

5E Lesson Template

Lesson Author(s)	Mitchell Smith
Lesson Title	Venture to Mars
Lesson Source	
Technology Needs (if any)	Computers, Google Earth
Date/Time Lesson to be Taught	
School	
Supervising Teacher	
Math or Science?	Science
Lesson Concepts	Understand how to use Google Earth and settling Mars
Objectives	Students will be able to understand how to use Google Earth and look at different cities and why they are able to thrive the way they are. They will also take that knowledge and be able to create a city for their mission to mars.
CO State Standards	
Materials List and Advanced Preparation	Computers, Worksheets for activity, Google Earth, posters, colored writing utensils.
Safety	Students should act in a manner that is appropriate for the classroom and also that follow school and teachers regulations.
Accommodations for Learners with Special Needs	Have them work in partners. Show the students how to work in Google Earth. Work with those students as need be.

5Es

1. ENGAGEMENT		Time: Minutes
What the Teacher Will Do	Probing/Eliciting Questions	Student Responses and Misconceptions
<ul style="list-style-type: none"> • Have the students come in and tell the teacher their name and one thing they like to do outside of school. • Show the students Google Earth, and a quick demo on how to use it. • Allow for them to find their house and the most interesting place they have ever visited. 	<ul style="list-style-type: none"> • Ask the students their names and what they like to do. • Ask if the students have ever worked with Google Earth. 	<ul style="list-style-type: none"> • Students may have limited knowledge with Google Earth.
Evaluation/Decision Point Assessment		Student Outcomes
<p>Make sure that the students know how to work Google Earth; also, have them show the teacher where their house is and what their favorite place they have been to is at.</p>		<p>Students should know how to navigate Google Earth.</p>

2. EXPLORATION		Time: Minutes
What the Teacher Will Do	Probing/Eliciting Questions	Student Responses and Misconceptions
<p><u>Part 1:</u></p> <ul style="list-style-type: none"> Teacher will present the first thing that the students are doing. Pass out worksheet with the hints of places that the students need to find on Google Earth. They will find different locations on google earth and make observations on the towns that they will find. <p><u>Part 2:</u></p> <ul style="list-style-type: none"> Teacher will present the next part of the lesson to the students. Explain that students need to take the information that they have learned by finding the cities, and use it to create the first city/town on Mars. Pass out materials so that the students can create their city/town. 	<ul style="list-style-type: none"> What makes this city or town thrive? What sort of technology has helped this town survive? How long has this town been their? How has it expanded? Where on earth is it? Why are you putting things the way you are one your map? How is that economically efficient? 	<ul style="list-style-type: none"> Students might get the wrong town. Students might not know what a town looked like in the past. Students might not understand how technology is being used to help with the survival of the city or town.
Evaluation/Decision Point Assessment		Student Outcomes
<p>The students should land on Mars when they are all done with the activity. They should have also filled out the work sheet giving me the name of the city/town, and also some important features that will help in that town surviving/thriving.</p>		<p>Students should be able to understand what important aspects are needed for a town to be created. Hopefully being able to apply this to the town there are going to create on mars.</p>

3. EXPLANATION		Time: Minutes
What the Teacher Will Do	Probing/Eliciting Questions	Student Responses and Misconceptions
<p>Teacher will allow for the students to work on their project. Periodically talking to each group making sure that they are on the right track.</p>	<p>Why do you think this city is designed like this?</p> <p>How are you going to make your city on Mars run efficiently?</p> <p>How can you take the information from earth and incorporate that into your Mars city maps?</p> <p>How would you create a city that doesn't leave a carbon footprint?</p>	<p>Student may struggle with the idea of why and how cities are created.</p> <p>Might struggle with transferring that information to mars.</p> <p>Might not understand that we cant keep relying on fuel sources that we do on earth.</p>
Evaluation/Decision Point Assessment		Student Outcomes
<p>The teacher should do informal assessments as the students are working on their projects. Making sure that they are understanding what it is they are trying to do. At the end of this section students should have both their discovery and their maps done.</p>		<p>Students should have discovered and written down all the information from the scavenger hunt. They should also have their maps created and ready to present.</p>

4. ELABORATION		Time: Minutes
What the Teacher Will Do	Probing/Eliciting Questions	Student Responses and Misconceptions
<p>Teacher will have the student come up, in front of the class, and explain how and why they created their cities the way they did.</p> <p>As the students are presenting, the teacher will take notes on the “good and bad” things about their cities.</p>	<p>Why did you put “that” where you did?</p> <p>Is this city just a foundation or is this a long term city?</p> <p>How many people can your city hold?</p> <p>What are you going to do about waste, fuel, and food?</p>	<p>Students may have trouble putting things in their city.</p> <p>Students may have a hard time presenting their maps they have created.</p> <p>Students may struggle with the concept of how to support people with limited information.</p>
Evaluation/Decision Point Assessment		Student Outcomes
<p>The teacher should look at how well the students created their map, if there is time and effort that shows in their final project. Students should also do a good job on presenting.</p>		<p>Students should be able to take that knowledge that they have learned and present it in a fashionable manner to demonstrate what they have learned.</p>

5. EVALUATION		Time: Minutes
What the Teacher Will Do	Probing/Eliciting Questions	Student Responses and Misconceptions
<p>The teacher will have the students turn in their work for the day. This is how they will be evaluated. The teacher will look at the worksheet to see if they could work with google earth, and translate that information into creating their own cities on mars.</p>		
Differentiation		Time: N/A
Students who are behind or need support.	For advanced or gifted students.	
<p>Will have the students work in groups, so if they get stuck they can ask one another before they ask the teacher. Keep the work on google earth simple, so they know and are able to work on the project.</p>	<p>Have them write more information on the worksheet when working with google earth. Ask more “deeper level” questions when they are presenting their maps, and also how they put more detail into their maps.</p>	