

PROJECT OVERVIEW

Name of Project:	Olympic Challenges: It's not all fun and games.	Duration: 9/30-10/28
Subject/Course: Science, ELA, SS, Math	Teacher(s): O'Boyle, Szegda, Hinken, Coleman, Mastenbrook	Grade Level: 7
Other subject areas to be included, if any:	Optional: Tech, Art or music	
Project Idea Summary of the issue, challenge, investigation, scenario, or problem:	Your country has chosen you to be part of a team to propose a plan & design for an Olympic zone for the next winter or summer olympics.	
Driving Question	How can you design a zone that addresses environmental issues so as to minimize negative impact, while recognizing the cultural practices of the chosen location?	
Content and Skills Standards to be addressed:	<p>Science</p> <p>E.ES.07.42 Describe the origins of pollution in the atmosphere, geosphere, and hydrosphere, (car exhaust, industrial emissions, acid rain, and natural sources), and how pollution impacts habitats, climatic change, threatens or endangers species.</p> <p>Social Studies</p> <p>G5.1 Humans and the Environment <i>Describe how human actions modify the environment.</i></p> <p>7 – G5.1.1 Describe the environmental effects of human action on the atmosphere (air), biosphere (people, animals, and plants), lithosphere (soil), and hydrosphere (water) (e.g., desertification in the Sahel Region of North Africa, deforestation in the Congo Basin, air pollution in urban center, and chemical spills in European Rivers).</p> <p>G2.2 Human Characteristics of Place <i>Describe the human characteristics of places</i></p> <p>7 – G2.2.1 Describe the human characteristics of the region under study (including languages, religion, economic system, governmental system, cultural traditions).</p> <p>Mathematics</p> <p>7. G.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale</p> <p>7. G.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.</p> <p>7. G.6 Solve real-world and mathematical problems involving area, volume (<i>optional but not assessed</i>) and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.</p>	

	<p>English</p> <p>CCSS. RI.7.2 Reading Standards for Informational Text. Key ideas and details Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text.</p> <p>CCSS. W.7.2 Writing Standards. Text Types and Purposes Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.</p> <p>a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.</p> <p>b. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.</p> <p>c. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.</p> <p>d. Use precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>e. Establish and maintain a formal style.</p> <p>f. Provide a concluding statement or section that follows from and supports the information or explanation presented.</p>
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		T+A	E			T+A	E
21st Century Skills to be explicitly <i>taught and assessed</i> (T+A) or that will be <i>encouraged</i> (E) by project work, but not taught or assessed:	Collaboration	SS, Math		Creativity		SS, Math	
	Presentation	SS					
	Critical Thinking:	All					

			Presentation Audience:	
Culminating Products and Performances	Group:	Group digital and/or mixed media presentation.	Class:	x
			School:	
			Community:	x
	Individual:	RAFT to EPA Blueprint using metric and standard US measurements scale. Powerpoint on individual carbon footprint	Experts:	x
			Web:	x
			Other:	

PROJECT OVERVIEW

Entry event to launch inquiry, engage students:	<p>Part 1: Video of Beijing and Rio de Janeiro Venues & their significance with examples of pollution and environmental effects as a whole 7th grade in cafetorium. Staff skit about 2020. Jen will not rap.</p> <p>Part 2: In Social Studies, Need to Know Lists, Project teams announced, discussions of expectations for teamwork, 1st team meeting, team building activity, contract, initial task list.</p>
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Assessments	Formative Assessments (During Project)	Quizzes/Tests	X	Practice Presentations	X
		Journal/Learning Log	X	Notes	X
		Preliminary Plans/Outlines/Prototypes	X	Checklists	X
		Rough Drafts	X	Concept Maps	X
		Online Tests/Exams	X	Collaboration feedback	X
	Summative Assessments (End of Project)	Written Product(s), with rubric: RAFT to EPA	X	Other Product(s) or Performance(s), with rubric: Blueprint, Digital Presentation	X
		Oral Presentation, with rubric	X	Peer Evaluation	X
		Multiple Choice/Short Answer Test	X	Self-Evaluation	X
		Essay Test		Other:	

Resources Needed	On-site people, facilities:	CAT Lab & Mini Lab, 7 th grade staff
	Equipment:	Laptops, desktops, projector, video cameras, document camera
	Materials:	11 X 17 paper, graph paper, calculators, non-fiction content material, video to show Olympic structures being built
	Community resources:	Jeff Auch – conservation Wayne Seimers – travel Holly Hughes – political issues John French – City Manager work with group from Finland? Mark Grimmette – luge Olympian

		Arland Cederquist – construction expert Architect YMCA – planning commissioner			
Reflection Methods	(Individual, Group, and/or Whole Class)	Journal/Learning Log	X	Focus Group	X
		Whole-Class Discussion	X	Fishbowl Discussion	
		Survey	X	Other:	

PROJECT TEACHING AND LEARNING GUIDE

Project: Olympic Challenge

Course/Semester: Mathematics

Knowledge and Skills Needed by Students
to successfully complete culminating products and performances, and do well on summative assessments

Scaffolding / Materials / Lessons to be Provided
by the project teacher, other teachers, experts, mentors, community members

I can find the area and perimeter of a triangle & quadrilaterals.



Total Response Questioning: Triangle Area

Mini-lesson on quadrilateral area & perimeter.

Distributed practice: Find area & circumference simple circles, circles converting units, shapes including pieces of circles.

I can find the circumference and area of circle



Mini-lesson on circles

Distributed practice: Find area & circumference simple circles, circles converting units, shapes including pieces of circles.

I can identify the actual length of dimensions using a scale drawing.



Mini-lesson using previous Olympic venue, garden blueprints and estimating scale factor and actual lengths and areas in metric & US dimensions.

I can draw a blueprint using correct scale in metric & us measurements



CAD expert /architect panel & discussion

Blueprint exemplars

PROJECT TEACHING AND LEARNING GUIDE

Project:

Course/Semester: Social Studies

Knowledge and Skills Needed by Students
to successfully complete culminating products and performances, and do well on summative assessments

Scaffolding / Materials / Lessons to be Provided
by the project teacher, other teachers, experts, mentors, community members

Explain and use a variety of maps, globes, and web based geography technology to study a region



Mapping labs with general ed teacher, support on thematic maps from special ed teacher

Use the fundamental themes of geography to describe regions or places on earth.



Direct instruction from general ed teacher, previous examples, video, written, and visual representations
Powerpoint with concepts stored online

Describe the landform features and the climate of the region



Direct instruction from general ed teacher, previous examples, video, written, and visual representations
Powerpoint with concepts stored online

Describe the human characteristics of the region under study



Direct instruction from general ed teacher, previous examples, video, written, and visual representations
Powerpoint with concepts stored online

Describe the environmental effects of building large structures on the Earth



Expert panel and discussion
Examples from past Olympic decisions

Explain how environmental factors would impact location choice



Expert panel and discussion
Examples from past Olympic decisions

Use multimedia tools to create a proposal



Direct instruction and practice in use of multimedia tools

PROJECT TEACHING AND LEARNING GUIDE

Project:

Course/Semester: English

Knowledge and Skills Needed by Students
to successfully complete culminating products and performances, and do well on summative assessments

Scaffolding / Materials / Lessons to be Provided
by the project teacher, other teachers, experts, mentors, community members

I can identify two or more central ideas in a text and discuss the ways that they are developed.



Lessons to teach main idea – chunk the text, five finger to palm, bumper-sticker, synthesize main ideas, sort important facts (repetition, what matters to author, author speaking to you)

I can summarize text using domain-specific language.



Lessons to teach skills for holding on to information – retelling, envisioning, questioning, note taking

Read alouds – model thinking about domain-specific language

Mini-lessons modeling note taking – picture notes (diagram, web, annotated drawing, cartoon, images), outlines, summary, 2-column, timeline

I can write informative text using cause/effect or problem/solution formats.



Model non-fiction text structures

I can develop the topic with relevant facts and examples.

Mini-lessons on organization of cause/effect and problem/solution writing

I can provide a concluding statement that supports the information presented.

Lesson on conclusion statements

PROJECT TEACHING AND LEARNING GUIDE

Project:

Course/Semester: Science

Knowledge and Skills Needed by Students
to successfully complete culminating products and performances, and do well on summative assessments

Scaffolding / Materials / Lessons to be Provided
by the project teacher, other teachers, experts, mentors, community members

I can identify how my choices affect the environment



Direct instruction on carbon footprint and pollution sources
Visual and reading materials videos





PROJECT CALENDAR

Project: Olympic Challenge

Start Date: September 30

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
PROJECT WEEK ONE				
Entry Event Part 1	4 – Entry Event part 2 ENG: Reading nonfiction text SS: Location research Science: Content	5 ENG: Reading nonfiction text SS: Location research Science: Content	6 ENG: Reading nonfiction text SS: Location research Science: Content	7 ENG: Reading nonfiction text SS: Location research Science: Content
PROJECT WEEK TWO				
10 ENG: Read nonfiction text, identify central idea SS: Century 21 skills Science: Research	11 Collaborative Day (MEAP) ENG: Read nonfiction text, identify central idea SS: Century 21 skills Math: preteach skills Science: Research	12 Collaborative Day (MEAP) ENG: Read nonfiction text, identify central idea SS: Century 21 skills Math: preteach skills Science: Research	13 Collaborative Day (MEAP) ENG: Read nonfiction text, identify central idea SS: Century 21 skills Math: preteach skills Science: Research	14 ENG: Read nonfiction text, identify central idea SS: Century 21 skills Math: preteach skills Science: Research
PROJECT WEEK THREE				
17 ENG: Reading nonfiction text	18 ENG: Reading nonfiction text	19 ENG: Reading nonfiction text	20 ENG: Reading nonfiction text	21 ENG: Reading nonfiction text

MATH: Blueprint SS: Project creation Science: Creating Presentation	MATH: Blueprint SS: Project creation Science: Creating Presentation	MATH: Blueprint SS: Project creation Science: Creating Presentation	MATH: Blueprint SS: Project creation Science: Creating Presentation	MATH: Blueprint SS: Project creation Science: Creating Presentation
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Presentations and English RAFT begin on October 24th.

Lesson Design: Careful construction of lessons to remove barriers and provide access for all students.	Checkpoints: Includes
<p>Social Studies: Multimedia presentations: Students will be presented with options for their final products. Direct instruction will be given in the process of using each technology tool. Breakout sessions based on the different tools will be offered. Assistance will be offered in special education rooms.</p>	<ul style="list-style-type: none"> ✓ Multiple ways to represent information ✓ Alternatives to text ✓ Support provided for text comprehension ✓ Flexible technology-based materials, strategies and tools ✓ Multiple ways for students show what they know ✓ Conspicuous supports for learning new strategies ✓ Mechanism for rapid feedback to learners ✓ Active student-centered methods ✓ Choice, Challenge, Novelty ✓ Connected, relevant learning
<p>English: Two choices of written text format: 1. Cause and effect or 2. Problem and solution Show variety of non-fiction text types. Students will be taught different styles of note-taking strategies to choose from to help them hold onto information. Scaffold reading sources. Cross-text discussions to create connections.</p>	
<p>Math: Total Response Questioning(PEAK) of area formulas to help students remember information & connect to emotion & non-verbal ques. Show a variety of blueprint types (garden designs, house designs, stadium design, track design). Choice of blueprint venue/zone to demonstrate understanding of scale, perimeter, area. Blueprint exemplars. Possible use of free blueprint software online.</p>	
<p>Science: Personal Carbon Footprint Different modes of presentation Support from special education</p>	