

Taste of Ancient Ohio Lesson Plans

TIME: 3 sessions (45 min)

⚠ SPEEDBUMP ⚠: Seventeen market stalls is a full market. If your room or your clock cannot hold a 17-station rotation, post the stalls in four zone clusters (Garden, Forest, Hunt, River) and require students to shop any nine stalls, at least one per zone. Budget 10 minutes of spillover into Lesson 3 for slow shoppers.

THE CORE CONVERSATION

What makes a plant a crop instead of a weed?

WHY THIS THEME: For most of the twentieth century, textbooks taught that farming came to Ohio from somewhere else, arriving with corn. Archaeology has now dismantled that story. Bruce Smith and colleagues demonstrated that eastern North America is one of the world's few independent centers of plant domestication. Sites in southeastern Ohio now include evidence of this "Eastern Agricultural Complex," such as domesticated goosefoot and sumpweed in cooking pits at the County Home site by 3,000 years ago, and a rockshelter cache of roughly 9,000,000 goosefoot seeds at Ash Cave. The crops that powered this story were later abandoned, so the plants returned to being weeds. It turns out, those weeds hide a 2000 year old farming tradition.

THE PURPOSE: Students are developing the ability to reason from physical evidence to a claim about daily life: charred seeds in a cooking pit mean somebody cooked them, bigger seeds over time mean somebody was choosing them, and a southern grass in an Ohio hearth means somebody carried it here and planted it. This builds directly on the communities and resources work of grade 3, feeds the Ohio history year in grade 4, and sets up grade 5's study of American Indian cultures and early agricultural civilizations of the Western Hemisphere. It also teaches that genetic traits vary, people select, and species can change.

STANDARDS ALIGNMENT: Social Studies: 3.5, 3.16, 4.3, 4.12, 5.2, 5.7. Social-Emotional Learning: B2.3.b, C3.2.b, D1.1.b, E1.1.b. English Language Arts: RI.4.1, RI.4.7, W.4.2, SL.4.1, RI.5.7, W.5.2. Science: Grade 3 Life Science (offspring and trait variation), Grade 4 Life Science (environmental change), Grade 5 Life Science (organisms and energy).

STUDENT PROMPT: Think about your favorite snack. Now imagine scientists digging up your kitchen trash in 3000 years. What would they find? What would it prove about what your family really ate?

THE THEME

Ohio's first farmers turned weeds into crops by paying attention for a very long time. The people changed the plants, and the plants changed the people.

STANDARDS AND MATERIALS

STANDARDS (ASSESSED)

SOCIAL STUDIES
3.5: Daily life is influenced by the agriculture, industry and natural resources in different communities. Assessed in: Chef's Shopping List zone sorting (Lesson 2); menu design constrained to local resources (Lesson 3). Students experience a community whose entire daily life runs on what the valley provides.
3.16: Individuals must make decisions because of the scarcity of resources. Making a decision involves a trade-off. Assessed in: Kitchen Rules and seasonality tags (Lesson 3); February Menu challenge for early finishers; closing trade question. Every dish forgoes another dish; winter forgoes almost everything.
4.3: Various groups of people have lived in Ohio over time including American Indians, migrating settlers and immigrants. Assessed in: Discussion (Lesson 1); students place the Eastern Agricultural Complex thousands of years before any other group they have studied in Ohio.
4.12: People have modified the environment throughout history resulting in both positive and negative consequences in Ohio and the United States. Assessed in: Lesson 2 discussion prompts at the Acorns and Wild Berries stalls: burning brush to feed oak groves, and garden clearings that accidentally created berry patches.
5.2: Early Indian civilizations (Maya, Inca, Aztec, Mississippian) existed in the Western Hemisphere prior to the arrival of Europeans. These civilizations had developed unique governments, social structures, religions, technologies, and agricultural practices. Assessed in: Lesson 3 closing discussion connects the EAC to the later corn agriculture of the Mississippian world: the field systems came first, the famous crop came later.
5.7: The variety of physical environments within the Western Hemisphere influences human activities. Likewise, human activities modify the physical environments. Assessed in: Zone structure of the market (Garden, Forest, Hunt, River) and menu balance rule (Lesson 3). The valley shapes the menu; the menu reshapes the valley.
SOCIAL-EMOTIONAL LEARNING (GRADES 3–5 BAND)
B2.3.b: Plan steps needed to reach a short-term goal. Assessed in: The Shopping List to Menu pipeline (Lessons 2–3): gather notes first, then use them to reach the finished menu.
C3.2.b: Participate in cross-cultural activities and acknowledge that individual and group differences may complement each other. Assessed in: Station work (Lesson 2): treating unfamiliar foodways with respect, and noticing that "normal food" is learned.
D1.1.b: Apply active listening and effective communication skills to increase cooperation and relationships. Assessed in: Pair shopping and menu pitches (Lessons 2–3); chefs must listen to their partner's ratings before the menu is set.
E1.1.b: Generate possible solutions or responses to a problem or needed decision recognizing that there may be more than one perspective. Assessed in: Menu design decisions (Lesson 3): many valid menus satisfy the Kitchen Rules, and partners must negotiate one.
ENGLISH LANGUAGE ARTS
RI.4.1: Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. Assessed in: Shopping List completion (Lesson 2): season, zone, and cooking method must come from panel text, not guesses.
RI.4.7: Interpret information presented visually, orally, or quantitatively and explain how the information contributes to an understanding of the text in which it appears. Assessed in: Panel photographs, herbarium sheets, and seasonality tags (Lesson 2): the image and the text answer different questions, and shoppers need both.

W.4.2 / W.5.2: Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

Assessed in: Menu dish descriptions and Chef's Promise (Lesson 3): each dish names ingredients, method, and tools in clear prose.

SL.4.1: Engage effectively in a range of collaborative discussions with diverse partners, building on others' ideas and expressing their own clearly.

Assessed in: Journal share (Lesson 1), pair shopping (Lesson 2), and menu pitch (Lesson 3).

RI.5.7: Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.

Assessed in: Menu design (Lesson 3): a legal menu requires synthesizing at least three panels across zones, tools, and seasons.

SCIENCE (LIFE SCIENCE)

Grade 3 (Behavior, Growth and Changes): Offspring resemble their parents and each other. Individuals of the same kind differ in their traits and sometimes the differences give individuals an advantage in surviving and reproducing.

Assessed in: Station work (Lesson 2): students select the biggest seeds each "harvest" and watch the crop change across generations. Domestication is heredity plus human choice.

Grade 4 (Earth's Living History): Changes in an organism's environment are sometimes beneficial to its survival and sometimes harmful.

Assessed in: Station work (Lesson 2): floodplain camps created disturbed, sunny ground, which is exactly what goosefoot, sumpweed, and their cousins needed. People changed the environment; the weeds moved in; farming began.

Grade 5 (Interconnections within Ecosystems): All of the processes that take place within organisms require energy.

Assessed in: Shopping List and menu rationale: oily seeds, starchy seeds, nut fats, and lean venison are different fuels, and a smart menu (like a smart valley) mixes them.

MATERIALS

Teacher Materials	Student Materials
- The Taste of Ohio activity packet (17 food panels, printed single-sided and posted in four zones) - This lesson plan, including the Seed Sorting Game cards (Lesson 1, Step 3: cut one set per pair) - Optional: bag of unshelled sunflower seeds for the hook - Document camera or projector for the model panel walkthrough	- Chef's Shopping List (one per student, from the activity packet) - Restaurant menu sheet (one per student or pair, from the activity packet) - Journal and pencil - Optional: colored pencils for menu decoration

ASSESSMENT

Formative: journal responses (Lesson 1), Seed Sorting Game debrief answers (Lesson 1), Chef's Shopping List completion and accuracy (Lesson 2, checked for evidence pulled from panel text).

Summative: the completed restaurant menu, graded with the Head Chef rubric (final page), plus each chef's spoken or written pitch for one dish.

LESSON 1: The Weed That Fed Ohio (45 min)**STEP 1: Journal + The Trash Question (10 min)**

 Individual, then pairs | Analog | Target: Core Conversation

Post the Student Prompt: scientists dig up your kitchen trash in three thousand years. What do they find, and what does it prove about what your family really ate? Give students five minutes to write, then share with a partner. Collect two or three examples aloud. Steer toward the key insight that for archaeologists and historians, trash is evidence. A pizza box proves pizza existed at some point. Nobody has to remember it or write it down. The trash tells the truth. Thus, a lot of history is built from evidence that is not written down, but inferred. Archaeologists are like detectives.

STEP 2: Mini-Lesson — Dinner, 1000 BC (15 min)

 Whole class | Analog or projector | Targets: Threshold 1 and Threshold 2

Tell the County Home story. In 1998, archaeologists from Ohio University dug into a rise above the Hocking River near Athens and found five huge cooking pits, some big enough to feed 60 people. In the ash were thousands of charred seeds. Ask: what do seeds in a cooking pit prove? (Answer: someone cooked them.) Then the twist: some of those seeds came from plants we now call weeds, and some, like maygrass, do not even grow wild in Ohio! That means someone carried those seeds north and planted them. Sketch the timeline on the board: squash, sunflower, goosefoot, and sumpweed are tamed by around 4,000 to 3,000 years ago (2000-1000 BCE); gardens and pottery and Adena mounds after that (1000-500 BCE); and corn is not important here until around 1000 CE. Walk through one panel (Goosefoot works well) under the projector so students see the parts: photo, what is it, how did people cook it, seasons, sources.

THE THEME CONNECTION

The mini-lesson plants both halves of the theme. The people changed the plants: seeds got bigger and coats got thinner because gardeners kept choosing them. The plants changed the people: once you have planted a garden, you stay to water, weed, guard, and harvest it. Villages, storage pits, and eventually mounds follow the seeds.

STEP 3: Explaining the Packet (15 min)

 Whole class | Analog | Target: Threshold 2 + Science standards

Hand out a station worksheet and a blank restaurant menu to each person. Explain that students will visit the panels like market stalls, take notes on their Chef's Shopping List, and then design tonight's specials for a restaurant that operates around 1000 BCE in the Ohio country. Students will . Students rotate with the Chef's Shopping List. Back at their seats, each student or pair completes the menu: one main course, one side dish, and one dessert. They will then close with a gallery walk or have chefs pitch their specials aloud.

STEP 4: Exit Ticket (5 min)

One sentence: "A weed is _____. A crop is _____." Keep these. Students revisit their own definitions in Lesson 3.

LESSON 2: Shopping Trip, 1000 BC (45 min)**STEP 1: Open the Market (5 min)**

The 17 panels are posted in four zones: Garden, Forest, Hunt, River. Hand out the Chef's Shopping List. Frame it as you are chefs planning tonight's menu, and this market is everything that exists.

STEP 2: Station Rotation (25–30 min)

 Pairs | Analog | Targets: Threshold 1 and Threshold 2

Pairs rotate freely (or on a timer, about 3 minutes per stall). For each food they record zone, season, cooking method, and a chef's star rating. Require the season and cooking columns to come from the panel text. Circulate with pressing questions: Which foods can you get in February? (Almost none. Stored nuts, dried

berries, smoked meat and fish. That is the point.) Why would anyone eat acorns if they need all that rinsing? What does a mussel shell become after dinner?

↓ SCAFFOLD DOWN: Threshold 1 ↓

Reduce the trip to nine required stalls, at least two per zone. Pair striving readers with a partner and let the pronunciation guides do their job: every scientific name has a say-it line. The star rating keeps engagement up even when note-taking is slow.

↑ SCAFFOLD UP: Threshold 3 ↑

Ask strong readers to track a second variable: which foods require a clay pot? They will discover the starchy seeds cluster behind pottery, and you can seed tomorrow's question: why did pots and porridge arrive together?

⚠ Heads UP ⚠

Expect "ew" at the mussels, the sumpweed shells, and the idea of eating weeds, and expect a few students to go quiet at the deer and turkey panels because animals die in them. Both reactions are the lesson working.

Guidance: do not shush disgust; kindly analyze the emotions with them. "Ew is interesting. Why do you think clams are gross and chicken nuggets are normal?" Normalize that every food culture, including ours, is learned. For the hunt panels, be matter-of-fact: these communities ate animals to live, used every part, and wasted nothing (which is more than most lunchrooms can say!) If a student connects this to hunting in their own family, that is a bridge, not a detour.

STEP 3: Close the Market (5 min)

Quick poll: which stall earned five stars? Which earned one? Ask one pair to defend a rating using a detail from the panel text. Shopping lists go somewhere safe. They are tomorrow's ingredient pantry.

LESSON 3: Opening Night (45 min)

STEP 1: The Kitchen Rules (5 min)

Review the rules printed on the menu and teacher page: every ingredient comes from the panels; every dish names its cooking method and tools; the full menu uses at least one food from the Garden, one from the Forest, and one from the Hunt or River. Announce the restaurant opens in twenty-five minutes.

STEP 2: Design the Menu (25 min)

 Pairs or individual | Analog | Target: Threshold 3

Chefs build a main course, a side dish, and a dessert from their shopping lists, then name the restaurant and write the Chef's Promise. Push on specificity: "deer" is not a dish; "fire-basin roasted venison with hickory milk gravy" is a dish. The dessert course does a lot of teaching, because sweetness without sugar forces students back to the forest panels like pawpaw leather, dried elderberries stirred into a seed cake, or fresh mulberries in season.

TEACHER/CONTENT NOTES

The trade question at the bottom of the menu is also part of the actual economics and archaeology. No money existed here, but goods moved enormous distances through exchange: Adena graves in Ohio hold copper from the Lake Superior country and ocean shell from the Gulf coast. Accept any reasonable trade (a deer hide, a basket of nuts, a favor) and ask the follow-up: how do both sides know the trade is fair?

STEP 3: Opening Night Pitches + Gallery (10 min)

 Whole class | Targets: Threshold 3 and Threshold 4

Post the menus. Each chef (or pair) pitches one dish in thirty seconds: what is in it, how it is cooked, why the village will love it. Listeners check the Kitchen Rules like health inspectors. If a dish breaks a rule (out-of-season berries in a February special, a mysterious corn muffin), the class flags it with evidence from the panels.

STEP 4: Return to the Exit Ticket (5 min)

Hand back Lesson 1's weed and crop definitions. Students revise them in writing. The strongest revisions notice the definitions describe a relationship, not a plant: a crop is a plant somebody chooses, and a weed is the same plant after everybody stops. If a student writes some version of "goosefoot did not change back, we just stopped looking," the lesson has landed at Threshold 4.

 THE THEME CONNECTION

Opening Night is the theme performed. Students spent three days inside a food system built by attention: farmers attending to seeds, gatherers attending to seasons, hunters attending to migrations. The menu they publish is a claim that they attended too. And the revised exit ticket closes the loop on the Core Conversation with the only honest answer: the difference between a crop and a weed is people.

THE HEAD CHEF RUBRIC

	HEAD CHEF (3)	SOUS CHEF (2)	APPRENTICE (1)
Accuracy	Every ingredient, method, and tool matches the panels. Seasons check out.	Foods match the panels; one method or season slip.	Includes foods, methods, or seasons the panels do not support.
Completeness	Three named dishes, each with ingredients, cooking method, and tools, plus a Chef's Promise.	Three dishes; one is missing a method, tool, or ingredient list.	Fewer than three dishes or several missing parts.
Balance	Menu draws on Garden, Forest, and Hunt or River, and shows awareness of season.	Menu covers two zones or leaves season unstated.	Menu draws on a single zone.
Communication	Dish names and descriptions are vivid, clear, and make the reader hungry; pitch cites panel evidence.	Descriptions are clear but plain; pitch retells without evidence.	Descriptions are unclear or dish names only.

QUESTIONS FOR THE PARENTS

A question from any parents: if Ohio had farms before the pyramids of Giza had company, why did nobody mention it in our textbooks? The answer is water! Charred seeds are tiny, and for a century archaeologists dug right through them. Beginning in the 1960s, a technique called flotation changed the evidence entirely. Excavated soil goes into water, carbonized seeds float, and suddenly the menu literally surfaces! Researchers in the region have called this the "Flotation Drum Revolution," and it is why the key discoveries in this lesson are so recent. The County Home analysis was published in 2016. Domesticated erect knotweed got its scientific name in 2017. Your students are learning some of the newest science to come out of Ohio!

KEY VOCABULARY

domesticate — to change a wild plant or animal, over generations, by choosing which ones get to reproduce

archaeologist — a scientist who studies past people through the things they left behind

flotation — washing dig-site soil in water so that tiny charred seeds float up and can be studied

earth oven — a cooking pit heated with fire and hot stones, then covered to bake food slowly

atlatl — a spear-thrower; a wooden handle that makes a dart fly harder and farther

parching — toasting seeds in a hot pot so they keep longer and taste nutty

leaching — rinsing food (like acorn flour) again and again to wash the bitterness out

weir — a fence built across part of a river to funnel fish into a trap

mast — the fall crop of nuts (acorns, hickory nuts, walnuts) that people and animals both depend on

migration — a regular long-distance journey animals make with the seasons, like ducks and geese in spring and fall

SOURCES FOR THE TEACHER

Every claim in this lesson and in the activity panels is in the full bibliography below. For a readable adult introduction, start with Gayle Fritz, *Feeding Cahokia* (2019), Bruce Smith, *Rivers of Change* (1992), Patton and Curran's County Home site report in *Midcontinental Journal of Archaeology*, volume 41 (2016), and Wymer and Abrams on Adena gardening in *Midcontinental Journal of Archaeology*, volume 28 (2003).

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