

Mi Vida Loca Cabin · February

Winter · Stars, Skies & the Science of Light

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

Welcome to February at Mi Vida Loca! This guide pairs two days of real Broken Bow adventures with complete unit studies, lessons, and quizzes. Subjects this month: **Astronomy · Physics of Light · Oklahoma History.**

Month	February · Winter
Subjects	Astronomy · Physics of Light · Oklahoma History
Day 1 Main Activity	Stargazing Science + Shadow Experiments
Day 2 Main Activity	Forest Heritage Center + Hochatown Distilling Co. Tour
Home Base	Mi Vida Loca Cabin · mycabinbrokenbow.com
Weather Note	Indoor backup options included — see end of Day 1

DAY ONE · Stargazing Science + Shadow Experiments

Lunch today at **Foggy Bottom Kitchen** — a local favorite.

9:00 AM

Daytime Astronomy: Sun Tracking & Shadow Science

February in Broken Bow offers beautifully clear winter skies. Start your astronomy unit during the day with a shadow-tracking experiment: use a vertical stick as a sundial and mark shadow positions every 30 minutes throughout the morning. Watch how the shadow moves and shortens — this is Earth's rotation made visible. Discuss why February days are longer than December days and trace the concept back to Earth's tilt and orbit.

11:00 AM

Beavers Bend Sunset Walk & Evening Stargazing

The Ouachita Mountains are one of Oklahoma's darkest-sky regions — February's clear cold nights offer exceptional stargazing with no leaves blocking the view. Pack hot cocoa and warm blankets and find a clear spot away from cabin lights. February skies feature Orion at his best, the Pleiades star cluster, and on clear nights the winter Milky Way. Download the free Star Walk or SkyMap app to identify constellations. Discuss how the light you're seeing left some stars thousands of years ago.

12:30 PM — LUNCH

Foggy Bottom Kitchen

A charming spot nestled in the trees of Hochatown with a wonderful covered patio surrounded by pines. Known for creative comfort food, daily specials, and a cozy atmosphere that feels like eating in the forest itself.

2:00 PM

Valentine's Nature Journaling — The Science of Hearts

In honor of February, create a nature journal page about love in the animal kingdom with a scientific twist. Research: How do cardinals (Oklahoma's state bird) choose mates? How do fireflies use light to attract partners? How do trees communicate through underground fungal networks — the 'Wood Wide Web'? Biology, ecology, and chemistry wrapped in a holiday theme.

■ Weather Note

February is Broken Bow's most unpredictable month — ice storms are possible. Evening temperatures drop into the low 30s. Stargazing requires serious warm layers — plan for it before dark so you're dressed appropriately.

Indoor Backup Options:

Ice day alternative: Gutter Chaos (bowling and arcade). Escape Room Hochatown for a family problem-solving challenge. Cabin unit study deep dives by the fireplace are perfect February activities.

DAY TWO · Forest Heritage Center + Hochatown Distilling Co. Tour

Lunch today at **Tacohoma Tacos and More** — a local favorite.

9:00 AM

Forest Heritage Center — Oklahoma's Timber History

Return to the Forest Heritage Center focusing on the human history exhibits: 1940s lumbering operations, the impact of timber industry on McCurtain County's economy, and the transition to sustainable forestry. How did this industry shape the towns of Broken Bow and Hochatown? Economics and social studies through a deeply local lens that surrounds the cabin.

11:00 AM

Hochatown Distilling Co. — Chemistry of Fermentation

Hochatown Distilling Co. offers fascinating tours with completely family-appropriate science. Learn about fermentation (yeast converting sugars to alcohol — biology and chemistry), distillation (separating compounds by boiling point — applied chemistry), and barrel aging (why wood changes flavor over time — organic chemistry in slow motion). The gift shop has beautiful local merchandise. Adults may enjoy a tasting while kids learn the science.

12:30 PM — LUNCH

Tacohoma Tacos and More

A fun, casual taco spot in Hochatown serving creative fresh tacos with local ingredients. Family-friendly, fast, and delicious — kids love building their own combinations.

2:30 PM

Cabin Astronomy Craft — Constellation Map Making

Back at the cabin, create constellation maps using black cardstock and white paint pens. Each family member picks a favorite constellation from last night's viewing and researches its mythology — Greek, Roman, and Native American sky stories are all different for the same star patterns. A beautiful keepsake that doubles as a lesson in astronomy and world cultures.

*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*

UNIT STUDY · FEBRUARY

Earth's Place in Space: Rotation, Revolution & the Seasons

Subjects: Astronomy · Physics of Light · Oklahoma History · Ages 6–16

LESSON ONE

Everything about our experience of time on Earth comes down to two movements: rotation (Earth spinning on its axis, giving us day and night) and revolution (Earth orbiting the sun, giving us years and seasons). Earth completes one rotation every 24 hours — which is why the sun appears to move across the sky from east to west. But Earth isn't upright as it orbits: it's tilted at 23.5 degrees. This tilt is the entire reason we have seasons. When the Northern Hemisphere tilts toward the sun (summer), days are longer and sunlight hits more directly. When it tilts away (winter), days are shorter and sunlight arrives at a shallow angle. February is when Oklahoma begins its slow lean back toward the sun — days grow about 2 minutes longer each day.

LESSON TWO

Light from stars is ancient. The nearest star to our solar system is 4.24 light-years away — meaning the light you see left that star 4.24 years ago. Many stars visible tonight sent their light hundreds or thousands of years ago. A light-year is the distance light travels in one year: about 5.88 trillion miles. The Milky Way galaxy contains an estimated 200-400 billion stars and is about 100,000 light-years across. Our solar system sits roughly 26,000 light-years from the center. The dark skies of the Ouachita Mountains make Broken Bow one of Oklahoma's best stargazing destinations.

The Science of Fermentation: Yeast, Chemistry & Transformation

LESSON THREE

Fermentation is one of humanity's oldest technologies — driven entirely by single-celled organisms called yeast. Yeast are fungi that eat sugar and, in the absence of oxygen, convert it into ethanol and carbon dioxide. This is called anaerobic respiration. The carbon dioxide is the same bubbling seen in bread dough, beer, and sourdough starter. In bread, we capture the CO₂ bubbles to make the bread rise. In brewing and distilling, we capture the ethanol. Different strains of yeast produce different flavor compounds, which is why a beer made with one yeast strain tastes completely different from one made with another, even if all other ingredients are identical.

LESSON FOUR

Distillation is the science of separating mixtures using differences in boiling point. Ethanol boils at 173 degrees Fahrenheit while water boils at 212 degrees. By carefully heating a fermented liquid to between those temperatures, distillers capture alcohol vapor which rises, travels through a copper still, cools, and condenses back into concentrated liquid. This same principle is used in chemistry labs, oil refineries, and water purification worldwide. Barrel aging adds another layer of chemistry: as liquid moves in and out of wood with temperature changes, it picks up vanillin (vanilla-like), tannins, and caramel-like sugars from the charred wood interior. Time plus wood plus temperature cycles equals flavor. Chemistry in slow motion.

QUIZ · FEBRUARY · Earth's Place in Space: Rotation, Revolution & the Seasons

1. What causes Earth's seasons?

- A) Earth's changing distance from the sun
- B) Earth's 23.5-degree tilt as it orbits the sun
- C) The moon blocking sunlight at different times
- D) Changes in the sun's brightness

2. How long does it take Earth to complete one full orbit around the sun?

- A) 24 hours
- B) One month
- C) One year
- D) 365.5 days

3. What is a light-year?

- A) One year in space time
- B) The distance light travels in one year — about 5.88 trillion miles
- C) The amount of light the sun produces in a year
- D) The time for light to travel from sun to Earth

4. What do yeast organisms eat, and what do they produce?

- A) They eat oxygen and produce carbon dioxide
- B) They eat sugar and produce ethanol and carbon dioxide
- C) They eat starch and produce lactic acid
- D) They eat alcohol and produce sugar

5. Why does distillation work to separate alcohol from water?

- A) Alcohol is heavier than water
- B) Water evaporates faster than alcohol
- C) Alcohol boils at a lower temperature than water
- D) A filter removes water molecules

6. What compound in oak barrels gives aged spirits a vanilla-like flavor?

- A) Tannin
- B) Caramel
- C) Ethanol
- D) Vanillin

Answer Key:

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

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