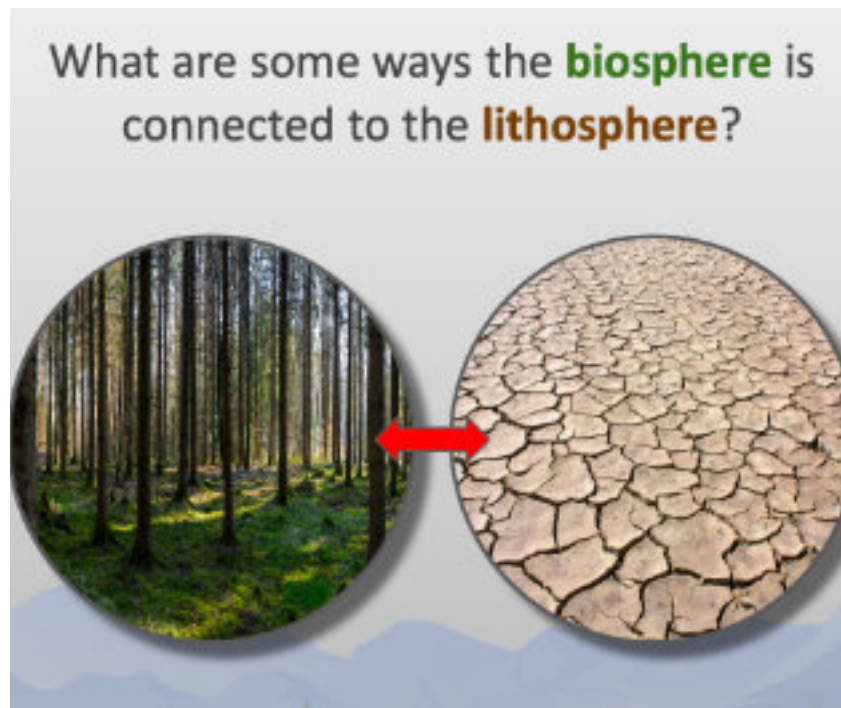




DIGITALLY WRITING NEW HISTORIES

How and why do humans modify physical environments?



1. What are some **POSITIVE** and **NEGATIVE** ways humans have modified the biosphere?
2. What were some limitations of early cities? How did modern cities overcome those limitations?
3. How will cities need to change in order to accommodate population growth? What are some ways cities might accomplish this?

Rebuilding the Biosphere

Designed by:	Aaron Eling - Grand Haven Area Public Schools
Unit Overview:	The purpose of this unit is the integration of an optional STEM inquiry activity for 6th grade GIANTS Unit 3, Lesson 3, Step 2. This extension activity is intended to shift students from the role of passive user to active creator as they research, design, and build a “City of the Future.”
Grade Level(s):	6th
Connection to Primary Source Materials	Primary source material for this activity will initially come from three (3) sources; photos, government data on population and urbanization, and quotes.
Michigan Social Studies Standards Addressed:	<p>6 - G1.2.1 Apply the skills of geographic inquiry (asking geographic questions, acquiring geographic information, organizing geographic information, analyzing geo-graphic information, and answering geographic questions) to analyze a geographic problem or issue.</p> <p>6 - G1.3.2 Explain the different ways in which places are connected and how those connections demonstrate interdependence and accessibility.</p> <p>6 - G2.2.1 Describe the human characteristics of the region under study, including languages, religions, economic system, governmental system, cultural traditions.</p> <p>6 – G5.1.1 Describe examples of how humans have impacted and are continuing to impact the environment in different places as a consequence of population size, resource use, level of consumption, and technology.</p> <p>6 – G5.1.2 Explain how different technologies can have positive and negative impacts on the environment.</p> <p>6 – G5.1.3 Analyze ways in which human-induced changes in the physical environment in one place can cause changes in other places.</p>

C3 Indicators	<p>D1.5.6-8. Determine the kinds of sources that will be helpful in answering compelling and supporting questions, taking into consideration multiple points of views represented in the sources.</p> <p>D2.Geo.1.6-8. Construct maps to represent and explain the spatial patterns of cultural and environmental characteristics.</p> <p>D2.Geo.8.6-8. Analyze how relationships between humans and environments extend or contract spatial patterns of settlement and movement.</p>
Disciplinary Literacy Essential Practices:	<p>Problem-based instruction (1)</p> <ul style="list-style-type: none"> • helps students make sense of problems at different scales and persevere in solving them. (SMP1) • engages students in developing and asking questions, as well as planning inquiries about history, politics, economics, geography, and the social world. • engages students in disciplinary specific (e.g. historical, political, economic, sociological, or geographic) thinking. • helps students make sense of historical, political, economic, and social problems at different scales (e.g. temporal or spatial), and make conjectures about possible solutions. • engages students in asking questions, both practical and theoretical, about the natural and designed world <p>Intentional efforts to build vocabulary and conceptual knowledge (7)</p> <ul style="list-style-type: none"> • presents vocabulary as language in use (as opposed to presenting words in decontextualized lists). • provides repeated opportunities for students to review and use new vocabulary over time, including discussing ways that new vocabulary relate to one another and to students' existing conceptual knowledge.
Other Relevant Standards, Connections to the CCSS, or the Context for the Unit	<p>CCSS Math</p> <p>Solve real-world and mathematical problems involving area, surface area, and volume. (6.G.A)</p>

Compelling Question:		
How and why do humans modify physical environments?		
Supporting Question 1	Supporting Question 2	Supporting Question 3
What are some POSITIVE and NEGATIVE ways humans have modified the biosphere?	What were some limitations of early cities? How did modern cities overcome those limitations?	How will cities need to change in order to accommodate population growth? What are some ways cities might accomplish this?

Inquiry Activity: Rebuilding the Biosphere

Supporting Questions 1-3	<p>What are some POSITIVE and NEGATIVE ways humans have modified the biosphere?</p> <p>What were some limitations of early cities? How did modern cities overcome those limitations?</p> <p>How will cities need to change in order to accommodate population growth? What are some ways cities might accomplish this?</p>
Step 1	<p>This inquiry activity is designed to be taught from start to finish using the Rebuilding the Biosphere slideshow as a guide but could easily be broken down into smaller steps depending on the length of the class period. All videos, websites, handouts, etc. are already embedded within the slideshow for convenience.</p> <p>Slides 1-11:</p> <ul style="list-style-type: none"> • Activating Prior Knowledge - includes the article What is the Biosphere? • Video - Urbanization and the Future of Cities (4:08) • Vocabulary • What You See / What You Don't see - Kolkata, India and Shanghai, China • Population and Urbanization Data - Kolkata, India and Shanghai, China <p>Slides 12-15:</p> <ul style="list-style-type: none"> • Video - City of the Future: Singapore (44:24) • What You See / What You Don't see - Singapore • Population and Urbanization Data - Singapore <p>Slides 16-18:</p> <ul style="list-style-type: none"> • Article - Dream Jobs: Urban Planner • Understanding Dimension • Introduction of Dimension 0 <p>Slides 19-28:</p> <ul style="list-style-type: none"> • Introduction of Dimension 1 (Choose a location) • Understanding GSPEC • Review of Primary and Secondary Sources

	<p>Slide 29:</p> <ul style="list-style-type: none"> • Introduction of Dimension 2 (Area Maps) <p>Slide 30:</p> <ul style="list-style-type: none"> • Introduction of Dimension 3 (TINKERCAD 3D Design) <p>Slide 31:</p> <ul style="list-style-type: none"> • Website Design (Google Sites) <p>Slide 32:</p> <ul style="list-style-type: none"> • Next Steps - prediction / reasoning
Formative Assessment Task:	The most likely formative assessment task would be the successful completion of the GSPEC handout. This is essential information that will guide students/groups as they make decisions during subsequent steps of the inquiry activity.

Summative Assessment	
<p>The most likely summative assessment would be the student-created, interactive website (slide 31), however, the design of the unit allows for an “early exit” depending on time and resources. The creation and presentation of 2D Area Maps (slide 29) could also be used as a summative assessment, as could the creation and presentation of the TINKERCAD 3D Design (slide 30). Since this is not a one-size-fits-all activity, teachers are encouraged to create their own assessment criteria based on the level of instruction and the inventiveness and resourcefulness of their students.</p>	

About the Inquiry Author



Aaron Eling teaches students in 6th grade at White Pines Intermediate School in Grand Haven, MI. He has taught science and social studies for 16 years. His favorite aspect of teaching social studies is when students become brave enough to respectfully question things that don't make sense. He can be contacted at elinga@ghaps.org

Learn More About the Inquiry Here:

A screenshot of a presentation slide titled "Do you Speak the Language of Social Studies?". The slide lists six social studies terms with their definitions. The terms are: Area, City, Population, Region, Urban Area, and Urbanization. The definitions are: Area - a geographic region; City - large settlement with a high population density; Population - the total number of people or organisms in a particular area; Region - an area of land that has common features; Urban Area - the region surrounding a city; Urbanization - the process through which cities grow, and higher percentages of the population comes to live in the city. The slide is displayed in a browser window, and a small video inset shows Aaron Eling speaking.