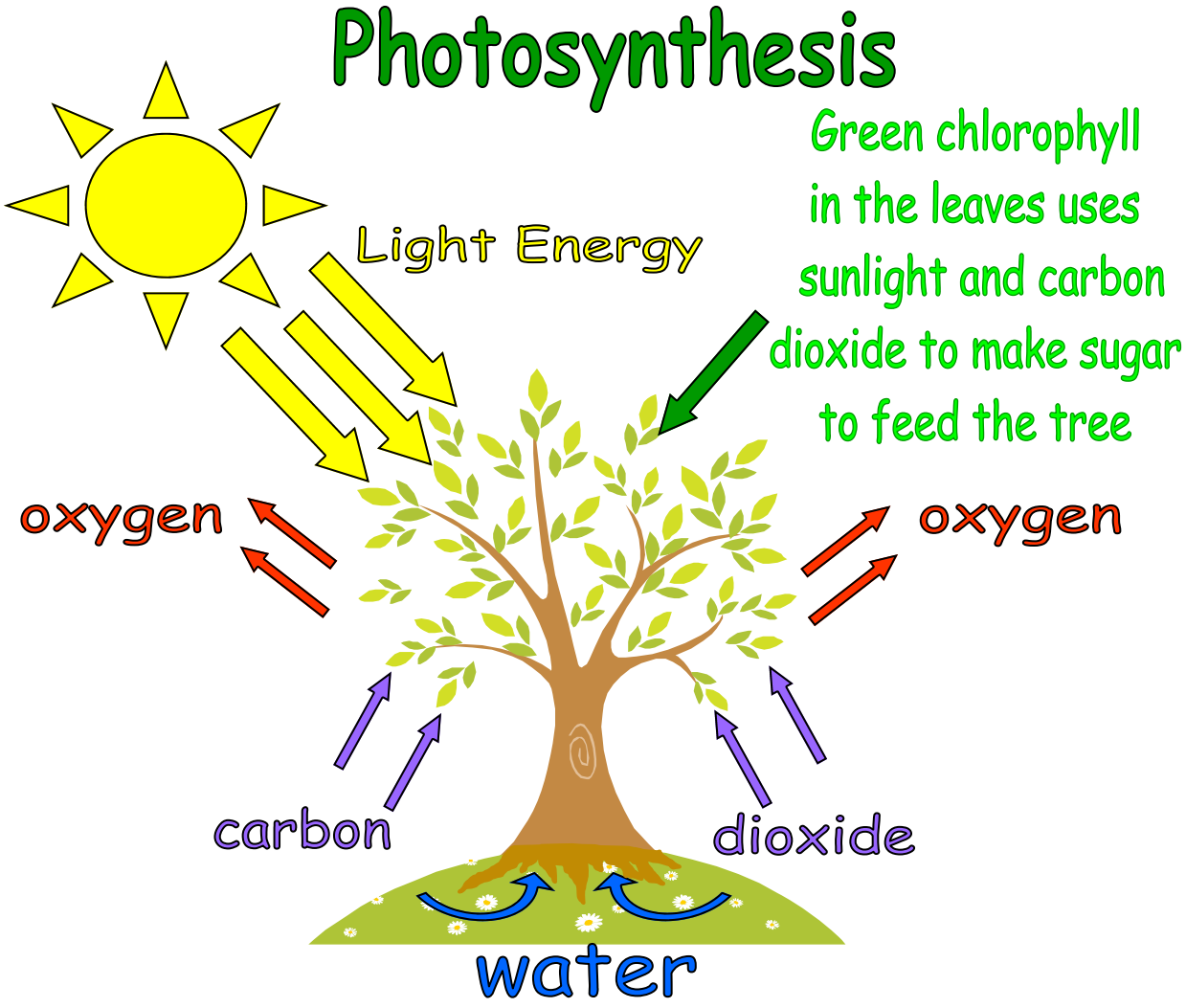
Why Leaves Change Colour

For many people autumn is a beautiful time, when the natural world treats us to a last burst of colour before the winter begins. The way the leaves change colour and fall from broad-leaved deciduous trees is closely linked to the way they make their food. Trees, like the most of plants, produce their own food by a process called photosynthesis.



Other chemicals in the leaves are yellow and red, but they are hidden. When the tree stops making chlorophyll in the Autumn and the green colour fades, these colours show through.

Photosynthesis is how plants make the food they need to grow and reproduce. When it happens, the tree uses the energy in sunlight to change carbon dioxide and water into types of sugar which feed the tree.

The sunlight energy is captured by chlorophyll, a green chemical found in the green parts of plants. The sugars produced are either stored in the leaves or sent to other parts of the tree to help it grow. When photosynthesis happens, oxygen is produced. Nearly all living creatures need to breathe oxygen, so plants producing oxygen is essential for life on earth to continue.

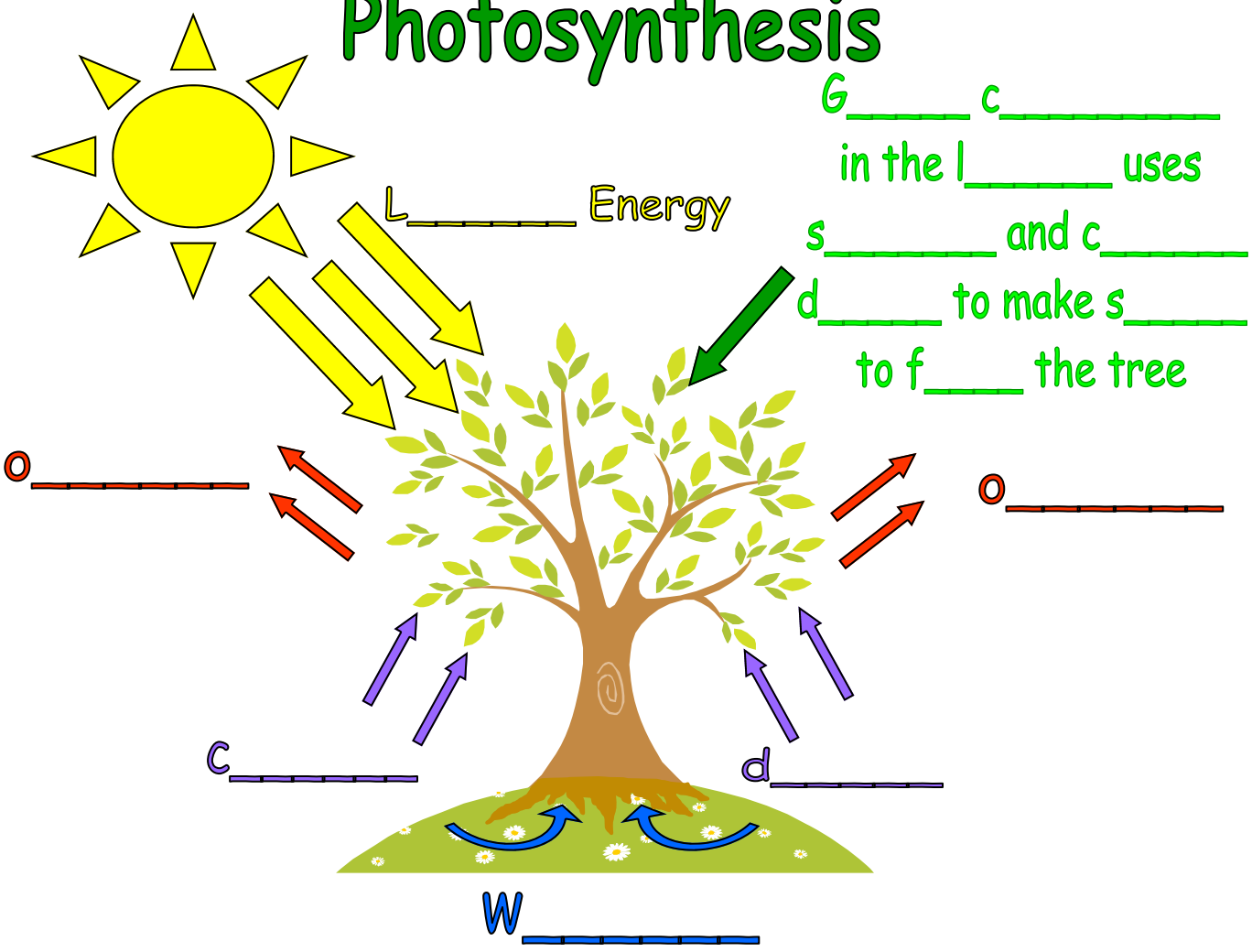
Plants need sunlight and warmth to produce chlorophyll. When there is not much sunlight, chlorophyll is not produced (think of the yellowing of grass that has been growing under a stone, or where a tent has been). Plants do not make chlorophyll in winter when there is less sunlight.

Carotene is another chemical found in leaves. It is a yellowy orange colour, but it is hidden by the green chlorophyll. It is the same chemical that makes carrots orange and the feathers of some birds look yellow. In Autumn green chlorophyll is no longer made by the leaves, so when the chlorophyll starts to disappear we can see the carotene and the leaves start to look yellow.

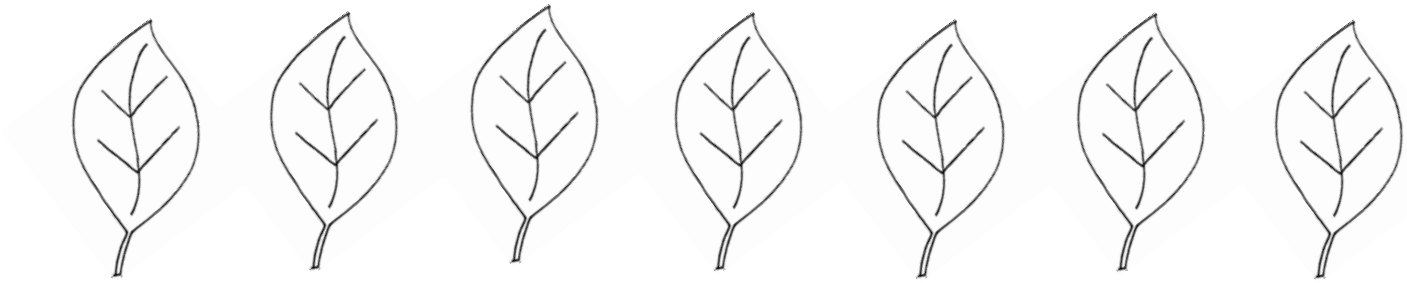
The plant starts to seal off the stalk of the leaf where it is joined to the twig, so that it will fall off. Other chemicals in the leaves change to a red/purple colour, which also starts to show through the leaves.
It is the same chemical that makes apples red and grapes purple.

Why Leaves Change Colour in Autumn

Photosynthesis



Another chemical in the leaves is c_____. It is a y_____ colour. When the tree s_____ making g_____ chlorophyll because there is less s_____, the green fades and the yellow and other r_____ chemicals show through.



Colour the 1st leaf green, then colour the other leaves to show how they gradually change colour when chlorophyll is not produced.