

## What to look for when you are out and about along the Emm Brook

### Why do leaves change colour?

The leaves change colour in response to changing light levels

Leaves are the food factory of the tree: moisture that contains valuable nutrients and minerals is sucked out of the soil by the roots and passed up through the tree into the leaves they mix with air and are converted into sugars and starches (tree food) . The energy needed for this process comes from the sun.

Sunlight is trapped in a leaf by a green pigment called Chlorophyll. It's chlorophyll that gives leaves their green colour in spring and summer.

When the days grow short and night time temperatures fall, the tree realises that autumn and winter are coming. Most trees do not grow in autumn and winter, so there is no need for food and the 'food factory' closes down.

As the length of daylight reduces during the autumn the supply of water to the leaves is cut off, trapping the glucose and waste products.

Without a supply of water chlorophyll production begins to drop off. As the green of the chlorophyll disappears other colours which have previously been obscured by the green, come to the fore. The orange, brown and yellow colours come from carotenoid pigments. The red and purple colours come from anthocyanin pigments. The intensity of the colour depends on the concentration of the stored sugars.



So a walk along the Emmbrook and Riverside Walk over the next week or two will perhaps provide some good photo- opportunities as nature puts on a show of autumn colour.