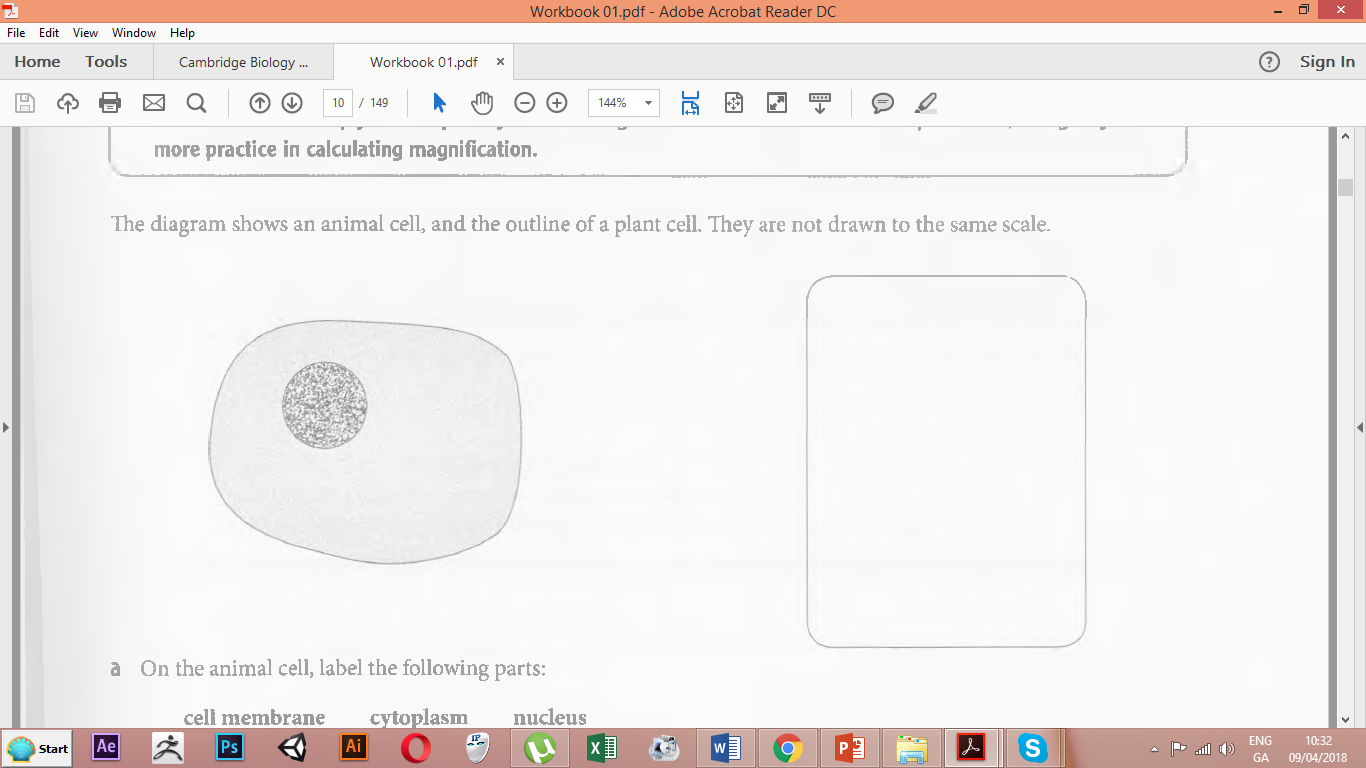
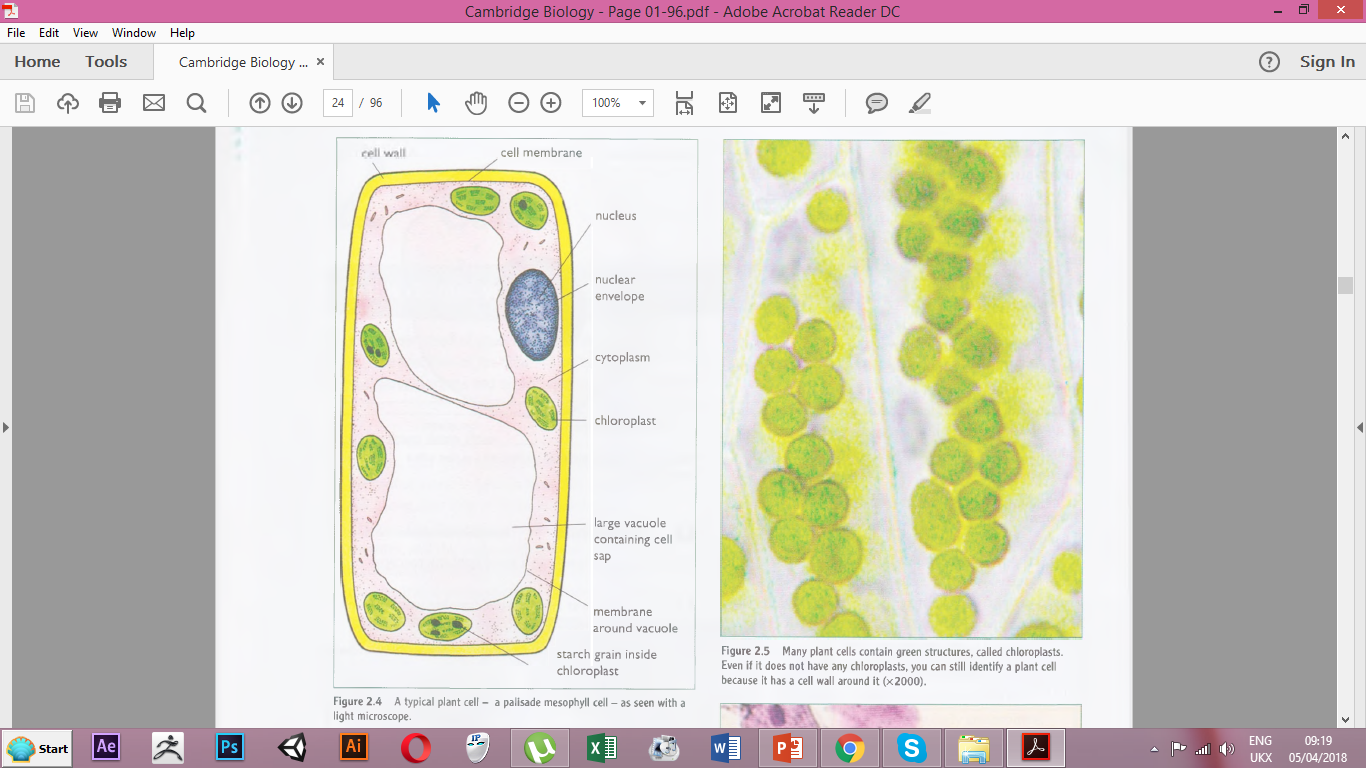
This exercise will help you to improve your knowledge of the structure of animal and plant cells, and give you more practice in calculating magnification.

1. The diagram shows an animal cell, and the outline of a plant cell. They are not drawn to the same scale.  
   
2. On the animal cell, label the following parts:  
   **cell membrane cytoplasm nucleus**
3. Complete the diagram of the plant cell, and then label the following parts:  
   **cell membrane cytoplasm large vacuole containing cell sap nucleus chloroplast cell wall membrane around vacuole**
4. The actual maximum width of the animal cell is 0.1 mm.  
   **i** Measure the maximum width of the diagram of the animal cell, in mm.  
   **ii** Calculate the magnification of the animal cell diagram. Show your working.  
     
   **Magnification =**
5. The magnification of the plant cell diagram is x 80. Calculate the real height of the plant cell. Show your working.  
   **Height =**

This exercise helps you to improve your observation and drawing skills (A03.3), as well as giving you more practice in calculating magnification.  
Look carefully at Figure 2.5 on page 20 in your Coursebook.

1. **i** In the space below, make a large diagram of the largest cell (the one near the top of the photograph). You cannot see all of the cell, as its ends are out of the picture. Draw only the part that you can see.  
     
     
     
     
     
     
     
     
     
     
     
     
     
     
   **ii** Label these structures on your diagram. You will have to make a sensible guess as to which structure is the nucleus.  
   **cell wall position of cell membrane chloroplast nucleus**

Use the check list below to give yourself a mark for your drawing. For each point, award yourself:

2 marks if you did it really well

1 mark if you made a good attempt at it and partly succeeded

0 marks if you did not try to do it, or did not succeed.

|  |  |  |
| --- | --- | --- |
| **Check point** | **Marks awarded** | |
| **You** | **Your teacher** |
| **You used a sharp pencil and rubbed out mistakes really thoroughly.** |  |  |
| **You have drawn single lines, not many tries at the same line.** |  |  |
| **You have drawn the specimen the right shape, and with different parts in the correct proportions.** |  |  |
| **You have made a really large drawing, using the space provided.** |  |  |
| **You have included all the different structures that are visible on the specimen.** |  |  |
| **You have drawn label lines with a ruler, touching the structure being labelled.** |  |  |
| **You have written the labels horizontally and neatly, well away from the diagram itself.** |  |  |
| **Take 1 mark off if you used any shading or colours.** |  |  |
| **Total (out of 14)** |  |  |

**Self-assessment check list for drawing:**

12-14 Excellent.

10-12 Good.

7-9 A good start, but you need to improve quite a bit.

5-8 Poor. Try this same drawing again, using a new sheet of paper.

1 -4 Very poor. Read through all the criteria again, and then try the same drawing.