Recall the different layers of cellular organization in multicellular organisms:

- cells → tissues → organs → organ systems → organisms

The overall function of an entire organism depends on the organization and combined function of individual cells.

**BRAINSTORM!**

**Question 1.**
How are the individual cells in plants organized to promote the function of the entire plant?

*Write your ideas below. Use the questions on the powerpoint to guide your thinking.*
Plant Organ and Organ Systems

Label the following diagram

Complete the following table

<table>
<thead>
<tr>
<th>Organ</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Root</td>
<td></td>
</tr>
<tr>
<td>Stem</td>
<td></td>
</tr>
<tr>
<td>Leaf</td>
<td></td>
</tr>
<tr>
<td>Reproductive</td>
<td></td>
</tr>
</tbody>
</table>
Photosynthesis and Respiration

Plant Tissue Systems

Label the following diagram

Complete the following table

<table>
<thead>
<tr>
<th>Tissue</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermal</td>
<td></td>
</tr>
<tr>
<td>Vascular</td>
<td></td>
</tr>
<tr>
<td>Ground</td>
<td></td>
</tr>
</tbody>
</table>

State the functions of

xylem tissues:

phloem tissues:
Plant Leaf Cross Section

A diagram representing the cross section of a typical leaf is shown below. This diagram shows many different types of cells and tissues. Add labels to this diagram to show the following:

1. the different types of cells that make up a leaf
2. the three types of tissue (dermal, ground and vascular)

you can find out more about the function of each type of cell or tissue here
2. Obtain a prepared slide of a cross section of a leaf. Using a microscope under low power, observe the cross section. Make a biological sketch of what you see in the space below. Label all structures you can see – use the PowerPoint, worksheet diagram or other sources to help you.
Photosynthesis and Respiration

BRAINSTORM!

Question 2.
How do living things get energy from the Sun?

*Write your ideas below. Use the questions on the PowerPoint to guide your thinking.*

What is photosynthesis?

Write a word equation for photosynthesis.
1. Write the balanced chemical equation for photosynthesis:

2. Where does the energy to drive this reaction come from?

3. The plant organ where most photosynthesis occurs is the _________. Photosynthesis is the primary function of _________ mesophyll cells. The pigment that is responsible for photosynthesis is called _______________. What color is this pigment? _______ In what cell organelle is this pigment located? _______________. Complete the diagram below by adding the labels indicated.

4. Why do you think the upper cuticle layer is thicker than the lower cuticle layer?
5. Why do you think leaves are broad, thin and flat?

6. Label on the diagram the movement of carbon dioxide, oxygen, sunlight, water, minerals and glucose.