**Lesson 5 Present findings and Persuade Board of Directors to make Optimal Choice.**

**Problem statement:** How can we provide energy to a growing population in Snohomish County and still be good stewards towards the environment?

This lesson is two-part. Students will present, in teams, their findings in the form of final design that highlights the benefits of their form of energy. Additionally, students will independently complete a written response (three to five paragraphs) to be presented to "Board of Directors” with final proposal.

**Learning objectives:** By the end of the lesson, student teams will have presented their findings from research to their peers. Students will listen to and gather information from each group presentation. Students will independently decide what they believe is the best proposal (even if it is not their own team’s proposal), and complete a written response (three to five paragraphs).

**Lesson standards (NGSS, CCSS, CTE):**

6th Grade ELA standards for Speaking and Listening

Comprehension and Collaboration:

* [CCSS.ELA-LITERACY.SL.6.1](http://www.corestandards.org/ELA-Literacy/SL/6/1/): Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.
* [CCSS.ELA-LITERACY.SL.6.1.B](http://www.corestandards.org/ELA-Literacy/SL/6/1/b/): Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.
* [CCSS.ELA-LITERACY.SL.6.1.C](http://www.corestandards.org/ELA-Literacy/SL/6/1/c/): Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.

Presentation of Knowledge and Ideas:

* [CCSS.ELA-Literacy.SL.6.4](http://www.corestandards.org/ELA-Literacy/SL/6/4/): Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.
* [CCSS.ELA-Literacy.SL.6.5](http://www.corestandards.org/ELA-Literacy/SL/6/5/): Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.

6th Grade ELA standards for Writing

* [CCSS.ELA-LITERACY.W.6.2](http://www.corestandards.org/ELA-Literacy/W/6/2/) Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.

NGSS:

* (MS-ETS1-2): Evaluate competing design solutions based on jointly developed and agreed-upon design criteria.
* (MS-LS2-4): Construct an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem.

**Soft Skills:**

* Critical Thinking: Students need to make decisions on what is the best option for their final choice to write about. Asking questions that make them think deeply and outside of the box will show evidence of critical thinking. Considering the viewpoint of others who will be impacted (and not just humans-the environment, wildlife also) shows evidence of critical thinking. A list of questions teachers can present to students will help guide their deeper thinking. (See below for questions stems).
* Creativity Students will need to come up with creative solutions to their project. They need to consider the land mass that has been set aside for the power source/energy generation plant; they also need to create ways to provide that energy with a minimum of harm and devastation to the environment.
* Collaboration: Working together with other students will improve the possible outcomes; all ideas should be put on the table before a final decision is made. Each student will be responsible for generating ideas AND listening to the ideas of others, with an open-mind.

**Locally and/or Personally Relevant for Students:**

* Students will make final decisions for best form of energy/power distribution based on their knowledge of their community and neighborhood. Students should consider how the final choice will impact their neighborhood visually (power distribution set-up, including poles, lines and towers), the impact on the natural landforms and habitats of the community (a decrease OR increase of: free-flowing streams, creeks, and other bodies of water, wildlife and vegetation, natural features, etc)

**Connections to career and educational pathways:**

* Students will mimic some of the real-life career tasks needed to complete this project, including making a presentation in front of a group of people, to justify their final decision, and writing up their findings.

**Materials:**

* Graphic organizers for note taking (See below)
  + Graphic Org-Individual/Role (1 per student)
  + Data Collection Worksheet (1 per group)
* Question stems for deeper thinking and discussion after presentations
* Rubrics (See below)
  + Group Presentation
  + Expository Writing

**Lesson preparation:**

* Students will use practices, research and knowledge from previous lessons to format and complete this lesson.
* Teacher will determine order for each student group presentation, or decide to allow groups to volunteer
* Print out
  + Graphic Organizer Individual/Role (1 per student)
  + Data Collection Worksheet (1 per group)

**Time required:** At least two lessons, and possibly more depending on how much time is needed for all groups to present their research and conclusions.

**Grouping of students for instruction:** Students continue to work in established groups. Presentations for first part of lessons will be in groups. Students may work together to complete final written response, however, each student will turn in individual writing component.

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| **Teacher** | **Student** |
| Direct Instruction:  Teacher will determine order for each student group to make presentation. Students will be given 15 minutes to finalize presentation.  Order will be posted for all to see.  Teacher will remind student of components of group presentation based on rubric from Day 3 lessons. | Collaborative Group Presentations:  Students will have ten minutes to present in groups their findings for the best use of the land, most efficient use of money, consideration for the environment, including wildlife and natural water features, and the desired outcomes for the community. |
|
| Guided Teaching:  Teacher will hand out graphic organizers for students to use while listenting to presentations.. (Graphic Organizer from Presentations {student takes notes indpendently}, OR Graphic Org for Individual Role {student takes notes while still acting in assigned role from begining of unit}. Teacher will determine which note-taking graphic organizer is preferred) . | Independent Work and Group Discussion:  Students not presenting will be taking notes on their graphic organizer. If students can not fill in a spot on their organizers they will ask the presenting group clarifying questions. |
| Guided Teaching:  Teacher provides list of Question Stems (Questions that Promote Deeper Thinking document) for students to form and ask clarifying questions to presenters. | Group Discussion:  After each group presents, they will answer questions from their peers for further clarification.  Students may ask questions from the list of Question Stems provided by the teacher. |
| After presentations teacher provides time for group collaboration. | Collaborative Group Work:  After all presentation students will have small group discussions to further clarify notes, comparing and evaluating for the best final option. |
| Guided Teaching:  Teacher will inform students that they are to use their notes from the graphic organizer to now come to some conclusions about which is the best option for the designated plot of land.  Teacher will present rubric for written response and provide time for students to formulate a response to the prompt. | Independent Writing:  Students will respond to prompt by writing a brief essay for final assessment which will be turned into their instructor. |

**Accommodations:**

* Students needing assistance will get these accommodations as needed:
* Graphic organizer with sentence starters
* Teacher-created notes
* A scribe
* An ASL interpreter
* Extra time to complete notes

**Extensions:**

Students who want extension opportunities will have these options:

* Present findings (both to classmates and Special Project Manager) using student-created visual aids (tri-boards, Google Slides, props)
* Research further into one of areas of interest that was highlighted in this unit (impact of natural hazards, alternative energy resources.

**Assessment:**

Summative Assessment for the Unit:

* Written paragraph encompassing knowledge gained from presentations and analysis of that information. Students will connect most effective energy option with problem statement in a 2-4 paragraph response. A claim, with evidence and elaboration to back it up, will be required. Writing conventions and correct formatting of response expected. Rubric will be shared.

Formative Assessment in the Lessons

* Group Presentations
* Student graphic organizers
* Group discussions to compare and evaluate presentations.

**References/Resources:**

* This is used during presentations so students can gather information on the varied energy options. Provide multiple copies to students, depending on how many different forms of energy will be presented. Created by Erin Duffy

[Graphic Org-notes from Presentations](https://docs.google.com/document/d/1NjfE4GQNMr00lqHQRrAJ6fxLxaDnRnmiMOXWLkUIVbI/edit?usp=sharing)

* This optional graphic organizer can be used in each lesson when students are expected to take notes in their assigned/chosen role.

[Graphic Org for Individual Role](https://docs.google.com/document/d/11WOHK9iOZaf5S_MR0mfJdKA4bgre-ApNv9W6MeWFeWo/edit?usp=sharing)

Created by Erin Duffy based on the Frayer Model.

* Rubric for Group Presentation (teacher will determine if groups are scored as a group, individually, or both):

[Group Presentation Scoring Rubric](https://docs.google.com/document/d/1fDm9seQErxX6chAybeZz270SCk9ci-TuPpCY_0GiQoE/edit?usp=sharing)

* This rubric is used for the writing assignment

[Copy of SB.Expository-Scoring-Guide.docx](https://drive.google.com/file/d/1d1_aCwyWAwS0coFHocOiOJHTFUppuEF0/view?usp=sharing)

Adapted from Springboard, by Erin Duffy

* Document with Critical Thinking question stems:
  + [Questions That Promote Deeper Thinking](https://www.lavc.edu/profdev/library/docs/promotethink.aspx)
  + Credit to: <https://www.lavc.edu/profdev/library>