



Lesson Three: East or West - Where Do Crops Grow Best?

Grade Level: 2nd Grade

Time: 45 - 60 minutes

Essential Question: How can we be stewards of Wyoming's agriculture to benefit current and future generations?

Objectives: Students will:

- Identify which crops are grown in different areas of the state.
- Explain why certain crops grow better in different areas.

Purpose: Students learn where certain crops are grown in Wyoming and hypothesize reasons for some areas being better suited for growing crops than others (water availability, elevation, and topography).

Required Materials/Resources:

- Wyoming Resources Map (one per student - (Source 2)
- Elevation map (one per student) - (Source 4)
- Irrigation map (one per student) - (Source 1)
- Wyoming map with county lines (optional one per student)
- Markers, colored pencils, crayons, etc. (optional)
- Chart paper (optional)

TEACHER NOTE: A possible suggestion for step 2 would be to give each student a copy of the blank map of Wyoming and have students make a prediction, either in groups or individually, of where Wyoming crops are grown based on what they have learned from the Irrigation and Elevation maps. Students should place dots (that represent each crop) with markers or draw the crops on the map. Once the students are done, introduce the Wyoming Resources Map.

Suggested Teacher Preparation:

- Review Wyoming Resources Map to gain understanding of crops grown in Wyoming.
- Review additional maps to make generalizations about areas where crops grow.
- Make an anchor chart if you want to record student thinking during the Assessment step.

Standards:


Science: 2-LS2-1 (DCI, CCC) - (Practiced/Encountered)

Social Studies: SS2.5.1 (Explicit)

Vocabulary:

- **Hypothesis** - an idea or theory that is not proven but leads to further study or discussion
- **Hypothesize** - to suggest an idea or theory
- **Irrigation** - the process of delivering water to crops
- **Precipitation** - the amount of water an area receives through weather, example: rain and snow

Instructional Procedure/Steps:

1. Say: **“Today, we are going to examine maps to understand why crops are grown in different areas of Wyoming.”**
2.  Pass out the Wyoming Resources Maps, Elevation Maps, and Irrigation Maps. Have students compare and contrast one part of Wyoming to another using land and agriculture maps. After giving students time to study the maps, ask the questions below. Allow time for students to share before moving on to the next question.
 - **“What do you notice about crops and water availability in a given area?”**
 - **“How does elevation affect crops growth?”**
 - **“Why are crops grown in some areas but not in others?”**
 - **Refer to maps: elevation map; crops map; precipitation map**

TEACHER NOTE:

Another suggestion for step 2 would be to put students in small groups and give each group a section of the Wyoming Resources Map. Students could report out to the other groups what they observed being grown in particular sections of Wyoming.



In this task, students will be engaged in the higher order thinking skill of analysis by comparing and contrasting different maps and regions. They are engaging in synthesis by hypothesizing reasons for the patterns they observe.



- Provide students with the definitions of hypothesis and hypothesize. Ask: **“What is a hypothesis you can make about why crops grow in some locations and not others?”** *Reasons should be one of the following: water availability, mountains, elevation, temperature, etc.*



Assessment: Check for understanding: Have students report out their observations of the maps. Points that should be brought out in the discussion are:

- **What connections can students make to crops being grown and what plants need to grow?**
- **Can students explain the connection to evidence of agriculture in Wyoming to availability of what plants need to grow?**
- **Can students explain why the crops can be grown there and why crops are not grown in other areas of the state?**
- **How does this connect to being a good steward of the land?**

It is important that students see the connection between crop growth, land care, land management, and how this contributes to being a good steward in Wyoming. Student thinking can be recorded on an anchor chart.

Credits/Sources:

1. Water Resources Data System. (2017, April). *Irrigation Map*. Retrieved July 5, 2017, from http://wwdc.state.wy.us/surveys/PWS_IS_Large.html
2. United States Department of Agriculture. (2018, May 31). *2012 Census Full Report*. Retrieved August 5, 2018, from <https://www.agcensus.usda.gov/Publications/2012/>
3. United States Department of Agriculture. (n.d.) *2017 State Agriculture Overview*. Retrieved August 5, 2018, from https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=WYOMING

4. Hammerlink, J.D., Webster, G.R., & Berendsen, M.E. (2014). *Wyoming Student Atlas: Exploring our Geography*. Laramie: Wyoming: University of Wyoming. <http://uwmaps.wygisc.org/studentAtlas/index.html?page=1>