

Preparation for

A-Level Topic: Cell structure and Microscopy





Key Question: How can we make the invisible, visible?

Challenge: Why do we need to make the invisible, visible?



Key Terms

Lens, light microscope, SEM, TEM, laser scanning microscope, resolution, magnification, refraction, miasma, organelles, cells, bacteria, fungi, protist, virus, Hooke, Janssen, van Leeuwenhoek, Pasteur, Snow.

 What to watch	 What to read	 What to do
<p>Task:</p> <p>Simple History Of The Microscope https://www.youtube.com/watch?v=TJyOQmdwHhE</p> <p>History Of The Microscope https://www.youtube.com/watch?v=Ue-86MDmjns</p> <p>History Of Microscopes - drier but more detailed about their impact https://www.youtube.com/watch?v=4HXKTLIEUFw</p>	<p>Task:</p> <p>Microscopes https://opentextbc.ca/conceptsofbiology1stcanadianedition/chapter/3-1-how-cells-are-studied/</p> <p>History of microscopes https://www.smithsonianmag.com/science-nature/what-we-owe-to-the-invention-microscope-180962725/</p>	<p>Task: Research the history of microscopes 2-3 hours over 3 weeks</p> <p>You can look at any aspect you like, for example, you can concentrate on the scientists themselves, on the physics of refraction and how each microscope improved on the previous, or the history of the cell, and how it came to be named/when we discovered each organelle (A Level organelle list, not just GCSE). It is your choice.</p> <p>What we are looking for:</p> <ul style="list-style-type: none"> • Scientific vocabulary and detail. Use the term plasma membrane, rather than cell membrane, for example. Talk about resolution and magnification, rather than 'zooming in'. • A sense of story. This is history, so the timeline needs to be followed, or manipulated in a way that makes sense to the viewer. • Edited work. You will find out much more information than we need to see. Pick out the pieces that best tell your story, don't just say it all.
 What to submit	<ol style="list-style-type: none"> 1. Your completed Microscopy Workbook found here: https://drive.google.com/file/d/1JaAvUFdOLOu2vGrI18urxjE_jzXBcq8J/view?usp=sharing 2. A presentation, either a fact sheet, PowerPoint, cartoon-style video, video with you drawing/making notes or video with footage (your own, not someone else's). Basically any media that can fully explain the aspect of microscopy you have researched. You only need to complete one of these, not more. No longer than 12 slides, 2 sides of A4, one side of A3 or 2 minutes long. Word count of 500-1000 words. 3. Seneca work that you can find the link to here: https://tinyurl.com/mry8jwcb 	