

# LEAF CHROMATOGRAPHY: WHY DO LEAVES CHANGE COLOR?



# LEAF CHROMATOGRAPHY

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Plants need several things to grow. They need water and nutrients. They pull these in from the soil using their root systems. They also need sunlight. This is gathered by their leaves through a process called photosynthesis. During photosynthesis, a chemical called chlorophyll converts the sunlight into sugars. The plant then uses these sugars as food.

Chlorophyll is what gives leaves and stems their vibrant green color. During the summer, there's lots of sunlight to gather. Therefore, lots of photosynthesis is taking place. That means lots of chlorophyll and lots of lively green leaves, as well as new flowers, stems, and seeds, are produced.

As winter approaches, though, the days become shorter. This means there's less sunlight for the leaves to gather. Some leaves can be frozen and emerge on the far side of winter intact. Many leaves, though, cannot. They break down their chlorophyll and send the nutrients to the plant's roots. There, they'll be protected during the winter months. This way, even though the leaves die, their valuable nutrients aren't wasted.

Remember, chlorophyll is where a leaf's green color comes from. When the chlorophyll is broken down and removed, what you see is the other chemicals that remain. Since these chemicals differ from tree to tree, you'll see different colors for each. When the chlorophyll is removed, the leaf dies and falls. However, there is a short period when these trees show off the other vibrant colors of whatever chemicals are left behind.

In the spring, the process begins again. The nutrients stored in the roots are sent back into the stems and branches. There, they grow new leaves and prepare the plant for another season of photosynthesis.

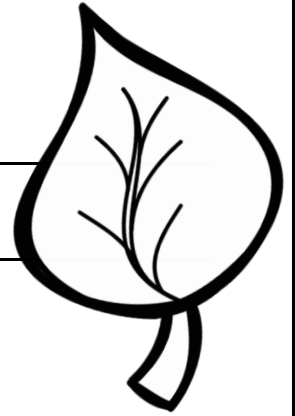
# LEAF CHROMATOGRAPHY

Name: \_\_\_\_\_ Date: \_\_\_\_\_

1. What three things do plants need?

---

---



2. What happens during photosynthesis?

---

---

---



3. What gives leaves and stems their vibrant green color?

---

4. What happens to the chlorophyll during fall and winter?

---

---

---



# LEAF CHROMATOGRAPHY

## ANSWERS

1. What three things do plants need?

**Water, nutrients from soil, and sunlight.**



2. What happens during photosynthesis?

**A chemical called chlorophyll converts the sunlight into sugars, then the plant uses these sugars as food.**

3. What gives leaves and stems their vibrant green color?

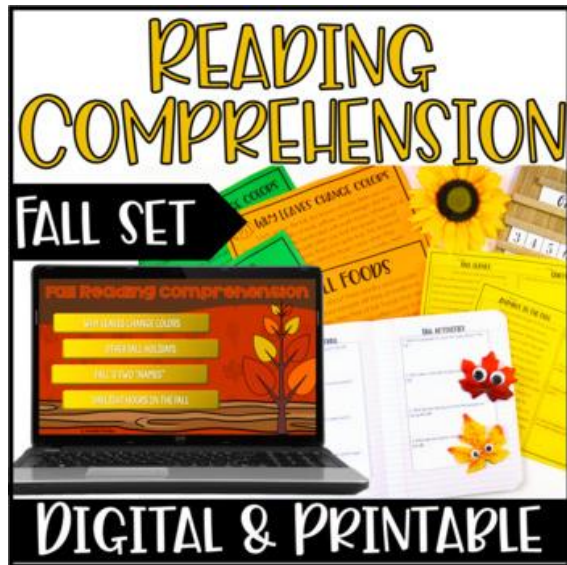
**Chlorophyll.**

4. What happens to the chlorophyll during fall and winter?

**Leaves break down their chlorophyll and send the nutrients to the plant's roots**



# WANT MORE FALL RESOURCES?



**READING COMPREHENSION**  
**FALL SET**

Fall Reading Comprehension  
5th Grade  
100 Questions  
100 Answers

**DIGITAL & PRINTABLE**

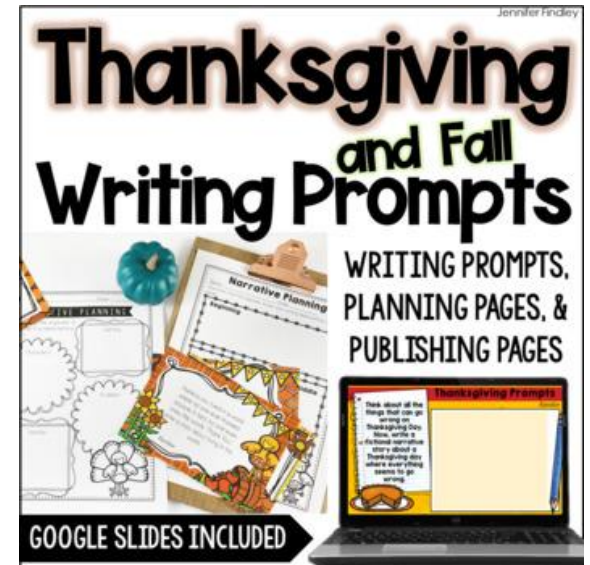
This resource includes a digital Google Slides presentation and printable worksheets. The digital version features a menu with options like 'Start Reading Comprehension', 'Print All Worksheets', and 'Print All Answers'. The printables include a worksheet titled 'Fall Foods' and a 'Fall Reading Comprehension' page with a tree illustration.



**FALL MATH CENTERS**  
**5TH GRADE**

GOOGLE SLIDES INCLUDED

This resource features a digital Google Slides presentation and printable math centers. The digital version includes a slide with the equation  $(6 \times 6) + (3 \times 4) =$ . The printables include 'Fall into' cards for place value (ones, tens, hundreds, thousands) and a 'Fall into' card for operations.



**Thanksgiving and Fall Writing Prompts**

WRITING PROMPTS, PLANNING PAGES, & PUBLISHING PAGES

GOOGLE SLIDES INCLUDED

This resource includes a digital Google Slides presentation and printable writing prompts, planning pages, and publishing pages. The digital version features a 'Narrative Planning' page and a 'Thanksgiving Prompts' page with a turkey illustration.



**FALL & THANKSGIVING**  
*math printables*

**5TH GRADE MATH**

This resource includes printable math worksheets for 5th grade. The worksheets feature fall-themed illustrations and activities such as 'PIES, PIES, PIES!' with a grid of math problems, 'FALL FESTIVAL' with a grid of math problems, and 'Acorns Addition' with a grid of math problems.



**"FALL"ING FOR PLACE VALUE**  
**FREE PRINTABLE**

GOOGLE SLIDES INCLUDED

This resource includes a digital Google Slides presentation and printable math worksheets for place value. The digital version features a 'What are the place values?' slide. The printables include a 'What are the place values?' worksheet and a 'What are the place values?' worksheet with a grid of math problems.

This resource was created by Jennifer Findley. It may be printed and photocopied for single classroom use. It may not be put on the Internet, sold, or distributed in any form. Check out my store for more resources that are common core aligned.



Follow my blog for updates, resources, and freebies.

[www.JenniferFindley.com](http://www.JenniferFindley.com)

Thanks!  
Jennifer Findley

