

# *Mi Vida Loca Cabin · October*

Fall · Fall Foliage, Fungi & the Science of Color

*A Two-Day Homeschool Adventure Guide for Families Staying at Mi Vida Loca*

Welcome to October at Mi Vida Loca! This guide pairs two days of real Broken Bow adventures with complete unit studies, lessons, and quizzes. Subjects this month: **Biochemistry of Color · Mycology · Fall Ecology.**

<b>Month</b>	October · Fall
<b>Subjects</b>	Biochemistry of Color · Mycology · Fall Ecology
<b>Day 1 Main Activity</b>	Skyline Trail Fall Foliage Hike + Leaf Color Science
<b>Day 2 Main Activity</b>	Mushroom Walk + Beavers Bend Mining Company
<b>Home Base</b>	Mi Vida Loca Cabin · <a href="http://mycabinbrokenbow.com">mycabinbrokenbow.com</a>

## DAY ONE · Skyline Trail Fall Foliage Hike + Leaf Color Science

Lunch today at **Abendigo's Grill & Patio** — a local favorite.

**9:00 AM**

### **Skyline Trail Fall Foliage Hike**

October is the month Broken Bow was made for. Peak fall color typically arrives mid-to-late October, painting the Ouachita Mountains in extraordinary reds, oranges, and yellows. The Skyline Trail offers the highest vantage points in the Beavers Bend area — sweeping views of the fall canopy spread below. Start early for the best light and wildlife activity. On northwest wind days, migrating raptors use Ouachita ridgelines as navigation guides and the hawk migration can be spectacular.

**11:00 AM**

### **Leaf Color Science — Biochemistry in the Forest**

While hiking, collect 5-6 leaves from different tree species at various stages of color change. Back at the cabin, set up a simple chromatography experiment: cut leaves into small pieces, place in rubbing alcohol for 30 minutes, then stand a paper coffee filter in the alcohol solution. Watch as the pigments separate into bands of color — the green chlorophyll near the bottom, the yellows and oranges higher up. This reveals the pigments hidden all summer by the dominant green of chlorophyll.

**12:30 PM — LUNCH**

### **Abendigo's Grill & Patio**

October is when Abendigo's is at its absolute best — the covered patio surrounded by fall color, crisp air, and often live music on weekends. Steaks, seafood, Southern favorites. The most atmospherically perfect October lunch in Hochatown.

**2:00 PM**

### **Cedar Bluff Trail — Fungi Observation Walk**

October rain plus leaf litter equals mushroom season. The Ouachita forests host extraordinary fungal diversity. Walk the Cedar Bluff Trail specifically looking for fungi on fallen logs, in leaf litter, and on living tree bark. **IMPORTANT:** look, photograph, and study — never eat any wild mushroom without expert identification. This is mycology — the study of fungi — one of the most underappreciated sciences.

## DAY TWO · Mushroom Walk + Beavers Bend Mining Company

Lunch today at **Grateful Head Pizza Oven & Tap Room** — a local favorite.

**9:00 AM**

### Guided Mushroom Walk — Ouachita Foraging Introduction

If a local foraging guide is available (ask Beavers Bend State Park rangers for recommendations), a guided mushroom walk is an extraordinary October experience. The Ouachitas host edible species including chicken-of-the-woods (bright orange shelf fungus on dead oaks), hen-of-the-woods (maitake), and chanterelles. A skilled guide can introduce the deadly look-alikes that make wild mushroom identification a skill requiring years of practice.

**11:00 AM**

### Beavers Bend Mining Company — October Dino Dig

October brings cooler temperatures to the outdoor mining sluice — perfect weather for spending extended time panning. The Dino Dig Adventure is especially fun in fall: the excavation area looks like a real paleontological dig site in the autumn light. After panning, use the gem identification station to catalog the day's finds and build a labeled rock collection display from the weekend's adventures.

**12:30 PM — LUNCH**

### Grateful Head Pizza Oven & Tap Room

Wood-fired pizza, craft beer, outdoor patio under fall-colored trees. October weekends at Grateful Head are lively and festive, often with live music. Arrive slightly before peak hours for the best patio table.

**2:30 PM**

### Sunset Drive — Fall Color Tour & Winery Stop

End the day with a sunset fall foliage drive through the Ouachita Mountains — Highway 259 through the park is spectacular in late October. Stop at Knotted Rope Winery or Girls Gone Wild Winery for a family-friendly visit. Discuss the science of wine fermentation as it connects to the chocolate and distilling lessons from other months.

*Back at Mi Vida Loca — End your day at the resort community: swimming pool (seasonal), stocked catch-and-release fishing ponds, clubhouse with pool tables, children's playground, and beautiful walking trails.  
Tonight, complete the quiz together as a family! [www.mycabinbrokenbow.com](http://www.mycabinbrokenbow.com)*

## UNIT STUDY · OCTOBER

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### *The Biochemistry of Fall Color: Why Leaves Change*

*Subjects: Biochemistry of Color · Mycology · Fall Ecology · Ages 6–16*

#### LESSON ONE

The chemistry of fall color is one of the most beautiful examples of biochemistry in nature. Throughout summer, chlorophyll — the green pigment responsible for photosynthesis — dominates all other leaf pigments. As day length shortens in fall, trees detect the change and begin preparing for winter. A special layer of cells forms at the base of each leaf stem, gradually cutting off the leaf's water and sugar supply. As chlorophyll breaks down without being replaced, other pigments become visible: xanthophylls produce yellows, carotenoids produce oranges. These pigments actually play a role in photosynthesis — they capture wavelengths of light that chlorophyll misses.

#### LESSON TWO

The brilliant reds and purples of maples, sumacs, and black gums come from anthocyanins — pigments newly synthesized as the leaf begins to die. Scientists believe anthocyanins protect the leaf's cellular machinery during the process of nutrient recovery, allowing the tree to extract and store maximum nitrogen and phosphorus from the leaf before dropping it. Trees invest heavily in producing high concentrations of nutrients in their leaves each spring — recapturing those nutrients in fall is crucial. The brilliance of fall color in any given year depends on summer and fall conditions: a dry summer followed by warm sunny fall days and cold (but not freezing) nights produces the most vivid display.

### *Mycology: The Hidden Kingdom of Fungi*

#### LESSON THREE

Fungi are one of the most ecologically important — and most misunderstood — kingdoms of life. They are neither plants (which make their own food through photosynthesis) nor animals (which find and consume other organisms). Fungi are decomposers and symbionts: they secrete enzymes that break down dead organic material (wood, leaves, animal matter) into simple compounds that plants and microbes can absorb, essentially running the nutrient recycling system of every terrestrial ecosystem. Without fungi, dead wood and leaves would accumulate indefinitely. What we call a mushroom is actually just the fruiting body — the reproductive structure of a much larger organism. The largest organism on Earth is a honey fungus mycelium in Oregon estimated to be 2,385 years old and covering 2,385 acres.

#### LESSON FOUR

The mycorrhizal network — called the Wood Wide Web — is one of ecology's most profound recent discoveries. Most forest trees, including all the pines in the Ouachita Mountains, form symbiotic relationships with mycorrhizal fungi. The fungi wrap around or penetrate tree root cells and extend their mycelial networks through the soil, dramatically extending the tree's ability to absorb water and nutrients. In return, the tree provides the fungus with sugars produced through photosynthesis. The network connects trees of the same and different species: large old trees with extensive root and fungal networks can transfer carbon, water, and chemical signals to neighboring trees — including their own seedlings — through the fungal network.

## QUIZ - OCTOBER - The Biochemistry of Fall Color: Why Leaves Change

### 1. What causes the yellow and orange colors in fall leaves?

- A) New yellow and orange pigments produced as the leaf dies
- B) Xanthophylls and carotenoids — pigments present all summer but hidden by green chlorophyll
- C) Chemical reactions between leaf acids and cooling temperatures
- D) Mineral deposits from the soil becoming visible

### 2. Why do trees produce red anthocyanin pigments in fall leaves?

- A) To signal other trees that they are healthy
- B) To create a protective light screen that helps recover maximum nutrients from the leaf before it drops
- C) As a byproduct of chlorophyll breaking down
- D) To attract birds that will spread their seeds

### 3. What is a mycelium?

- A) The fruiting body (mushroom cap and stem) of a fungus
- B) The reproductive spores produced by a mushroom
- C) The main body of a fungus — a network of microscopic filaments extending through soil
- D) The chemical that gives mushrooms their distinctive flavor

### 4. What is the Wood Wide Web?

- A) A type of spider web found specifically in forest habitats
- B) The mycorrhizal fungal network connecting trees and allowing them to share nutrients and chemical signals
- C) The communication system trees use by releasing chemicals into the air
- D) A scientific website mapping forest ecosystems globally

### 5. What conditions produce the most vivid fall color display?

- A) A wet summer followed by a warm rainy fall
- B) A dry summer followed by warm sunny fall days and cold (but not freezing) nights
- C) An early frost that rapidly kills all chlorophyll simultaneously
- D) High humidity throughout October

### 6. Why are fungi classified separately from both plants and animals?

- A) They are too small to be classified with larger organisms
- B) They reproduce differently from both plants and animals
- C) Unlike plants they cannot make their own food; unlike animals they secrete enzymes to break down and absorb dead material rather than consuming other organisms
- D) They have unique cell walls made of a different material than any other organism

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#### Answer Key:

1. B 2. B 3. C 4. B 5. B 6. C

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*We hope this adventure fills your family with wonder and curiosity. Every season in the Ouachita Mountains brings something new to discover. Mi Vida Loca Cabin · Broken Bow, Oklahoma · [mycabinbrokenbow.com](http://mycabinbrokenbow.com)*