WOW Program Lesson Plan
Why Do Leaves Change?

Program Duration:
20 minutes

Recommended Grade Levels:
K-5th grade

Materials Needed:
- 3 Leaves from the same tree

- Rubbing alcohol

- Jar

- Plastic baggie or wrap

- Paper coffee filter

-Small bowl or pan

Learning Objectives

1. Students will be able to understand the color-changing process of leaves

2. Students will learn what kind of leaves are found in their backyard.

Preparation

- Discuss with your child the changes that fall weather brings
- Talk about different trees that they see in their backyards and in other places that they frequent
- Visit Ohio's DNR Trees of Ohio guide online to learn about different trees and their leaves found in Ohio. Click on the link here: Tree of Ohio guide
- Ask them why they think that leaves change color
- Ask them why they think that leaves fall off trees

Background

Fall is a favorite time of year for many reasons: Holidays, pumpkin spice, and especially changing leaves! As the season approaches, leaves that were green in the summertime become yellow, red, and orange. This is due to a chemical called chlorophyll that gives leaves, grass, and other plants their characteristic green color. Then, the leaves fall off of trees and gather in yards and on sidewalks. Some of them are raked into piles and used for other purposes, but most leaves just decompose in nature. Trees spend late fall and winter with bare branches; in the springtime, they grow new leaves that are green and will repeat the same life cycle we have just discussed.

Introduction

If you look outside, you'll notice that the trees in your yard have changed color since the summertime. Their leaves are no longer green but orange and red! Today, we will be exploring the types of leaves in your yard and why they change color every fall. What causes them to do this? Can we recreate the same situation? Let's find out!

Activity

1. Have a look at the leaf identification sheet (page 3) and look at Ohio DNR's Tree of Ohio (link in the preparation section) with your child, and then go outside to see if you recognize any leaves. Discuss with your child the leaves you are able to identify.

2. Collect 3 leaves that still hold some green color; this is our source of chlorophyll.
3. Bring the leaves inside and have your child break them into little pieces and place them in the jar. Pour rubbing alcohol over the leaves until they are barely covered, then mash the leaves thoroughly into the alcohol.
4. Cover the jar with plastic wrap, place it into the bowl, and pour hot water into the bowl. Leave this mixture for half an hour, occasionally swirling it to stir the leaves.
5. Cut a strip of the coffee filter and place it in the jar so that it touches the alcohol mixture. You can tape it to the rim of the jar so that it remains secure.
6. Observe the way the leaves change color throughout the experiment

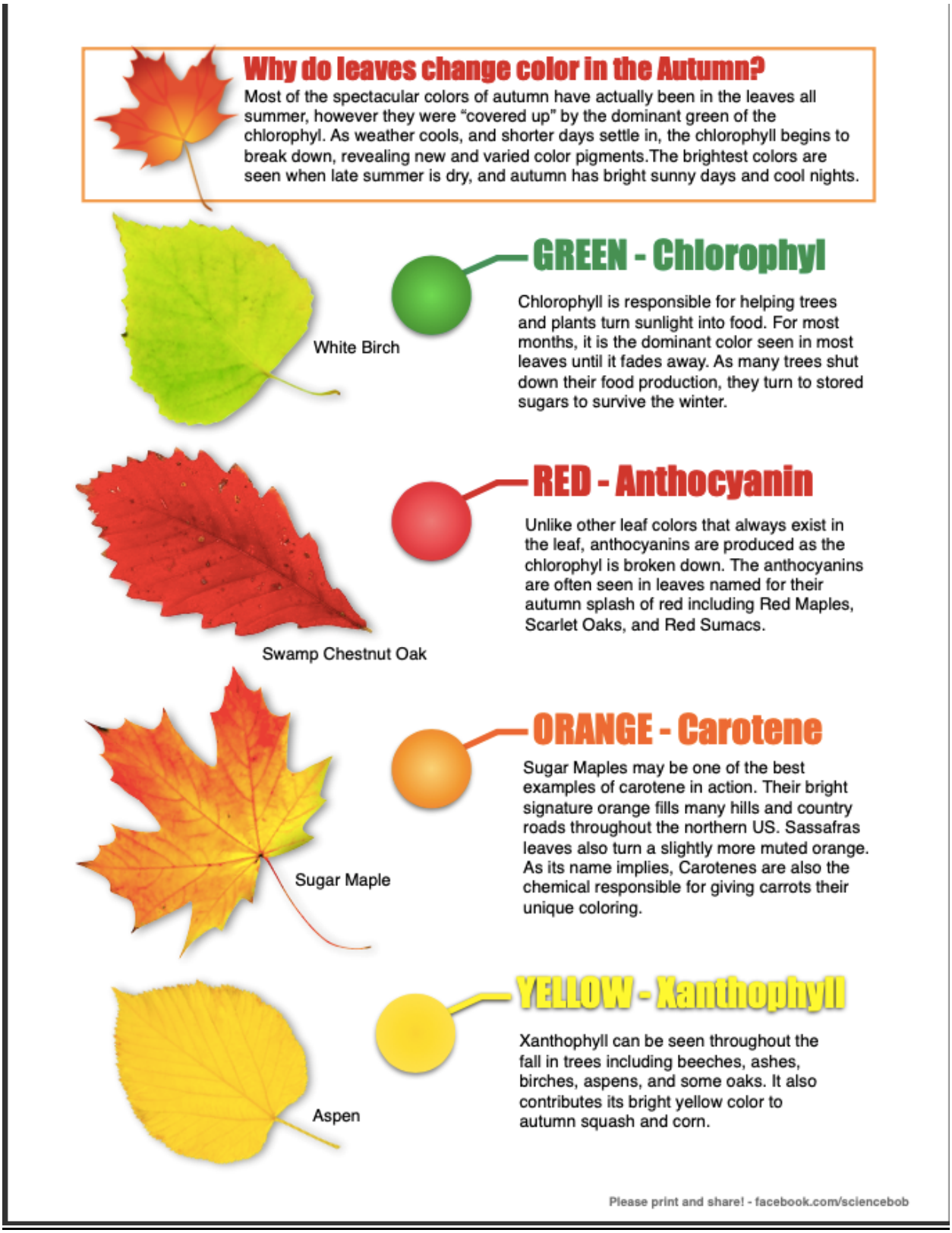
Questions

1. What happened to the leaves?
2. Where did the green color “go?”
3. Which leaves were you able to identify?

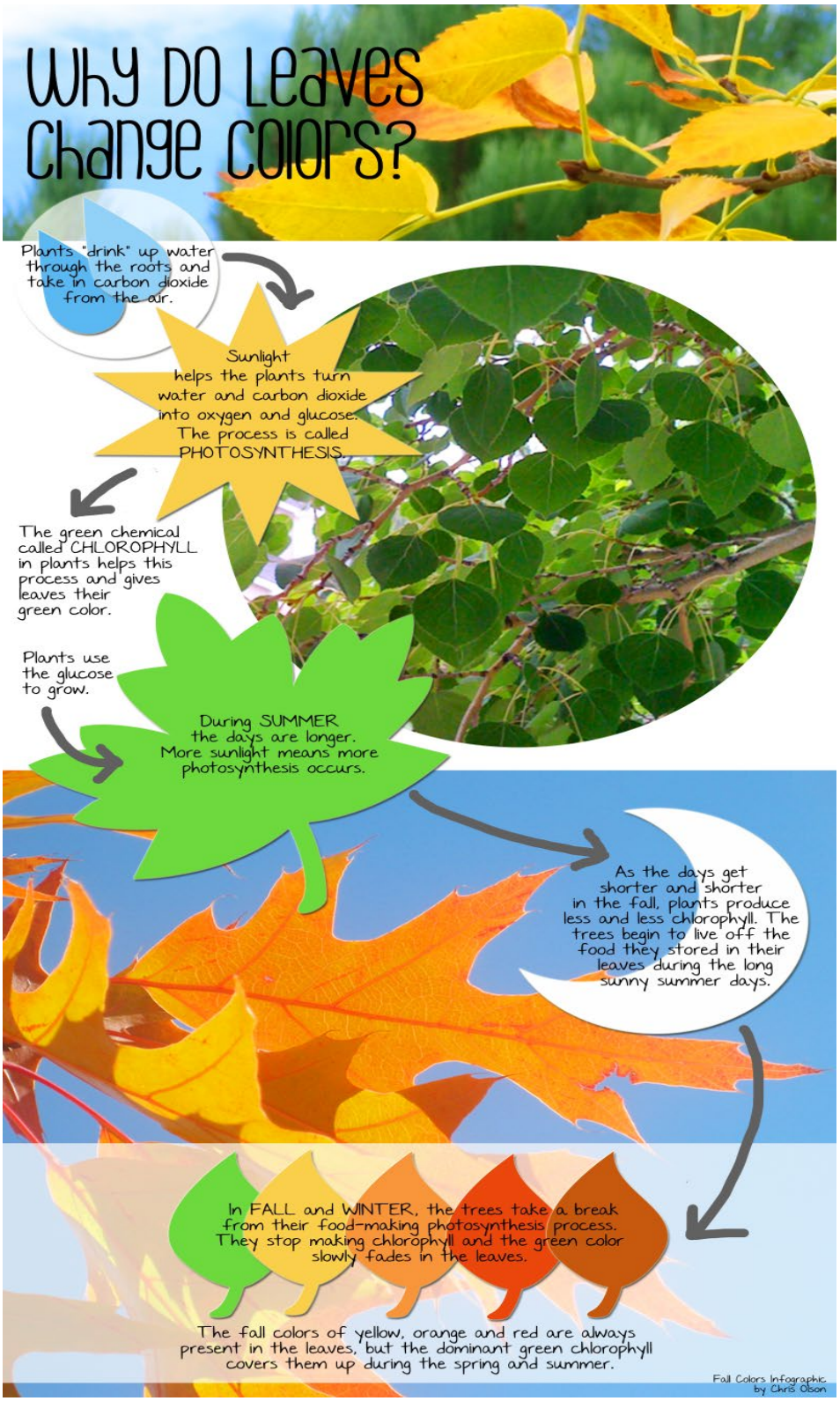
Summary

In most places around the world, changing leaves mark the changing of seasons. During this time of year, leaves lose their color, become dry and brittle, and fall from trees. We have learned that chlorophyll causes the vibrant green color in leaves. When it is removed, they turn a warmer color like yellow or orange. Each leaf has its own unique color change because there are many different types of leaves on many different types of trees. Today you identified some of the ones that can be found in your very own backyard.

Source: www.iMOM.com



Source: https://sciencebob.com/why-do-leaves-change-color-in-the-fall/



Source: https://momathonblog.typepad.com/momathon_blog/2012/09/why-do-leaves-change-colors-in-fall.html