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# Lesson Plan: Autumn Investigator's Field Guide

## Materials Needed:

- A blank notebook or sketchbook (to become the Field Guide)
- Pencils, colored pencils, and crayons
- A small bag or basket for collecting treasures
- Glue or clear tape
- A magnifying glass (optional, but highly recommended)
- A camera or phone for taking pictures (optional)
- Access to an outdoor space with trees (backyard, park, trail)

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## Learning Objectives

By the end of this lesson, the student will be able to:

- Observe, collect, and identify key characteristics of at least three different types of autumn leaves or natural objects.
- Create detailed scientific sketches and leaf rubbings, labeling basic parts.
- Write a descriptive paragraph using sensory details (sight, sound, touch, smell) inspired by their observations.
- Compose a short, creative poem (like a haiku) about an aspect of autumn.
- Explain in their own words the basic science behind why leaves change color.

## Lesson Activities

### Part 1: The Expedition (30-45 minutes)

**Goal:** To engage in active observation and collection, using senses to explore the autumn environment.

1. **Become a Nature Detective:** Introduce the project! Explain that you are both going to become "Autumn Investigators." Your mission is to create a field guide that captures all the amazing things happening outside right now. The notebook will be your official guide.
2. **Head Outside:** Go to your chosen outdoor space. Encourage the student to walk slowly and observe carefully. What do they see? Hear? Smell? Feel on their skin?
3. **The 5-Senses Scavenger Hunt:** Prompt the student with questions to guide their observation:
  - **Sight:** "Find the most colorful leaf you can. Find a leaf with an interesting shape or pattern. What colors do you see in the sky versus on the ground?"
  - **Touch:** "Find something smooth (like an acorn). Find something rough (like bark). How does a crunchy leaf feel compared to a fresh one?"
  - **Sound:** "Stand perfectly still for one minute. What sounds do you hear? The wind? Rustling leaves? Birds?"
  - **Smell:** "What does the air smell like? Can you smell the damp earth or decaying leaves?"

Describe it."

4. **Collect Samples:** Using the collection bag, carefully gather interesting (and already fallen) items. Aim for a variety of leaf shapes, colors, seeds, acorns, pinecones, or uniquely shaped twigs. Remind the student that we are scientists collecting data!

## Part 2: The Science Lab (30 minutes)

**Goal:** To analyze the collected items, learn the science of leaf color, and document findings creatively.

1. **Set Up Your Lab:** Lay out all the collected treasures on a table. Choose a favorite leaf to investigate first.
2. **Scientific Sketching:** In the Field Guide, dedicate a page to the chosen leaf. Guide the student to draw it as accurately as possible. Use the magnifying glass to see the tiny veins. Label the parts: the **blade** (the main part), the **veins**, and the **petiole** (the little stem that connects it to the branch).
3. **Leaf Rubbing Art:** Place the leaf under a clean page in the Field Guide. Peel the paper off a crayon and rub the side of it over the page. The texture of the leaf will magically appear! This is a great way to record the shape and vein structure.
4. **Solving the Color Mystery:** Ask the student, "Why do you think leaves change color in the fall?" After they share their ideas, explain the science in a simple, story-like way:
  - "During spring and summer, leaves are like tiny food factories for the tree, using sunlight, water, and a green chemical called **chlorophyll**. This chlorophyll is so strong that it covers up other colors that are also in the leaf."
  - "In autumn, when the days get shorter and colder, the tree knows it's time to rest for winter. It stops making food, so the green chlorophyll fades away."
  - "When the green disappears, the other colors that were hiding all along—the yellows and oranges—finally get to show off! Some trees also make new colors, like reds and purples, as a kind of sunscreen to protect the leaf before it falls."
5. **Record the Science:** On a new page titled "The Secret of Colorful Leaves," have the student write or draw their own explanation of this process. They don't need to copy it word-for-word, but rather explain the "story" of the leaf colors.

## Part 3: The Writer's and Poet's Desk (15-20 minutes)

**Goal:** To use observations to fuel creative and descriptive writing.

1. **Descriptive Paragraph:** Choose another item from the collection (an acorn, a pinecone, a crunchy leaf). On a new page, ask the student to write a short paragraph describing it as if they were explaining it to someone who has never seen it before. Encourage them to use the observations from the 5-senses scavenger hunt. (*Example prompt: "How did it feel in your hand? What colors did you see? Did it make a sound when you handled it?"*)
2. **Autumn Haiku:** Introduce the Haiku, a simple and fun form of Japanese poetry with three lines:
  - Line 1: 5 syllables
  - Line 2: 7 syllables
  - Line 3: 5 syllables

Share an example:

*Green fades from the trees,  
Gold and red now decorate,  
Crunchy leaves fall down.*

Have the student compose their own haiku in the Field Guide about something they experienced

during their expedition.

## Assessment (Show What You Know)

The completed "Autumn Investigator's Field Guide" is the primary assessment. Review it together using this checklist:

- [ ] Does the guide contain at least one detailed sketch with labels?
- [ ] Is there at least one creative leaf rubbing?
- [ ] Is there a page that explains, in the student's own words, why leaves change color?
- [ ] Is there a descriptive paragraph using sensory details?
- [ ] Does the guide include an original autumn-themed haiku?

The goal is completion and creative effort, not perfection. Celebrate the unique and personal Field Guide the student has created!

## Differentiation and Extension

- **For Extra Support:** Provide a pre-printed leaf identification chart to help with naming trees. Offer sentence starters for the descriptive paragraph (e.g., "The leaf I found looks like..."). Work together to clap out syllables for the haiku.
- **For an Extra Challenge:** Research the specific types of trees the collected leaves came from (e.g., Oak, Maple, Birch). Add a map of the park or yard where items were found. Write a short story from the perspective of a falling leaf or a squirrel preparing for winter.

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