Magnification and Microscopes





Department of Zoology & Entomology

Magnification and microscopes

Looking closer at nature has always fascinated us and microscopes have been used for over 400 years! The technology has improved over time and now we are able to see smaller and smaller structures – even molecules!

We use dissecting microscopes to view whole animals and look closely at their body structures. But we can see their individual cells and tissues by using a compound light microscope. To see their cells, their tissues are sliced and placed onto a glass slide. Sometimes, a stain will be added to the slide so that specific parts of the cells are visible – like making the nucleus of a cell turn purple!

Being able to see inside of an animal or plant has led to great discoveries! Modern medicine has produced many useful medications because we were able to see how cells react to certain chemicals. Understanding the inner workings of an animal allows us to understand how it functions in its environment. We found out why plants are green by looking at their cells (hint: they have chlorophyll in their cells).



You don't have to be an artist to be a biologist!

When drawing what you see under a microscope, we use simple line drawings, like this:



We don't need to do any fancy drawings or shading or realistic looking structures – we only draw the outline of the structures that we can see.



Task 1: Looking through your **magnifying glass**, draw the head and antennae of the insect that you have in front of you.

What insect do you have in front of you?

Does this insect have long or short antennae?

List 3 other interesting observations you can see on the head

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Task 2: Looking through your **dissecting microscope**, draw the antennae of the insect that you have in front of you.



Does your insect's antennae have any hairs or other structures?

Are joints on the antennae visible?

Note any other interesting observations you see on the antennae

Task 3: Looking through your **compound light microscope**, draw the two cells: plant cell (left) and animal cell (right).

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Can you see these structures on your cells? Label them on your drawing!

