Create Your Own Civilization

Grade level: 6-7th grade

Our school is departmentalized in the upper grades with each 5th and 6th grade teacher specializing in a few content areas. In the afternoons, I teach social studies while another teacher teaches my students science. Typically our lessons follow a specific timeline set by our district with little discussion or overlap between content areas.

Because our school departmentalizes, it's harder for teachers to make connections across disciplines. Knowing that connections leads to deep thinking, my colleagues discussed how we could adapt the curriculum to better meet the needs of our students. Luckily I work with an amazing team of teachers that are supportive and receptive to trying new approaches.

Justification:
I developed this unit of study as a way to bridge curriculum in 6th grade and engage students in a creative project that parallels content in different areas. Plus the work can easily be differentiated to meet the needs of my students. A project that is a sure fire winner in 6th grade is, Create Your Own Civilization. This is a highly motivating unit and a good springboard for implementation. Art, language arts and social studies standards are already embedded in this project, but I knew we could easily embed STEM standards too by creatively restructuring the timing of curriculum. Ecological study and ecosystems are usually taught at the end of the year. A flip to late fall sets the stage for students to develop their own ecosystem for their civilization.

This is an ongoing multi week project taught by several teachers. The project is not intended to be taught everyday for several weeks. Rather, the project is meant to be taught in chunks. When curriculum is introduced that parallels the work for this project, time is set aside for process, understanding and creation. Students do have choice and will be involved in its development. Because of this, it's difficult to know exactly how much time it will take. A public showing of student work on their civilizations is set for late march. The plan is to introduce the project at the beginning of December.

NGSS:
MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.
MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
MS-ETS1-2 Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
Science is a Way of Knowing-Science is a way of knowing used by many people, not just scientists.
Scientific Knowledge Assumes an Order and Consistency in Natural Systems-Science assumes that objects and events in natural systems occur in consistent patterns that are understandable through measurement and observation
Science Addresses Questions About the Natural and Material World-Science knowledge can describe consequences of actions but does not make the decisions that society takes.

Common Core:

MP.4 Model with mathematics. (MS-LS2-5)

MP.6 Attend to precision.

6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems.

6.NS.B.2 Fluently divide multi-digit numbers using the standard algorithm.

7.G.B.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

CCSS.ELA-Literacy.RST.6-8.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics. Identify ecosystems (6-V.2) Describe ecosystems (6-V.3)

CCSS.ELA-LITERACY.W.6.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.W.6.5 With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.

CCSS.ELA-LITERACY.W.6.6 Use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of three pages in a single sitting.

Objectives: Students will be able to…

- Create a new civilization using prior knowledge about how ancient civilizations were developed
- Identify biotic and abiotic factors available in their ecosystem
- Identify natural resources to be used for tools and technology. Explain tools/technology their people will use to help them survive.
- Name and identify parts of a major river in their civilization
- Create a new calendar system to reflect the needs of their people
- Engineer a bridge across a major river in their civilization for transportation and trade.
- Document arts in your civilization by creating one of the following resources: Wikipedia page, children's book, myth, legend, biography about a hero in your civilization, song, architecture, painting, perform a skit, etc.
- Make connections across disciplines and understand the complexities of a civilization
- Discuss several different bridge designs and choose one to build
- Define three major types of bridges, including a beam or truss bridge, an arch bridge, and a suspension bridge.
- Identify effective geometric shapes used in bridge design.
- Identify several factors that engineers consider when design bridges.
- Describe what happens when people interact with the environment
- Use technology to research, plan, collaborate and publish writing.
- Present their civilization to the school community explaining their design process, thinking and product.

Background Knowledge: One of the essential questions for 6th grade social studies is, *How does where we live affect how we live?* We explore this question by first learning about the ancient civilizations of the western hemisphere: Inca, Maya, and Aztec. This work allows for an understanding of some big ideas. One big understanding is that early people adapted to their environment and used resources available to them for survival. Different ecosystems had pros and cons. And early humans lived in a variety of environments. Additionally, students completed a unit at the beginning of the year on geography and map skills giving them the background they need to make a political and physical map of their civilization.

Materials:
Access to Chromebooks
Book, *Weslandia*
Art supplies (paper, chart markers, popsicle sticks, building materials for bridges, Spheroes)

Engage: 1 day

Students are given an official looking envelope addressed to them. (full name, Mr. or Ms. and typed) Inside is a top secret letter from the US government requesting their expertise in developing an experimental civilization. Top Secret Letter This sets the stage for the project and gives an explanation of expectations to students.
Read, *Weslandia*. The story is a about a boy who creates a new civilization by discovering a new plant growing in his backyard. Discuss the elements of culture and the process of creating a civilization found in the book. Potential topics to talk about (geography, ecosystems, resources, agriculture, religion, concept of time, trade, social structure, art, etc.)
Use Think, Pair, Share thinking routine to guide discussion. Make an anchor chart with students' noticings.
Give students an opportunity to work with a partner to brainstorm ideas for their own civilization.

Explore: 1 week

Vocabulary (Words of the discipline): abiotic, biotic, adaptations, predators, consumers, biome, decomposers, climate, elevation, temperature

During the beginning stages of this unit, students will explore different ecosystems around the world and determine where on the earth their experimental civilization is located. Students are completing work on ecosystems with the science teacher. The video and the lesson I've included are a sample of a video and lesson from our district curriculum that she plans on using.

Kahn Academy video on Ecosystems and Biomes

Discovery Education

Students will have a day to explore a collection of physical and political maps in the classroom. They will use these as models in making their own maps. To organize student thinking, I plan on using,

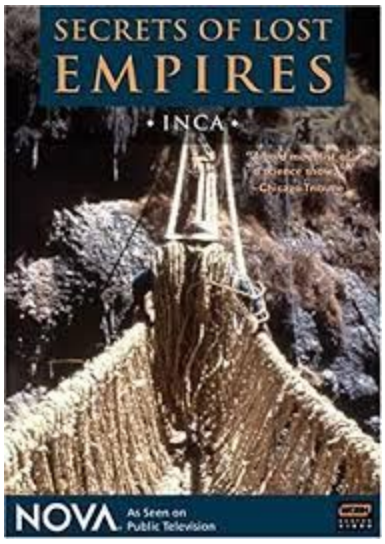
Create Your Civilization- Part 1 worksheet. The worksheet asks students to examine biome and bio-climate maps to determine their civilization's ecosystem. USGS Map of Global Ecological Land Units This is one of the resources I plan on using as a whole class.

Explain: Periodically during the unit, students will use Padlet to share and reflect on their thinking. At the end of the unit, students will present their civilization projects to the school community and get feedback from adults and peers.

Elaborate:

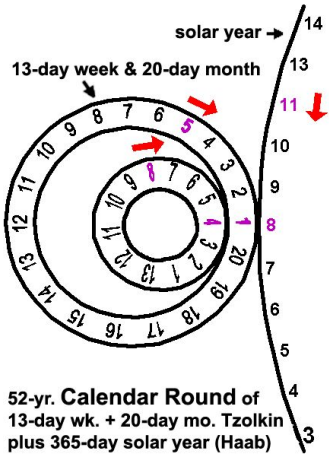
The following is a list of lessons that I plan on implementing. Some will be required, while others are optional. Plus, students will have choice in their learning and may choose another way to demonstrate their learning.

River-Students are designing a river, naming and labeling parts, for their civilization since almost every civilization started near a river. Here is the worksheet I plan on using to support the learning. Create Your Civilization-Part 2-*The River*



Bridges- Students are introduced to suspension bridges made by the Inca. After a lesson and videos on bridges, students are involved in bridge making in science class. Video links to introduce history of bridges: Brief Introduction to Bridges and The Impossible Bridge

The link to the engineering lessons on bridges. Teach Engineering: Bridges The science teacher plans on using most of the lessons on this website, but not all. (I was introduced to an online app for making 3D designs called Tinkercad by a colleague. I'm excited to introduce a way my students can use this cool tech tool to make a 3D model of a bridge. I'm not sure I can pull this off, but this same awesome colleague shared how he uses Sphero to challenge his students to code the Sphero ball to move over the bridge and support its weight.)



Calendar- After learning about Mayan calendar systems, students create their own calendar. A link to a website supporting this work. **Mayan Calendar System**
Ask students what they wonder about the current calendar system we use. Students come up with three interesting questions. Share. Students research different calendar systems and report on the results. Share the interesting facts about the French Republic Calendar, Soviet Union Calendar and Baha'i Calendar.
With this knowledge, students create their own calendar for their civilization using precision in math to calculate the days, weeks and months.

Create a Creature- Students have the option to create a creature that could realistically live in their ecosystem. Questions to raise the level of complexity. What adaptations has you creature made in order to survive in your ecosystem?

The Arts- Students create one or more of the following documents: Wikipedia page, children's book, myth, legend, biography about a hero in your civilization, song, architecture, painting, skit performance, etc.

Evaluation:

Assessment for this project is through teacher observation, journals, planning sheets and feedback from other classmates and adults regarding Civilization presentations.
Teacher rubric on final presentations of civilizations.

Students use FlipGrid, an online video making tool, to reflect on their progress and learning. The FlipGrid code is: d22c8578. The Password is: 5thgradeOlis