CHICAGO BOTANIC GARDEN

Leaf COLORing Activity

There are four pigments responsible for leaf colors:

Chlorophyll (pronounced KLOR-a-fill) – green

Xanthophyll (pronounced ZAN-tho-fill) – yellow

Carotene (pronounced CARE-a-teen) – gold, orange

Anthocyanin (pronounced an-tho-SIGH-a-nin) – red, violet, can also be bluish

Leaves are **brown** when there are no more photo-sensitive pigments; only the **tannins** are left.

Color these leaves according to the pigments they produce:

Sugar maple

Leaves change slowly and over time may be any combination of the four pigments, ending in a brilliant flame of anthocyanin.

Pin oak

This stately tree holds its anthocyanin-rich leaves through the fall, and holds pigment-less leaves through the winter.

Tulip tree

A pale hint of chlorophyll mixes with xanthophyll and a touch of carotene as this tree shuts down for winter.

Sumac

The anthocyanin in these leaves makes them the color and shape of flames, and appears as fire against the duller colors of the surrounding landscape.

Honey locust

Light filtering through the xanthophyll and lighter carotene of these leaves creates an ethereal glow.

Buckeye

Leaves turn color early in the season; the lighter carotenes glow warmly against the blue sky and green grass.

Ginkgo

Carotenes recede quickly around the edges of the leaves as they prepare to parachute to the ground.

Sweetgum

The darker anthocyanin hues turn these feathery leaves the color of shadows—fitting for the spooky month of Halloween.

Japanese maple

Like the maple, this tree puts on an awe-inspiring display of xanthophyll, carotene, and anthocyanin all together.

Answers: