

Pollinators Perception of Color



Alabama Wildlife Federation Outdoor Classroom Field Investigations

To use this interactive PowerPoint with your students:

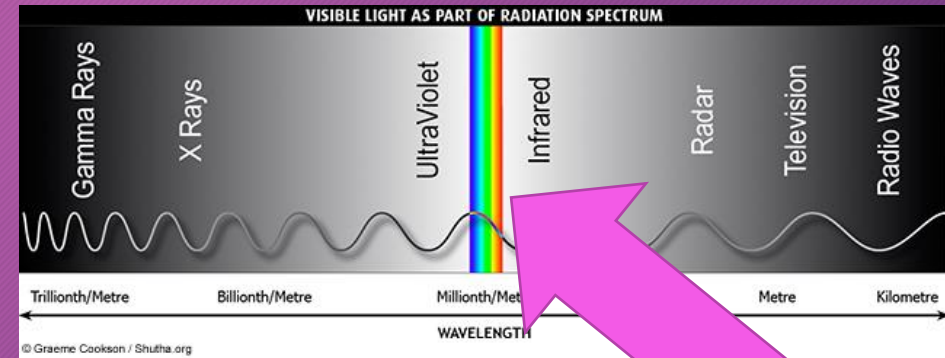
1. Click on “**Enable Editing.**”
2. Click the “**Slide Show**” tab at the top of the screen.
3. Then choose “**From Beginning**” from the menu.

How Does the Human Eye See Color?

1. Light receptors in the eye send a message to the brain.

Cones see **COLOR**

Three types of cones.
Red, **Green** and **Blue**



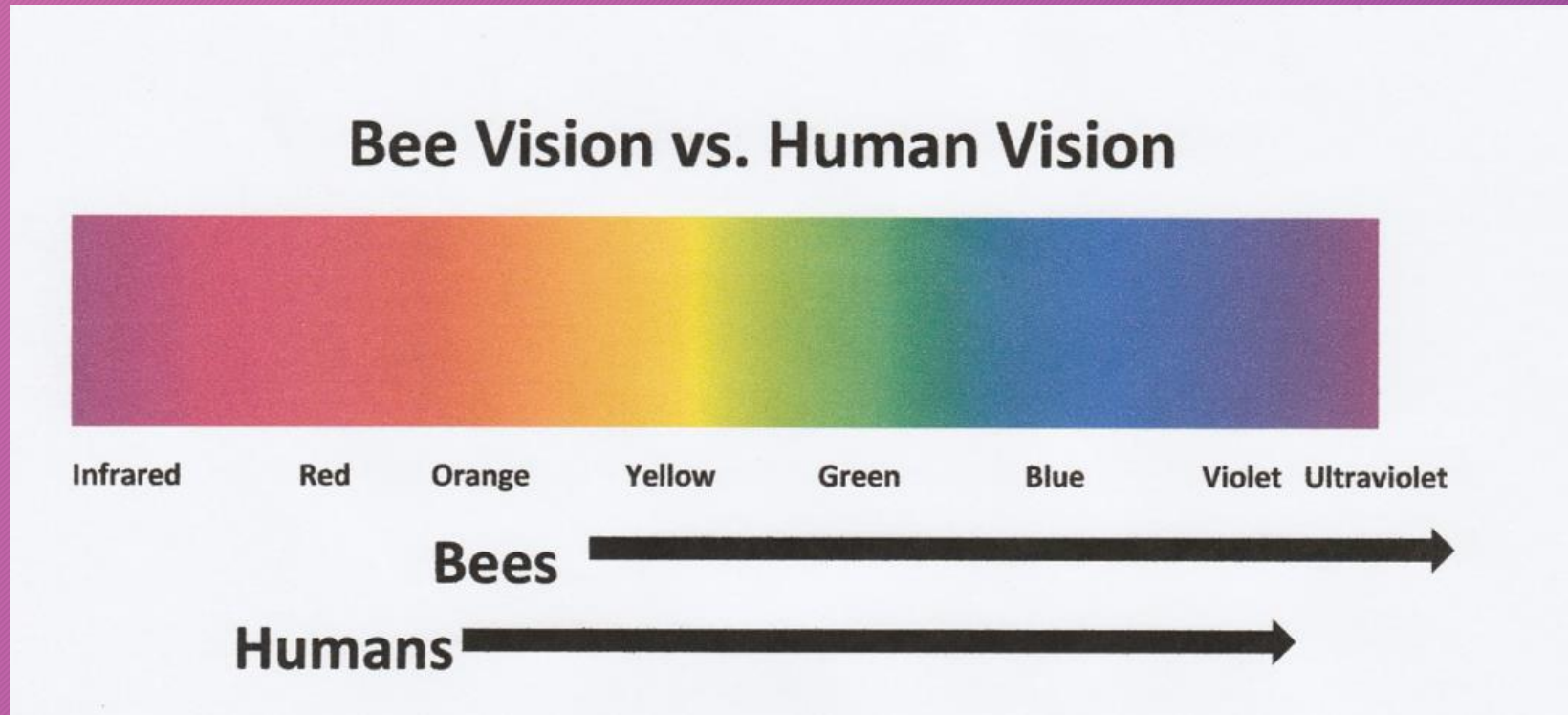
Visible to us!

2. The brain produces familiar sensations of color.

3. The surface reflects some color(s). All other color(s) are absorbed.

WE SEE ONLY THE REFLECTED COLOR.

Are Pollinators Seeing Differently?



* The bees see in ultraviolet, blue and green. These photoreceptors combine to see a large range of colors.

* Bees see 5X faster than humans.

* They can also see patterns that the human eye cannot.

Does color affect the plant a pollinator selects?



Bees prefer bright **blue** and **violet** flowers.



Moth on mock orange that has a **citrus fragrance**.



Butterflies prefer **yellow**, **orange**, **pink** and **red** flowers.



Hummingbirds prefer **pink**, **red**, **fuchsia** or **purple** flowers.



Bats rely more on **fragrance** than color.



How about Nocturnal Pollinators?

- * Bats are NOT blind! They can see 3X better than humans.
- * They are most attracted to colors like white, green and purple.
- * However, they use their sense of smell more than sight.



Evening Primrose

Who is the Pollinator with the Best Vision?

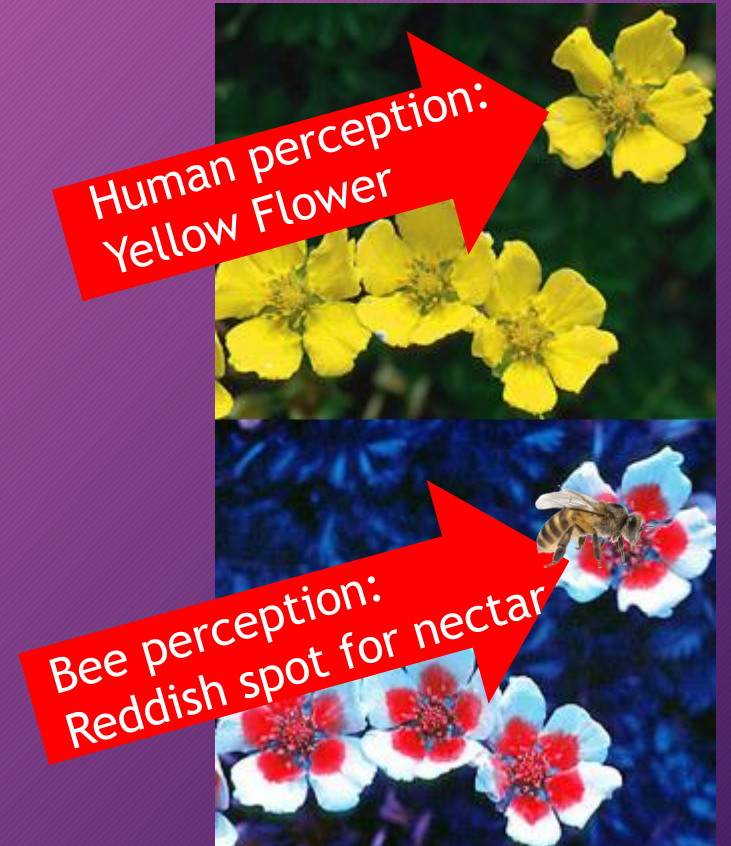


* Butterflies have been known to have up to 15 photoreceptors. That is 5X more than humans.

* The patterns on a butterfly's body in ultraviolet light are believed to attract mates and protect them from predators.

What are "nectar guides"?

- * Many insects have compound eyes along with vision in the ultraviolet (UV) range.
- * Scientists have studied how these insects know how to find the nectar in the flower.
- * The answers lies in the pigments of the flower petals and UV range seen by the pollinator's eyes.
- * The pigments create a "landing pad" for pollinators.



Can you practice seeing like a pollinator?

