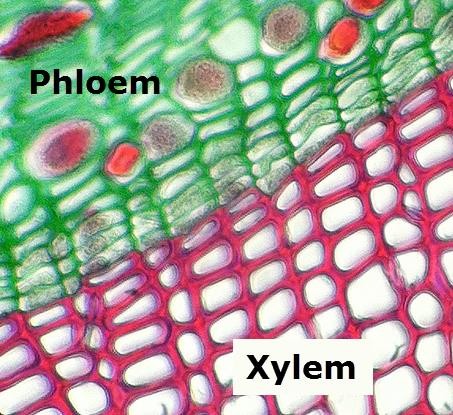
**Xylem and Phloem – animation analysis activity**

This activity uses the excellent animation produced by SAPS - [*http://youtu.be/LQ03xIkLLQU*](http://youtu.be/LQ03xIkLLQU)



*Figure 1 Phloem Xylem and the cambium meristem - adapted from Fickleandfreckled CC on Flickr*

# Activity 1- The xylem and phloem in roots

Use the vertical section through a root (low power is best)

1. Which direction do the blue water molecules travel in the xylem

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1. Which way to the red sugar molecules travel?

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1. Which vessels are biggest the red xylem or the yellow phloem?

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# Activity 2 – The xylem and phloem in a stem

Use the vertical section through a root (high power is best)

1. Which way do the blue water molecules travel to get into the xylem? Do they go through cell cytoplasm or cell walls, or both?

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1. Which way to the red sugar molecules travel?

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1. Why do some red sugar molecules disappear in the blue parenchyma cells?

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# Activity 3 – The xylem and phloem in a leaf

Use the vertical section through a leaf

1. Where do the red sugar molecules appear first? Explain why?

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1. Do you ever see red sugar molecules in the red xylem tubes? Explain your answer.

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1. How do most water molecules leave the leaf?

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