

Lesson 11: Wyoming Mineral & Energy Fair

Grade Level: 4th Grade

Time: Teacher should provide enough work sessions so students can complete their projects. A final session needs to be set aside for the fair itself.

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

Objective: Students will create and present a project about Wyoming's mineral and energy resources describing how they are developed, used and cared for, pros and cons of each, and how we can be stewards of them.

Purpose: Students demonstrate their knowledge about being a steward of Wyoming's mineral and energy resources by sharing their learning with a larger community.

Required Materials/Resources:

- Wyoming Mineral & Energy Fair Success Criteria sheet (one per student)
- Project Checklist (one per student)
- Peer/Self Evaluation (one per student)
- Supplies for project method teacher decides his/her class should do
- Anchor charts, worksheets, graphic organizers, resources from all previous lessons in the unit
- Invitations, if class is inviting parents, community members, other classes, administrators, etc. to visit their fair

Suggested Teacher Preparation:

- Decide on time and location space for your Mineral and Energy Fair where students will present their projects.
- Decide what method of project your students will present: poster, PowerPoint, Prezi, etc.
- Gather all appropriate materials necessary for creating projects.
- Decide on time you are allowing for creating projects, feedback/revision, and the fair itself.
- Post anchor charts and provide worksheets, graphic organizers, etc. from all previous lessons.
- Assign students to six small groups. Assign each small group one of the following Wyoming resources: Coal, Oil, Natural Gas, Wind, Hydropower, and Uranium.
- Assign group roles if teacher feels students need them to work productively and use time efficiently. Group roles are per teacher discretion depending on project method assigned.

Standards:

Science: 4-ESS3-1 (Practiced/Encountered)


Social Studies: SS5.1.1, SS5.6.1 (Practiced/Encountered)

ELA: 4.SL.4 (Practiced/Encountered)

CVE: CV5.2.2 (Practiced/Encountered)

Vocabulary: No new vocabulary is introduced in this lesson.

Instructional Procedure/Steps:

1.  Say: **“In our last lesson, you will start creating a final project about one of Wyoming’s mineral and energy resources: Coal, Oil, Natural Gas, Wind, Hydropower, and Uranium. You will also present your projects at a Wyoming Mineral and Energy Fair.”** If other individuals/groups from outside of the classroom will attend the fair, share that information with students at this time.



In this task, students will be engaged in the higher order thinking skill of synthesis by combining the unit’s concepts and ideas into a culminating project.

2. Divide students into six groups. Assign each group their Wyoming mineral and energy resource and explain specific project details pertaining to the project method that the teacher has decided upon. Pass out Wyoming Mineral & Energy Fair Success Criteria sheets and Project Checklists. Say: **“After groups have been working on their projects and feel it is complete, your group will present your project to me. I will give you feedback on areas your group needs to improve in your project and note which areas your project has exceeded my expectations.”** Review both the sheet and checklist with students and answer any questions students might have about them. Share any additional grading criteria you might have. Tell students how many days/how much time you have decided that groups will have to complete their projects. Be sure to specify how much time is before your feedback session and how much time groups will have for project revisions after the feedback session.
3. Display/pass out previous lessons’ resources that students may refer to if needed. Allow groups to begin working.
4. After work sessions are completed, have groups present projects to you, and provide feedback about their projects. Allow time for groups to revise their projects. Below are some examples of possible feedback/notes you might give to groups:
 - *A way to improve the **Knowledge of the Resource** section: “Your project does not state if your resource is renewable or nonrenewable. Please add that.”*
 - *Exceeds comment for the **Pros and Cons** section: “Your project clearly and specifically describes three pros and three cons for this resource.”*
 - *Try and not include “judgment” statements in your comments such as “I liked that your project ...” or “I do not like how your project ...”*

5. After all projects have been revised, have students present their completed projects at the Wyoming Mineral and Energy Fair.

Assessment: Grade projects according to provided Success Criteria and other criteria decided upon at the start of the unit. Have students complete the Peer/Self Evaluation either before or after presenting at the fair, per teacher discretion.

Credits/Sources: Not applicable