

## PLANTS (teacher's notes)

### STEMS

#### About stems:

- There are different stems such as:
  - Runners or stolons: They are long side shoots such as the ones we find in strawberry plants.
  - Bulbs: They are short and thick stems that grow underground and have swollen leaves around them such as the ones we find in tulips, garlic or onions. Every garlic clove is a swollen leaf and every onion layer is a leaf too.
  - Tubers: They are swollen stems that grow underground such as potatoes.
  - Rhizomes: They are thick stems that grow underground in a horizontal way.
  - Corms:
  - Water-storing stems: They are soft and thick stems that store water such as those in cacti.
- In the web page below you will find photographs and explanations.

<http://www.backyardnature.net/stemtype.htm>

#### Activity 1: Let's compare stems!

A) Ask your pupils to look at a flower stem and the stem/trunk of a tree. Make them realize that the epidermis protects the stems in both plants as our skin protects our bodies.



B)

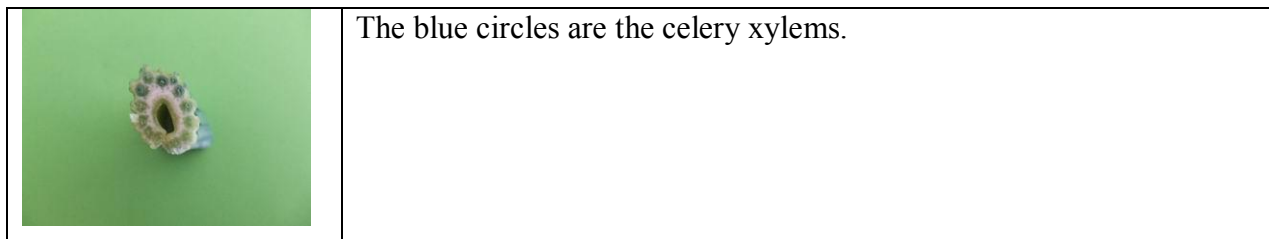
	A	B
1.- <b>Herbaceous stems</b> are soft.	✓	
2.- <b>Woody stems</b> are strong and hard.		✓

### Activity 2: Can a stem help a plant to reach the light?

- **CONCLUSIONS:** The stem grows and finds the light because plants need light to produce their food. Some plant parts are sensitive to light.

### Activity 3: Let's think more about stems!

- **CONCLUSIONS:** You will see the xylem, which is the vascular tissue that carries water **up** the plant from the roots.



If you go to the address below you will see the xylem in pink:

[http://www.usborne-quicklinks.com/uk/uk\\_entity\\_pages/uk\\_download\\_image.asp?lib=683&linkid=430164](http://www.usborne-quicklinks.com/uk/uk_entity_pages/uk_download_image.asp?lib=683&linkid=430164)

### Activity 4: How do stems carry water and food?

A) Use the picture in:

[http://www.usborne-quicklinks.com/uk/uk\\_entity\\_pages/uk\\_download\\_image.asp?lib=683&linkid=430164](http://www.usborne-quicklinks.com/uk/uk_entity_pages/uk_download_image.asp?lib=683&linkid=430164)

B) Ask questions to guide the pupils to learn that...

- The xylem (pink in the drawing) is the vascular tissue that carries water **up** the plant from the roots.
- The phloem (violet in the drawing) is the vascular tissue that carries the food dissolved in water to all parts of the plant. Help the pupils realize that they have sieve plates across the tubes with small holes.

Xylem tubes and phloem tubes are different.

### **Activity 5: Let's go on with stems!**

The yellow part in the picture that you will find in the address below is the cortex that gives support to the plant.

[http://www.usborne-quicklinks.com/uk/uk\\_entity\\_pages/uk\\_download\\_image.asp?lib=683&linkid=430172](http://www.usborne-quicklinks.com/uk/uk_entity_pages/uk_download_image.asp?lib=683&linkid=430172)

A) Here the pupils should imagine the inside of a stem different from in activity 3.

C) No

D) To make easily understood.

### **Activity 6: What are stems for?**

- They transport water.
- They transport minerals.
- They transport the food (plants make their own food in leaves).
- They support leaves, flowers...
- If necessary, the stem will grow helping the plant to find light.