

Agriculture and the Curriculum: K-5

NGSS, Common Core, and Oregon Social Sciences Academic Content Standards



Kindergarten

- Life Science:** Observe plants in the school environment. What do they need in order to thrive? How are their needs met (K-LS1-1)?
- Earth Science:** Compare and contrast weather over time by measuring attributes such as temperature, wind speed, and precipitation. How is agriculture affected by weather (K-ESS2-1)?
- Earth Science:** Introduce students to Oregon's primary natural resources, and how they are used (K-ESS3-1); How do humans conserve resources (K-ESS3-2)?
- Engineering and Technology:** Identify and discuss agricultural examples of humans using engineering and technology to solve problems (K-2-ETS1-1).
- Language Arts:** In small groups or individually, have students tell a story about a farm using pictures, writing, or the spoken word (K.W.3).
- Language Arts:** Have students compare and contrast Oregon agricultural items, and then sort by attributes (K.L.5.a).
- Math:** Direct students to plant seeds by first counting the number of seeds in a packet, and then arranging the seeds in a garden row (K.CC.5).
- Historical Knowledge:** Introduce students to historical figures who have influenced agricultural practices in Oregon and worldwide (K.14).
- Financial Literacy:** Explore local agricultural and food sector jobs (K.6). Compare and contrast how these jobs have changed over time (K.18).

1st Grade

- Life Science:** Share examples of roots, stems, leaves, and fruits with students, introducing each plant part and its function (1-LS1-1).
- Heredity:** Use the school landscape to observe that plants resemble their 'parents,' but are not exact replicas (1-LS3-1).
- Language Arts:** Have students write a sequential story that outlines an event that took place in the school garden or on a farm (1.W.3).
- Math:** Use three fruits such as varieties of squash or eggplant to explore measurement. Arrange them by length, and then describe the length of each object by comparing and contrasting it with the other two objects (1. MD. 1).
- Economics:** Compare and contrast the monetary value of commodities grown in Oregon (1.4).
- Multicultural Studies:** Learn about and appreciate different culinary traditions that are present in your school community (1.6).
- Geography:** Introduce different local natural resources and explore how people use them, and how availability varies seasonally (1.8) (1.9).
- Social Science Analysis:** Learn about a local agricultural controversy. What can students do to address the issue (1.21)?

2nd Grade

- Life Science:** Conduct an experiment that illustrates the reliance of plants on sunlight and water (2-LS2-1).
- Life Science:** Learn about pollinators and their role in plant reproduction. Have students create a model to mimic pollination (2-LS2-2).
- Physical Science:** Analyze data collected from different Oregon forest products to determine which have properties that are best suited to different purposes such as carpentry, construction, toys, or park structures (2-PS1-2).
- Physical Science:** Use examples from food science such as butter and ice cream to explore how some changes caused by heating or cooling can be reversed, and some cannot (2-PS1-4).
- Earth Science:** After it rains, observe how water affects the topography of your school's landscaping (2-ESS2-1). Using a map of Oregon, explore the variety of water sources and forms that exist in our state (2-ESS2-3).
- Language Arts:** Independently or in groups, have students research an agricultural topic, such as a specific Oregon commodity, and create a report using a variety of digital tools (2.W.6) (2.W.7).
- Math:** Have students use a ruler or other tool to plant seeds at the appropriate depth and spacing (2.MD.1). Compare and contrast the diameter and length of different agricultural commodities (2.MD.4).
- Economics:** Identify local businesses involved in agriculture and learn about the goods and services they provide (2.7).
- Geography:** Explore the Grown in Oregon Map to learn about how geography affects regional differences in commodity production (2.11).
- Historical Knowledge:** Identify and describe harvest festivals celebrated in the school community, explaining why they are significant (2.17).
- Historical Thinking:** Explain how individuals in the past have influenced current agricultural and natural resource practices in Oregon (2.21).

Agriculture and the Curriculum: K-5

NGSS, Common Core, and Oregon Social Sciences Academic Content Standards



3rd Grade

Life Science: Have students research and illustrate the life cycles of different plants and animals found on a farm, and/or observe embryo development first hand by hatching chicks in the classroom (3-LS1-1).

Life Science: Conduct an experiment that asks students to use evidence to explain that plants and animals have traits inherited from their parents, that some traits are influenced by the environment, and that traits influence survival and reproduction (3-LS3-1) (3-LS3-2)(3-LS4-2).

Life Science: Conduct an experiment that illustrates that different organisms are more or less successful in a given habitat, and form hypotheses as to why (3-LS4-3).

Engineering Design: Have students design a trellis or irrigation system that meets the needs of an agricultural site. Consideration should be given to limited materials, time, and cost (3-5-ETS1-1).

Language Arts: In small groups or individually, have students present on an agricultural topic using facts and relevant descriptive details while speaking clearly and at an understandable pace (3.SL.4).

Math: Create a square foot garden, having students plan a garden bed using square foot grids (3.NF.1). Have students calculate perimeter and area for their garden beds using their maps (3.MD.8).

Economics: Using the food system as an example, learn about key agricultural industries in Oregon (3.6), examine the relationship between producers and consumers (3.4), and discuss how profit can influence sellers in agricultural markets (3.5).

Geography: Use the Grown in Oregon map and Get Oregonized textbook to explore ways to divide Oregon into geo-political regions (3.8). Analyze Oregon's natural resources by region, and consider how resources are used locally and globally (3.9).

4th Grade

Life Science: Dissect plants and observe animals, constructing an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction (4-LS-1).

Earth Science: After it rains, or after a rain simulation, observe school landscaping to collect evidence for the relationships between water, wind, vegetation, and erosion (4-ESS2-1). Why is erosion a concern for farmers?

Language Arts: Have students use a variety of digital tools to produce a report on an Oregon agricultural commodity (4.W.6).

Economics: Use the example of water rights to explore how wealth, access, and scarcity connect to personal, community, and regional resources (4.3). How is this conversation influenced by political views, boundary disputes, and cultural differences (4.9)?

Multicultural Studies: Analyze the relationships between different American Indian tribes and Oregon's natural resources prior to colonization, and the impact of colonization/reduced access to culturally significant natural resources on their customs and ways of knowing (4.11).

History: Analyze changes in Oregon's agricultural history over time, considering the impact of technological developments (4.10) (4.13).

Financial Literacy: Using the food system, examine different purchasing choices and opportunity costs (4.4).

5th Grade

Physical and Life Science: Explore the farm food web, linking the energy in animals' and students' food to the sun (5-PS3-1). Diagram the movement of matter among plants, animals, decomposers and the environment (5-LS-2-1). Use evidence to support the argument that plants get the materials they need for growth chiefly from air and water (5-LS1-1).

Earth Science: Have students interview family and/or community members to explore ways that individual communities use science ideas to protect the Earth's resources and environment (5-ESS3-1).

Language Arts: In small groups or as a class, compare and contrast environmental conservation strategies, paying particular attention to similarities and differences in points of view, using everyone's ideas to identify best practices for the school's green space (5.SL.1) (RI.5.6).

Math: Measure and map school landscaping beds, converting between different standard measurement units (5.MD.1).

Geography: Compare and contrast movement of people, agricultural goods, ideas and cultural patterns in the United States, considering past, present, and future trends (5.10). Consider trade regulations, and how they affect international relationships (5.6).

Multicultural Studies: Identify issues related to historical events and agriculture to recognize multiple perspectives on power, authority, and governance in relation to systems of oppression and current impact on traditionally marginalized groups in the modern era (5.21) (5.25).

Financial Literacy: Analyze agricultural career choices through the return on investment (5.8).

Geography: Describe how technological developments in agriculture, related societal decisions, and personal practices affect sustainability in the United States (5.12).