Dude, where’s our Pool?
The Allocation and Distribution of Resources in Shelton, Washington
An Interdisciplinary Curriculum Unit

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Unit Introduction

This interdisciplinary unit engages students in how issues of ownership, specifically the tension between public and private, and community access are restricted by private ownership decisions. To explore this we have students investigate community resources that have recently ceased to exist, an example being the local pool. Because students have already mounted an organized reaction to the closure of the community pool, we have focused the unit on exploring this movement, analyzing what happened and planning for future actions. This directly places students in an engaged discussion of what it means to be private and public, specifically how individual and group actions affect and are affected by resource distribution and sustainability. It asks students to look at private property that is also viewed as a community resource. This unit addresses the interconnectedness of social/economic systems and community, as well as how decisions about private property affect the community as a whole, while expanding on that notion to explore how communities might respond to those decisions. Because this relates to issues that have been specifically identified by the community itself, this unit plan meets not only the needs of the standards, but also provides space for a community to explore issues that are directly relevant to them.

Unit Overview
Theme: Resource Politics in Shelton, Washington
Unifying Understanding: The choices that individuals and private industry make affect the local environment, public community as a whole, and individuals within that community.
Enduring Understandings
- Students play a role in their community and have the power to affect social change
- Public vs. private enterprises play an integral role in the Shelton community
- Individuals/groups affect/are affected by economic decisions
- The costs/benefits of economic decisions in the global and local economies
- Math can be used to illustrate the interconnected nature of private versus public
- Quantities can be used for descriptive modeling of real world situations
- It’s important to analyze data to make sure that the right model is used
- Students can affect the distribution of resources in their community

Guiding Questions
1. How do changing resources in Shelton affect students and their local environment?
2. How do the choices of individuals affect the community?
3. How do individuals affect the distribution of resources and sustainability, and how are they affected by it?

Essential Questions
- What role do they play, and what can students do to make a difference in their community?
- What is private property? What is public property? What are their roles in community?
- How do the needs of the community interact with private ownership?
- How can we justify the public use of private space?
- How can we use math to model what is happening in the community?
- How can we interpret and make sense of data?
- Is the distribution of resources in our community fair?
- How can students affect the distribution of resources in their community?
## Content Standards

### Social Studies: 12th grade
- 2.1.1 Analyzes how economic choices made by groups and individuals in the global economy can impose costs and provide benefits.
- 2.4.1. Analyses and evaluates how individuals affect and are affected by the distribution of resources and sustainability.
- 1.4.1 Analyzes and evaluates ways of influencing national governments and international organizations to establish or preserve individual rights and/or promote the common good.

### English Language Arts: 11th/12th grade
- RI 1-Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.
- RI 7-Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.
- W 2-Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
- W 4-PROduce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
- W 7-Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation;
- W 8-Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

### Standards for Mathematical Practice:
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.

### Math-Statistics:
- Quantities: N-Q- Reason quantitatively and use units to solve problems.
- Making Inferences and Justifying Conclusions: S-IC- Understand and evaluate random processes underlying statistical experiments
  2. Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation.
  4. Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.

### Math-Economics:
- Vector and Matrix Quantities: N -VM- Perform operations on matrices and use matrices in applications.
6. (+) Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network.
7. (+) Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled.
8. (+) Add, subtract, and multiply matrices of appropriate dimensions.
9. (+) Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties.
10. (+) Understand that the zero and identity matrices play a role in matrix addition and multiplication similar to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse.
11. (+) Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Work with matrices as transformations of vectors.

Sustainability:

- Standard 1: Ecological, Social, and Economic Systems: Students develop knowledge of the interconnections and interdependence of ecological, social, and economic systems. They demonstrate understanding of how the health of these systems determines the sustainability of natural and human communities at local, regional, national, and global levels.


Across the Disciplines: Students can articulate the interconnected nature of not only the choices that individuals make and the local community, but also of English language arts, math, and social studies.

ELA:
- Integrate and evaluate multiple sources into writing to address or solve a problem (R)
- Conduct research projects to answer a question or solve a problem (S)
- Write informative/explanatory texts to convey complex ideas (P)
- Cite textual evidence (S)
- Produce clear and coherent writing (P)
- Gather multiple information from authoritative sources and materials (S)

Math-Economics:
- Understand that multiplication of matrices is not commutative (K)
- Know the identity and zero matrices in relation to multiplication and addition respectively (K)
- Perform operations on matrices and use matrices in applications (S)
- Manipulate matrices (S)
- Create a matrix as a tool to experiment with different allocations of resources (P)
- Know that math can represent real-world situations and be used as a tool to model them (K)
- Reason quantitatively (R)
- Define appropriate quantities for the purpose of descriptive modeling (R)
- Use math to model real world situations (P)

Math-Statistics:
- Evaluate the consistency of a statistical model (R)
- Justify conclusions (R)
- Identify the processes that underlie statistical experiments (R)
- Evaluate the validity of population estimates (R)
- Use data from a sample to estimate a population data set (S)
- Develop a margin of error for population estimates (S)
- Use units to solve problems (S)
- Know that math can represent real-world situations and be used as a tool to model them (K)
- Reason quantitatively (R)
Define appropriate quantities for the purpose of descriptive modeling (R)

Use math to model real world situations (P)

**Social Studies:**

- Analyze how economic choices made by groups and individuals in the global economy can impose costs (R)
- Analyze how economic choices made by groups and individuals in the global economy can provide benefits (R)
- Analyze how individuals affect the distribution of resources and sustainability (R)
- Evaluate how individuals affect the distribution of resources and sustainability (R)
- Analyze how individuals are affected by the distribution of resources and sustainability (R)
- Evaluate how individuals are affected by the distribution of resources and sustainability (R)
- Analyze and evaluate ways of influencing national governments and international organizations to establish or preserve individual rights and/or promote the common good (R)

**Sustainability:**

- Develop knowledge of the interconnections and interdependence of ecological, social, and economic systems (K)
- Know what resources are available in Shelton, and to whom (K)
- Know the ways in which private and public ownership impact the community (K)
- Demonstrate understanding of how the health of these systems determines the sustainability of natural and human communities at local, regional, national, and global levels (P)

**WHERE TO**

*W: Help the students know Where the unit is going and What is expected. Help the teacher know Where the students are coming from.*

**Across the Disciplines:** Seeing that the community gathering places in Shelton have been dwindling lately (skate park has been shut down, pool has been closed, and a planned community center has instead been reconfigured into a transit hub), and that some students have begun to take action about the community pool being shut down, we want all of our students to know what is going on and how they can make a difference. The first lesson will be a classroom forum on what students have been seeing happening to the community resources, and who has been taking action and how that action has impacted their lives.

**ELA:** Students will look at texts and begin to analyze how these primary and secondary sources differ from narrative texts. They will explore what these texts are used for, how they are written, and what the implications are for examining and writing such texts. Among the primary sources included will be letters, and the concept and format of letter writing will be covered in preparation for letter writing to be included in the final project. Students will be informed that the brainstorming of their investigation of an industry of their choosing will culminate into a final essay project that includes explanatory texts and letter writing to explain their findings. They will be expected to peer review and edit their own writing and their peers’ writing, thus utilizing conventions of grammar, vocabulary, and syntax to display their works of academic writing.

**Mathematics:** Students will begin by investigating data on a global scale of how economic decisions that individuals make impact their individual lives, then the idea of local industry will be introduced and students will be asked to brainstorm an investigation of an industry of their choosing that affects their everyday life. Some suggestions will be made: “What happened to the community pool?” “What happened to the community center?” “What effect does Walmart have on the local environment?”

**Social Studies:** Students will begin with an Introduction to economic concepts exploring ideas and the history of Private and Public property, ownership, and the commons. Using this
understanding they will begin to explore how economic decisions might produce cost/benefits through an analysis of budgets. Students will then move into an exploration of civic participation, making connections between economic decisions that affect the community and the community’s ability to respond. During week three, students will engage in an application of economic decisions and civic participation through analysis of community resources in Shelton. Students will identify specific community responses and discuss why those responses were taken up and evaluate the effectiveness of those responses. Synthesis and plans re-application: students will use understanding of civic participation to address disappearing community resources in Shelton through crafting a final paper that identifies said resource and proposes possible plans of action.

H: **Hook** all students and **Hold** their interest.

*Across the disciplines:* What happened to the community pool? The first hook for students will be an initial investigation into what happened to the community pool and why it is important for students to have a space to call their own. Students can talk about what it means to have a space to call one’s own, and can discuss what the pool in Shelton meant to them.

E: **Equip** students, help them **Experience** the key ideas and **Explore** the issues.

**ELA:** English Language Arts ideas of informative versus narrative texts will be explored with examining primary and secondary sources from informative documents, and how those differ from narrative texts. Letter writing conventions will also be touched upon. Scaffolding on these two subjects will culminate in an informative, textual exploration of how resources are supplied/taken away and how they affect the community.

**Mathematics:** Math investigation will mainly center around the chosen investigation topic of the students’ choosing which center on the main idea. Any mathematical discussions as a whole class will connect with the economic choices that led to the pool being taken away.

**Social Studies:** Week one will be spent introducing students to key concepts for the unit which will then be built off of for the remainder of the unit by putting those concepts into context with the investigations students will be performing. Each stage of work will build towards the next stage, with students using their developing understanding to make and test predictions around communities’ economic decision making.

R: **Provide opportunities to Rethink** and **Revise** their understandings and work.

**ELA:** Students will be able to investigate different kinds of sources and their importance in crafting community decisions. They will have opportunities to explore these sources and determine in what way the wording or the ideas represent a type of bias. Students will additionally revise their understandings of letter-writing in preparation for crafting letters on their findings. Editing opportunities, discussions, and the influx of ideas will enable students to rethink their ideas and revise their wording.

**Math-Statistics:** In order to get students thinking about what they perceive to be trustworthy statistics I will have them investigate what is obviously false, then move into statistics that could be biased for a number of reasons. This will allow students to see how what they may assume can be reconsidered.

**Math-Economics:** Student may feel that supporting places for recreational activities is a extraneous endeavor, but on realizing the importance to the community these places are they can revise their initial understandings of what it means to be a supportive member of the community.

**Social Studies:** Because students will be building off of previous knowledge during each stage, they will be able to retest initial ideas throughout the course of the unit. Students will initially be asked to do work towards their understanding of civic participation by analysing different scenarios, they will be able to re-test/re-apply this knowledge the following week when they
look at the Shelton pool, and again the final week when they are crafting their final essays. Students will be able to compare their thoughts on their own budgets with their thoughts on the School’s budget and will be able to see whether the comparison has lead to new ideas about what it means to work to fulfill their financial needs. Students will spend time revising their final essays using a provided rubric in order to self assess, reflect, and propose plans of action for revision.

E: Allow students to Evaluate their work and its implications.

**ELA:** Self- and peer-assessments will be implemented on students’ written work, which will allow for editing of academic language as well as revision of ideas. Students will also collaborate on ideas and evaluate one another on the ideas they present for their projects.

**Math-Statistics:** Self-assessment and peer-assessment of individual/group investigations, as well as peer assessment of the statistical modeling to ensure that their model is unbiased and statistically accurate.

**Math-Economics:** There will be periodic sessions for students to comment on each others sketches, graphs, models, tables, and analyses. There will also be sessions for students to self-assess and make revisions based on the feedback from their peers and their new understanding from their studies in the other disciplines.

**Social Studies:** students will perform self-assessments of their final paper drafts before turning them in in order to provide space for student evaluation. students will reflect on their work and propose plans of action for further revisions.

T: Be Tailored to the different needs, interests, and abilities of learners including connections to the communities.

**Across the disciplines:** Directions will be read aloud and written on the board as well as provided in the first language of students who are English Language Learners. Group work will be monitored closely, and students who have social needs will be given options to take breaks or work individually. Tasks will also be broken into manageably small parts while we will also provide extensions for students who complete the initial work quickly.

O: Be Organized to Maximize initial and sustained engagement as well as effective learning.

**Across the disciplines:** Having students generate their own investigations into community resources will maximize engagement, as well as spark interest in community involvement. Maintaining a schedule and being mindful of work time will help keep students on track in their work toward the end assessment goal, and thus keep their sights on the learning targets.
Learning Experiences Calendar

Week One

All- Day 1
Guiding Question: What do you know about interconnectedness of community? What would you like others to know?
Learning Experiences: Ball of yarn systems activity. Discussion on places that are important for you, and the shutdown of the community pool. Writing activity on the importance of having a place to call one’s own and how the community has been affected by the diminishing resources.

All- Day 2
Guiding Question: What is a community, who are the people in our classroom community?
Learning Experiences: Students will create classroom norms and establish roles, building community between and within their classes.

Day 3
Social Studies
Guiding Question: What is public, what is private?
Objectives/learning Experiences: students will engage in vocab exercises for public, private, ownership, and the commons. Students will read articles on the privatization of public resources (ex. Nestles use of water in california) and articles on eminent domain. Students will record arguments for when governments/people have the right to land that outweighs private concerns and when private concerns outweigh public demands.

English Language Arts
Guiding Question: What is letter writing?
Objectives/Learning Task: Students will discuss and interpret what letters are and what they are for.

Math-Statistics
Guiding Question: What are measures of center and variation?
Learning Experiences: Students will engage in a review activity focused on measures of center.

Math-Economics
Guiding Question: What is in our world?
Learning Experiences: Students share their understandings of what supports our public spaces.

Day 4
Social Studies
Guiding question: How are resources considered both public and private?
Learning objectives: Students will continue reading articles on the privatization of public resources (ex. Nestles use of water in california, NBS article on eminent domain, excerpt from hitchhikers guide to the galaxy) and articles on eminent domain. Students finish recording arguments for when governments/people have the right to land that outweighs private concerns and when private concerns outweigh public demands. Students will create a graphic organizer T chart that compares justifications for both situations.
Exit task: Does public need ever justify appropriating private property and why?

English Language Arts
Guiding Question: How does one write business letters? What are they for?
Objectives/Learning Task: Students will look at business letters and compare/contrast them with friendly letters. They will discuss in what contexts business letters are used for.

Math-Statistics
Guiding Question: In what ways can we model statistics?
Learning Experiences: Students will investigate frequency tables and histograms through working with modeled data.

Math-Economics
Guiding Question: How do we construct a network modeling our world?
Learning Experiences: Students will have a brief introduction to the graph theory concept of directional graphs.

Day 5
Social Studies
Guiding Question: How can communities affect the usage of public property? Students will investigate scenarios of government usage of public property

English Language Arts
Guiding Question: In what ways can high school students use business letters? Can they make a difference?
Objectives/Learning Task: Students will discover the ways in which they themselves use business letters, and when and where in their lives this task will become relevant. They will reflect on any possible differences they can make in their communities, and on how they themselves could use business letters to possibly get the pool back.
Formative Assessment: Students will write reflections to themselves, in the form of a business letter, detailing what they learned in the week about business letters and how it could help them toward completing their final projects.

Math-Statistics
Guiding Question: In what ways are statistics represented for people in the professional world?
Learning Experiences: Students will read US Census data and identify the methods of analyzing the data that the Census uses.
Formative Assessment 1: Exit Ticket

Math-Economics
Guiding Question: How do we refine and delineate a network?
Learning Experiences: This continues the exploration into aspects of directional graphs.
Week Two

Day 6
Social Studies
Guiding Questions: 1. Why did you make those choices? Why are some items more important to you than others? 2. What item would you be most willing to part with? Least willing? Why?
If you couldn’t afford all of these items how might you attempt to cover the difference? (borrowing, working more, cutting/eliminating expenses)
Learning Experiences: Students will examine an example of a typical student budget. They will look at the list as a class and determine if there is anything missing. Working in small groups students will then be asked to rank items in terms of importance. In small groups, students will discuss: the guiding questions. In small groups students will provide a written response to the second set of guiding questions.

English Language Arts
Guiding Question: What is research? Why is research?
Objectives/Learning Task: Students will evaluate the importance of research, discuss what it is and what it isn’t, and why it exists.

Math-Statistics
Guiding Question: What is the average income of our class? What about the families in our community? What about Shelton as a whole?
Learning Experiences: Students will gather data about the average income of their classmates who have jobs and their families and create statistical models of the data.

Math-Economics
Guiding Question: How do networks relate to data structures?
Learning Experiences: Students make a connection from graphic depiction of systems to matrices.

Day 7
Social Studies
Guiding Question: Where might the funds for the pool/pool repairs be? Why might this be a problem?
Learning Experiences: Examine Shelton School District’s budget: see-think-wonder. Perform the same analysis that you did for a student's budget for Shelton’s budget, imagining yourself as the original budget designer.

English Language Arts
Guiding Question: In what ways can we model research?
Objectives/Learning Task: Students will discover the ways that they themselves could model research. They will begin to look at primary and secondary source documents.

Math-Statistics
Guiding Question: What is the average income of our class? What about the families in our community? What about Shelton as a whole?
Learning Experiences: Students will estimate Shelton’s school budget based on the data they gathered about their class using a scale based on the population ratio and compare this with the actual budget.

Math-Economics
Guiding Question: How does matrix mathematics models the real world?
Learning Experiences: Students will learn about some matrix operations.
Day 8
Social Studies
Guiding Question: What are the implications for your practice?
Learning Experiences: Civic participation intro picture analysis (see-think-wonder thinking routine)
Teacher: gives background on photo, connects it to civic action questions for class: What occurred? What was the response? What was the effect? What are the implications for your practice? Teacher distributes Civic participation handout. Students get into pairs and highlight the words or phrases that best describe each form of civic participation

English Language Arts
Guiding Question: How do people cite sources properly? Why does it matter?
Objectives/Learning Task: Students will discuss what citation is and what it isn’t. They will explore why it matters in academia. They will look at examples of proper versus improper source citations.

Math-Statistics
Guiding Question: What is a good population estimate?
Learning Experiences: Students will investigate real examples of good and bad population estimates based on several methods of sampling and approximation.

Math-Economics
Guiding Question: How do you multiply two matrices?
Learning Experiences: Students will learn how to multiply two matrices.

Day 9
Social Studies
Guiding Question: How do we apply this understanding?
Learning Experiences: Applying understanding. Students will apply understanding of civic participation types by reading scenarios in which groups and individuals have attempted to address a social issue. They will predict what forms of civic participation might be most effective in each situation and give their rationale. They will then read through the whole scenario and identify which civic participation types were used. They will compare their initial answers with their subsequent observations and describe why different tactics were or were not effective.

English Language Arts
Guiding Question: What are bogus sources and why are they “trolling” your research?
Objectives/Learning Task: Students will detect legitimate sources from bogus/fake ones, and find clues that will help them to tell the difference. They will examine the damage that can be done by finding fake, illegitimate resources.

Math-Statistics
Guiding Question: Were our budget estimates really accurate?
Learning Experiences: Students will investigate whether their population estimates from lesson 5 are accurate and why using margin of error and what they have learned about samples in lesson 6.

Math-Economics
Guiding Question: How can matrices be used to represent sets of linear equations?
Learning Experiences: Students will learn how to find solutions for equations efficiently with matrices.

Day 10
Social Studies
Guiding Question: What are important issues facing you and your community?
Learning Experiences: Processing. Think about issues facing you, your community or the world. Pick an issue that is important to you and write a short paragraph describing what it is and why it’s important. Give supporting evidence. Then develop a plan of action, use 2-3 forms of civic
participation that you have learned about to describe how you might address the problem and why these actions would be effective.

**English Language Arts**

*Guiding Question:* How do we put all of this information together?

*Objectives/Learning Task:* Students will reflect on ways and strategies they could use to research and simultaneously keep track of citations.

*Formative Assessment:* Students will research three sources, appropriately cite sources in-text and in a bibliography, and explain in an endnote why the sources are legitimate. They will also reflect on what they still wonder about regarding research, and what they feel they could learn in preparation for their final projects.

**Math-Statistics**

*Guiding Question:* What does it mean for statistics to be valid?

*Learning Experiences:* Students will engage in a classroom discussion on what validity is and how we know when something is true or accurate.

*Formative Assessment 2:* Exit ticket

**Math-Economics**

*Guiding Question:* What are determinants and how are they used?

*Learning Experiences:* Students will learn how to find solutions using determinants and Cramer’s rule.

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**Week 3**

**Day 11**

**Social Studies**

*Guiding questions:* How has your thinking changed over time in regards to community resources? What are you thinking now?

*Learning Experiences:* Symposium on Shelton Pool: In looking at Shelton’s pool, students will discuss how they and the community have been affected by the removal of access to the pool. They will also discuss how other resources have disappeared from the community and how they see this as affecting Shelton. Essential questions: What resources have ceased to exist in Shelton? Why might these resources be disappearing (multiple causes)? How have community members attempted to address these issues? Have these actions been effective? Why or Why not? What are potential next steps?

**English Language Arts**

*Guiding Question:* What kinds of sources should we look for that will give us information about the Shelton pool and lack of other resources? Where can we find these?

*Objectives/Learning Task:* Students will discuss in groups and as a class the different types of resources they could use to find out what happened to the diminished resources in Shelton. They will come up with strategies on how to find this information.

**Math-Statistics**

*Guiding Question:* What does it mean for sample statistics to represent the population validly?

*Learning Experiences:* Students will investigate real data that represents populations accurately based on valid sampling methods.

**Math-Economics**

*Guiding Question:* What are matrix identities and inverses?

*Learning Experiences:* Students will practice how to derive the inverse of a matrix using its determinant.
Day 12 & 13

Social Studies- Days Twelve and Thirteen

Guiding Question: a) why the pool was closed b) reasons for and against closing the pool c) actions the community has taken to prevent the closing of the pool d) proposed alternatives.
Learning Experiences: After the initial discussion, students will perform research to determine a) why the pool was closed b) reasons for and against closing the pool c) actions the community has taken to prevent the closing of the pool d) proposed alternatives. Using this information, students will create a graphic organizer to group their findings.

English Language Arts- Days Twelve and Thirteen

Guiding Question: Why did these resources cease to exist?
Objectives/Learning Task: Using the graphic organizer from Social Studies, students will write an analysis in the form of a business letter to detail what they have found. They could write to me, or pretend they are spies/informants detailing this “undercover” information they have found and how alternatives could potentially be implemented.
Formative Assessment: Students will provide a business letter detailing the information they have deduced from their graphic organisers from Social Studies.

Math-Statistics- Day Twelve

Guiding Question: What does an invalid conclusion look like?
Learning Experiences: Students will work in groups to identify what is exactly is happening in an invalid sample, whether or not intentions are good.
Formative Assessment 2: Exit ticket

Math-Statistics- Day Thirteen

Guiding Question: What does it mean for something to be statistically consistent?
Learning Experiences: Students will engage in a classroom discussion of what it means for statistics to be consistent with an abstracted model and assess how much error there is in the application of such a model.

Math-Economics- Day Twelve

Guiding Question: How are matrices used to analyze networks?
Learning Experiences: Students will investigate several problems involving network analysis, consumer preference models, electrical systems, and ecological models.

Math-Economics- Day Thirteen

Guiding Question: What matrix algebra concepts are necessary to understand resource distribution systems?
Learning Experiences: Students will learn some properties of matrices and write proofs showing consistency between equations.

Day 14

Social Studies

Guiding Question: How can communities voice opinions on community issues?
Learning Experiences: use graphic organizer to engage in a mock community forum using the following essential questions
- Is the distribution of resources in our community fair?
- How can students affect the distribution of resources in their community?
- What can students do to make a difference in their community?

exit task: so what, now what? Is it important for students to get involved in their communities, why or why not? What other community resources would you be interested in investigating?

English Language Arts

Guiding Question: Can the data tell the story?
Objectives/Learning Task: Students will discuss ways in which maths can be implemented to tell a story. They will find sources that provide demographic/numerical/other relevant information on Shelton’s resources.

Math-Statistics
Guiding Question: What does it mean for an abstract model to fit the real data?
Learning Experiences: Students will work in groups on analyzing and modeling a real data set then try and fit an abstract statistical model to it.

Math-Economics
Guiding Question: How do matrices model an economy?
Learning Experiences: Students will work on matrix models showing how interconnected industries support and sustain each other and how resources are distributed.

Day 15
Social Studies
Guiding Question: How can you use your understanding of civic participation to create plans of action?
Learning Experiences: Making connections; use understanding of civic participation to address disappearing community resources in Shelton. Brainstorm ideas, create plan of action, begin research.

English Language Arts
Guiding Question: Can numbers lie to you?
Objectives/Learning Task: Using the numbers from the previous day, and using their framework for research methodologies, students will write a summary on their findings, ways to conduct their own research studies, and reflect on what they would still need to learn about research and letter writing to complete their projects.
Formative Assessment: Analysis on statistical information gathered in ELA/maths classes; reflection on what they would still like to learn about the process of data gathering.

Math-Statistics
Guiding Question: How do you conduct a statistical study?
Learning Experiences: In their small groups, students will determine what the typical structure of a statistical study is, then present a framework for research methodologies on a poster to the class. Students will then begin brainstorming research topics to go with their civics projects, bringings back on Monday their research question.
Formative Assessment 3: Exit ticket

Math-Economics
Guiding Question: How can we affect our economy and how does it affect us?
Learning Experiences: Students will analyze how events and public investments influence the economy.
Week 4

Day 16
Social Studies
Guiding Question: What are resources that are disappearing in your community and why?
Learning Experiences: Research: identify and describe the community resource, what it is and why it’s disappearing.

English Language Arts
Guiding Question: How will you prepare your business letters and findings?
Objectives/Learning Task: Students will begin writing their letters, writing a rough overview of their findings they have gathered from all classes and what the data signifies. They will also propose alternate solutions that could benefit the community.

Math-Statistics
Guiding Question: What will you study?
Learning Experiences: Students will begin writing a template for their statistical research, starting with outlining a research time frame, then outlining how they incorporate their findings into their projects.

Math-Economics
Guiding Question: How can I encapsulate intangible values into a mathematical model intended to represent our world?
Learning Experiences: On their own, students will begin the task of making sense in their own terms the integration of their public space support model with the economy model.

Day 17
Social Studies
Guiding Question: How can civic participation be used to affect change in a community?
Learning Experiences: Make predictions. Continue writing for final essay, this time focusing on what types of civic participation might be effective for addressing your resource

English Language Arts
Guiding Question: How can written arguments be strengthened? In what ways could they potentially be lacking?
Objectives/Learning Task: Students will continue work on their letters, strengthening their arguments, gathering more data, building up their bibliographies, and discussing what else could be implemented into their letter

Math-Statistics
Learning Experiences: Students will participate in self driven research based on their 3-day plans.

Math-Economics
Guiding Question: How can our group make sense of integrating public and private domains?
Learning Experiences: Students will learn from one or two others about how they addressed the question of how to integrate the public and economic models.

Day 18
Social Studies
Guiding Question: How has your learning thus far prepared you to synthesize your understanding?
Learning Experiences: Bring together your understanding of what the community resource is, why it's disappearing, and plans of action for getting it back.

English Language Arts
Guiding Question: As a peer reviewer, how can I strengthen my fellow student’s letter content?
Objectives/Learning Task: Students will peer review and edit each others’ essays. Students will implement changes where they see fit.

Math-Statistics
Learning Experiences: Students will participate in self driven research based on their 3-day plans.

Math-Economics
Guiding Question: How can we understand public and private domains?
Learning Experiences: Students will develop understanding in a whole-class discussion on the matter of public and private endeavors.

Day 19
Social Studies
Guiding Question: What needs to be the case to plan for revisions?
Learning Experiences: Reflection and revision. Self-assess and peer review your final paper draft using the rubric. Write a reflection in which you address where you and your peer review partner have noticed strengths in your paper, and where there is room for improvement. Devise a plan for how you will address the areas you need to improve in.

English Language Arts
Guiding Question: Now what? How could the letters be effectively presented?
Objectives/Learning Task: Students will conduct another round of peer review and implement changes. They will also begin to come up with presentation plans for how to recite their letters, discussing what constitutes good public speaking and what it looks like. They will get an opportunity to practice their public speaking skills in small groups.

Math-Statistics
Guiding Question: How did my research turn out?
Learning Experiences: Students will peer revise and edit the conclusions they have drawn from their research with a critical eye for sampling bias and how well the model fits the data.

Math-Economics
Guiding Question: How do we support public spaces?
Learning Experiences: Students will develop a support network model based on their learning from this interdisciplinary curriculum unit.

Day 20
Social Studies
Guiding questions: How does re-thinking writing contribute to meeting the aims of writing?
Learning Experiences: Final revisions. Revise and finish your final drafts.

English Language Arts
Guiding Question: How did my research turn out?
Objectives/Learning Task: Students will submit their final drafts, finalise their presentation plans, and reflect on the entire experience and what they liked/didn’t like.
Formative Assessment: Final project; final reflection.

Math-Statistics
Guiding Question: How did my research turn out?
Learning Experiences: Students will self assess their research and the incorporation of their study into their civics projects, then practice their presentations with a peer.

Math-Economics
Guiding Question: What does my community think of how we can support public spaces?
Learning Experiences: Students will learn from each others’ presentations their understanding of their ideal support system.
Culminating Project Description

Using quantitative reasoning, statistical and matrix modeling, predict the distribution of a specific resource that is mediated through public and private control, then write a letter to one of your local representatives. Students will craft a persuasive paper that will argue for an investigation into how access to a specific community resource is mediated through public and private control, and what the community’s role might be in affecting access to that resource, using quantitative reasoning to craft an argument. Students will present their papers to the community in a culminating public presentation, then participate in the ceremonious sending of the letters to the representatives.

Family Involvement Plan

Collaboratively, we (the teachers) will write a letter to parents to send home with students at the beginning of the unit. In the letter, we will introduce ourselves as the teachers of their students and describe our intent with this unit. We will tell parents about the politically charged nature of this unit and ask them to join us and their students in supporting the school as a community within the greater community. The letter will include a request for parent participation in various stages of the project including field trip chaperoning, assisting with setup and takedown for the community event, and support of their students budding political activism.

When students present their culminating projects from the unit, parents and community members will be invited to attend. The presentation of culminating projects will include students political statement of action on their research topic of choice, and the support for their call to action. At this event, students will ceremoniously mail their letters to their local representatives about the resource they chose to investigate. At the end of the unit and this event, parents and community members will receive an evaluation form to assess the effectiveness of the unit on the community, and their students’ learning. We will use these evaluations to refine the unit for future uses.
## Lesson Details

### All Day 1 Lesson Plan

<table>
<thead>
<tr>
<th>Launch</th>
<th>60 Minutes</th>
<th>Ball of yarn activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kaitlyn Says:</strong></td>
<td>Today we are going to do an activity involving this ball of yarn. I will demonstrate for you how this will look with our teachers real quick.</td>
<td></td>
</tr>
<tr>
<td><strong>Kaitlyn, Ana, Max, and Ron Do:</strong></td>
<td>Kaitlyn will pass the yarn to Ana keeping a bit of slack and Ana will catch it and keep a little slack, then pass it to Max, who will keep some yarn, then pass it to Ron, and Ron will pass it to Kaitlyn again who will roll up the ball.</td>
<td></td>
</tr>
<tr>
<td><strong>Kaitlyn Says:</strong></td>
<td>So this is what we will be doing, make sure to keep a bit of yarn with you when you pass it on to the next person. First we are going to count off by 4 and each go with a teacher to do this activity in a small group.</td>
<td></td>
</tr>
<tr>
<td><strong>Students Do:</strong></td>
<td>Count off by 4, 1’s go to Kaitlyn, 2’s to Ron, 3’s to Max, and 4’s to Ana who will each have a ball of yarn.</td>
<td></td>
</tr>
<tr>
<td><strong>Teacher Says:</strong></td>
<td>Make sure to alert the person you are going to underhand toss the ball of yarn at to make sure they are ready to catch it.</td>
<td></td>
</tr>
<tr>
<td><strong>Teacher Does:</strong></td>
<td>Say a student name then underhand toss the ball of yarn, keeping a little bit. Facilitates the tossing, making sure it goes quickly and efficiently. After the yarn has gotten back to the teacher <strong>Say:</strong> Everyone hold tight to your yarn now and take one step in. Now take two steps back. Now return to where you were initially standing. Can I get the person next to me to hold on to my yarn for a moment.</td>
<td></td>
</tr>
<tr>
<td><strong>Teacher Does:</strong></td>
<td>Slowly and carefully push your way into the middle of the system, not dodging yarn, but rather pushing it and deforming it. Then carefully step out and take your yarn back.</td>
<td></td>
</tr>
<tr>
<td><strong>Teacher Says:</strong></td>
<td>Now I want everyone to take one step in any direction you want. What do your notice about what I just did in comparison to what we have all just done together?</td>
<td></td>
</tr>
<tr>
<td><strong>Students Do:</strong></td>
<td>Give ideas about how the systems changes in unison.</td>
<td></td>
</tr>
<tr>
<td><strong>Teachers Do:</strong></td>
<td>Gather all of the groups back together into one big circle.</td>
<td></td>
</tr>
<tr>
<td><strong>Max Says:</strong></td>
<td>So what did everyone notice in their smaller groups?</td>
<td></td>
</tr>
<tr>
<td><strong>Students Do:</strong></td>
<td>Share ideas about what they saw.</td>
<td></td>
</tr>
<tr>
<td><strong>Ron Says:</strong></td>
<td>So how does this connect to the Shelton community?</td>
<td></td>
</tr>
<tr>
<td><strong>Ana Says:</strong></td>
<td>How does this connect to what happened to the pool?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instruction</th>
<th>110 Minutes</th>
<th>Pool conversation ~60 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Students Do:</strong></td>
<td>Suggest ways that the community is a living system, and the pool being taken away was like the teacher entering the system.</td>
<td></td>
</tr>
<tr>
<td><strong>Teacher Says:</strong></td>
<td>So what does it mean for the pool to be taken away?</td>
<td></td>
</tr>
<tr>
<td><strong>Students Do:</strong></td>
<td>Suggest reasons why the pool was important, it was a place for students to hang out and call their own.</td>
<td></td>
</tr>
<tr>
<td><strong>Teacher Says:</strong></td>
<td>What does it mean to have a place to call your own? What places do you have in your community, and why are they important? Talk with your neighbor for a minute to generate some ideas. Now share out.</td>
<td></td>
</tr>
</tbody>
</table>
**Launch**

**30 Minutes**

**Teacher Says:** Today we are going to build a community within our classroom, establishing norms and roles that we will use throughout the rest of this year together. So the first thing we want you to do today is write on a piece of notebook paper what you need in order to be successful in a group work setting.

**Students Do:** Write on their own piece of paper.

**Teacher Says:** Now that you have some needs down I want you to round robin share in your group until everyone has said every need. Then I want you to write on the poster paper that will be put on your table the collective needs of your group.

**Teacher Says:** Now that everyone has put their group needs on a poster we are going to do a gallery walk to see what everyone has written.

**Teachers Do:** Conduct a gallery walk.

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**Instruction**

**130 Minutes**

**Teacher Says:** Now that we have collective set of needs we have seen, we will establish a set of norms for the class that we will all agree on. Now we will break out into groups of four based on the number on the card you will be receiving.

**Teacher Does:** Pass out cards and organize students into groups.

**Teacher Says:** Now that we are in our groups we want you to work on this activity together. Read the Broken Circles Task Card on your desk and make sure to follow the directions closely. Make sure that you don’t speak in this activity,

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**Closure**

**10 Minutes**

**Teacher Says:** Now that you have shared I want you to share with the whole class a theme your group has established.

**Students Do:** Share themes about why places are community assets.

**Teacher Says:** So we have established some major themes about why places are community resources, and really very important to the community as a whole. Thank you everyone for sharing today.
and follow the rules on your role card. It is important that everyone participate in this activity, so make sure to follow the norms you have established.

**Students Do:** Broken Circles activity ~ 60 minutes.
**After 60 minutes**
**Teacher Says:** So how did this activity go for you? What did you notice?
**Students Do:** Classroom discussion on how they did ~50 minutes.

<table>
<thead>
<tr>
<th><strong>Closure</strong></th>
<th>20 Minutes</th>
</tr>
</thead>
</table>
| **Teacher Says:** So today we worked on building class norms and establishing roles that we will play in this class over the course of this unit. How did everyone feel about today? Is there anything you might have changed?
**Students Do:** Discuss what everyone felt went well and didn’t go well, establishing a community that is ok with mistakes and willing to make changes. |
# Social Studies Day 6 Lesson Plan

**Primary Teacher:** Maxwell Merchant  
**Grade:** 12th

**Standards:**  
2.1.1 Analyzes how economic choices made by groups and individuals in the global economy can impose costs and provide benefits.

**Learning Targets** *(K- Knowledge, R-Reasoning, S-Skill, P-Product)*  
R: Students will analyze a typical student budget to see how economic decisions can impose costs and provide benefits.

**Summary of Learning Activities**  
Students will examine an example of a typical student budget. They will look at the list as a class and determine if there is anything missing. Working in small groups students will then be asked to rank items in terms of importance.  
In small groups, students will discuss:  
- q: Why did you make those choices? Why are some items more important to you than others?  
- In small groups students will provide a written response to:  
  - What item would you be most willing to part with? Least willing? Why?  
  - If you couldn’t afford all of these items how might you attempt to cover the difference? (borrowing, working more, cutting/eliminating expenses)

**Instructional Practices**  
Instructions will be written on the whiteboard and will be given orally to students before work begins. I will ask students to describe their understanding of the work they are about to do and ask if there are any clarifications needed before they begin. Teacher will provide an example of a typical student budget on the overhead projector. Teacher will ask students if there is anything additional that should be added to the list. Teacher will add additional items. Teacher will direct students to small groups to discuss the importance of each budget item. Teacher will them task students with creating a written response that addresses how they would react to a budget deficit.

**Language Demands**  
*Content Specific Vocabulary:* Budget deficit- Ask class what it means to have a budget deficit. Provide additional description if needed after student responses  
*Language Functions:* analyze- analysis takes the form of questions given to students

**Formative Assessments**  
Introduction, no formative assessment

**Student Voice**  
Student voice is accounted for in speaking back understanding of the lesson, learning objectives and instructional tasks. Student voice is drawn upon in altering the analyzed budget document. Student voice is prioritized in budget analysis

**Teaching Outline and Procedures**  
- 5 minutes: Introduction  
- 20 minutes: Initial assessment of budget  
- 35 minutes: small group work
# Social Studies Day 7 Lesson Plan

**Primary Teacher:** Maxwell Merchant  
**Grade:** 12th

**Standards:**  
2.1.1 Analyses how economic choices made by groups and individuals in the global economy can impose costs and provide benefits.

**Learning Targets** *(K- Knowledge, R-Reasoning, S-Skill, P-Product)*  
R: Students will analyze a typical student budget to see how economic decisions can impose costs and provide benefits

**Summary of Learning Activities**  
see-think-wonder: examine Shelton's budget, what do you see, what do you think, what do you wonder? Analysis of budgets allows students to investigate how economic choices can impose costs and provide benefits by showing how the decisions made about resources can lead to benefits for students, it lets students see what actions they will need to take to maintain a balanced budget and it lets them see how an organization might have to make similar choices. Students will then analyze those choices and evaluate their effectiveness.

perform the same analysis that you did for a student's budget for Shelton’s budget, imagining yourself as the original budget designer

exit task: Where might the funds for the pool/ pool repairs be? Why might this be a problem?

**Instructional Practices**  
Instructions will be written on the whiteboard and will be given orally to students before work begins. I will ask students to describe their understanding of the work they are about to do and ask if there are any clarifications needed before they begin. Teacher will ask students to perform a see-think-wonder exercise when looking at the budget for the Shelton School District. Teacher will direct students to engage in small group discuss of Shelton’s budget where they will be tasked with ranking potential importance of budget items imagining themselves as the crafter of the budget. Students will be asked to decide how they could address a budget shortfall if they were school officials.

Teacher will end discussion with 5-10 minutes remaining for the class period. Teacher will assign the exit task for the day which asks: Where might the funds for the pool/ pool repairs be? Why might this be a problem?

**Language Demands**  
*Content Specific Vocabulary:* Budget deficit- Ask class what it means to have a budget deficit. Provide additional description if needed after student responses  
*Language Functions:* analyze- analysis takes the form of questions given to students

**Formative Assessments**  
exit task: Where might the funds for the pool/ pool repairs be? Why might this be a problem?

**Student Voice**  
Student voice is accounted for in speaking back understanding of the lesson, learning objectives and instructional tasks. Student voice is drawn upon in altering the analyzed budget document. Student voice is prioritized in budget analysis
Teaching Outline and Procedures
5 minutes: introduction
10 minutes: see-think-wonder
10 minutes: initial assessment
25 minutes: small group work
5-10 minutes: exit task

Social Studies Day 8 Lesson Plan

Primary Teacher: Maxwell Merchant
Grade: 12th

Standards:
1.4.1 Analyzes and evaluates ways of influencing national governments and international organizations to establish or preserve individual rights and/or promote the common good.

Learning Targets (K-Knowledge, R-Reasoning, S-Skill, P-Product)
R: Students analyze different forms of civic participation as tools for influencing local and national governments, and international institutions

Summary of Learning Activities
Civic participation intro
picture analysis (see-think-wonder thinking routine)
Students analyze picture depicting sit in at a Woolworth's lunch counter
discussing answers to teacher questions in small groups and then reporting back to the class. What occurred? What was the response? What was the effect? What are the implications for your practice?
Students then receive a handout on types of civic participation and descriptions of that type and use. Students get into pairs and highlight the words or phrases that best describe each form of civic participation

Instructional Practices
Instructions will be written on the whiteboard and will be given orally to students before work begins. I will ask students to describe their understanding of the work they are about to do and ask if there are any clarifications needed before they begin.
Teacher: shows photo of civil rights protest sit in at Woolworth’s lunch counter. Asks students to look at the picture and write down what they see, what they think and what they wonder about the photo.
Calls on students to share their responses.
Questions for class to synthesize discussion after initial responses: What occurred? What was the response? What was the effect? What are the implications for your practice?
Teacher extends understanding after the exercise by giving background on the photo, and connecting it to the larger discussion about civic action. Teacher distributes Civic participation handout and directs students to high light words and phrases that best describe each form of civic participation. Teacher models highlighting of first civic participation example. Teacher then circulates around the classroom addressing student questions and facilitating completion of the worksheet.
### Language Demands

**Content Specific Vocabulary:** civic participation - students are asked to consider civic participation generally in the opening activity, students then analyze a document which lists and describes specific examples of civic participation. These general and specific focusing activities should give students a solid basis for understanding what civic participation means. This understanding will be further applied in future lessons.

**Language Functions:** Analyzes: analysis of picture is guided by teacher questions, analysis of civic participation worksheet is modeled by teacher.

### Formative Assessments

Thinking about and analyzing the provided picture as a text.

### Student Voice

Student voice is accounted for in speaking back understanding of the lesson, learning objectives and instructional tasks.

### Teaching Outline and Procedures

5 minutes: introduction  
20 minutes: see-think-wonder  
15 minutes: synthesizing questions  
5 minutes: teacher talk  
15 minutes: worksheet

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### Social Studies Day 9 Lesson Plan

**Primary Teacher:** Maxwell Merchant  
**Grade:** 12th

**Standards:**  
1.4.1 Analyzes and evaluates ways of influencing national governments and international organizations to establish or preserve individual rights and/or promote the common good.

**WA State Sustainability Standards:**  
Standard 1: Ecological, Social, and Economic Systems: Students develop knowledge of the interconnections and interdependence of ecological, social, and economic systems. They demonstrate understanding of how the health of these systems determines the sustainability of natural and human communities at local, regional, national, and global levels.
Learning Targets *(K- Knowledge, R-Reasoning, S-Skill, P-Product)*

R: Students evaluate how effective different forms of civic participation are for different purposes

R: Students analyze different forms of civic participation as tools for influencing local and national governments, and international institutions

K: Students will come to know how social systems connect through demonstrating understanding about the interconnectedness of social systems and social movements

Summary of Learning Activities

Applying understanding

Students will review civic participation document. Students will apply understanding of civic participation types by reading scenarios in which groups and individuals have attempted to address a social issue. They will predict what forms of civic participation might be most effective in each situation and give their rationale. They will then read through the whole scenario and identify which civic participation types were used. They will compare their initial answers with their subsequent observations and describe why different tactics were or were not effective.

Instructional Practices

Instructions will be written on the whiteboard and will be given orally to students before work begins. I will ask students to describe their understanding of the work they are about to do and ask if there are any clarifications needed before they begin. Teacher will ask students to review the civic participation document and ask any clarifying questions about it before the main activity. Teacher will show a preview of each scenario, will read the preview and then ask students to consider what forms of civic participation those involved might use and why. After students discuss possible forms of civic participation, the teacher will read the scenario allowed and ask students to return to their original answers to assess which forms of civic participation were actually used, and why they might have been effective.

Language Demands

*Content Specific Vocabulary:* Civic participation types will be listed and described in the document handed out on the previous day. Students will review the document before the beginning of the main activity.

*Language Functions:*
analyze-students will analyze scenarios to identify potential and actual actions using civic participation methods
evaluate- students will evaluate which forms of civic participation would be most effective in a given scenario and give reasons for their choice. Students will use their built prior knowledge from their analysis of the civic participation document to make reasoned claims about the uses for specific forms of civic participation

Student Voice:
Student voice is accounted for in speaking back understanding of the lesson, learning objectives and instructional tasks.

Teaching Outline and Procedures

15 minutes: Intro/document review
45 minutes: civic participation scenario analysis
## Social Studies Day 12 Lesson Plan

**Primary Teacher:** Maxwell Merchant  
**Grade:** 12th

### Standards:
2.4.1. Analyzes and evaluates how individuals affect and are affected by the distribution of resources and sustainability.  
1.4.1 Analyzes and evaluates ways of influencing national governments and international organizations to establish or preserve individual rights and/or promote the common good.

### Learning Targets *(K-Knowledge, R-Reasoning, S-Skill, P-Product)*

- **R:** students should be able to analyze online resources to identify evidence to evaluate how individuals and groups are affected by the decision to eliminate the pool as a community resource  
- **R:** analyzes how individuals and groups affect the distribution of resources through their efforts to reaffirm access to the pool  
- **R:** evaluate how individual and group efforts at organization and civic participation have or have not been effective

### Summary of Learning Activities

Students will perform research to determine a) why the pool was closed b) reasons for and against closing the pool c) actions the community has taken to prevent the closing of the pool d) proposed alternatives. Using this information, students will create a graphic organizer to group their findings.

### Instructional Practices

Students will be directed to enter the computer lab at the beginning of the class. Instructions will be written on the whiteboard and will be given orally to students before work begins. Students will also be informed that they will have two days to complete this work. I will ask students to describe their understanding of the work they are about to do and ask if there are any clarifications needed before they begin. The website resources for research will be posted on the whiteboard next to the instructions for the day. I will briefly discuss what the websites are and how they might be used. I will instruct students to create a graphic organizer using powerpoint. Students will be allowed to work in pairs in order to complete work. Students will then begin work and I will circulate among them checking understanding and assisting with questions about the assignment. Towards the end of the period students will be asked to share what’s working and what needs more work both in terms of the work that they are producing as well as what they might need from the instructor.

### Language Demands

**Language Functions:** Analyze- students will analyze resources to answer questions

### Assessment Evidence

Formative: The Graphic organizer will serve as the formative assessment for the day. I will evaluate student work based on their addressing each section of the organizer. students will be evaluated based on their production of evidence to support their claims and their application of understanding about civic participation in proposing future plans of action.

**Student Voice:** I will ask students to describe their understanding of the work they are about to do and ask if there are any clarifications needed before they begin.
Teaching Outline and Procedures

5-10 mins. Introduction to work
35 mins. research and Graphic organizer creation
5-10 mins. students will be asked to share what’s working and what needs more work both in terms of the work that they are producing as well as what they might need from the instructor.

Classroom Management Plan:
Social Studies

Students will be engaged in several different classroom formats, primarily focusing on large group interactions that highlight student/teacher interactions, small group discussions that highlight student/student interactions, and individual research where students work on their own project/research but may discuss their work with their peers. The only major shift from these practices of organization is a mock community forum meeting, which will rely on students participating utilizing pre-established roles. Student/teacher interactions in the large group format have been minimized and are largely used to introduce new information and to set students up to work in small groups. Expectations for this mode of instructional organization will be given in the introduction of each day it is utilized. Students will be expected to listen when others are speaking, but are encouraged to respond to other students voices. The teacher is expected to respect student voice and input and to direct student responses back to the class where appropriate. Small group discussions will always be focused around a series of questions for the group to address and respond to in writing unless otherwise specified. The focus on written responses is to encourage active participation by group members and to provide a space for students to think through their discussion in a new way by providing a written format. All students are expected to participate in small group discussion and will be reminded of this before each break into small groups. Because of the varied work time and tasks associated with small groups, I hesitate to assign roles that may distract from the group work. Instead students will be presented with a visible list of group norms for group work that will remain visible throughout the unit (poster). As the instructor I will develop an initial list, which students will be able to revisit at the beginning of each week.

Group work norms:
Everyone speaks/contributes
Step up/ step back- if you’ve spoken once, wait until everyone else has spoken again before speaking again
Decide who will record group responses/ group work and how the work will be recorded
Be aware of time and the amount of work that needs to be done, assign a group member to keep the group on task

Community Forum:
In community forum students will imagine themselves participating in a meeting in which community members have come to address their concerns about the closure of the pool. Students will divide into three groups, those in favor of keeping the pool open, those in favor of the pool closing, and school officials. Students will use their understanding of their research and the graphic organizers they have created to develop and then voice their arguments for whether or not the school’s pool should be closed. Those students who have been selected as school officials will moderate the meeting and serve as information resources for students upon request. School officials will guide the discussion using the guiding questions laid out in the lesson plan. Students will roughly be divided along pro and con lines, with 4 students acting as school officials.
# English/Language Arts Day 5

**Teacher:** Ana-Claudia Magaña  **Subject/Grade:** 12

**Standards:** English Language Arts:
- RI 7: Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem;
- W 2: Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
- W 4: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)

**WA State Sustainability Standards:** Standard 1: Ecological, Social, and Economic Systems
Students develop knowledge of the interconnections and interdependence of ecological, social, and economic systems. They demonstrate understanding of how the health of these systems determines the sustainability of natural and human communities at local, regional, national, and global levels.

<table>
<thead>
<tr>
<th>Learning Targets (K-Knowledge, R-Reasoning, S-Skill, P-Product)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RI 1: Skill</td>
</tr>
<tr>
<td>RI 7: Reasoning</td>
</tr>
<tr>
<td>W 2: Product</td>
</tr>
<tr>
<td>W 4: Product</td>
</tr>
<tr>
<td>W 7: Skills</td>
</tr>
<tr>
<td>W 8: Skill, Reasoning</td>
</tr>
</tbody>
</table>

**Summary of Learning Activities**
Students will discover the ways in which they themselves use business letters, and when and where in their lives this task will become relevant. They will reflect on any possible differences they can make in their communities, and on how they themselves could use business letters to possibly get the pool back. Students will write reflections to themselves, in the form of a business letter, detailing what they learned in the week about business letters and how it could help them toward completing their final projects.

**Instructional Practices**
- Reflections
- Business letter writing
- Planning for final project
- Resources
- Documentation

**Language Demands**
*Content Specific Vocabulary:*
- Business letters
- Summaries
**Language Functions:**
TELL: I think that…
PRAISE: Wow, I liked how you said…
SUGGEST: You might also think about…
ASK: What do you mean by…

**Discourse and/or Syntax:**
Students will voice their opinions and findings to differentiate business letters from friendly letters. They will use properties of grammar, vocabulary, and form where and when appropriate to write their business letters.

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**Formative Assessments**
Students will write reflections to themselves, in the form of a business letter, detailing what they learned in the week about business letters and how it could help them toward completing their final projects.

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**Student Voice**
Written reflections, Writing to oneself, Group discussion

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**Teaching Outline and Procedures**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will talk with an elbow partner about when they themselves would use business letters, especially within the context of getting resources that are needed in Shelton.</td>
<td>8 min.</td>
</tr>
<tr>
<td>As a large group, students will voice when and where they as high schoolers and in the future they would need to use business letters, while I write their ideas on the board.</td>
<td>10-15 min.</td>
</tr>
<tr>
<td>Students will write business letters to themselves, reflecting in the letters what they learned about business letter writing and how it could help them towards completing their final projects.</td>
<td>35-40 min.</td>
</tr>
<tr>
<td>Exit ticket: Students will submit their final business letters.</td>
<td>2 min.</td>
</tr>
</tbody>
</table>

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**English/Language Arts Day 9 Lesson Plan**

**Teacher:** Ana-Claudia Magaña  **Subject/Grade:** 12

**Standards:** English Language Arts:
- RI 1-Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.
- RI 7-Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem;
- W 2-Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
- W 4-Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
- W 7-Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation;
- W 8-Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

**WA State Sustainability Standards:** Standard 1: Ecological, Social, and Economic Systems
Students develop knowledge of the interconnections and interdependence of ecological, social, and economic systems. They demonstrate understanding of how the health of these systems determines the sustainability of natural and human communities at local, regional, national, and global levels.

<table>
<thead>
<tr>
<th>Learning Targets (K-Knowledge, R-Reasoning, S-Skill, P-Product)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RI 1: Skill</td>
</tr>
<tr>
<td>RI 7: Reasoning</td>
</tr>
<tr>
<td>W 2: Product</td>
</tr>
<tr>
<td>W 4: Product</td>
</tr>
<tr>
<td>W 7: Skills</td>
</tr>
<tr>
<td>W 8: Skill, Reasoning</td>
</tr>
</tbody>
</table>

**Summary of Learning Activities**
Students will detect legitimate sources from bogus/fake ones, and find clues that will help them to tell the difference. They will look at websites and practice their “detective” skills using resources that will guide their analyses. They will explore the damage that can be done by finding fake, illegitimate resources, and reflect on why it is important to find legitimate source material.

**Instructional Practices**
- Written reflection
- Research
- Discerning between legitimate and illegitimate sources
- Reasoning through conflicting information
- Group discussion

**Language Demands**

**Content Specific Vocabulary:**
- Research
- Research guides
- Summaries
- Resources
- Documentation
- Legitimate sources
- Illegitimate sources

**Language Functions:**
- TELL: I think that...
- PRAISE: Wow, I liked how you said...
- SUGGEST: You might also think about...
- ASK: What do you mean by...

**Discourse and/or Syntax:**
Students will voice their opinions and findings as to what differentiates legitimate sources from bogus/fake ones, and find clues that will help them to tell the difference. They will use guides to help them discern these differences in their research.

**Formative Assessments**
Students will submit a reflection on what they learned about telling apart bogus sources from real ones. They will also write any questions, comments, or concerns they may still have.

**Student Voice**
Written reflections, Group discussion, Group presentation

**Accommodations**
Students who have reading problems will be given extra time to complete their research. Those who do not speak English as their first language will be allowed to find websites in their preferred language. They have the option to use speech-to-word software if required or if they find it helpful.

**Teaching Outline and Procedures**
- Using Concept Attainment Model, students will determine what constitute genuine resources from fake ones. (15 mins)
- Students will work in teams of three to find 3-5 resources, and then determine if the sources are legitimate or fake and why. (25 min.)
- Students will present one legitimate finding and one bogus finding to the rest of the class, voicing reasons as to why the sources are/are not dependable. (13 min.)
- Students will reflect on what they learned from the experience and what they still wonder about. (6 min.)
- Exit ticket: Turn in reflections on note cards. (1 min.)

**English/Language Arts Day 10 Lesson Plan**

**Teacher:** Ana-Claudia Magaña  **Subject/Grade:** 12
Standards: English Language Arts:

- RI 1-Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.
- RI 7-Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem;
- W 2-Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
- W 4-Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
- W 7-Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation;
- W 8-Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

WA State Sustainability Standards: Standard 1: Ecological, Social, and Economic Systems
Students develop knowledge of the interconnections and interdependence of ecological, social, and economic systems. They demonstrate understanding of how the health of these systems determines the sustainability of natural and human communities at local, regional, national, and global levels.

Learning Targets (K-Knowledge, R-Reasoning, S-Skill, P-Product)
RI 1: Skill
RI 7: Reasoning
W 2: Product
W 4: Product
W 7: Skills
W 8: Skill, Reasoning

Summary of Learning Activities
Students will discuss how they could go about researching and citing legitimate sources for their projects. They will research three sources, appropriately cite sources in-text and in a bibliography, and explain in an endnote why the sources are legitimate. They will also reflect on what they still wonder about regarding research, and what they feel they could learn in preparation for their final projects.

Instructional Practices
- Written reflection
- Research
- Citation
- Endnotes
**Group discussion**

**Language Demands**

**Content Specific Vocabulary:**
- Research
- Citation
- Summaries
- Resources
- Documentation
- Endnotes
- Legitimate sources

**Language Functions:**

TELL: I think that…
PRAISE: Wow, I liked how you said…
SUGGEST: You might also think about…
ASK: What do you mean by…

**Discourse and/or Syntax:**

Students will have engaged in group discussions regarding notions of expository texts. They will have researched different types of expository texts. They will be expected to have three sources with summaries, citations, and reflections by the end of the class period. These sources will propel them towards the construction of their final projects.

**Formative Assessments**

In groups, students will research via computers, using books, etc. at least three different informative texts that will help them answer their research questions. Students will write short summaries on each source on notecards, being sure to properly cite each source. At the bottom of each note card, students will write why their sources are legitimate and how they will enhance their project. Students will reflect on how this evidence could forward their research project.

**Student Voice**

Written reflections, Vocal sharing of ideas, Explanation of why their sources are legitimate

**Teaching Outline and Procedures**

As a class, students will review how to implement research while keeping in mind citations and finding out whether or not a website is legitimate. (8 mins)

Students will reflect back on their research questions and determine what kinds of informative texts they could use, by talking with an elbow partner. (7 mins)

In groups and individually, they will research using computers, books they’ve brought, etc. at least three different informative, legitimate texts that will help them answer their research questions. Students will write short summaries on each source on notecards, being sure to properly cite each source. At the bottom of each notecard, students will reflect on how this evidence could forward their research. They will also reflect on how they could tell the websites are legitimate. They will refer to instructions on the board that will inform them of how I want them to take their notes and do their citations as a reminder of what was covered the previous days. (37 mins)
As a collective, everyone will share one piece of evidence they have found and the major points of what it says, and how they could tell it was legitimate. (7 mins)

Exit ticket: Students will staple their note cards together and submit them on their way out. (1 min)

English/Language Arts Day 12 Lesson Plan

Teacher: Ana-Claudia Magaña  Subject/Grade: 12

Standards: English Language Arts:
- RI 1-Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.
- RI 7-Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem;
- W 2-Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
- W 4- Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
- W 7-Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation;
- W 8-Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

WA State Sustainability Standards: Standard 1: Ecological, Social, and Economic Systems
Students develop knowledge of the interconnections and interdependence of ecological, social, and economic systems. They demonstrate understanding of how the health of these systems determines the sustainability of natural and human communities at local, regional, national, and global levels.

Learning Targets (K- Knowledge, R-Reasoning, S- Skill, P-Product)
RI 1: Skill
RI 7: Reasoning
W 2: Product
W 4: Product
W 7: Skills
W 8: Skill, Reasoning
**Summary of Learning Activities**

Using the graphic organizer from Social Studies class, students will write an analysis in the form of a business letter to detail what they have found about the pool closure. They will write to me, pretending they are spies/informants detailing this “undercover” information they have found and how alternatives to the problem could potentially be implemented.

<table>
<thead>
<tr>
<th>Instructional Practices</th>
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</thead>
<tbody>
<tr>
<td>● Writing an argument</td>
</tr>
<tr>
<td>● Research</td>
</tr>
<tr>
<td>● Discerning between legitimate and illegitimate sources</td>
</tr>
<tr>
<td>● Using information from other classes/areas of study</td>
</tr>
<tr>
<td>● Finding alternative solutions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Language Demands</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content Specific Vocabulary:</strong></td>
</tr>
<tr>
<td>● Research</td>
</tr>
<tr>
<td>● Argument</td>
</tr>
<tr>
<td>● Business letter</td>
</tr>
<tr>
<td>● Solutions</td>
</tr>
<tr>
<td>● Problem solving</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Language Functions:</strong></th>
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</thead>
<tbody>
<tr>
<td>TELL: I think that…</td>
</tr>
<tr>
<td>PRAISE: Wow, I liked how you said…</td>
</tr>
<tr>
<td>SUGGEST: You might also think about…</td>
</tr>
<tr>
<td>ASK: What do you mean by…</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Discourse and/or Syntax:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will write letters using conventions of grammar, vocabulary, and form. They will explain their arguments in their writing.</td>
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<thead>
<tr>
<th>Formative Assessments</th>
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<tbody>
<tr>
<td>Students will provide a business letter detailing the information they have deduced from their graphic organizers from Social Studies.</td>
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<thead>
<tr>
<th>Student Voice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will use their own written language to write what discoveries they have made in their graphic organizers that reflect students’ research.</td>
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<table>
<thead>
<tr>
<th>Teaching Outline and Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will pull out the graphic organizers they made in Social Studies class. (2 min.)</td>
</tr>
<tr>
<td>Students will discuss their findings with one another and talk about what they would like to write about with an elbow partner. (7 min.)</td>
</tr>
<tr>
<td>Individually, students will write out their business letters to describe the research they have found and what it potentially means. (30-50 min.)</td>
</tr>
</tbody>
</table>
If time permits, students will proofread their own letters or proofread their peers’ letters. (optional 20 min.)

Exit ticket: Students will submit letters if complete. If not, they will finish them during the next class period. (1 min.)

### English/Language Arts Day 19 Lesson Plan

**Teacher:** Ana-Claudia Magaña  **Subject/Grade:** 12

**Standards:** English Language Arts:
- RI 1-Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.
- RI 7-Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem;
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**Learning Targets (K-Knowledge, R-Reasoning, S-Skill, P-Product)**
RI 1: Skill
RI 7: Reasoning
W 2: Product
W 4: Product
W 7: Skills
W 8: Skill, Reasoning

**Summary of Learning Activities**
Students will conduct another round of peer review to their final letters and implement changes. They will also begin to come up with presentation plans for how to recite their letters, discussing what constitutes good public speaking and what it looks like.

**Language Demands**

**Content Specific Vocabulary:**
- Writing an argument
- Research
- Public speaking
- Proofreading
- Presentation

**Language Functions:**
- TELL: I think that…
- PRAISE: Wow, I liked how you said…
- SUGGEST: You might also think about…
- ASK: What do you mean by…

**Discourse and/or Syntax:**
Students will use conventions of grammar, syntax, vocabulary, and form to proofread each other’s letters and provide valuable feedback. Students will engage in discussion as to what constitutes good public speaking skills.

**Formative Assessments**
Students will proofread and monitor where they are in the letter-writing process in completing their final projects.

**Student Voice**
Students will voice their own opinions on what constitutes good public speaking in preparation to share their voices with the community. They will also refine their written voice in proofreading their letters.

**Teaching Outline and Procedures**

- Students will take out their letters for peer review. (1 min.)
- Students will review their peers’ papers, using conventions of grammar, vocabulary, syntax, and idea refinement. (25-30 min.)
- Elbow partners will discuss what constitutes good public speaking skills. (3 min.)
As a class, everyone will contribute ideas on the board tips for public speaking when presenting their findings to the public. (6 min.)

Students will practice their public speaking skills in small groups. (20-25 min.)

### Classroom Management Plan

**English Language Arts**

Students will primarily be organized into table groups of 4 people. They will have constructed a set of classroom norms prior to the 20-day unit; these norms would have already been reviewed, finalized, and shared with the rest of the class prior to beginning group discussion, so that all students could know and understand what is asked of each of them, and what they should expect from each other. The students will normally engage in discussions with their elbow partners and within their own table groups to test out their ideas and share their thinking with one another. They will then be expected to participate as part of a large group. On occasion when I feel that the same people are responding over and over again, I will resort to pulling out names from a container to select people at random to contribute to the discussion. Students with special needs and accommodations will be accounted for during these group discussions. For instance, if a student with vocal disabilities is selected to speak up in discussion, he/she/they will be encouraged to communicate their ideas through another possible format, such as writing their words on the board or on a portable whiteboard they carry with them. Students will be expected to listen when others are speaking, but are encouraged to respond to other students’ voices. The teacher is expected to respect student voice and input and to direct student responses back to the class where appropriate. Small group discussions will always be focused around a series of questions for the group to address and respond to in writing unless otherwise specified. Students will then be asked to either work in groups or individually on their projects. They will be encouraged to help one another in completing their assignments and will be allowed to engage in peer discussions, so long as they complete the tasks that are asked of them.

When conducting peer reviews, students will be prompted to give thorough critiques and peer reviews of each other’s work, while avoiding harsh remarks and/or hostilities, i.e. “your work sucks” would not be acceptable. They will be shuffled around the room so that different people have the chance to peer review their work. After this process, students will be expected to go home and revise their work, prepared to arrive the following day having implemented the corrections wherever necessary. Whenever possible, time will be provided in class for students to revise their work and ask for additional feedback.

An environment of disrespect and disregard for the dignity of another student will not be tolerated. Such behavior will be directly addressed within the classroom and resolved as quickly, directly, and effectively as possible to allow for students to voice their opinions, find resolution, and find solutions so that they can continue to collaborate with one another with few impediments. Students will be encouraged to show one another respect when engaging in group discussions, peer reviews, individual writing exercises, speech preparation, the final presentation, and all other aspects of this unit. Students will also be encouraged to help one another; this project is not a competition, but rather a collaborative effort in which students must work and support with one another towards a common goal that will benefit the well-being of students in the long run.
# Mathematics-Statistics Day 5 Lesson Plan

In what ways are statistics represented for people in the professional world?

**Teacher Name:** Kaitlyn Frasier

<table>
<thead>
<tr>
<th>Central Focus</th>
<th>Identifying statistical models based on real data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content Standards</strong></td>
<td><strong>Math Standard:</strong> Making Inferences and Justifying Conclusions: S-IC</td>
</tr>
<tr>
<td></td>
<td>Understand and evaluate random processes underlying statistical experiments</td>
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<tr>
<td></td>
<td>2. Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation.</td>
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<tr>
<td></td>
<td><strong>Literacy Standard:</strong> Reading</td>
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<td></td>
<td>2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.</td>
</tr>
<tr>
<td><strong>Student Learning Goals</strong></td>
<td><strong>Learning Targets:</strong> (Knowledge- K, Skill- S, Reasoning- R, Product- P)</td>
</tr>
<tr>
<td></td>
<td>● Know that math can represent real-world situations and be used as a tool to model them. (K)</td>
</tr>
<tr>
<td></td>
<td>● Identify the processes that underlie statistical experiments. (R)</td>
</tr>
<tr>
<td><strong>Common Errors, Developmental Approximations, Misconceptions, Partial, or Misunderstandings</strong></td>
<td>● Data is just data and doesn’t mean anything</td>
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<tr>
<td></td>
<td>○ We will look at conclusions that have been drawn from data</td>
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<td></td>
<td>● Data is collected from the entire population</td>
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<td></td>
<td>○ We will investigate what it means to survey a sample and the difference between a sample and a population</td>
</tr>
</tbody>
</table>

### Instructional Strategies and Learning Tasks:

<table>
<thead>
<tr>
<th>Launch</th>
<th>I do: Write on the board “Data”</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 minutes</td>
<td>I say: What do you think of when you hear the word data?</td>
</tr>
<tr>
<td><strong>Students do:</strong> Make associations based on prior knowledge and raise their hand to suggest something to put on the board.</td>
<td></td>
</tr>
<tr>
<td>I do: Write the initial associations students make on the board in a branching pattern.</td>
<td></td>
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<tr>
<td>I say: Why do you think you made these associations? (specify certain associations)</td>
<td></td>
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<tr>
<td><strong>Students do:</strong> Provide their reasoning.</td>
<td></td>
</tr>
<tr>
<td>I do: Begin sorting the list while students give reasoning behind their associations into mathematical and nonmathematical categories.</td>
<td></td>
</tr>
<tr>
<td>I say: Why do you think I have sorted your associations in this way? What new suggestions do you have? Do you have anything you might want to add to the list or take away from it?</td>
<td></td>
</tr>
<tr>
<td><strong>Students do:</strong> Provide further categorization ideas.</td>
<td></td>
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<tr>
<td>I do: Continue to write on the board the categorization and analyze what they believe data is, assessing what prior knowledge they have about where data shows up in the real world.</td>
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</tbody>
</table>
| Instruction/Structured Practice and Application | I say: So you all know a lot about data, but where do we see it in real life? What does data look like in real life, and how do people present it to us in different ways?  
I do: Pass out the Young Adults in America presentation slides to the groups alongside the reading guide. |
<table>
<thead>
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<tbody>
<tr>
<td><strong>Instruction/Structured Practice and Application</strong></td>
<td><strong>35 minutes</strong></td>
</tr>
</tbody>
</table>
| I say: So what I want you read through this packet and focus on the guiding questions I have given you. I want you to read silently for 10 minutes and write notes on your question and answers, and I’ll signal when I want you to start talking in your groups.  
*After 10 minutes*  
I do: Signal to the group that they should begin their discussions about the guiding questions, giving them 15 minutes. After about five minutes I will hand out poster paper for students to write the answers to their guiding questions.  
*After 15 minutes*  
I say: So I see some really awesome posters out there, let’s put them up on the walls.  
I do: Conduct a gallery walk asking students to note similarities and differences between their answers to what conclusions they drew from the report. |
| **Closure** | **10 minutes** |
| I say: So what did we notice today between our group discussion, then the gallery walk we just did?  
**Students do:** Point out the many ways that data are represented in the report they saw today, and how their conclusions were very different between groups.  
**I say:** That’s what I wanted you to notice today, how the conclusions different people draw from the same data can range from one end of a spectrum to another. Data is very important, and drawing conclusions is subjective if you haven’t presented the data in a clear way. Ok so one last thing today, I want you to write an exit ticket for me telling me about what are the ways you saw that statistics can be modeled this week? What questions do you have? |
| **Planned Supports** | **Whole Class:**  
- Students will only be asked to speak in whole group if they feel comfortable  
- Students will always have the option to ask their group for assistance  
- The task will move at a pace to maintain interest and hold attention, but not too quickly as to confuse  
**Groups of students with similar needs:**  
- Materials given in the first language of students  
- Students with a first language in common will be grouped together for this activity  
- Students who have trouble comprehending written word will have the material given to them in advance and read aloud to them in a small group with me  
**Individual students:** |
- Students are asked to first refer to their groups as a resource, and so for any question I will always as the group if they can answer, but I will answer if a student feels uncomfortable
- Give language support

**Students with IEP’s or 504 plans:**
- Break down the task into smaller parts
- Step-by-step instructions
- Allow for extra time if needed
- Give language support/materials in conversational English or their first language
- Give the materials in advance

**Strategies for responding to common errors and misunderstandings, developmental approximations, misconceptions, partial understandings, and/or misunderstandings:**
- Ask probing questions to get at what the student already know then build on what they have

The common errors are:
- Data is just data and doesn’t mean anything
  - We will look at conclusions that have been drawn from data
- Data is collected from the entire population
  - We will investigate what it means to survey a sample and the difference between a sample and a population

<table>
<thead>
<tr>
<th>Materials</th>
<th>Teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Young Adults in America</td>
<td>● Young Adults in America</td>
</tr>
<tr>
<td>● Whiteboard and pens</td>
<td>● Whiteboard and pens</td>
</tr>
<tr>
<td>● Young Adults in America Reading Guide</td>
<td>● Young Adults in America Reading Guide</td>
</tr>
</tbody>
</table>

**Academic Language Demands:**

<table>
<thead>
<tr>
<th>Language functions</th>
<th>● Inquiry/Seeking Information</th>
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<tbody>
<tr>
<td></td>
<td>○ Students will be reading the article and looking for answers to the guiding questions</td>
</tr>
<tr>
<td></td>
<td>● Summarizing and Informing</td>
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<tr>
<td></td>
<td>○ Students will inform their group of their conclusions</td>
</tr>
<tr>
<td></td>
<td>● Inferring, Predicting, and Hypothesizing</td>
</tr>
<tr>
<td></td>
<td>○ Students will draw conclusions based on the data given</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vocabulary</th>
<th>● Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Population</td>
<td>● Population</td>
</tr>
<tr>
<td>● Random</td>
<td>● Random</td>
</tr>
<tr>
<td>● Data</td>
<td>● Data</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ways students need to use language</th>
<th>● Reading the presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Reading the guide</td>
<td>● Reading the guide</td>
</tr>
<tr>
<td>● Writing responses to the reading guide</td>
<td>● Writing responses to the reading guide</td>
</tr>
<tr>
<td>● Talking to their group about their answers</td>
<td>● Talking to their group about their answers</td>
</tr>
<tr>
<td>● Talking to the class about their group work</td>
<td>● Talking to the class about their group work</td>
</tr>
</tbody>
</table>
Support of language
See planned supports, but students who struggle with language will have their groups as a resource as well as materials in their first language if not English. Students will only be asked to speak if they feel comfortable.

Assessment:

<table>
<thead>
<tr>
<th>Type of assessment</th>
<th>Description of assessment</th>
<th>Modifications</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formative Assessment</td>
<td>Students will be asked to write an exit ticket stating what new ways of modeling statistics they have learned about throughout the course of the week</td>
<td>Students with language needs can recite their answer orally</td>
<td>Proof of ability to identify statistical processes and models when looking at statistical experiments. Vocabulary I will be looking for will be: random sampling, bias, evidence, collection, and population (see Rubric)</td>
</tr>
</tbody>
</table>

Mathematics-Statistics Day 6 Lesson Plan
What is the average income and budget of our class?

Teacher Name: Kaitlyn Frasier

Central Focus
Estimating population data based on sample data

Content Standards
Math Standard: Quantities: N-Q- Reason quantitatively and use units to solve problems.
2. Define appropriate quantities for the purpose of descriptive modeling.
Making Inferences and Justifying Conclusions: S-IC- Understand and evaluate random processes underlying statistical experiments
4. Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.

Student Learning Goals
- Use data from a sample to estimate a population data set (S)
- Develop a margin of error for population estimates (S)

Common Errors, Developmental Approximations, Misconceptions, Partial or Misunderstandings
- Just take each piece of data and multiply by the scalar
  ○ I will discuss the importance of having one analogue for the population data rather than many because we could never recreate the entire population from sample data
- Multiply any measure of center by the scalar
  ○ I will discuss the importance of using the mean as the “best” measure of center, except where there are major outliers
## Instructional Strategies and Learning Tasks:

<table>
<thead>
<tr>
<th>Launch</th>
<th>I say: So in social studies you have been looking at what makes up a budget, and you decided on what criteria is important. In math we are going to survey each other on what our individual budgets are. Now what might be wrong with that in terms of statistics? Students do: Students have had some exposure to how statistical samples should be consistent, but not a great amount so one student may say that the samples may not be consistent, if not I will point this out. I say: Right, so a statistical survey has to have specific things in common for the data to be useful. So I should specify that I mean for you to survey your family’s budget, making sure to note how many people are in the family, and the total income. I’ll use mine as an example so you have some rates you can use consistently. [make up relevant statistics] Now, starting in your group and writing down your whole group’s data I want you to share your budget.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruction/Structured Practice and Application</td>
<td>I do: Circulate while students are writing their budgets and collecting their group’s data, noting the similarities and differences, then have students group by role (facilitators, equity monitors, resource monitors, and recorder/reporters) to share their data efficiently. This should take about 15 minutes. I say: So it looks like everyone has the data all written down, now I want you to find the measures of center for your data set. Do it together with your groups so I can see group answers to see if they correspond. So find the mean, median, mode, and standard deviation for each budget category.</td>
</tr>
<tr>
<td>Closure</td>
<td>I say: So can we check with each other as a whole to see what the consensus is? Group 1? [I will write the measures of center on a poster paper at the front of the room to keep] Group 2? Ah very similar answers. [I will go through every group] So all of this data is very important and I am going to keep it for tomorrow because we will be using it to estimate the budget of the population as a whole. Let me just add one thing on top here, our total class sample size because if we know the sample size and the data we can estimate population tomorrow.</td>
</tr>
</tbody>
</table>
| Planned Supports | Whole Class:  
- Students will only be asked to speak if they feel comfortable  
- Students will always have the option to ask their group for assistance  
- The task will move at a pace to maintain interest and hold attention, but not too quickly as to confuse  
Groups of students with similar needs:  
- Materials given in the first language of students  
- Students who have trouble comprehending written word can have the material given to them in advance and read aloud to them in class and have a structured discussion about the reading before the class discussion  
Individual students:  
- Students are asked to first refer to their groups as a resource, and so for any question I will always as the group if they can answer, but I will answer if a student feels uncomfortable |
**Students with IEP’s or 504 plans:**
- Break down the task into smaller parts
- Step-by-step instructions
- Allow for extra time if needed
- Give language support/materials in conversational English or their first language
- Give the materials in advance

**Strategies for responding to common errors and misunderstandings, developmental approximations, misconceptions, partial understandings, and/or misunderstandings:**

The misconceptions are:
- Just take each piece of data and multiply by the scalar
  - I will discuss the importance of having one analogue for the population data rather than many because we could never recreate the entire population from sample data
- Multiply any measure of center by the scalar
  - I will discuss the importance of using the mean as the “best” measure of center, except in cases where there are major outliers

<table>
<thead>
<tr>
<th>Materials</th>
<th>Teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Poster paper and pens</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math notebooks</td>
</tr>
<tr>
<td>Budget from social studies</td>
</tr>
</tbody>
</table>

**Academic Language Demands:**

<table>
<thead>
<tr>
<th>Language functions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inquiry/Seeking Information</td>
<td></td>
</tr>
<tr>
<td>- Students will be surveying their classmates</td>
<td></td>
</tr>
<tr>
<td>Solving Problems/Problem Solving</td>
<td></td>
</tr>
<tr>
<td>- Students will find the measures of center with the help of their group members</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measures of center (mean, median, mode)</td>
</tr>
<tr>
<td>Sample</td>
</tr>
<tr>
<td>Population</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ways students need to use language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveying their classmates</td>
</tr>
<tr>
<td>Talking to their group to agree upon measures of center</td>
</tr>
<tr>
<td>Organizing data</td>
</tr>
<tr>
<td>Sharing out their measures of center</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Support of language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will only be asked to speak if they feel comfortable, and the surveying of classmates will be heavily structured to make sure that everyone gets to everyone else (first groups then role groups). Students who have trouble organizing data will be supplied with a template.</td>
</tr>
</tbody>
</table>
Mathematics-Statistics Day 10 Lesson Plan

What does it mean for statistics to be valid?

Teacher Name: Kaitlyn Frasier

<table>
<thead>
<tr>
<th>Central Focus</th>
<th>Statistical Validity</th>
</tr>
</thead>
</table>
| **Content Standards** | **Math Standard:** Making Inferences and Justifying Conclusions: S-IC Understand and evaluate random processes underlying statistical experiments  
2. Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. |
| **Student Learning Goals** | **Learning Targets:** (Knowledge-K, Skill-S, Reasoning-R, Product-P)  
● Evaluate the consistency of a statistical model (R)  
● Evaluate the validity of population estimates (R)  
● Justify conclusions (R) |
| **Common Errors, Developmental Approximations, Misconceptions, Partial Understandings, or Misunderstandings** | ● All statistics can be trusted  
○ The investigation of this lesson is designed to address this misconception  
● All populations can be estimated based on one sample  
○ We will investigate what random processes make it ok to estimate population data  
● Justification means giving an example  
○ We will discuss what makes up a generalized justification |

**Instructional Strategies and Learning Tasks:**

**Launch**  
10 minutes  
Discuss the image to the right asking questions like:  
● How is this image accurate?  
● How is it inaccurate?  
● Why?  
● Is it data?  
● Is it valid?  
● What does it mean for data to be valid?

I Say: Today we will discuss the validity, or accuracy of data, so we will be looking at some sample data sets and investigate what it means for a population estimation to be valid, then justify our conclusions.

**Instruction/Structured Practice and Application**  
30 minutes  
I Say: You may have learned before that justifications can be examples of data being true or working in real life, but in statistics a justification that data is valid is saying why the data is valid beyond one case. It is generalizing, or making it clear that the data works in most if not all situations. So what we’re going to do is investigate a situation to determine whether or not the conclusions that are drawn about the population are valid, then justify our answers. On the task card your resource monitors will pick up you will find your instructions for the class period today. Keep in mind that I will only answer group questions, so make sure that you all agree on questions before I come over.
<table>
<thead>
<tr>
<th>I Do:</th>
<th>Give out the task card</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Students Do:</strong></td>
<td>Students assigned to the role of resource monitor will pick up the task cards and facilitators will read them out loud to their groups. In their groups, students will then attend to producing a poster attending to the checklist on the task card.</td>
</tr>
<tr>
<td>I Do:</td>
<td>Walk around the room after students begin working on their posters (about 10 minutes after the task card in projected) and scope their posters for what their understandings are, and where I may need to ask scaffolding questions:</td>
</tr>
<tr>
<td></td>
<td>• What does a sample represent?</td>
</tr>
<tr>
<td></td>
<td>• What does a population represent?</td>
</tr>
<tr>
<td></td>
<td>• When is it ok to estimate a population based on a sample?</td>
</tr>
<tr>
<td></td>
<td>• What is random?</td>
</tr>
<tr>
<td></td>
<td><strong>Extension:</strong> What if Kasson gave everyone in first period math (so about 200 students) a survey to write their answer on, would his sample be any more valid?</td>
</tr>
<tr>
<td>I Do:</td>
<td>Select and sequence students posters to be presented (2-3 groups, 5 minutes per group) making sure to highlight different strategies and suggestions about how Kasson’s sampling was problematic.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Closure 20 minutes</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>I Do:</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Planned Supports</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Whole Class:</strong></td>
</tr>
<tr>
<td>• Students will only be asked to speak if they feel comfortable</td>
</tr>
<tr>
<td>• Students will always have the option to ask their group for assistance</td>
</tr>
<tr>
<td>• The task will move at a pace to maintain interest and hold attention, but not too quickly as to confuse</td>
</tr>
<tr>
<td>• Directions will be handed out and read aloud</td>
</tr>
<tr>
<td><strong>Individual students:</strong></td>
</tr>
<tr>
<td>• Students are asked to first refer to their groups as a resource, and so for any question I will always as the group if they can answer, but I will answer if a student feels uncomfortable</td>
</tr>
<tr>
<td>• Give language support</td>
</tr>
<tr>
<td>• Monitor student interactions to make sure that quieter students are being heard if they want to speak</td>
</tr>
<tr>
<td>• Assign competence to students whenever possible!</td>
</tr>
<tr>
<td><strong>Students with IEP’s or 504 plans:</strong></td>
</tr>
<tr>
<td>• Break down the task into smaller parts</td>
</tr>
<tr>
<td>• Step-by-step instructions</td>
</tr>
<tr>
<td>• Allow for extra time if needed</td>
</tr>
</tbody>
</table>
- Give language support/materials in conversational English or their first language
- Give the materials in advance
- Help generalize concepts from examples

**Strategies for responding to common errors and misunderstandings, developmental approximations, misconceptions, partial understandings, and/or misunderstandings:**
- Ask probing questions to get at what the student already know then build on what they have

The common misconceptions are:
- All statistics can be trusted
  - The investigation of this lesson is designed to address this misconception
- All populations can be estimated based on one sample
  - We will investigate what random processes make it ok to estimate population data
- Justification means giving an example
  - We will discuss what makes up a generalized justification

<table>
<thead>
<tr>
<th>Materials</th>
<th><strong>Teacher</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>● Projector and document camera</td>
</tr>
<tr>
<td></td>
<td>● Statistical Validity Task card</td>
</tr>
<tr>
<td><strong>Student</strong></td>
<td>● Poster paper</td>
</tr>
<tr>
<td></td>
<td>● Pens</td>
</tr>
</tbody>
</table>

**Academic Language Demands:**

| Language functions | ● Analyzing/Evaluating |
|                   | ○ What is a consistent model? |
|                   | ○ What does valid mean? |
|                   | ● Justifying |
|                   | ○ What is a valid justification? |

| Vocabulary | ● Validity |
|           | ● Sample |
|           | ● Population |
|           | ● Random |

| Ways students need to use language | ● Read or listen to the task card |
|                                   | ● Express their opinions and evaluations of the scenario |
|                                   | ● Write their answers to the questions on the poster |
|                                   | ● Present their conclusions to the class (if their group is selected) |

| Support of language | See planned supports, but if students are struggling to use academic language I will ask their group members to help articulate if the student speaking so wishes, if not, then I will ask probing questions to connect their word choice to the academic language that fits, asking if it makes sense to make such connections. |
### Assessments:

<table>
<thead>
<tr>
<th>Type of assessment</th>
<th>Description of assessment</th>
<th>Modifications</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formative Assessment</td>
<td>Group posters as well as individual exit tickets where students are asked to state the learning target for the day, why it is important as well as what they learned about that day.</td>
<td>Students could type or orally demonstrate their learning, in their first language if necessary</td>
<td>Proof of understanding of estimating population data as well as the purpose of the lesson (see Rubric)</td>
</tr>
<tr>
<td>Self Assessment</td>
<td>How did you address the product requirements for this group project? (rubric) Is your justification for your evaluation valid? How do you feel you did on this product? How was working with your group? What could you do better next time?</td>
<td>Students could type or orally demonstrate their learning, in their first language if necessary</td>
<td>Proof of working with their group and allowing for student voice</td>
</tr>
</tbody>
</table>

### Mathematics-Statistics Day 15 Lesson Plan

**How do you conduct a statistical study?**

**Teacher Name:** Kaitlyn Frasier

**Central Focus**

- Determining appropriate quantities for statistical modeling

**Content Standards**

- **Math Standard:** Quantities: N-Q- Reason quantitatively and use units to solve problems.
  - 2. Define appropriate quantities for the purpose of descriptive modeling.

**Student Learning Goals**

- **Learning Targets:** (Knowledge-K, Skill-S, Reasoning-R, Product-P)
  - Represent real-world situations with mathematics (P)
  - Define quantities for the purpose of descriptive modeling (R)
  - Justify conclusions (R)

**Common Errors, Developmental Approximations, Misconceptions, Partial or Misunderstandings**

- We can use any sample size to estimate a population
  - We will discuss how sample size has to be proportionate and representative of the population
### Instructional Strategies and Learning Tasks:

<table>
<thead>
<tr>
<th>Launch</th>
<th>I say: So all of this time we have been learning about statistical models and how to interpret statistics, while practicing collecting and interpreting data, but today I want to know: How do you conduct a statistical study? In your groups I want you to write a framework with specific constraints on how to conduct a study. I want you to prepare this framework on a poster to present to the class.</th>
</tr>
</thead>
</table>
| Instruction/Structured Practice and Application | Students do: Work in their groups on creating this framework based on the prior knowledge they have build throughout the course of the past three weeks.  
I do: Walk the room making sure that groups participate equitably, and ask students questions about why they choose the constraints they do. |
| Closure | I say: I’d like you to share your frameworks with the class, justifying each constraint and how they will help you make conclusions based on the data collect.  
Students do: Share their posters, giving each other constructive criticism, and compiling a list of important features they would like to include in a collective framework.  
I say: So it looks like we have pieced together a collective framework that everyone will be using for your statistical studies next week. Now I’d like you to all individually answer the following questions:  
- What did you learn this week about estimating population data and margin of error?  
- What did you learn about conducting a statistical study?  
- Self-assess your framework based on the rubric and make any changes you would like to make given the permission of your group before turning in your framework to me |

### Planned Supports

**Whole Class:**  
- Students will only be asked to speak if they feel comfortable  
- Students will always have the option to ask their group for assistance  

**Individual students:**  
- Students are asked to first refer to their groups as a resource, and so for any question I will always as the group if they can answer, but I will answer if a student feels uncomfortable  
- Give language support  

**Students with IEP’s or 504 plans:**  
- Break down the task into smaller parts  
- Step-by-step instructions  
- Allow for extra time if needed  
- Give language support/materials in conversational English or their first language  
- Give the materials in advance
**Strategies for responding to common errors and misunderstandings, developmental approximations, misconceptions, partial understandings, and/or misunderstandings:**

- Ask probing questions to get at what the student already know then build on what they have

The common errors are:

- We can use any sample size to estimate a population
  - We will discuss how sample size has to be proportionate and representative of the population

<table>
<thead>
<tr>
<th>Materials</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>● Poster paper</td>
</tr>
<tr>
<td></td>
<td>● Pens</td>
</tr>
</tbody>
</table>

**Academic Language Demands:**

<table>
<thead>
<tr>
<th>Language functions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>● Classifying</td>
</tr>
<tr>
<td></td>
<td>○ Students will sort and decide what is important to do in a study</td>
</tr>
<tr>
<td></td>
<td>● Justifying and Persuading</td>
</tr>
<tr>
<td></td>
<td>○ Students will have to say why their constraints are relevant</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vocabulary</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>● Sample size</td>
</tr>
<tr>
<td></td>
<td>● Population</td>
</tr>
<tr>
<td></td>
<td>● Bias</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ways students need to use language</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>● Share their ideas with their groups</td>
</tr>
<tr>
<td></td>
<td>● Represent their ideas in words and pictures on poster paper</td>
</tr>
<tr>
<td></td>
<td>● Share their poster with the class</td>
</tr>
<tr>
<td></td>
<td>● Listen to groups present posters</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Support of language</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students will only be asked to speak if they feel comfortable.</td>
</tr>
</tbody>
</table>

**Assessments:**

<table>
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<tr>
<th>Type of assessment</th>
<th>Description of assessment</th>
<th>Modifications</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formative Assessment</td>
<td>An exit ticket asking students what they have learned about estimating population data based on sample data, margin of error, and how to conduct a statistical study/report</td>
<td>Students can orally convey their learning</td>
<td>Proof of estimating population data based on sample data and develop a margin of error in order for them to define their quantities for their investigations into their community resource (see Rubric)</td>
</tr>
<tr>
<td>Self Assessment</td>
<td>Students will be asked to assess their own framework based on the rubric for a</td>
<td>Students can assess their work orally or in writing</td>
<td>see Rubric</td>
</tr>
</tbody>
</table>
Mathematics-Statistics Day 16 Lesson Plan

What will you study?

Teacher Name: Kaitlyn Frasier

<table>
<thead>
<tr>
<th>Central Focus</th>
<th>Choosing a Research Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content Standards</td>
<td>Math Standard: Quantities: N-Q- Reason quantitatively and use units to solve problems. 2. Define appropriate quantities for the purpose of descriptive modeling.</td>
</tr>
</tbody>
</table>

**Instructional Strategies and Learning Tasks:**

| Launch 5 minutes | I say: So in social studies you have all chosen research topics that you want to study, and as you all know you will be presenting an argument to the community about your community research topics. Today what we are going to do is brainstorm possible statistical studies you could do to support those topics. What I want from you by the end of class today is going to end up being an outline of your research for the rest of this unit, but first I want you to tell me what is a research question? Right, a research question is what you want to find an answer to, or a problem you set out to solve. What is a statistical research question? Right, it’s a special research question that you can answer by collecting data. Now in order to do the research for this statistical study you will be using the framework we all made together last week. [will be on the wall for all to see] |
| Instruction/Structured Practice and Application 50 minutes | I say: So what I want you to do first is write down your research topic in the middle of a piece of paper, then brainstorm statistical study topics you could use to support that social studies topic. **Students do:** For five minutes individually brainstorm their topics.  
I say: Now that you have some statistical ideas, let’s round robin in your group. Write down any new ideas you think could help your topic too as they come up. **Students do:** For ten minutes round robin  
I say: Now I want you to pick the one statistical topic idea that you think would best support your research topic. So if I were going to research the community pool I could do like Kesson did and survey the school, but of course with a better random sample. Write on a new piece of paper this topic then try to generate a question that could lead your study on that statistical topic. **Students do:** For five minutes generate questions.  
I say: Now you all have your statistical research question! The next thing you have to do is, keeping the framework we made last week in mind, make a two-day research plan for how you will collect data, analyze it, and how that research will fit into your social studies project. Some things to consider are: |
<table>
<thead>
<tr>
<th>What conclusions might you be able to draw from this study?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What happens if your study nullifies your hypothesis?</td>
</tr>
<tr>
<td>How can you best sample to estimate the population data?</td>
</tr>
</tbody>
</table>

So for the last 20 minutes of class I want you to write an outline for how you will conduct your research.

**Closure**  
**5 minutes**

**I say:** I’ve been checking around and it looks like everyone has a great plan set up for their statistical study. Tomorrow we will be starting the data collection process!

**Planned Supports**

**Whole Class:**
- Students will always have the option to ask their group for assistance
- The task will move at a pace to maintain interest and hold attention, but not too quickly as to confuse
- Directions will be read aloud

**Groups of students with similar needs:**
- Students will be allowed to type or use speech to text software to write

**Individual students:**
- Students are asked to first refer to their groups as a resource, and so for any question I will always ask the group if they can answer, but I will answer if a student feels uncomfortable
- Give language support

**Students with IEP’s or 504 plans:**
- Break down the task into smaller parts
- Step-by-step instructions
- Allow for extra time if needed
- Give language support/materials in conversational English or their first language
- Give the materials in advance
- Students will be allowed to type or use speech to text software to write

**Strategies for responding to common errors and misunderstandings, developmental approximations, misconceptions, partial understandings, and/or misunderstandings:**
- Ask probing questions to get at what the student already know then build on what they have

**Materials**

**Student**
- Paper
- Computers

**Academic Language Demands:**

**Language functions**
- Classifying
  - Students will categorize their statistical topic ideas into useful and non useful segments in order to determine what they will study.
- Summarizing and Informing
  - Students will share their brainstorm with classmates
Vocabulary

<table>
<thead>
<tr>
<th>Ways students need to use language</th>
<th>Descriptive model</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Writing down ideas</td>
<td>● Sharing ideas with groups</td>
</tr>
<tr>
<td>● Writing out a logical outline</td>
<td></td>
</tr>
</tbody>
</table>

Support of language

Students will be given computer resources if they require speech-to-text software or typing instead of writing.

Classroom Management Plan

Mathematics-Statistics

Much of the work students will be doing in the mathematics-statistics portion of this unit will be in small groups in the manner of complex instruction. Thus the groups will be strategically randomly assigned so that students with special needs are met, but otherwise the roles will be random and students will be in a different role each week. Speaking in small groups and in the whole class can be difficult for some students, so there will be many opportunities for individual think time, work with pairs, and work in small groups before proceeding to large group discussions. In the light of complex instruction, at the beginning of the unit we will establish explicit norms and roles that the students will play a large part in creating. Some norms and roles/responsibilities that I will emphasize, alongside those that the class contributes are as follows.

Norms:

- Everyone is expected to participate
- Collectively we are stronger than individually
- Respect is key
- Everyone will have a chance to be every role at some point during the unit
- Everyone has something to contribute
- When groups present everyone will be expected to be respectful and actively listen
- Active listening
- Your group is your first resource

Roles/Responsibilities: Each person in your group will have an assigned role to fulfil

- **Equity Monitor**
  - Encourages everyone to share their ideas
  - Makes sure everyone feels respected and heard
  - Elicits voices from those who may be too shy to speak

- **Resource Monitor**
  - Makes sure everyone understands what is happening
  - Makes sure the group has the resources it needs
  - Calls the teacher over for group questions

- **Facilitator**
  - Gets the group off to a quick start
- Keeps ideas flowing
- Keeps time and makes sure the group is on track

- Product Monitor
  - Makes sure everyone’s ideas are represented on the final product
  - Manages the final product production
  - Makes sure everyone is able to present the final product

Beyond the roles and responsibilities established in complex instruction for student involvement, I believe that the practices I take on as a teacher are intrinsically tied to the behaviors students exhibit, but that these behaviors can also be affected by the lives of students. Disruptive behavior may be symptomatic of an issue at home, or a lack of empathy from me as a teacher. For this reason I want the classroom space to be that of comfort, empathy, and mutual respect as outlined in the Restorative Justice model of behavioral intervention. If behavior becomes an “issue” for anyone in the classroom (me or a student), students will be encouraged to call a meeting with the involved parties to discuss all perspectives involved.
### Mathematics-Economics Day 4 Lesson Plan

How do we construct a network modeling our world?

**Teacher Name:** Ronald Thompson

<table>
<thead>
<tr>
<th>Central Focus</th>
<th>Draw a Network</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><img src="image" alt="Network Diagram" /></td>
</tr>
</tbody>
</table>

| Practice Standards | 1. Make sense of problems and persevere in solving them.  
|                    | 4. Model with mathematics  
|                    | 7. Look for and make use of structure |

| Content Standards | Math Standard: Vector and Matrix Quantities  
|                  | 6. (+) Use matrices to represent and manipulate data (partial) |

|                       | • Understand the basic concepts of directed graphs and other network models (K)  
|                       | • Starting with a favorite public space, draw a system of supporting resources around that space. Draw others that support the public space indirectly. (P) |

| Common Errors, Developmental Approximations, Misconceptions, Partial, or Misunderstandings | • The supporting nodes are exclusively places in geographical space.  
|                                                                                       | • The arrows or arcs must represent money.  
|                                                                                       | • The overall network should be extremely detailed.  
|                                                                                       | • The nodes should not be abstract entities. |

<table>
<thead>
<tr>
<th>Instructional Strategies and Learning Tasks:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Launch 15 minutes</td>
</tr>
</tbody>
</table>
| Structured Practice and Application 35 minutes | **You do:**  
|                                                      | After the launch have the students sketch out the support structures of the community around the favorite place. Then instruct them to make a list and the types of support. Label all the features of the network.  
|                                                      | **You all do:** |
| Close 10 minutes | Talk about the patterns that emerge, leaving students with ideas how to further delineate their diagrams into structured digraphs. |
| Planned Supports | **All students:**  
| | ● Students will only be asked to speak to the whole class if they feel comfortable  
| | ● Students may use the chalkboard to present their ideas  
| | ● The teacher may follow student explanations on the chalkboard  
| | ● Students will always have the option to ask other students for assistance  
| | ● Speak clearly and concisely and be mindful of the use of vocabulary  
| | ● Glossary of terms in students’ first languages  
| | **Groups of students with reciprocal needs and abilities:**  
| | ● Pair ELLs with students who know their first language  
| | **Students with IEP’s or 504 plans:**  
| | ● Make accommodations for students who need them  
| Materials | **Teacher:**  
| | Chalkboard, chalk, and eraser or facsimile  
| | Classroom mathematics library  
| | **Student:**  
| | Paper, pencil, and eraser  
| | optional: internet access devices, calculators  
| Academic Language Demands: |  
| **Vocabulary** | ● Network  
| | ● Directed graph or digraph  
| | ● Vertex or node  
| | ● Edge or arc  
| | ● Adjacency matrix  
| | ● Source and sink  
| **Ways students need to use language** | ● Read and follow the instructions  
| | ● Label the graphic diagram thoroughly  
| | ● Evaluate others’ graphs constructively  
| **Support of language** | Expectations of respect for other students will be set and maintained when they speak. Writing material will be provided for those who need them. Teacher may restate student voice or elicit other students to rephrase what was said.  

Evaluate a classmate’s graph, suggesting adaptations and indicating strong components  
**We do:**  
Show some examples of network sketches on the document camera projector and discuss how their graphics attends to modelling and makes use of structure
Assessment:

<table>
<thead>
<tr>
<th>Type of assessment</th>
<th>Description of assessment</th>
<th>Modifications</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formative Assessment</td>
<td>Sketch of the support network of the student’s choice of public space</td>
<td>Students may write an outline if they prefer not to sketch</td>
<td>Nodes are clearly delineated and the links between them are visible and unambiguous.</td>
</tr>
<tr>
<td>Peer Assessment</td>
<td>Students write an evaluation of one of their fellow student’s work</td>
<td>Students may add illustrations to their suggestions</td>
<td>Demonstrate constructive examination of their peer and awareness of network concepts</td>
</tr>
</tbody>
</table>

Mathematics-Economics Day 7 Lesson Plan

How does matrix mathematics model real world systems?

Teacher Name: Ronald Thompson

<table>
<thead>
<tr>
<th>Central Focus</th>
<th>Matrix arithmetic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matrix arithmetic</td>
<td>$A = \begin{bmatrix} a &amp; b \ c &amp; d \end{bmatrix}$</td>
</tr>
</tbody>
</table>

Content Standards

Math Standard: Vector and Matrix Quantities

- 7. (+) Multiply matrices by scalars to produce new matrices.
- 8. (+) Add, subtract, and multiply matrices of appropriate dimensions.

Student Learning Goals


- Describe the properties of a matrix (K)
- Solve matrix mathematics problems (S)
- Recognize incompatible matrix dimensions paired with mathematical operations (K)

Common Errors, Developmental Approximations, Misconceptions, Partial, or Misunderstandings

- Having a scalar resize the dimensions of a matrix
- Adding, subtracting matrices with different dimensions
- Multiplying matrices m x n and p x q where m does not equal q
- Multiplying the column of the first by the row of the second
### Instructional Strategies and Learning Tasks:

<table>
<thead>
<tr>
<th><strong>Launch</strong></th>
<th>Have students explore matrix adding and multiplying in books and charts in the classroom math library, on their internet access devices, and other media. Conduct a discussion of what they found writing key knowledge on the board. Fill in gaps in their understanding before starting the worksheet.</th>
</tr>
</thead>
</table>
| **Structured Practice and Application** | **Worksheet:** an array of math problems and short contextual problems of tabular data  
**Students do individually:** the matrix math problems on the worksheet  
**Students do in small groups:** they may transition to working in small groups when they feel they could use help from other students in their group.  
**We all do together:** bring the whole class into discussion when many students find a challenging problem |
| **Close**          | Ask students to relate the math they learned to their construction of the table model they designed earlier in the lesson.  
Forecast the next lesson: matrix algebra including the identity and inverses. |
| **Planned Supports** | **All students:**  
- Students will only be asked to speak to the whole class if they feel comfortable  
- Students may use the chalkboard to present their ideas  
- The teacher may follow student explanations on the chalkboard  
- Students will always have the option to ask other students for assistance  
- Speak clearly and concisely and be mindful of the use of vocabulary  
- Glossary of terms in students’ first languages  
**Groups of students with reciprocal needs and abilities:**  
- Pair ELLs with students who know their first language  
**Students with IEP’s or 504 plans:**  
- Make accommodations for students who need them  
- Have available large-sized print of worksheets |
| **Materials**       | **Teacher:**  
Chalkboard, chalk, and eraser or facsimile  
The worksheet with matrix addition, subtraction and multiplication problems  
Classroom mathematics library  
**Student:**  
Paper, pencil, and eraser  
optional: internet access devices, calculators |
| **Academic Language Demands:** | **Vocabulary:**  
- Linear equation  
- Matrix  
- Determinant  
- Identity |
Ways students need to use language
- Read the worksheet instructions and math problems
- Write the steps they took to reach their answer
- Read other students math reasoning
- Talking with other students about their math reasoning
- Speaking to the whole class about their math reasoning and queries

Support of language
Expectations of respect for other students will be set and maintained when they speak. Writing material will be provided for those who need them. Teacher may restate student voice or elicit other students to rephrase what was said.

Assessment:
<table>
<thead>
<tr>
<th>Type of assessment</th>
<th>Description of assessment</th>
<th>Modifications</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formative Assessment</td>
<td>Review their work on the worksheets</td>
<td>Students may continue their worksheets before the next class</td>
<td>Show a proficient ability to add, subtract and multiply matrices.</td>
</tr>
</tbody>
</table>

Mathematics-Economics Day 13 Lesson Plan
What matrix algebra concepts are necessary to understand resource distribution systems?

Teacher Name: Ronald Thompson

Central Focus
Basic matrix algebra concepts

\[ x = (I - A)^{-1}d = \begin{pmatrix} 19.19 \\ 12.97 \end{pmatrix} \]

Content Standards
Math Standard: Vector and Matrix Quantities
9. (+) Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties.
10. (+) Understand that the zero and identity matrices play a role in matrix addition and multiplication similar to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse.

Student Learning Goals
- Find inverses of square matrices (S)
- Find the determinant of a square matrix (S)
- Resolve simple matrix algebra problems (S)
- Students will be able to prove properties of matrices (R)

Common Errors, Developmental Approximations,
- Matrices are commutative under multiplication
- Matrices are not commutative under addition
- Missteps when finding the determinant.
## Misconceptions, Partial, or Misunderstandings

### Instructional Strategies and Learning Tasks:

<table>
<thead>
<tr>
<th>Launch</th>
<th>20 minutes</th>
<th>Have students explore matrix algebra concepts in the whole language library, on their internet access devices, and other media. Conduct a discussion of what they found writing key knowledge on the board. Fill in gaps in their understanding before starting the worksheet.</th>
</tr>
</thead>
</table>
| Structured Practice and Application | 30 minutes | **Worksheet:** an array of matrix algebra problems  
**Students do individually:** the matrix algebra problems on the worksheet  
**Students do in small groups:** they may transition to working in small groups when they feel they could use help from other students in their group  
**We all do together:** bring the whole class into discussion when many students find a challenging problem. |
| Close | 10 minutes | Ask students to relate the algebra they learned.  
Forecast the next lesson: constructing an input-output model. |

### Planned Supports

**All students:**  
- Students will only be asked to speak to the whole class if they feel comfortable  
- Students may use the chalkboard to present their ideas  
- The teacher may follow student explanations on the chalkboard  
- Students will always have the option to ask other students for assistance  
- Speak clearly and concisely and be mindful of the use of vocabulary  
- Glossary of terms in students’ first languages  

**Groups of students with reciprocal needs and abilities:**  
- Pair ELLs with students who know their first language  

**Students with IEP’s or 504 plans:**  
- Make accommodations for students who need them  
- Have available large-sized print of worksheets

### Materials

**Teacher:**  
Chalkboard, chalk, and eraser or facsimile  
The worksheet with matrix algebra problems  
Whole language mathematics library  

**Student:**  
Paper, pencil, and eraser  
optional: internet access devices, calculators

### Academic Language Demands:

**Vocabulary**  
- Linear equation  
- Matrix  
- Determinant  
- Identity
Ways students need to use language
- Read the worksheet instructions and algebra problems
- Write the steps they took to reach their answer
- Read other students’ reasoning
- Talking with other students about their reasoning
- Speaking to the whole class about their reasoning and queries

Support of language
Expectations of respect for other students will be set and maintained when they speak. Writing material will be provided for those who need them. Teacher may restate student voice or elicit other students to rephrase what was said.

Assessment:

<table>
<thead>
<tr>
<th>Type of assessment</th>
<th>Description of assessment</th>
<th>Modifications</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formative Assessment</td>
<td>Exit Ticket: Prove that... given X = DX + E show that X = (I - D)^(-1) E</td>
<td>Students may turn-in their proof the following day</td>
<td>Procedures are reasonable and justified by the properties and definitions of matrices</td>
</tr>
</tbody>
</table>

Mathematics- Economics Day 15 Lesson Plan
How can we affect our economy and how does it affect us?

Teacher Name: Ronald Thompson

Central Focus
Input-output resource modeling

Practice Standards
Model with mathematics

Content Standards
Math Standard: Vector and Matrix Quantities
6. (+) Use matrices to represent and manipulate data

Student Learning Goals
- Construct distribution matrix based on statistical data and best-estimate information on the community’s regional economy (P)
- Generate outcomes on various demand assumptions (S)

Common Errors, Developmental
- Models are perfectly accurate all the time
- The economic system is best understood with these methods alone
<table>
<thead>
<tr>
<th>Approximations, Misconceptions, Partial, or Misunderstandings</th>
</tr>
</thead>
</table>

**Instructional Strategies and Learning Tasks:**

<table>
<thead>
<tr>
<th>Launch</th>
<th>10 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Given the economic conditions of our community, it is clarifying at times to view positions that are strictly utilitarian. The Leontief model is one used often to portray how resources are distributed within a system of industries.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Structured Practice and Application</th>
<th>30 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students will make calculations and predictions on a simplified model. They can then demonstrate variation of results based on adjusted inputs or changes in assumptions about resources.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Close</th>
<th>20 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Discussion between students on the potential uses of such models given shifting ecological circumstances.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Planned Supports</th>
<th>All students:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>● Students will only be asked to speak to the whole class if they feel comfortable</td>
</tr>
<tr>
<td></td>
<td>● Students may use the chalkboard to present their ideas</td>
</tr>
<tr>
<td></td>
<td>● The teacher may follow student explanations on the chalkboard</td>
</tr>
<tr>
<td></td>
<td>● Students will always have the option to ask other students for assistance</td>
</tr>
<tr>
<td></td>
<td>● Speak clearly and concisely and be mindful of the use of vocabulary</td>
</tr>
<tr>
<td></td>
<td>● Glossary of terms in students’ first languages</td>
</tr>
</tbody>
</table>

**Groups of students with reciprocal needs and abilities:**

- Pair ELLs with students who know their first language

**Students with IEP’s or 504 plans:**

- Make accommodations for students who need them

<table>
<thead>
<tr>
<th>Materials</th>
<th>Teacher:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chalkboard, chalk, and eraser or facsimile</td>
</tr>
<tr>
<td></td>
<td>Classroom mathematics library</td>
</tr>
<tr>
<td></td>
<td>Document camera</td>
</tr>
</tbody>
</table>

**Student:**

- Paper, pencil, and eraser
- Calculators with matrix math capabilities
- optional: internet access devices

<table>
<thead>
<tr>
<th>Academic Language Demands:</th>
</tr>
</thead>
</table>

**Vocabulary**

- Planned economy
- Inter-industry flow
- Leontief system
- Economic sector
- Economic capital
Ways students need to use language

Students will be writing an essay from the calculations they made using their constructed distribution matrix.

Support of language

Expectations of respect for other students will be set and maintained when they speak. Writing material will be provided for those who need them. Teacher may restate student voice or elicit other students to rephrase what was said.

Assessment:

<table>
<thead>
<tr>
<th>Type of assessment</th>
<th>Description of assessment</th>
<th>Modifications</th>
<th>Evaluation Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formative Assessment</td>
<td>Write a short essay on the merits of different economic policies in the community based on the input-output model we studied.</td>
<td>Students may turn in their essay on the following day.</td>
<td>Position of the essay sufficiently based on evidence and quantitative reasoning</td>
</tr>
</tbody>
</table>

Mathematics-Ecology Day 17 Lesson Plan

How can I encapsulate intangible values into a mathematical model intended to represent our world?

Teacher Name: Ronald Thompson

Central Focus

Quantifying quality

Practice Standards

2. Reason abstractly and quantitatively

Content Standards

Math Standard: Vector and Matrix Quantities
6. Use matrices to represent and manipulate data (partial)

Student Learning Goals

- Design alternative systems that include ineffable aspects of human experience that nevertheless benefit well-being

Common Errors, Developmental Approximations, Misconceptions,

- There are limits to the imagination of what is possible when modeling real life experiences and situations
- A constructed imagining of the circulation of quality is a fanciful endeavor
- We must live within our means
### Partial, or Misunderstandings

---

### Instructional Strategies and Learning Tasks:

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Launch</strong>&lt;br&gt;10 minutes</td>
<td>Students will be instructed to revisit their original network system diagrams. Additions, simplifications, expansions will done to the design. The main task will be to integrate their support network into the economic model.</td>
</tr>
<tr>
<td><strong>Structured Practice and Application</strong>&lt;br&gt;45 minutes</td>
<td>On this lesson, they will work individually thinking of ideas about interconnecting the two systems and determining the meanings of the links between them.</td>
</tr>
<tr>
<td><strong>Close</strong>&lt;br&gt;5 minutes</td>
<td>Note that the next lesson will have the students working with one or two others.</td>
</tr>
</tbody>
</table>

### Planned Supports

**All students:**
- Students will only be asked to speak to the whole class if they feel comfortable
- Students may use the chalkboard to present their ideas
- The teacher may follow student explanations on the chalkboard
- Students will always have the option to ask other students for assistance
- Speak clearly and concisely and be mindful of the use of vocabulary
- Glossary of terms in students’ first languages

**Groups of students with reciprocal needs and abilities:**
- Pair ELLs with students who know their first language

**Students with IEP’s or 504 plans:**
- Make accommodations for students who need them

### Materials

**Teacher:**
- Chalkboard, chalk, and eraser or facsimile
- Classroom mathematics library

**Student:**
- Paper, pencil, and eraser
- Optional: internet access devices, calculators

### Academic Language Demands:

<table>
<thead>
<tr>
<th>Vocabulary</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of life</td>
<td></td>
</tr>
<tr>
<td>Cultural capital</td>
<td></td>
</tr>
<tr>
<td>Gross national happiness</td>
<td></td>
</tr>
</tbody>
</table>
Support of language

| **Expectations of respect for other students will be set and maintained when they speak. Writing material will be provided for those who need them. Teacher may restate student voice or elicit other students to rephrase what was said.** |

<table>
<thead>
<tr>
<th>Assessment:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of assessment</strong></td>
</tr>
<tr>
<td>Formative Assessment</td>
</tr>
</tbody>
</table>

Classroom management plan:
Mathematics-Economics

The central guiding principle of my classroom management will take a learner-centered approach. Learning students are expected to participate not only in the curriculum discussion but in setting and revisiting norms and roles. There will be the central strategy of "you do, you all do, we do." Instead of having the math instructor present how to do a math problem, the students will first take a look at the problem on their own individually. If the problem is sufficiently challenging, all will share the same engaged thought. As they continue to work, the teacher can signal for students to work in pairs or groups. Sometimes this occurs naturally as students may wish to share their understanding. Whole class discussions may follow. It is the intent that their knowledge and understanding of mathematical concepts will be constructed upon the prior knowledge of students in their own voices first, introducing the general academic terms after a time where are comfortable with the language.

The expectations will be set and maintained throughout the class period. At the beginning of each class, the guiding question will be written on the board and a goal established. At the close, students and teacher will assess how well they sustained their commitment to the goals and whether they sufficiently answered the guiding question. Students will be oriented to each other's thinking. The class will adhere to standards of mutual respect and sustained engagement until the close of each session. The teacher and students will accommodate for the particular needs of individual students that support learning.
Scaffolding for Metacognition:

- Setting aside time for self-reflection
- Setting aside time for reflection on daily goals and learning objectives
- Establishing group norms and roles
- Establishing classroom needs
- Setting aside time for self-assessment
- Having students write exit tickets stating the learning target of the lesson and why it is important for them to be learning and where they are in their process toward meeting that goal

We will include these scaffolding mechanisms into our lesson plans because we believe it is important to establish a safe and learner-centered environment where not only our students have time to reflect on where they are in the learning process, but also are responsible for their own learning, and these the best ways we believe can help students build metacognitive thought processes.

Scaffolding Language Demands:

<table>
<thead>
<tr>
<th>Language functions that will be important to engaging and meeting objective:</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Inquiry/Seeking Information</td>
</tr>
<tr>
<td>● Summarizing and Informing</td>
</tr>
<tr>
<td>● Comparing and Contrasting</td>
</tr>
<tr>
<td>● Sequencing/Ordering</td>
</tr>
<tr>
<td>● Classifying</td>
</tr>
<tr>
<td>● Analyzing</td>
</tr>
<tr>
<td>● Inferring, Predicting, and Hypothesizing</td>
</tr>
<tr>
<td>● Justifying and Persuading</td>
</tr>
<tr>
<td>● Solving Problems/Problem Solving</td>
</tr>
<tr>
<td>● Synthesizing</td>
</tr>
<tr>
<td>● Evaluation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Texts</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Math:</strong> Reading real world problems that involve descriptive modeling, reading/sampling data, and evaluating models</td>
<td><strong>Math:</strong> Defining quantities, estimating population mean, developing a margin of error, simulating models, and interpreting data</td>
</tr>
<tr>
<td><strong>Social Studies:</strong> Evaluating texts relating to effects of resource distribution read texts on vocabulary for resources, global economy, distribution, sustainability, cost/benefit</td>
<td><strong>Social Studies:</strong> Defining and compare/contrasting public and private, analyzing and discussing community resources, analyzing economic choices using a cost benefit analysis, analyzing economic choices in how they affect are affected by gourds and individuals, analyzing the effects of economic decisions in relation to sustainability, and writing out analyzes</td>
</tr>
<tr>
<td><strong>ELA:</strong> Hearing other points of view that may differ from the student’s own, and reading texts that relate to and challenge real-world problems related to resource distribution, etc.</td>
<td><strong>ELA:</strong> Writing ideas, arguments, and analyses on resource distribution, economic choices, and</td>
</tr>
</tbody>
</table>
community resources. Writing reflections on what was learned, challenged, or expanded, and discussing ideas and opinions related to resource distribution, economic choices, and community resources.

<table>
<thead>
<tr>
<th>Discourse</th>
<th>Syntax</th>
<th>Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Math:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defining quantities aloud</td>
<td>Comparing/Contrasting</td>
<td>Inference vs. deduction</td>
</tr>
<tr>
<td>Simulating models</td>
<td>Defining quantities</td>
<td>Validity</td>
</tr>
<tr>
<td>Justifying their thinking</td>
<td>Interpreting data tables</td>
<td>Models</td>
</tr>
<tr>
<td>Reasoning</td>
<td><strong>ELA:</strong></td>
<td>Descriptive Models</td>
</tr>
<tr>
<td>Evaluating the validity of models</td>
<td>Representing poetic imagery</td>
<td>Estimation</td>
</tr>
<tr>
<td><strong>Social Studies:</strong></td>
<td>Grammar</td>
<td>Margin of error</td>
</tr>
<tr>
<td>Evaluating</td>
<td>Punctuation</td>
<td>Data (sample and population)</td>
</tr>
<tr>
<td>Analyzing</td>
<td>Parts of Speech</td>
<td>Matrix (Zero, Identity)</td>
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<tr>
<td></td>
<td>Figurative Language</td>
<td>Associative and Distributive</td>
</tr>
<tr>
<td><strong>ELA:</strong></td>
<td>Sentence order and Structure</td>
<td><strong>Social Studies:</strong></td>
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<tr>
<td>Defining</td>
<td>Vocabulary choice</td>
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<td>Resources</td>
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<td>Explaining</td>
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<td>Describing</td>
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<td>Recounting</td>
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<td>Groups</td>
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<td>Evaluating</td>
<td></td>
<td>Individuals</td>
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<tr>
<td>Constructing arguments</td>
<td></td>
<td><strong>ELA:</strong></td>
</tr>
<tr>
<td>Interpreting</td>
<td></td>
<td>Argument</td>
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<tr>
<td></td>
<td></td>
<td>Discourse</td>
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<tr>
<td></td>
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<td>Connector words</td>
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<td>Nominalizations</td>
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<td>Passive vs. active voice</td>
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<tr>
<td></td>
<td></td>
<td>Academic vs. vernacular</td>
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</tbody>
</table>

**Strategies to support language use:** We will include these scaffolding mechanisms into our lesson plans because research proves that tying learning to prior knowledge is a vital part of the learning cycle, and language is prior knowledge, so we must first access that for every student.

PReP- for introducing vocabulary and activating prior knowledge
Graphic organizer- compares costs/benefits of economic decisions
Graphic organizer- concept web
TWA- to introduce vocabulary
Bridging- to connect the content areas
Factual Information- to provide scaffolding
Assessment Plan:

Pre-Assessments

Social Studies:
Assessment Prompt: Students will read a source document that makes a specific claim, they will articulate the claim in the article and show evidence from the article that supports the claim. They will then respond to the claim either agreeing or disagreeing, giving reasons for their opinion.
Learning Targets to be Addressed: Students will analyze and evaluate source material.
Criteria: I will be looking for students’ ability to connect claims with evidence and the ability to move beyond the author’s voice in order to form opinions about the text. This is the same type of analysis/evaluation that is called for in the standards and which will be used during the unit.
Adaptations/Accommodations: Students may type or orally convey their answers if needed, and students with language needs can convey their answers in their first language.

ELA:
Assessment Prompt: Students will discuss possible reasons as to why public resources such as the pool and the skate park closed down, and how this affects them on personal and communal levels. They will reflect in writing on what is the meaning of having a space to call one’s own, and what they would like to do about it if they had a magic wand or had the power to enact change. As a second three part question, I would like to know if students know how to write letters, what explanatory texts are, and what primary/secondary sources are.
Learning Targets to be Addressed: Analytical/reflective thinking, writing reflections on their discussion, catalyzing ways to think about the final assessment, knowledge of primary/secondary sources, knowledge of letter writing, knowledge of explanatory texts
Criteria: I am looking for students to have reactions or thoughts about the closing of the Shelton pool and/or skate park. I will also assess their answers regarding their knowledge of expository texts, sources, and letter writing.
Adaptations/Accommodations: Students may type or orally convey their answers if needed. Students with language needs can convey their answers in their preferred language.

Math-Statistics:
Assessment Prompt: Classroom discussion on the statistics they have learned in their past years of schooling like mean, median, and mode. Students will write down their current understandings of these concepts and turn them in.
Learning Targets to be Addressed: Prior knowledge of statistics, evaluating data models
Criteria: I am looking for students to have a clear understanding of what the mean, median, mode, and standard deviation mean with a beginning understanding of what it means to interpret data. I will be assessing these understandings through definitions students write and turn in.
Adaptations/Accommodations: Students may type or orally convey their answers if needed, and students with language needs can convey their answers in their first language.

Math-Economics:
Assessment Prompt: Students will examine a set of algebra problems including some requiring matrix mathematics.
Learning Targets to be Addressed: Existing understanding of algebraic properties and proofs.
Criteria: I am looking for students with foundational understanding of the practices of algebraic reasoning.
Adaptations/Accommodations: Alternate large-print of the exam, glossary of terms in first language of all students, vocalized reading of the assessment problems.

Formative Assessments

Social Studies:
Assessment Prompt: Individual exit tickets for multiple days in the classroom, exit tickets will ask students to reflect on the learning they did that day and extend their understanding utilizing the ticket prompt
Learning Targets to be Addressed:
● analyze economic decisions and the potential effects of these decisions
● reflect on the need for personal commitment and action
● apply analysis of community action towards the pool to other potential resources
Criteria: These exit tasks will be used to synthesize and extend understanding, so I will look to see that the writing accurately conveys the day’s work and acts as a bridge for future work.
Adaptations/Accommodations: Students may type or orally convey their answers if needed, and students with language needs can convey their answers in their first language.

ELA:
Assessment Prompt: Students will submit in writing what they have learned during the day regarding writing or researching about their topics. They will also write what they have yet to learn. I will assess these prompts based on progress made or realizations that have been discovered and their observations on these topics; if they have not felt they made progress or realizations, I would want them to write why that is and how they could move their projects forward. Wherever necessary, they will also submit any writing they have done for the class to be peer-reviewed for ideas, and to add to their bodies of knowledge.
Learning Targets to be Addressed: Recap of individual lessons that have been covered and reflection on what other things could be learned as a result.
Criteria: I will be looking for students to formulate ideas on their own learning, reflecting on what they learned for the day. I will also want them to restate what they have learned so as to ensure that they have taken something away from the lesson. Acknowledging the progress they have made or have yet to make also allows students to process how they see their project, and to brainstorm areas for improvement.
Adaptations/Accommodations: Students with language needs will be provided with either oral translation or assignment pages in their first language. Students who need accommodation for group work will be given the option of working independently where appropriate; classroom norms and roles will be emphasized.

Math-Statistics:
Assessment Prompt: Individual exit tickets where students are asked to state the learning target for the day, why it is important as well as what they learned about that day.
First Assessment Learning Targets:
● Know that math can represent real-world situations and be used as a tool to model them.
• Identify the processes that underlie statistical experiments
• Reason quantitatively
• Use units to solve problems

1. First Assessment Criteria: I will be looking for students to be able to identify statistical processes and models when looking at statistical experiments. Vocabulary I will be looking for will be: random sampling, bias, evidence, collection, and population.

Second Assessment Learning Targets:
• Evaluate the consistency of a statistical model
• Evaluate the validity of population estimates and margins of error
• Justify conclusions

2. Second Assessment Criteria: I will be looking for students to be able to evaluate statistical models and population data estimates from the sample data for accuracy. Vocabulary that I will be looking for is: estimate, consistent, bias, random sampling and population.

Third Assessment Learning Targets:
• Use data from a sample to estimate a population data set
• Define appropriate quantities for the purpose of descriptive modeling
• Develop a margin of error for population estimates

3. Third Assessment Criteria: I will be looking for students to be able to estimate population data based on sample data and develop a margin of error in order for them to define their quantities for their investigations into their community resource.

Adaptations/Accommodations: Students with language needs will be provided with either oral translation or assignment pages in their first language. Students who need accommodation for group work will be given the option of working independently where appropriate, and classroom norms and roles will be emphasized.

Math-Economics:
Assessment Prompt: Exit tickets where students will be asked to recite some amount of learning from the lesson for the day.

1. First Assessment Learning Targets:
• Understand the basic concepts of directed graphs and other network models
• Starting with a favorite public space, draw a system of supporting resources around that space.
  Draw others that support the public space indirectly

First Assessment Criteria: Nodes are clearly delineated and the links between them are visible and unambiguous.

2. Second Assessment Learning Targets:
• Describe the properties of a matrix
• Solve matrix mathematics problems
• Recognize incompatible matrix dimensions paired with mathematical operations

Second Assessment Criteria: Show a proficient ability to add, subtract and multiply matrices.

3. Third Assessment Learning Targets:
• Find inverses of square matrices
• Find the determinant of a square matrix
• Resolve simple matrix algebra problems
• Students will be able to prove properties of matrices

Third Assessment Criteria: Procedures are reasonable and justified by the properties and definitions of matrices.

4. Fourth Assessment Learning Targets:
• Construct distribution matrix based on statistical data and best-estimate information on the community’s regional economy
• Generate outcomes on various demand assumptions

Fourth Assessment Criteria: Position of the essay sufficiently based on evidence and quantitative reasoning.

5. Fifth Assessment Learning Targets:
   • Design alternative systems
   • Use matrices to represent and manipulate data

Fifth Assessment Criteria: A lucid depiction of quality flow is sufficient.
Adaptations/Accommodations: Students may choose their own preferred method of conveying information, and extra time will be given to those who need it.

Self-Assessments

Social Studies:
Assessment Prompt:
   • use rubric to evaluate rough draft for final paper
   • write a reflection addressing what is working now, what still needs work, and provide a description of your plans for meeting those goals
Learning Targets to be Addressed: Students will analyze their own work and evaluate it for next steps.
Criteria: I will be looking for students’ demonstration of self-reflexivity, and for concrete plans of action to address the needs of their paper.
Adaptations/Accommodations: Students may type or orally convey their answers if needed, and students with language needs can convey their answers in their first language.

ELA:
Assessment Prompt: Students will be asked to write what they learned from the day, write what progress has been made, and write what they are still wondering about/have yet to learn or research.
Learning Targets to be Addressed:
   • Metacognize on any progress that has been made
   • Recap of individual lessons that have been covered.
   • Reflection on what other things could be learned as a result
Criteria: I will be looking for students to formulate ideas/opinions on their own learning. I will also want them to restate what they have learned so as to ensure that they have taken something away from the lesson.
Adaptations/Accommodations: Students with language needs will be provided with either oral translation or assignment pages in their first language. Students who need accommodation for group work will be given the option of working independently where appropriate; classroom norms and roles will be emphasized.

Math-Statistics:
1. Group Assignment Assessment Prompt: How did you address the product requirements for this group project? (rubric) Is your justification for your evaluation valid? How do you feel you did on this product? How was working with your group? What could you do better next time?
Learning Targets to be Addressed
- Evaluate the consistency of a statistical model
- Evaluate the validity of population estimates and margins of error
- Justify conclusions

Criteria: I will be looking for students to be reflective in their writing and to address whether or not their math is representing what they believe it to be.

Adaptations/Accommodations: Students may type or orally convey their answers if needed, and students with language needs can convey their answers in their first language.

2. Final Assignment Assessment Prompt: How did you address the product requirement for this group project? (rubric) How did you incorporate the statistics into your research? How do you feel you did on this product? How was working with your group? What could you do better next time?

Learning Targets to be Addressed:
- Use data from a sample to estimate a population data set
- Define appropriate quantities for the purpose of descriptive modeling
- Develop a margin of error for population estimates

Criteria: I will be looking for students to be reflective in their writing and to address whether or not their math is representing their conclusions in their final research product.

Adaptations/Accommodations: Students may type or orally convey their answers if needed, and students with language needs can convey their answers in their first language.

Math-Economics:
Assessment Prompt: What decisions and revisions did you make to your graphic representations? Why did you make the changes you did? What questions do you have about your designs? How did any mathematical results influence your decisions? How did the results affect your opinions?

Learning Targets to be Addressed: Students will make sense of a problem and persevere in solving it, by reasoning abstractly and quantitatively with their constructed mathematics model.

Criteria: I will be looking for student reasoning about their decisions and changes they made when constructing their graphs, diagrams, and tables.

Adaptations/Accommodations: Students may type or orally convey their answers if needed, and students with language needs can convey their answers in their first language.

Summative Assessment
Assessment Prompt: Using quantitative reasoning, statistical and matrix modeling, predict the distribution of a specific resource that is mediated through public and private control, then write a letter to one of your local representatives. Students will craft a persuasive paper that will argue for an investigation into how access to a specific community resource is mediated through public and private control, and what the community’s role might be in affecting access to that resource, using quantitative reasoning to craft an argument. Students will present their papers to the community in a public presentation.

Learning Targets to be Addressed:

Social Studies:
- Analyze how economic choices made by groups and individuals in the global economy can impose costs
- Analyze how economic choices made by groups and individuals in the global economy can provide benefits.
- Analyze how individuals affect the distribution of resources and sustainability
- Evaluate how individuals affect the distribution of resources and sustainability
• Analyze how individuals are affected by the distribution of resources and sustainability
• Evaluate how individuals are affected by the distribution of resources and sustainability
• Analyze and evaluates ways of influencing national governments and international organizations to establish or preserve individual rights and/or promote the common good.

ELA:
• Write informative/explanatory texts to convey complex ideas
• Analyze informative/explanatory texts to grasp ideas and meanings
• Explore ways in which one can use research

Math-Statistics:
• Use math to model real world situations

Math-Matrices
• Create a matrix as a tool to experiment with different allocations of resources
• Use math to model real world situations

Sustainability:
• Demonstrate understanding of how the health of these systems determines the sustainability of natural and human communities at local, regional, national, and global levels

Criteria:
1. A letter to a representative addressing how access to a specific community resource is mediated through public and private control
2. Annotated bibliography of primary and secondary resources used for research
3. Statistical analysis of control over a specific resource in Shelton
4. An accurate matrix model predicting the distribution of resources
5. Write about a community resource in their town that has recently disappeared
6. Synthesize understanding of civic participation
7. Address strategies for reestablishing community access
8. Analyze recent pool closure in community and actions that have been taken to reestablish access
9. Evaluate effectiveness of those actions
10. Discuss possible future actions that could be taken
11. Come to a conclusion on best next steps

Adaptations/Accommodations: Students with language needs will be allowed to draft and create their projects in first language/informal vernacular, as long as they allow for editing and revision for the final assignment.
## Culminating Project Rubric

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Self-Evaluation</th>
<th>Evidence (Why did you give yourself this score?)</th>
<th>Teacher Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0- Not Complete</td>
<td>1- Met Criteria</td>
<td>2- Exceptional Work</td>
</tr>
<tr>
<td>Letter to Representative</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Annotated Bibliography</td>
<td></td>
<td></td>
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<tr>
<td>Statistical Study</td>
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<tr>
<td>Matrix Model</td>
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<tr>
<td>Understanding of Civic Involvement</td>
<td></td>
<td></td>
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<tr>
<td>Plan for Future Action</td>
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</tbody>
</table>
**Context for Learning**

90 Rural High School Seniors (17-19 year olds)
   46 male and 44 female

Race/Ethnic Breakdown (based on OSPI Washington State Report Card)
   2 Native American
   1 Black/African American
   1 Asian/Pacific Islander
   12 Hispanic/Latino(a)
   71 White
   3 Two or more races

Socioeconomic Status Breakdown (based on OSPI Washington State Report Card)
   47 students with free/reduced lunch

<table>
<thead>
<tr>
<th>IEP/504 Plans: Classifications/Needs</th>
<th>Number of Students</th>
<th>Supports, Accommodations, Modifications, Pertinent IEP Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>504: ADHD</td>
<td>1</td>
<td>Step-by-step instructions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extra time</td>
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<td></td>
<td></td>
<td>Preferential seating</td>
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<tr>
<td>504: Severe ADHD</td>
<td>1</td>
<td>Step-by-step instructions</td>
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<td></td>
<td></td>
<td>Extra time</td>
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<td></td>
<td></td>
<td>Preferential seating</td>
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<td></td>
<td></td>
<td>Headphones</td>
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<td></td>
<td></td>
<td>Have her repeat directions aloud</td>
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<td></td>
<td></td>
<td>Checklists</td>
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<tr>
<td>504: Migraines</td>
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<td>Extra time</td>
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<tr>
<td></td>
<td></td>
<td>Preferential seating</td>
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<td></td>
<td></td>
<td>Breaks</td>
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<td>IEP: Reading Disorder</td>
<td>3</td>
<td>Step by step instruction</td>
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<td>Breaking down concepts</td>
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<td>Clearing defined language functions</td>
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<td>Extra time on tests</td>
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<td>Restating questions</td>
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<td></td>
<td>One-on-one oral instructions</td>
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</table>

<table>
<thead>
<tr>
<th>Other Learning Needs</th>
<th>Number of Students</th>
<th>Supports, Accommodations, Modifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underperforming students</td>
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<td>Extra time</td>
</tr>
<tr>
<td>English Language Learners</td>
<td>3</td>
<td></td>
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</table>

In designing this project we drew heavily from interest in this issue as voiced by multiple members of our school’s community. Organization around the issue of the pool closure has been ongoing for some time, and many of our students were directly involved in activities to save it. The organization to save the pool is well established, having its own website, plans of action, data presentations, described actions, and media outreach. Many of our students were involved, to various degrees in many of these activities and would come into this unit knowing many forms of civic participation that can bring about change. It is this strong cultural wealth and knowledge that this unit seeks to build off of with the goal of facilitating student reflection on work that has been accomplished, to develop analysis and evaluative tools in regards to actions taken, and to extend these practices beyond this single scenario to help students generalize principles of civic engagement for empowerment when addressing future goals.

Not all students will come in with the same background knowledge or level of involvement in organization around the pool, and for that reason, much of the work that we do in this unit is two-fold. The prior knowledge of the more involved students is leveraged in order to teach their peers, while structures are put in place to help the more involved students understand how to involve members of their community in projects they undertake. While the project begins with student knowledge and students assets, it furthers these assets to engage students in a deeper understanding of civic participation and community organizing.
Final Project and Presentation Assignment

This unit will end with a school/community event where you will share your learning with families, the community, and invited local representatives. You will create a presentation incorporating the following projects you will work on in the content areas listed:

- A letter to your local representative arguing for an investigation into how access into a specific community resource is mediated through public and private control (Social Studies and ELA)
- A statistical study supporting your argument that addresses the specific community resource you chose (Math-Statistics)
- A model showing the distribution and circulation of resources within an interconnected group you chose (Math-Economics)
- A discussion of possible future actions you and the community could take relative to the resource you chose (Social Studies)

Through this project you will communicate your concern for the community resource that you chose and dedication to civic involvement. Through your presentation you will inform the community of a resource that has either disappeared or depleted, raising their awareness of the importance of this resource to the community. In your presentation you will explain the interconnectedness of public and private interactions within the community, economy, and ecosystem.

You will be evaluated on the following criteria:

- The letter and presentation persuasively argues for an investigation into the community resource that has recently disappeared or depleted.
- Annotated bibliography of sources support the argument
- Statistical study is valid and accurate, supporting the argument
- Matrix model accurately predicts the distribution of resources
- A plan for future action is established
Social Studies Grading Rubric: Final Essay

Essay Prompt:

Part 1:

- Identify a resource in your community that is disappearing or that has already disappeared.
- Describe the resource and its importance to the community.
- Use evidence to make a claim as to why the resource has disappeared.
  - Was the resource publicly owned or privately owned?
  - What were the causes for the disappearance of the resource?
  - What are the effects of the disappearance of the resource?
  - Who was affected?

Part 2:

- Use your understanding of civic participation actions to determine 2-3 potential forms of civic participation that may be useful in this situation.
  - Describe what each type of civic participation is.
  - Make a claim about why that form of civic participation would be most effective in this scenario.
  - Give evidence from a like scenario where that form of civic participation was effective in achieving its goal (you may draw from the scenarios covered in class during week 2).
  - Identify a form of civic participation that would not be effective and describe why.

- Propose a plan of action:
  - How will you go about taking up this project? Now that you’ve identified a disappearing community resource and have proposed several forms of civic participation, what are your next doable acts?
  - Identify three doable acts in which you will begin organizing around this issue. Describe how you will involve friends, family, and community members in taking up this issue. Put into words exactly how you visualize using these forms of civic participation within your community to save your resource.
<table>
<thead>
<tr>
<th></th>
<th>0 Incomplete</th>
<th>1 Beginning</th>
<th>2 Approaching</th>
<th>3 Meeting</th>
<th>4 Exceeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>A community resource is</td>
<td>Does not identify a community resource</td>
<td>identifies a resource but does not describe its importance to the community, why it's disappearing, or how the disappearance affects the community</td>
<td>identifies a resource describes its importance and gives reasons for how it affects the community does not give evidence to support claims</td>
<td>identifies a resource describes its importance and gives reasons for how it affects the community gives evidence to support claims</td>
<td>3 AND Identifies counter claims addressing why the owners of the resource decided to end access to it (ex. school officials could no longer afford to keep the pool open)</td>
</tr>
<tr>
<td>synthesized understanding</td>
<td>does not identify or describe acts of civic participation</td>
<td>identifies 1-2 civic participation actions but does not elaborate further</td>
<td>identifies and describes 2-3 civic participation types describes why they would be useful</td>
<td>identifies and describes 2-3 civic participation types describes why they would be useful compare to another scenario that used the same civic participation type</td>
<td>3 AND Identifies and describes more than 3 civic participation types Identifies and describes civic participation types not discussed in class/in the handout</td>
</tr>
<tr>
<td>A plan for future action is established</td>
<td>no work shown</td>
<td>restates information from part 2 without further elaboration</td>
<td>describes 2 or more doable acts that are general rather than specific to the student’s community</td>
<td>Describes two to three doable acts that are specific to the student’s community</td>
<td>3 AND initiates one or more of those doable acts during the community presentation</td>
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</tr>
<tr>
<td><strong>Conceptual</strong></td>
<td>No work shown</td>
<td>Work shown</td>
<td>Work shown</td>
<td>Work shown</td>
<td>Work shown</td>
</tr>
<tr>
<td><strong>Understanding</strong></td>
<td></td>
<td>demonstrates that you have some idea of what the problem/activity is asking, but the connection is unclear</td>
<td>demonstrates that you have an idea of what the problem/activity is asking and loosely connects</td>
<td>demonstrates that you have an idea of what the problem is asking <em>and</em> there is a clear connection</td>
<td>demonstrates that you have a good idea of what the problem is asking <em>and</em> a clear connection with a justification</td>
</tr>
<tr>
<td><strong>Procedural</strong></td>
<td>No work shown</td>
<td>Incorrect use of strategy, but obvious effort shown</td>
<td>Almost correct use of strategy</td>
<td>Correct use of strategy, but the answer may not be the best answer</td>
<td>Correct use of strategy <em>and</em> the best answer presented</td>
</tr>
<tr>
<td><strong>Fluency</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Problem</strong></td>
<td>No work shown</td>
<td>Some work is shown, but is not obviously connected to the answer, <em>and</em> the answer is incomplete</td>
<td>Some work is shown <em>and</em> connects to the answer given, but the answer is incomplete —Or— An almost complete answer is given with little work shown</td>
<td>Ample work is shown <em>and</em> connects to the answer given, but the answer may not be complete —Or— A complete answer is given with little work shown</td>
<td>All necessary work is shown <em>and</em> clearly connects to the complete answer</td>
</tr>
<tr>
<td><strong>Solving</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Reasoning</strong></td>
<td>No work shown</td>
<td>Steps in the work shown are difficult to follow</td>
<td>Steps in the work shown can be followed with a close eye but do not clearly lead to the answer given</td>
<td>Steps in the work shown follow from one to the next, but may not clearly lead to the answer</td>
<td>Steps in the work shown clearly follow from one to the next <em>and</em> lead to the answer</td>
</tr>
</tbody>
</table>
Statistical Validity Task Card

Your Task:
As a student at Shelton High School, Kasson wanted to know how many students felt that the pool being closed was unfair, but he knew he could not ask every single classmate. He decided to take a sample of the first twenty people he saw Tuesday. He finds that 17 of the students felt it is unfair, 2 didn’t really care, and 1 said they understood why it had to close and thought it was fair. Kasson concludes from their report that the school as a whole feels it is unfair for the pool to be closed. Is Kasson’s data a valid representation of the school’s feelings about the pool? Justify your answer.

Product: A poster with all of your group member’s names, date, and answers to the following questions:
- What is Kasson’s sample? What is the population?
- Can you identify any problems with choosing the sample in the way that Kasson did?
- Is Kasson’s data a valid representation of the school? Why?

Young Adults In America Reading Guide

What you will read: Young Adults in America by Tom Snyder, National Center for Educational Statistics. This is a report presentation on statistics gathered about young adults (18-24 year olds) in America. Read all of the slides with a critical eye on the conclusions you may draw from the graphics, and the conclusions they present. Answer the following questions while you read:

- On page 4, what happened in 1988?
- Does the chart on page 11 accurately portray a day for you?
- What conclusions do you draw from this report?
- What conclusions does the author draw?
- What ways are data represented here?
Student Resources

Social Studies:
Privatization of resources and eminent domain:
http://www.salon.com/2014/07/14/nestle_is_bottling_water_straight_from_the_heart_of_californias_drought/
This article is for work that students will be doing during week one to address tensions between public and private ownership. With this article students will examine the effects of privatization of natural resources and one possible effect of limiting access to resources through that privatization. Students will use these articles to construct claims about the validity of public needs challenging private ownership
This article is for work that students will be doing during week one to address tensions between public and private ownership. With this article students will investigate a scenario involving eminent domain in which the government attempting to seize privately owned land. Students will use these articles to construct claims about the validity of public needs challenging private ownership

In Class Handouts: https://www.luminpdf.com/viewer/hSCQQgNSrQxNZnFkH
Students will use these handouts on the various days outlined.

ELA:
PBS History Detectives: http://www.pbs.org/opb/historydetectives/technique/historical-research/
This website gives students hints for how to become “mystery detectives” and learn how to conduct proper research inquiries.

Introduction to Research: https://www.library.cornell.edu/research/introduction
This website directs students towards viable ways to begin to think about research, and how to go about conducting research analyses.

Evaluating Online Sources: http://library.columbia.edu/locations/undergraduate/evaluating_web.html
This site gives insight as to how to evaluate online sources and check for legitimate information.

Don’t be Fooled: Use the SMELL Test:
http://www.pbs.org/mediashift/2013/02/dont-be-fooled-use-the-smell-test-to-separate-fact-from-fiction-online038/
This website provides students with an acronym for how to easily check if a website is presenting fact, versus false information.

MLA Formatting and Style Guide: https://owl.english.purdue.edu/owl/resource/747/01/
This website provides a basic style guide as to how to cite sources in-text and in a bibliography.

Math-Statistics:
Data Pit: http://quickfacts.census.gov/qfd/states/53/53045.html
Students will use this bank of data to investigate what real data looks like and how it is represented to the people in the statistics profession.
**Research Representation:**

Students will read this presentation and analyze the types of data representations that are presented to the general public.

**Math-Economics:**

**Math is Fun- Matrices:** [http://www.mathsisfun.com/algebra/matrix-introduction.html](http://www.mathsisfun.com/algebra/matrix-introduction.html)

An introduction to matrix mathematics. Students will have this information available online or as a printout of basic matrix operations.

**Economics on-line- Game Theory:**
[http://www.economicsonline.co.uk/Business_economics/Prisoner%27s_dilemma.html](http://www.economicsonline.co.uk/Business_economics/Prisoner%27s_dilemma.html)

This site looks at how a game theory example uses a payout matrix.


This textbook covers matrix mathematics including addition, subtraction, multiplication. Additional topics include identities, inverses and determinants.
Teacher Resources

**Social Studies:**
http://a57.foxnews.com/global.fncstatic.com/static/managed/img/fn2/feeds/Associated%20Press/2013/05/27/0/0/d5ea3b66c1e21111330f6a7067007def.jpg
This link provides the image of protesters performing a sit-in at the woolworth's lunch counter. It provides the resources for a student text analysis performed during week 2.

**ELA:**
**How to Write a Business Letter:**
This website provides basic formatting and content information on how to write business letters.

**Letter Writing Guide:**
This online letter writing guide provides formats and examples of different types of letters and what they are used for.
http://www.letterwritingguide.com/

**Introduction to Research:**
This introduction to research features how-to guides when beginning and conducting research and how to formulate a research question.
https://www.library.cornell.edu/research/introduction

**MLA Formatting and Style Guide:**
This website provides a basic style guide as to how to cite sources in-text and in a bibliography.
https://owl.english.purdue.edu/owl/resource/747/01/

**Evaluating Online Sources:**
This website gives information as to how to detect “bogus” information from real sources.
http://library.columbia.edu/locations/undergraduate/evaluating_web.html

**Math-Economics:**
**Several systems and economic problems using matrices:**

**The input-output model:**

**Math-Statistics:**
**Statistics Textbook:** http://onlinestatbook.com/2/index.html
This statistics textbook will act as supplementary material for me to access statistics standards to structure lessons for students.
**Auxiliary Items**

**Group Norms/Roles**

**Meeting Roles:**
Usage of Complex Instruction model for group work roles
- Facilitator: initiates discussion/guides group through tasks
- Resource Monitor: recorder of minutes
- Product Monitor: note taker/recorder of work
- Equity Monitor: combined with facilitator if only three are at the meeting / task manager

Rotation for assignment of roles: Role tasks will be guided by norms used in classroom group work (role cards). Additional responsibilities will be clarified as they arise. The rotation will be guided by the following: Facilitator→ Resource Manager→ Equity Monitor→ Product Monitor→ Facilitator. As more individual work arose we have de-emphasized the use of group roles, allowing us to all be product monitors as well as having anyone who is comfortable with it write minutes.

**Individual Responsibilities:**
- To be determined during group meetings. Additional roles will be expanded as the workload presents itself
- Preview the work to be done for the group meeting and bring up any questions before we begin with the day’s work

**Interpersonal Commitments:**
- Give everyone space to speak and not to speak
- Don't interrupt
- Timeliness in completion of work and readiness to work upon arrival at meetings
- Everyone contributes

**Meeting procedures:**
- Begin by clarifying/agreeing to the day's tasks and how individuals' roles relate to those tasks
- Work through tasks for each day
- Focus on task at hand, write down questions as they arise that do not pertain directly to task at hand. Announce that there is a question, the group will then make space for questions to be addressed after completion of the initial task.
- Decide on work to be completed outside of the meetings and who is responsible for completion of which tasks. (equity monitor)
- Revisit group agreement and record revisions
- After the group meeting is over create a list to share of what we will focus on next time and what to have done.
Meeting Minutes

March 30, 2015
1:30pm TESC Library
Present: Max, Kaitlyn, Ron (minutes)
Absent: Ana-Claudia returning from Germany

Max: volunteers to write the group norm document
Ron: group roles from complex instruction
Max: randomized group roles, but assigned project roles
I think we later agreed to rotate the group meeting roles instead of randomizing them.

Kaitlyn: differences in group work roles, what we want to get done today
Kaitlyn: give everyone a space to speak and not speak, don't interrupt

Max: everyone contributes, what sorts of discussions we bring to the meetings
Kaitlyn: suggestion… writing down unrelated questions to reduce tangential discussions
Ron: agrees
Max: suggestion… individual roles will expand as the workload increases
Ron: there are modifications from the evergreen roles (as opposed to the featherstone roles)

Group: Facilitator and Equity Monitor combined if three, Resource Monitor takes minutes,
Product Monitor produces turn-ins.
Max: Has anyone set-up a google docs, NO, well we have made it so, on Google Drive.
Isn't that what was said? But the group norms are on Google Docs, not google drive? Was there an issue with Google Drive?

Max: Additional work, standards to focus on
Kaitlyn: has some
Ron: none
Kaitlyn: suggest we pay attention to the ecology issue on page 1 of interdisciplinary
curriculum unit plan, (i) environmentally sustainable...
Ron: connections to towns in deforestation situations of similar towns around the world
Max: economy, comparisons to national average
Kaitlyn: logging industry, Simpson,....
Max: standards: economics 2.1.1 2.4.1, social studies (none specific)
Kaitlyn: standards: math all of smp’s, 7-rp ratios and proportions, n-q number and quantity,
8-ced, f-le exponential, g-gmd geometric measurement and dimensions, s-id statistics,
(non-numbered standards are for high school)
Ron: suggestion… non standards math like game theory and topology… best to back-burner
these ideas until further thought
Max: clarify themes
Kaitlyn: exploring resources
Ron: attempts to understand looking at individual resources: timber, shellfish...
Max: best to stick to the big ideas
Ron: agrees
Kaitlyn: next meeting?
All: Friday, sometime.
Max: will turn in the group norms from google drive at 10pm tonight (Monday). We can all look
and add before then.
April 3, 2015  
Present: Max, Ron, Kaitlyn, Ana  

Agenda Items and Main Points:  
10:07 AM: Going over individual roles  
Resource monitor: (Ana) takes minutes  
Equity monitor: (Max) make sure everyone is contributing, facilitate direction of tasks for outside the groups, meetings  
Product monitor: (Kaitlyn) type up assignments, ensure everyone’s contribution is recorded  
Facilitator: (Ron) initiates discussion/ guides group through tasks  
10:21 AM: Max and Ron changed roles so now Ron is equity monitor and Max is facilitator.  
10:22 AM: Max reads out the nature of the assignment; everyone pulls out the necessary materials (seminar preparation, edTPA, etc.)  
10:27 AM: We deliberate on what to do  
Kaitlyn: The value of college  
Max: Resource distribution & allocation  
Ron: Making college decisions to include vocational schools/military; resource of trees, timber industry, forest management; impact of big box stores; impact of prisons on rural communities; conservation & how to construct a viable economy that includes ecological phenomena  
Ana: Hang-outs for students, what sorts of buildings are going in-going out of Shelton  
Ron suggests our activity be a game that students make (video/board game)  
10:44 AM: We have decided on a title (ta-da!): Resource Politics in Shelton  
Minor points on the topic:  
What does this have to do with the environment?  
- Methods of distribution  
- Resources in the community  
- Access to resources  
10:46 AM: Took a break  
11:01 AM: Returned from break  
11:02 AM: Division of Work- Each individual writes out a section of the assignment?  
11:12 AM: Final project: Students will present impressions about resource availability, resource politics in Shelton  
11:15 AM: We discuss Noddings, Yosso, and Greenwood  
We each share our 3-4 principles/e-mail them to Kaitlyn  
Our ideas are combined in the document  
Idea with place, how it shapes us (individual & universal)  
Global conversation, diversity  
11:32 AM: Begin work on question #3  
Finding criteria on syllabus, discussion with the group  
We search for ideas & share them with Kaitlyn  
Debating whether to punctuate the document  
11:46 AM: Document is finished. We all agree it is acceptable & make final adjustments.  
11:49 AM: Assignment is submitted to Canvas.  
11:51 AM: Collective and self-assessment: Group Norms  
Changes in meeting notes:  
- Changed rotation schedule in roles (facilitator -> resource monitor -> equity monitor -> product monitor)
- Switched Revisit Group Agreements to the first task
- Revisit Group Agreements included in the last task of the day
- Concerns/issues: Support (e-mail) saying to have something for next time

11:54 AM: For next week: Individual work, reading assignments
Start looking for resources, revisit standards

April 9, 2015
12:55pm meeting begins
Attendance: Kaitlyn (Facilitator), Max (Product), Ana (Equity), Ron (Resources, Minutes)

Roles and Norms reviewed:
We added that Equity Monitor may change with another if both agree.
Rotation is based on initial assignment
Goals:
Examine guiding questions, write the introduction, look for hooks.
Guiding Questions examined:
Guiding questions placed Introduction overview and UBD stage one document.
Questions raised:
Stage one or introduction? What is the hook? What is the rational? Why is it important? Why is it important to students?
What is it that puts students into an engaged understanding of the concepts private and public? There is some connections between private and public community, specifically that private property is a community resource. Max writes a statement in the introduction overview, concepts and rationale for looking at related aims. We discussed the justifications for this position and came to a consensus. Restating the introductory one page overview.
Writing the Introduction:
We read the assignment from the group document and the Talking Trash unit introduction. There were details in the example that we can add to the introduction for our own disciplinary area.
Including the standards:
Kaitlyn copied over the environmental standard into the document, stage one.
Max copied Social Studies standards.
Ana, the same for English Language Arts.
Ron asked Kaitlyn to enter the matrices and practices standards into the doc.
Understanding by design looking at how to decode standards.
There is some concern that we have too many math standards.
We can trim what we do not use at some time when we write daily lesson plans.
Enduring understandings and essential questions:
Ana expressed concern about writing questions to the standards. We will not do that.
Our focus again is what is private property and public domain. Examples:
- How do the needs of community interact with individual ownership?
- The importance of having space to call one’s own?
- What is a good model?
- How should we interpret and make sense of data?
- What are the different views of private and public?

Looking at the six facets of understanding.
Thinking about social justice issues.
Key Knowledge and Skills to be Acquired:
What is knowledge and what are skills?
We read from page 59 the extended description of skills.
A consensus was reached on the knowledge and skills that will be attended.

Plans Next Week:
We will need to read the language demand document.
We will meet next Friday, April 17, at 10:00am in the library.
Bring some ideas for the... ?
Each subjects
Talk more on final assessments
Kaitlyn’s message says:
For Friday April 17 bring a brainstorm of the final assessment piece, read the language demands document, attend to the language demands for your content area, bring UbD, CASL, and computer access. Do a look through of the intro what we have so far and add anything that could be helpful.

Group Roles and Norms:
Expand equity monitor to include observing tasks described in Groupwork text.
2:45pm Meeting adjourns

April 17, 2015
10:00 am meeting begins
Attendance: Kaitlyn (Resources, Minutes), Max (Facilitator), Ron (Product, Equity)

10:45 Ana enters google doc from home
Goals:
Finishing the intro/stage 1 and Analyzing language demands
Clarifying language demands:
Members shared thoughts on the language demands graphic organizer and how the pieces were interpreted and arranged.
Max and Kaitlyn typing up language demands for their content areas, Ron looking through content standards to see what fits “text” vs “task”
Ron asks how exact a translation of the standards the “texts” need to be.
Ana adds her content area pieces to the language demands organizer
We had a conversion on the intents and meanings of the discourse, syntax and vocabulary boxes in the Language Demands graphic organizer.
Ron said they correspond to the reading concepts of pragmatics, syntax and semantics.
Max quoted from ascd.org added discourse demands are thinking skills, message organization. Syntax are sentence and grammar skills. Lexical demands are the use vocabulary, figurative language.
Authors Note:
Max has extensively added to Ron’s initial statements in the authors’ note.
Kaitlyn writes some on the third entry.
Ana works on the ELA language demands some more.
We went through the Design Standards checklist for Stage 1.
Some editing of the author note.
Revisiting Roles and Norms:
Max: Given the type of work that we were doing we established the tasks and each had a looser format to our roles. We de-emphasized the role of facilitator led to a more healthy function of the group.
Kaitlyn: I agree in that the emphasis on strict norms and roles holds us back, me especially because I tend to flit around and struggle focusing on one thing specifically.
Ron: I feel that I am confident in cohorts who can really generate material and I have to step back and take it in and accept it.
Max: What do you see as something that might help create a more productive space for you, Ron?
Ron: More prep work and anticipation of what we will be doing in the group meetings, more concrete. The workload is pressure so knowing what to do would be helpful.
Max: We may have made a mistake by jumping into this task before really understanding what the task was asking. So one suggestion may be previewing work before we come in and bringing in questions we can answer before beginning.

April 24, 2015
10:15pm TESC Library
Present: Max, Kaitlyn, Ron (minutes)
Absent: Ana-Claudia at the social justice conference

Reviewed learning from Tuesday class session

Check-in:
Many in the cohort are ill. Kaitlyn hasn’t eaten in two days. Max is getting better, still has stomach pains. Ron is fine. Ana is social justicing.

Goal for today’s meetings:
Establish metacognition components, language demands, assessment methods for our design.
Kaitlyn is writing stuff for cross disciplinary area of the WHERETO.
Changed the structure of UbD stage 1-3 document so that it meets the criteria of draft to be turned in on Week 5.
We acknowledge that we are focusing more on the retraction of community centers in Shelton.
Examples are the swimming pool at the high school, the community center turned into a transit center and the skateboard park.
We see we have not been asked to create a schedule of lessons that exists in Talking Trash.
Messaging Ana about individual tasks due Monday.

Context for Learning:
A heads-up that there is a context for learning assignment to the design. We will write on how to individualize our teaching. We will provide accommodations for students with special needs, reading IEPs, autism, migraines, ELLs. Not all needs are specified.

Scaffolding the metacognition and language demands:
Was that talked about anywhere?
Determine what they are and make plans to address them using the McKenna Robinson text.
Language demands we transfer the information collected in the “graphic organizer for analysis of language demands” into the draft to be turned in week 5.
Metacognition examples: self-assessments, looking through the rubrics

Conversation on ecology aspect of the curriculum unit:
Depending on student choices. They may also consider social sustainability issues, also part of the standards.

Description of individual assignments posted on facebook:
Individually we have decided to work on the following to make sure to have done by Monday 10pm: WHERETO pieces that pertain to individual content area, Assessment plan pieces that pertain to content area, and 1 fully formed Lesson plan for your content area.

Reflection on norms and concluding thoughts:
Group roles have become de-emphasized. All present found that to be acceptable. Tuesday we will talk to Ana about when we will be meeting next.
The meeting adjourns at 11:55am.

May 3, 2015
Present: Kaitlyn, Ron (minutes), Max, Ana
Start 10:10am
Caffe Vita, Olympia

We went over a checklist of things to do:
Kaitlyn suggested putting the peer assessments from last Tuesday expected as part of our document.
It was noted that we have a peer-to-peer assessment that is now on google doc.
We need to get the calendar out of the way.
We reviewed how complete the individual lesson plans are.
Concerning the tentative lesson calendar:
Max has his written for weeks 2, 3, and 4
Ana and Kaitlyn has all hers.
Ron will have his done this afternoon.
Kaitlyn formated the calendar to accommodate what is expected.
We resolved a question on multi-day lesson plans by concluding that we should have single-day lesson plans only in our set of five, but a few multi-day plans in the calendar is fine for now.
Max: shared his week 1 introduction, day 3 and 4 to the group.
What are the ideas for days one and two the launch?
Max: reads the article on pool.
Kaitlyn: says that's awesome.

Ron and Kaitlyn discussed the nature of math instruction as it can move in and away from the "real" world. This is acceptable given the nature of the discipline.
Max constructed a resource list in google docs.
These would be student-teacher resources that each of us will add.
Shelton demographic statistical data found and placed into the document.
Also, students with reading IEP’s (no details beyond this) and those who need oral instructions.
Ana can put her instructional materials in the document.
Kaitlyn is formatting lesson plan for day 1 and 2.
We will be setting up the launch.
Resolve what the peer feedback on collaboration
Lesson plans for the first two days, so far an empty template
Kaitlyn describes the group activity with yarn and interconnectedness thanks to James B.’s description from seminar.
The meeting adjourns at 11:51.
Peer-Assessments of Unit

Feedback from Brian Kinsella
1. Yes. I wonder about whether your learning targets should be more specialized to your curriculum/place. In some places, the standards are basically copied over as learning targets. All that specificity is in the assessment plan. This might just be semantic – I suppose there is no reason why a learning target and a standard can’t be the same. But don’t you want learning targets for the day written on the board – so shouldn’t they be more “kid-friendly?” How could you translate them into more accessible language?
2. I’m having difficulty telling whether planned assessments fall under selected response, written response, performance assessment, or personal communication. Either in stage 2 or in the assessment plan.
3. I’d like to see some kind of sequencing – a calendar or chronology of events, so I can see how the content areas build on each other throughout the unit. This is partially covered by the “W” in the WHERETO, but I’d like to see a learning calendar “like in Talking Trash.”
4. About the hook. I like the mystery aspect of “what happened to the local pool?” I wonder whether all the students are going to have strong feelings about the pool or not. The idea of “a space of one’s own…” will there be space for students to explore these theme in a context where it might not necessarily relate to Shelton’s community resources? What about people who just moved to the area, or people who don’t like Shelton and want to leave?

Feedback from Christian Loeffler
1. Everything seems to align between the goals, objectives and standards. I do wonder if you feel you be able to deeply examine all of your standards? I also wonder how important that would be or even if it is?
2. a. From how I am understanding the math lingo, it looks like everything matches up. You are looking at what you claim to be looking at and I see the connections to the targets and goals.
b. Exit tickets seem to work. I do not have the assessment book with the chart so I would double check that, but it seems like they would work to me. The only thought I would add or ask would be how conversations between students or between student and teacher might be included in your assessment.
c. I think so but I don’t have the book on me.
Summative assessment: I am a little confused about how it will look in the end. it sounds like a presentation of various ideas and positions supported by evidence. I am wondering how much the presentation itself will be supported and worked on during lessons.
Feedback from Josh Bolton

1. Yes, it seems like the major concept, guiding question etc. are aligning. The mathematics standards are a little hard for me to connect, but is likely due to lack of understanding of how that math connects to the unifying concept.

2. a. In looking over the assessments, I see a lot of what you’re assessing, but not how. How are you finding these things out?
b. Are the pre-assessments also formative? How are they designed to elicit student growth?

Summative conclusions:

- Can’t find connections with matrices
- Under “Connection to Sustainability”, include connections to humans, cities, etc.
- More specifically label maths standards
- How is letter writing/explanatory text going to be assessed?
- Are all language needs a function of primary/secondary language? What about dyslexia, lack of background knowledge, etc.? Refine more of the accommodations.
- Is completion of project the final goal? Is progress geared toward that? Or is progress mental growth?

Feedback from Erin Acker:

- The description of the budget workshops seems to be missing a larger rationale in how they connect.
- the assessment seems to align well with the standards and you desired understandings, the unit outline/calendar really helps illustrate how everything ties together
- It looks like some more work needs to be done linking the parts of the final assessment
- exit tickets work well
### Self-Assessment of Unit

#### Checklist of Essential Components

<table>
<thead>
<tr>
<th>✓+, ✓, ✓, missing</th>
<th>Page Numbers</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓+</td>
<td>3</td>
<td>Introduction to Unit that includes all elements from curriculum project description</td>
</tr>
<tr>
<td>✓+</td>
<td>3, 77</td>
<td>Unit reflects a theme or big idea important to the community</td>
</tr>
<tr>
<td>✓+</td>
<td>3</td>
<td>Unit incorporates essential questions designed to hook the learner</td>
</tr>
<tr>
<td>✓</td>
<td>6</td>
<td>Description of how unit attends to community cultural wealth</td>
</tr>
<tr>
<td>✓</td>
<td>76-77</td>
<td>Description of the anticipated characteristics of students with whom you will be working</td>
</tr>
<tr>
<td>✓+</td>
<td>3-8</td>
<td>UBD unit overview for stages 1-3</td>
</tr>
<tr>
<td>✓</td>
<td>77</td>
<td>Web or statement of examples of students' likely pre-existing concepts about what you plan to explore informed by student interviews and/or pedagogical literature</td>
</tr>
<tr>
<td>✓</td>
<td>18</td>
<td>A written plan for collaborating with families and communities</td>
</tr>
<tr>
<td>✓</td>
<td>28, 39, 54, 66</td>
<td>Plan of instructional practices to manage the classroom</td>
</tr>
<tr>
<td>✓+</td>
<td>69-75</td>
<td>Assessment plan and evaluation criteria for formative and summative assessments, including a final product/project that is presented to an authentic audience</td>
</tr>
<tr>
<td>✓</td>
<td>67</td>
<td>A plan for engaging student metacognition that attends to 3 elements of “student voice”</td>
</tr>
<tr>
<td>✓</td>
<td>67</td>
<td>Identification of Language Demand to be explicitly taught</td>
</tr>
<tr>
<td>✓+</td>
<td>19-21</td>
<td>Evidence of plan/activity designed to build community within the classroom</td>
</tr>
<tr>
<td></td>
<td>19-66</td>
<td>Daily fully scripted lesson plans. These lessons should provide evidence of challenging students existing schemata and developing critical thinking skills</td>
</tr>
<tr>
<td>---</td>
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<td>-----------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>✓</td>
<td>69-75</td>
<td>Examples of daily formative, student voice, and one summative assessment, including a scoring rubric</td>
</tr>
<tr>
<td>✓+</td>
<td>84-85</td>
<td>Annotated list of 5-7 sources for content knowledge that students will engage in the unit</td>
</tr>
<tr>
<td>✓+</td>
<td>86</td>
<td>Relevant annotated set of 7-10 supplementary resources to help inform teacher</td>
</tr>
</tbody>
</table>

**Sample lessons that illustrate attention to literacy, language demand and individual learning needs**

| ✓ | 29-31  
   | 42-43  
   | 55-57  | Sample of instructional strategies used for Language Demand                                                                        |
| ✓ | 31-33  
   | 40-43  
   | 58-60  | Sample of reading lesson appropriate to grade level and subject requirements                                                      |
| ✓ | 37-39  
   | 52-54  
   | 62-63  | Sample of writing lesson appropriate to your grade level and subject                                                              |
| ✓ | 31-33  
   | 46-48  
   | 55-57  | Sample of lesson that provides accommodations for students with different skill levels and/or particular special needs             |
| ✓ | 31-33  
   | 40-43  
   | 58-60  | Sample of lesson that builds in strategies for students who are English Language Learners                                         |
Peer Feedback to Collaborators

Kaitlyn to group
Max- Thank you for being a wonderful equity monitor throughout our group work process, making sure that everyone’s voices were heard, and actively listening. You supported my learning through keeping us on track toward the end goal and challenging my ideas when I was being overly anxious. In the future I would recommend asking more questions whenever you have them because whenever you asked a question it seemed that we were all on the same level of uncertainty, and having these questions come up is important for the group to address.

Ron- Thank you for writing the minutes so much, especially when I was struggling a couple of weeks ago and you helped me keep the minutes on track. You supported my learning through challenging my mathematical ideas and asking questions to push my thinking. In the future I would recommend keeping a planner/journal of activities to keep individual projects organized in order to keep a strict timeline for yourself.

Ana- Thank you for being such a wonderful hostess, as well as always brightening the mood of the group when we were gloomy because it was often gloomy. You supported my learning through asking questions and making suggestions whenever you thought of them. These questions and suggestions are what drive new thought and move the group forward. In the future I would recommend having more confidence in your ideas and suggestions because they are always worthy and deserve to be heard.

Max to group
Ron- Your work on integrating mathematical ideas into our project served to help me think of the work we were doing in new ways. You embodied the spirit of equity monitor whether you were assigned that role or not, always checking in to see where everybody was and providing space for us to address our own thinking and confusion. You made group work useful, insightful and engaging. When you had questions they were always questions and concerns that helped us all in our thinking. I always want to hear more from you, because what you say is always worth hearing and attending to.

Ana- I appreciated your vision and ideas when approaching this project, your genuine interest and care for the community that we work in lead you to brainstorm the guiding idea for our Unit. Your questions for the group always proved very valuable leading me to expand my own thinking and return to areas that I now wanted to rethink and expand upon. In the future I would urge you to speak up as soon as you have an idea, because your contributions were always thought provoking and helpful.

Kaitlyn- I appreciated your dedication to this project and to all of our learning. The work you put in was astounding, especially in regards to your conception of this project as a whole, you kept track of all of the parts and could easily visualize how they conceptually fit together. You helping me think through issues I was having when I struggled and proved an invaluable resource to us all. In the future I would urge you to delegate more, I often saw you taking the initiative to work in new areas at a disproportionately greater amount of work than you asked of others.
Ron to group
Ana - I really appreciate your thoughtfulness for details on this project. Your questions on the things I was doing triggered some positive reflection and denoted a sincere curiosity and engagement with our group effort. I had hoped to hear more of your ideas because the ones we did were quite useful. You had a welcoming disposition and you were generous in noticing progress, even the most incidental of movements.

Kaitlyn - I am in awe of your organizational skills and ceaseless work ethic. I was concerned at times, you exhibited a level of stress that would be far from beneficial in the long run. Nevertheless, I admire how well you take the program’s instruction and put it into practice in all situations. Your assigning competence was effective in getting me through to some semblance of completion on this project.

Max- Thank you for bringing passion and meaning to a project that was shrouded by scaffolded constructs and designing intricacies. I appreciate how you shared your understanding of the goals before us and what approaches to take to get there. Your attention is a gift and I felt honored when I earned it.

What awesome teachers you will be!

Ana to group
Kaitlyn- Good grief, Kaitlyn, I was amazed by all the work and effort you put into realizing our unit project! Thank you immensely for keeping us on-target and for helping us to get organized and get going with this. I very much appreciated your drive, ingenuity, discipline, and above all your vision for seeing this project through. You never cease to amaze me with how much work you put into everything you do in the program and the results really show and shine. I hope that you also put just as much effort into taking care of yourself and of your own needs, because as amazing as our work ethics can be, we are still trapped inside bodies that need nourishment and rest. Do not hesitate to delegate more work to others.

Max- Thank you, Maxwell, for all of your encouragement and dedication that you have put into this project! I appreciated how you would often re-direct the group when we got too distracted, and did an excellent job at keeping us on-task. You asked excellent questions that helped to drive this project forward and deepen our levels of understanding. I appreciated your ideas and suggestions and felt that they added greatly to our knowledge, especially with regards to how the Shelton community could (in theory) band together and get back the pool. You gave the project more of a social justice edge. Ask more questions for clarification when you have concerns, and likewise seek compromises when listening to others’ ideas.

Ron- Ron, thank you for your mathematical knowledge and expertise. As a person like myself who does not understand matrices very well, I felt you did an excellent job in explaining the mathematical relationships between maths and the world at large, and how it could be applied in the real world. Thank you for keeping track of the minutes and for doing an excellent job documenting our progress. You also brought up interesting concerns and insights during the meetings that helped us to refine and shape this project. I would recommend keeping a planner or some form of documentation to keep track of what items have already been completed, what items still need to be completed, and when and how to adhere to deadlines.