



# Changing Leaves

# Why do leaves change color in the fall?

Have you ever noticed that the leaves on trees change throughout the year?

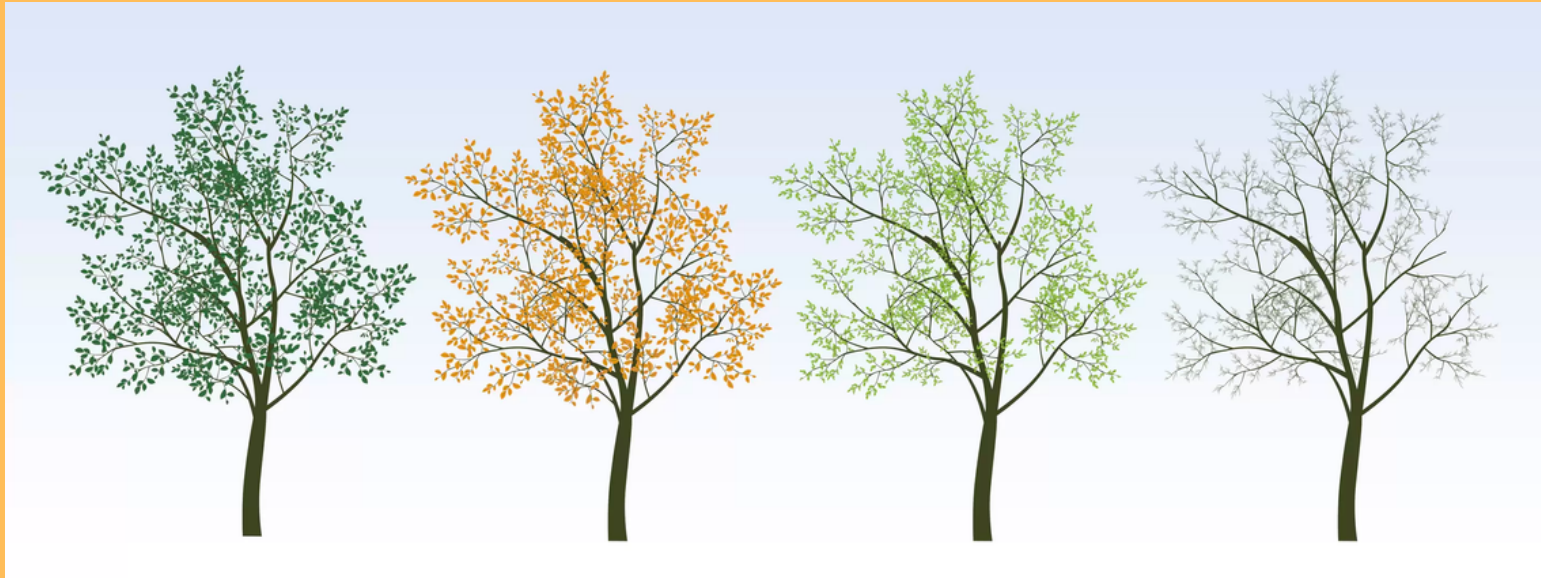
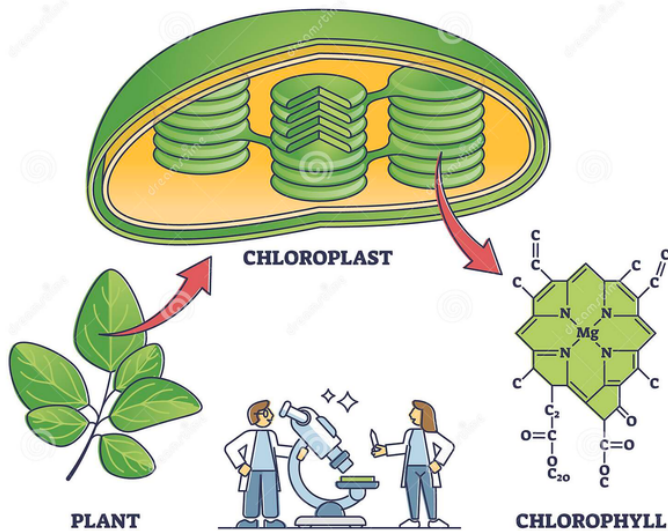


Photo: Artemis Tree Services

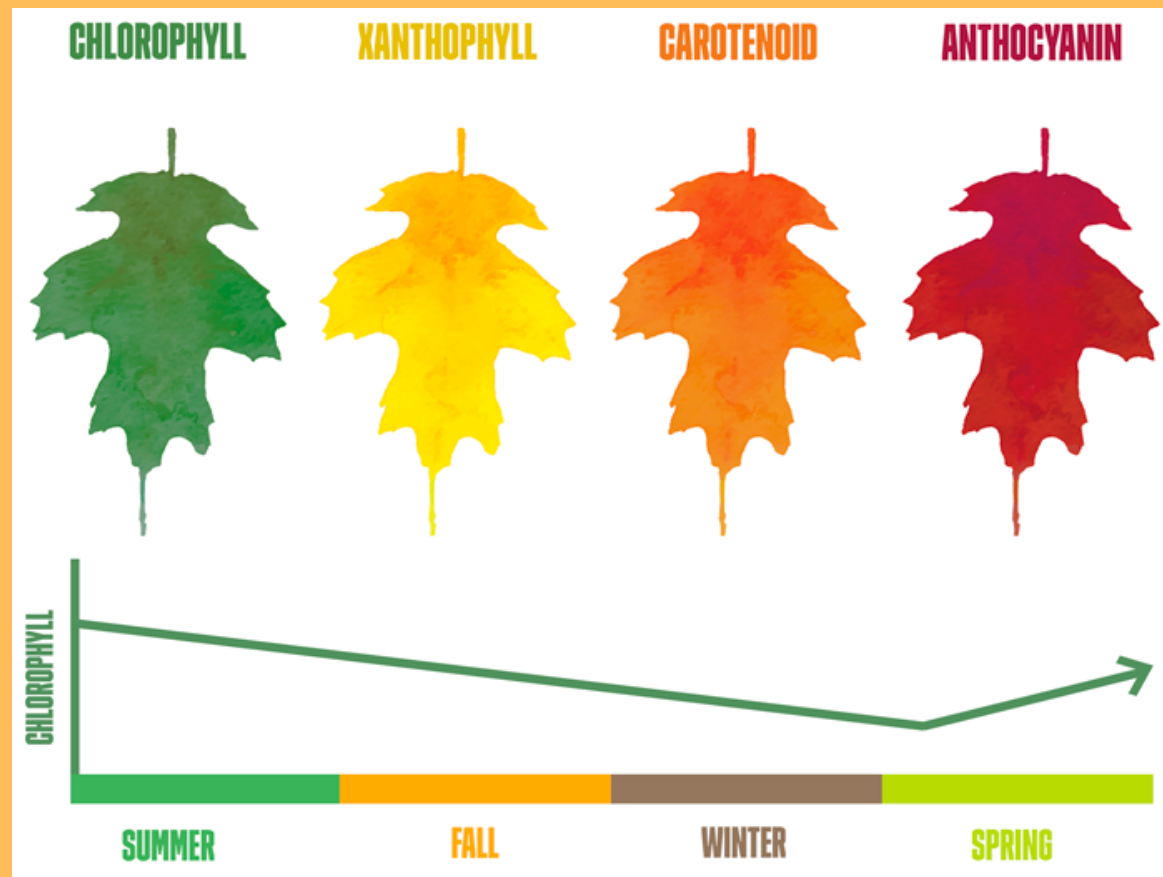
# What makes them change color?

## CHLOROPHYLL!

- Chlorophyll is the green pigment made during photosynthesis that plants and leaves use to make food
- As the year progresses, the leaves make less chlorophyll because of lower temperatures and less sunlight



- As the amount of chlorophyll decreases, other pigments in the leaves start to be shown more
- The chart below shows the different pigments that are dominant after chlorophyll production declines



# Summer

- Summer has the warmest temperatures and is the time of year with the most daylight, which means this is when the highest amount of chlorophyll is produced
- This means the predominant color of leaves in the summer is green





# Autumn

- As summer ends, temperatures drop and there is less daylight
- This means leaves stop producing as much chlorophyll
- As the amount of chlorophyll decreases, the pigments xanthophyll, carotenoid, and anthocyanin become more prominent, turning the leaves yellow, orange, and red



# Winter

- During the winter months, when temperatures drop even more, the leaves turn brown and then eventually die and fall off of the trees, leaving the trees bare



# Spring

- As temperatures rise and there is more sunlight, leaves start to grow back, and the amount of chlorophyll is dominant again, making the leaves green





# References

<https://cos.northeastern.edu/news/why-do-the-leaves-change-color-in-the-fall-and-what-do-i-do-with-this-feeling-of-existential-dread/>