Los **A**ngeles **U**nified **S**chool **D**istrict
Office of Curriculum, Instruction and School Support
Elementary History-Social Science and
Elementary Science Divisions

Day 2

ESSENTIAL QUESTION: What do human beings need to survive and thrive in a new environment?

FOCUS QUESTION: What role does location play in deciding where a colony should be started?

Objective

Students are expected to determine the best location for their space colony through analyses of both 17th century images and maps of Jamestown and Plymouth colonies, as well as current documents about Mars and the Moon.

Quick Look

- Conceptual Flow: After having made the decision to build a space colony, students must now decide where they will go.

- Summary: Students analyze the factors that affected the choice of location for the Jamestown and Plymouth settlements. Then they read and analyze informational text about Mars and the Moon. They use this information to determine a location for their space colony.

- Time: Approximately 3 ½ - 4 hours

- History Content Standards:
  - 5.4.1 Understanding the influence of location and physical setting on the founding of the original 13 colonies, and identify on a map the locations of the colonies and the American Indian nations already inhabiting these areas.

- Science Content Standards:
  - ES 5.5b, Students know the solar system includes the planet Earth, the Moon, the Sun, eight other planets and their satellites, and smaller objects, such as asteroids and comets.
  - ES 5.5c Students know the path of a planet around the Sun is due to the gravitational attraction between the Sun and the planet
  - ES 4.4b Students know how to identify common rock-forming minerals (including quartz, calcite, feldspar, mica, and hornblende) and ore minerals by using a table of diagnostic properties.

- ES 4.5a Students know some changes in the earth are due to slow processes, such as erosion, and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes.
- ES 4.5c Students know moving water erodes landforms, reshaping the land by taking it away from some places and depositing it as pebbles, sand, silt, and mud in other places (weathering, transport, and deposition).

- *Common Core State Standards:
  - Writing Grade 5: 2, 7, 8
  - Reading Informational Texts Grade 5: 1, 3, 9, 10
  - Speaking & Listening: Grade 5: 1, 2
    *see Appendix A

- Student Products
  - Journal Entries
  - Visual Analysis Worksheet (Student Handout 2.1)
  - Historical Colony Chart Student Handout (Student Handout 2. 2)
  - Moon Mars graphic organizer (Student Handout 2.3)
  - Entry on both the Student and Classroom Historical Colony Chart under "Location"

BACKGROUND

History Background

Choice of location was critical to the survival of the colonies. In Jamestown, the colonists settled in forested swampland by the James River, sixty miles from the mouth of the Chesapeake Bay, in order to protect themselves from attack by sea. Water was important to meet their survival needs. However, this water was brackish and did not flow well so it contributed to disease. Native American settlements were in the region.

The Plymouth Colonists never originally intended to land in Massachusetts. Their charter was for Virginia but they went off course in a storm. They settled in a wooded peninsula near the ocean on a hill. They had to contend with the cold winter climate. Native American settlements were in the region.

Science Background

In considering the location of a space colony, scientists have determined a "Goldilocks Zone", i.e. "not too hot, not too cold, but just right". The two possibilities within this zone are Mars and the Moon. Other planets would be unrealistic due to distance and temperature.

Given these limitations, other relevant factors need to be considered when choosing the location. For example, the Moon is closer but Mars has more water. Students will use the information from their readings to arrive at a decision about where to build their colony. Either choice is fine, but students need to cite evidence for their choice.

Vocabulary

gravity, landforms, resources, craters, dehydrated, radiation, terrain, sub climates

Materials

For Each Student

- Visual Analysis Worksheet (Student Handout 2.1)
- Student Historical Colony Chart (Student Handout 2. 2)
- Moon Mars graphic organizer (Student Handout 2.3)

For the Classroom (Project or print one for each group)

Construction of Jamestown

- http://www.virtualjamestown.org/pic7a.html

or

- http://www.virtualjamestown.org/gallery2.html
  Click on **James Fort Construction, May-June, 1607. D18**

John Smith's Map of Jamestown

- http://commons.wikimedia.org/wiki/File:Capt_John_Smith%27s_map_of_Virginia_1624.jpg

Image of Plymouth

- http://www.americaslibrary.gov/jb/colonial/jb_colonial_subj_e.html
- Samuel de Champlain's 1605 map of Plymouth Harbor (Student Handout 2.5)
- Classroom Historical Colony Chart
- Classroom Moon/Mars graphic organizer
- Classroom pro/con Moon and Mars graphic organizers
- 4 sets of **Moon Readings**
  - Terrain/Map (Student Handout 2.6a, 2.6b)
  - Atmosphere, Water, and Weather (Student Handout 2.7a, 2.7b)
  - Gravity (Student Handout 2.8)
  - Miscellaneous Facts (Student Handout 2.9)
- 4 sets of **Mars Readings**
  - Terrain/Map (Student Handout 2.10a, 2.10b, 2.10c)
  - Atmosphere, Water and Weather (Student Handout 2.11a, 2.11b)
  - Gravity (Student Handout 2.12)
  - Miscellaneous Facts (Student Handout 2.13)
- Moon pro/con Chart (Teacher Resource 2.1)
- Mars pro/con Chart (Teacher Resource 2.2)
- Space Colonization Application (Teacher Resource 1.2 ***This is from Day 1***)

PART I
LOOKING BACK

Objective
Students will analyze primary and secondary sources to determine the factors that impacted the choice of location for the early colonies.

Engage/Introduction: Introduce the students to the two colonies that we will be studying throughout this unit. Plymouth and Jamestown colonies will be providing us with historical perspective as we make our decisions about our space colony.

- Access prior knowledge by creating a class circle map of information for each colony from their study this school year. If more background is needed read the sections from their history text or show the videos from the Pearson/Scott Foresman Online Learning Exchange (OLE). Additional background information can be found at the websites for each location.
- For Jamestown: History Is Fun website http://historyisfun.org/
- For Plymouth: Plymouth Plantation website http://www.plimoth.org/

Explore/Analysis
- Within each group of four students, give two students the Jamestown image and map and give two students the Plymouth image and map. Students will work in pairs to analyze the two documents focusing on the location of the colonies. Students will use the visual analysis sheet to analyze their documents. (Optional: hand lenses help students to focus on specific details in the images, particularly in the maps.)
- *The Photo Analysis activity provides students with a context to support new vocabulary.*

- Provide sufficient time for students to thoroughly investigate the images. Then ask each pair to share their information with another pair of students who had a different colony.

- Review the images with the class as a whole group. Emphasize the role of the environment in the location of these colonies.

  Teacher will ask:
  - *How is the environment helping the people?*
  - *Provide evidence from the images and maps.*
  - *How might the environment cause a problem for the people?*
  - *Provide evidence from the images and maps.*

  Reminder: We are using an inquiry approach and not all answers will be found in these documents. Tomorrow students will be reviewing written accounts for more information. Do not give students additional information that isn't present in these images.

Explain/Conclusion

- **Journal Entry**:
  - Use the Journal Entry model found in the Addendum.
  - Have students complete a journal entry that answers the focus question: *For the 17th century colonists, what role did location play in deciding where a colony should be started*? Use evidence from the documents to support your answer.
    Journal entries provide an opportunity for students to develop organizational skills in writing after having experienced oral practice with other students and the teacher.

- Summarize learning by making an entry under "Location" on the Historical Colony Chart (Student Handout 2.2)

- **Begin a large Class Historical Colony Chart**. Entries will be made on this chart as the unit progresses.

PART II
LOOKING FORWARD

Objective

Students will read and interpret informational text about Mars or the Moon in order to choose an appropriate location for a space colony. They will construct an argument citing evidence for or against a specific choice. They will present their case in an oral presentation.

Engage/Introduction

- Refer back to the initial letter on Day 1 and remind students that one of their tasks is to recommend colonizing either the Moon or Mars.
  Teacher will say and ask:
  - *We have to make a decision whether to colonize the Moon or Mars.*
  - *What factors do you think we should consider?*

- Have students brainstorm and share a list of concerns. Remind them to think about the 17th century colonists' concerns. The following factors should be part of the final list:
  - Distance
  - Gravity
  - Food Supply
  - Water Supply
  - Temperature
  - Terrain
  - Gas Exchange/Waste Disposal (Oxygen and Carbon Dioxide)

Explore/Analysis Activity

- Have students get into their space colony groups formed on Day 1. Each group will get a different piece of informational text (Student Handouts 2.6-2.13) that provides relevant information about the concerns listed above. Each student in each group will read, discuss and answer the questions using the text. Using the graphic organizer (Student Handout 2.3) they will summarize the information in the appropriate box.
  📖 *This is an opportunity for students to clarify comprehension with other students and prepare to share understanding in the following step.*

- Space Colony Conference
  Each student in each group will count off A-B-C-D. All of the students with the same letter will meet in a larger "conference" of eight. Each group will have 1 expert in each of the 8 research areas. They will present their findings to their fellow students and fill in the information on their individual graphic organizer.
  📖 *By serving in the role of an expert, students have opportunities to both clarify information in the expert group and then orally share that information with their colony group.*

- The four conference groups will now meet together as a whole class group.

- Using the classroom charts, MARS Pro/Con Chart and MOON Pro/Con Chart, students and/or teacher will list concerns that are positive or negative about each location.

Explain/Conclusion

- Students will return to their space colony groups. Each group will discuss and choose a location based on the information they have gathered in the conference groups. Groups will present their choice citing evidence from the combined research notes as support for their decision.
- **Journal Entry**:
  - Each student will write a journal entry explaining the choice of location with supporting evidence.
    📖 *Journal entries provide an opportunity for students to develop organizational skills in writing after having experienced oral practice with other students and the teacher*

PART III
BRINGING IT ALL TOGETHER

Group Discussion

- Using a double bubble graphic organizer, hold a class discussion comparing the location concerns of the 17th century colonists with the proposed space colonists.

17th Century Colonists only

- Unfriendly neighbors
- Perils of crossing the ocean

Space Colonists Only

- Gravity
- Oxygen
- Solar Radiation
- Perils of traveling through space

Both

- Food
- Water
- Shelter
- Distance
- Health
- Economic Purpose

- **Journal Entry**:
  - Students make a journal entry that answers the focus question:
    What role does location play in deciding where a colony should be started?
    Journal entries provide an opportunity for students to develop organizational skills in writing after having experienced oral practice with other students and the teacher.

- **Space Colonization Application entry (Teacher Resource 1.2):**
  Teacher will say:
  - In your ***Space Colony Teams*** review the application that will be submitted to Congress.
  - Work with your team to prepare the information to enter in the section: "**Colony Location**".
  - In preparation for filling out this section, consider:
    - Why your ***Space Colony Team*** chose the Moon or Mars
    - Why this location will be the best in helping your colony survive and thrive in a new environment