

# Color

Plant pigments reflect colors in the Arboretum



**Age:** 4+

**Time:** 15+ minutes

One way to explore color in the Arboretum is to observe colors of flowers, leaves, and trees.

## Here's How:

**Walk through one or two gardens** in the Arboretum

- **Name the colors** you see.
- Count **how many different colors** you can find.
- Look for a **flower that has different colored petals** or parts.
- Look for **plants that have different colors in their leaves**.
- Look for **tree bark that has different shades of the same color**.

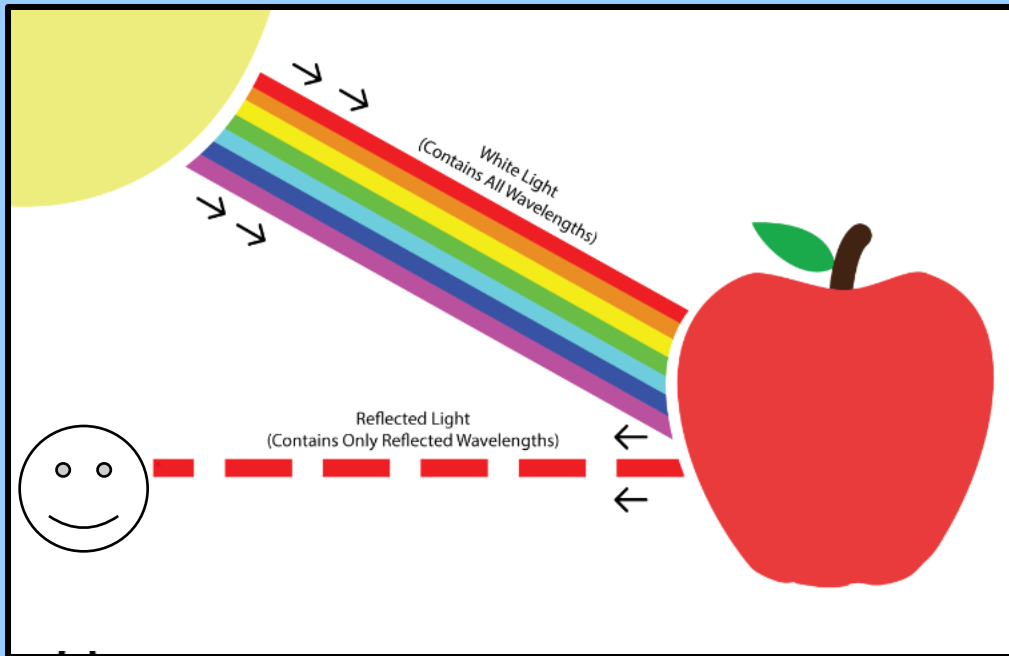
## The Back Story:

### The Science of Color

Color is what we see when light bounces or reflects off of objects.

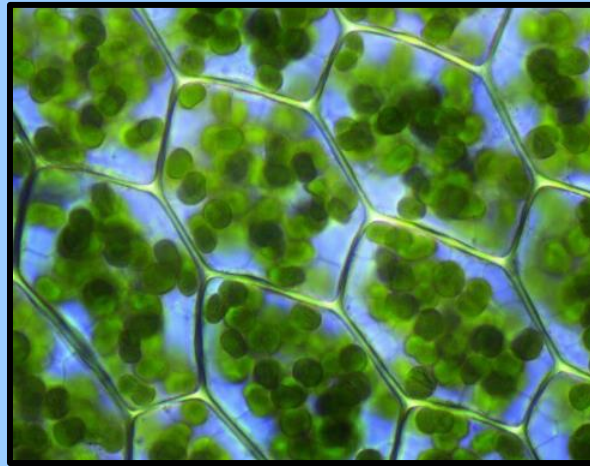
Pigments in objects reflect some colors in the light and absorb all other colors.

Plant pigments are what give plants their colors. For example, a red apple looks red because the red pigments (betalains) in the apple reflect the red color in the light and absorb all the other colors—orange, yellow, green, blue, and purple.



There are many plant pigments. Here are four:

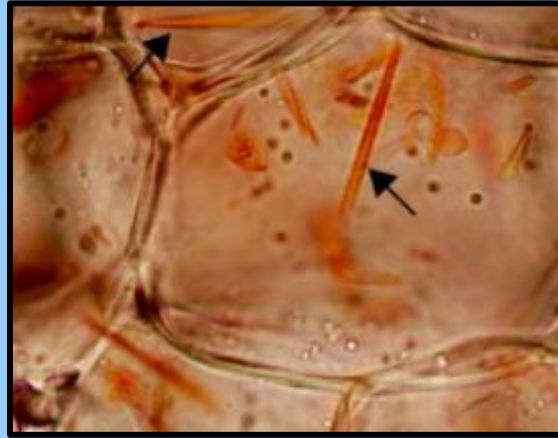
**Chlorophyll** is a plant pigment that **reflects green and blue colors** and absorbs all other colors, so when we look at green lettuce or grass, we see green. The green spots in the below photo are chlorophylls.



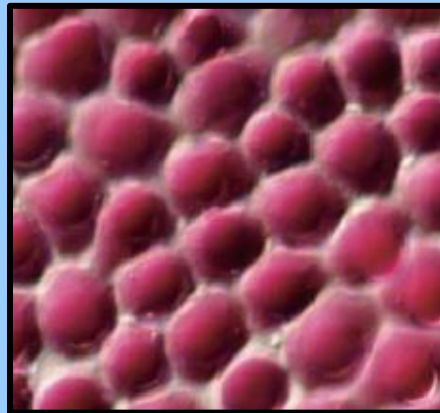
**Betalains** is a plant pigment that **reflects red colors** and absorbs all other colors, so when we look at a red rose or a strawberry, we see red. The red rectangles in the below photo are betalains.



**Carotenoid** is a pigment that **reflects red, yellow, and orange colors** and absorbs all other colors, so when we look at a carrot or a mandarin orange, we see orange. The orange rods in the below photo are carotenoids.



**Anthocyanin** is a pigment that **reflects red, blue, and purple colors** and absorbs all other colors, so when we look at purple grapes or purple cabbage, we see purple. The spots in the below photo are anthocyanins.



Which of these plant pigments are in the leaves and flowers you see in the gardens? Even if you do not know the names of all the plant pigments, we know they are there because different colors are being reflected and we see the colors.