1. **a** Without looking back at the beginning of this chapter, decide which five of these characteristics are found in all living things.

**movement blood system sight growth nutrition photosynthesis sensitivity speech excretion**

**b** List the other two characteristics of all living organisms.  
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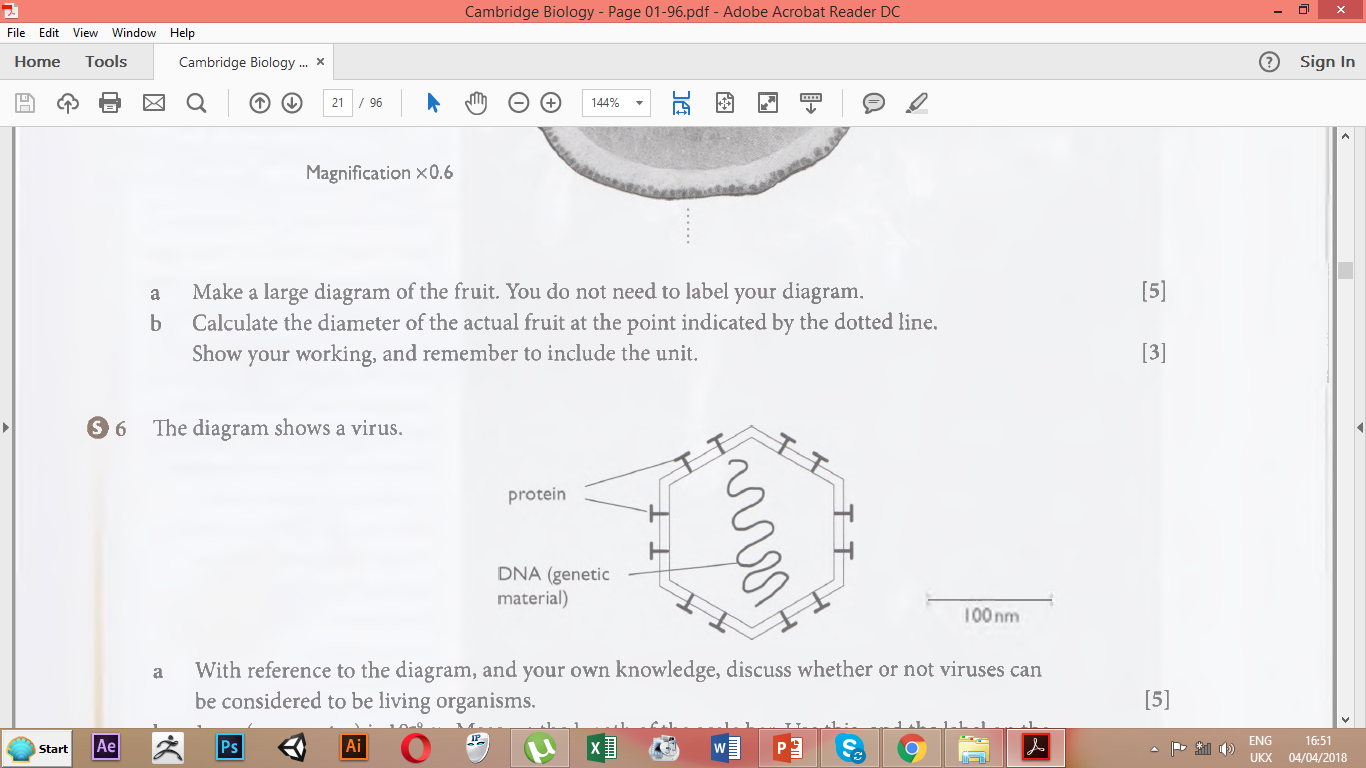
1. Three species of tree have the following binomials: *Carpodiptera africana, Commiphora ayfricana, Commiphora angolensis*  
   Which two of these species do biologists consider to be the most closely related?  
   Explain your answer.  
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2. Construct a table to compare the characteristic features of animals and plants.
3. Construct a dichotomous key to help someone to identify five of your teachers. Try to meet these criteria:

* each pair of characteristics describes one contrasting feature
* each person could be identified without having to compare them with another person
* the key contains no more than four pairs of points (you may be able to do it with just three pairs).

When you have finished, swap your key with someone else to check if it works. If not, make adjustments to it.

1. The photograph shows a section through a fruit.
2. Make a large diagram of the fruit. You do not need to label your diagram, **[5]**

Magnification x0.6

1. Calculate the diameter of the actual fruit at the point indicated by the dotted line. Show your working, and remember to include the unit. **[3]**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. The diagram shows a virus.
3. With reference to the diagram, and your own knowledge, discuss whether or not viruses can be considered to be living organisms.  
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4. 1 nm (nanometre) is 10'9m. Measure the length of the scale bar. Use this, and the label on the scale bar, to calculate the magnification of the diagram. Show your working.  
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