthing College.

Instructions: This pack will help you make the best possible start to studying this subject.

The tasks in this pack:

- should take you **about 4 hours to complete.**
- should be handed into your teacher when teaching starts **from 8th September 2025** with your name on it for assessment.
- are also available on the internet – follow the links in the document.

If you need help: The tasks are designed to get a bit more difficult as you work through them as they are preparing you for studying at a higher level and to become an effective independent learner. You should try to get as far as you can working on your own but if you do need help, please email us at gettingreadyfor@worthing.ac.uk, telling us which Getting Ready For pack you are working on and what help you need. Help is available throughout the summer holidays.

Skills Focus for this Getting Ready for Pack	
Following instructions Researching Independent Learning Problem Solving	Written communication Note Taking Analysing/synthesis Interpretation

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Target Grade	Type of task	Task and subject specific skill reference	Deadline
All	Research and writing notes	**01. Cells research task** The first topic you will be studying in September is Cells. Complete the research task below and bring your notes to your first lesson so they can be checked and added to. **<u>Eukaryotic cells</u>** Draw a labelled animal cell and add the functions of the following cell structures: Cell surface membrane Cytoplasm Nucleus including the nucleolus Mitochondria Ribosomes Smooth endoplasmic reticulum Rough endoplasmic reticulum Golgi apparatus Lysosomes Cilium / flagellum Vesicles **<u>Prokaryotic cells</u>** Draw a diagram of a typical bacteria cell and label. Add the functions of the following structures: Capsule / slime layer Cell wall Cell surface membrane Cytoplasm 70S ribosomes DNA loop Plasmids Mesosomes Rotary-like flagellum Some useful links: https://www.khanacademy.org/science/biology/structure-of-a-cell https://www.youtube.com/watch?v=cj8dDTHGJBY	**Your first lesson**
All	Research and building on GCSE knowledge	**02. Specialised cells** There are some highly specialized cells that you need to know about. For the list below, describe the structure (you could include a diagram), where they are located and the function. Sperm cell Egg cell / ovum Red blood cell / erythrocyte White blood cells (neutrophil, lymphocyte, eosinophil and monocyte) Sensory, relay and motor neurone Hepatocyte Renal tubule epithelial cell Ciliated epithelial cell (trachea and oviduct only) Squamous epithelial cell (alveoli only) Muscle cells (skeletal/striated, smooth and cardiac)	**Your first lesson**

		Epithelial cell (gastric pits only)	
All	**Building on GCSE knowledge**	**03. Transition baseline assessment** Complete the baseline assessment and bring your answers to your first lesson. This work will be marked, and feedback given.	**Your first lesson**
Notes:			

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Task 3

HUMAN BIOLOGY TRANSITION BASELINE ASSESSMENT

Part 1: Cell structure and microscopes

1. Why do scientists use microscopes? [1]

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2. Explain the function of the mirror in a light microscope [1]

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3. An animal cells is viewed using a 10x eye piece lens and a 20x objective lens. Calculate the total magnification. [2]

4. Define resolution [1]

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5. Calculate the actual size of an onion cell if it measures 20mm using a 1000x magnification. [2]

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6. The invention of the electron microscope has allowed scientists to find out more information about cells. Explain how the electron microscope has done this. [2]

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Scientists want to examine onion cells under a light microscope. They take one sheet of cells form the epidermis of the onion and place it on a glass slide. Iodine is used to dye the cells and a cover slip is placed on the top.

7. Draw what the scientists would expect to see under the light microscope [1]

8. Why is a thin layer of cells used? [1]

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9. What is the role of iodine? [1]

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10. Why can't scientists see all the cell components? [1]

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11. What is a specialised cell? [1]

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12. Give 2 examples of specialised cells and their functions [2]

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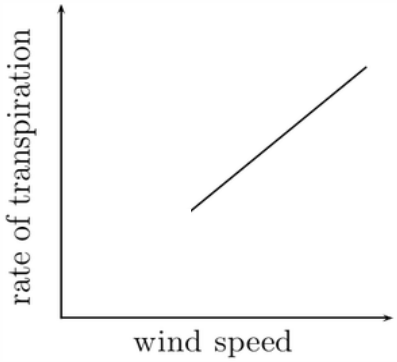
Part 2: Data questions

1. Scientists need to be able to interpret data in graphs to decide if there are trends in the results. For each graph below, describe the trend [5]



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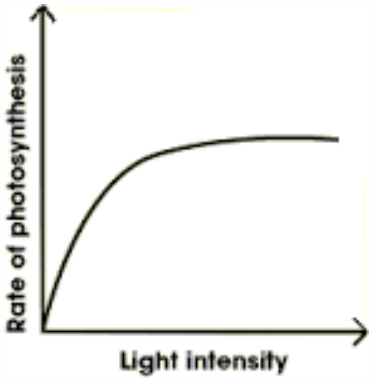

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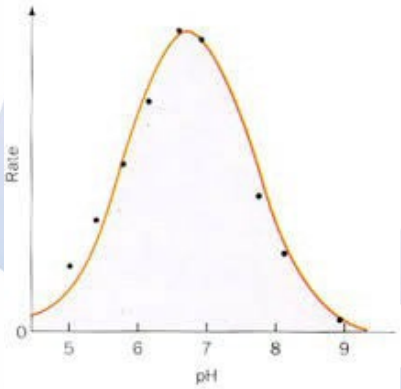

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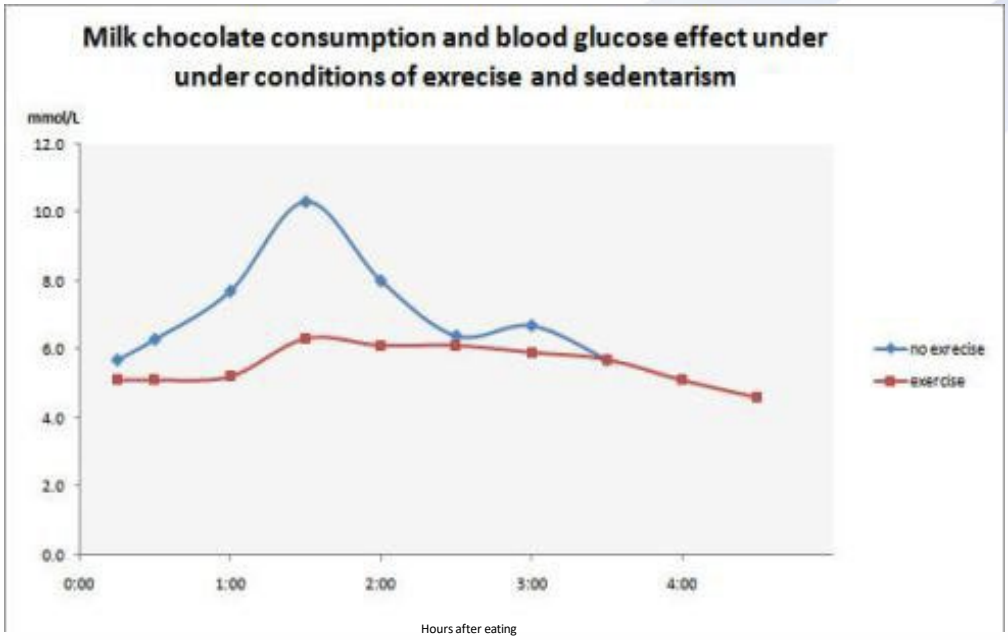
2. A medical research team investigated how quickly the body deals with glucose after a meal. They studied the blood glucose concentration of people who exercised versus those who did not.

Here are their results:



(a) What organ in the body regulates blood glucose concentration? [1]

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(b) Explain the stages that would bring about a return to normal blood glucose concentration after eating chocolate [4]

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(c) Name one variable that the researchers would have controlled [1]

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(d) The researchers made the following conclusion:

"Blood glucose returns to normal values for all people after 4 hours"

To what extent do you agree with this conclusion? [4]

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Work Placement Week

All students are required to participate in a **compulsory** week-long work placement. It is recommended that the placement chosen is either relevant to your course, or relevant to what your future career aspirations are.

Work placement form submission deadline

All L2 and L3 students studying on triple or double courses will be given their work placement week dates by their course leaders when they start in September.

The deadline to submit your placement forms are as follows:

Date of work placement week	Deadline for returning completed form
Dec-25	24th October 2025
January / February 2026	24th October 2025
March / April 2026	19th December 2025
May / June 2026	13th February 2026

All students studying 2 or more single subjects will have the option of either carrying out their work placement during:

- February half term
- Easter holidays
- May half term
- 22nd – 26th June 2026

The deadline to submit your placement forms are as follows:

Date of work placement week	Deadline for returning completed form
February half term (16th - 20th February)	Friday 24th October 2025
Easter holidays (27th March - 13th April)	Friday 19th December 2025
May half term (26th - 29th May)	Friday 13th February 2026
22nd – 26th June	Friday 1st May 2026