

Model of a Colony



Background: The class has been learning about the American Colonies during the 1700s. We have studied the New England, Mid-Atlantic, and Southern colonies. The class will be divided into 3 groups, with each group designing and building a model of one of the colonies.

Design Challenge: Each group will research a particular colony and then work together to construct an accurate model. It is important to plan together and decide who will be responsible for building each aspect of the colony. The group will decide on a uniform scale for each model.

Criteria:

Your colony model must

- be built to scale
- accurately represent the assigned colony
- show various buildings, fences, and other structures
- have at least one moveable part that represents a simple machine used in the 1700s and that can move at least five times
- be neat and attractive.

Materials: You may select from the items below.

- cardboard base
- wood strips
- recycled and/or found materials
- art straws
- scissors
- general art supplies
- glue
- craft sticks

Targeted Standard of Learning: History and Social Science USI.5b
Supporting Standards of Learning: English 5.1, 5.7, 5.8
Science 5.1
Mathematics 5.11

Targeted Standards for Technological Literacy: 6, 20
Supporting Standards for Technological Literacy: 1, 9

Model of a Colony

Targeted Standard of Learning: USI 5b

- The student will demonstrate knowledge of the factors that shaped colonial America by comparing and contrasting life in the New England, Mid-Atlantic and Southern colonies, with emphasis on how people interacted with their environment.



Targeted Standards for Technological Literacy: Standard 6, Standard 20

- Students will develop an understanding of the role of society in the development and use of technology.
- Students will develop an understanding of and be able to select and use construction technologies.

Prior Knowledge & Skill	Materials & Preparation	Safety Issues	Class Management	Materials Provided	Time Management
<ul style="list-style-type: none"> • Knowledge of targeted History and Social Science Standard of Learning USI.5b • Some understanding of the design process 	<ul style="list-style-type: none"> • See Design Brief for recommended materials. Teachers may substitute materials. • Reference materials on American colonies 	<ul style="list-style-type: none"> • Insure cleanliness of found and recycled materials. 	<ul style="list-style-type: none"> • Three groups for the three colonies 	<ul style="list-style-type: none"> • Design Brief • Guided Portfolio • Rubric Assessment 	<ul style="list-style-type: none"> • Session 1: Introducing Design Brief and Portfolio (30 min.) • Sessions 2 and 3: Building and Portfolio work (30 min. each) • Session 4: Testing, sharing, and evaluating (45 min.)

Name _____

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Group Members: _____

1. What is the problem? State the problem in *your own words*.

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Science 5.1
Mathematics 5.11

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Name _____



2. Brainstorm solutions.

Draw or describe some possible solutions.

A large graphic organizer consisting of four rounded rectangular boxes arranged in a 2x2 grid. The boxes are connected by lines to a central illustration of a glowing lightbulb with radiating lines, symbolizing an idea or solution.

Name _____

4. Test your solution.

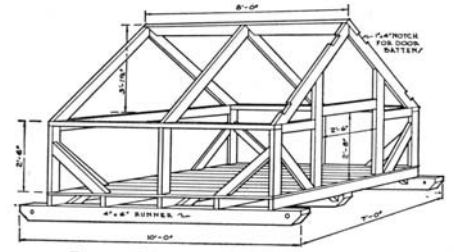
- Is your colony model built to scale? YES NO
- Does it accurately represent the assigned colony? YES NO
- Does it show various buildings, fences, and other structures? YES NO
- Does it have at least one moveable part? YES NO
- Can the part move at least five times? YES NO
- Is your colony neat and attractive? YES NO



Name _____

5. Evaluate your solution.

Was it the best solution? Would one of your other ideas have been better? Why or why not?



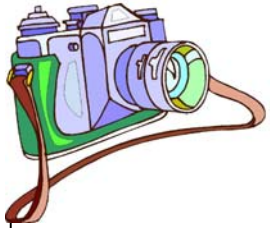
What would you have done differently?

Could you add to it to make it better? What would you add to it?

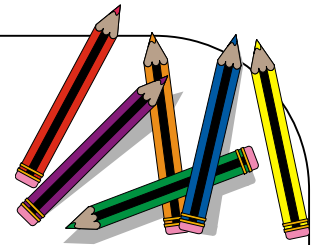
Guided Portfolio—6

Name _____

Attach a photograph of your final project here. If you do not have a photograph, draw a picture of your final project.



How would you make your project better? Draw a picture showing how it would look after you have made changes to it.



Rubric for *Model of a Colony*

Name _____

Date _____

Design Brief Rubric	no evidence	limited understanding	some understanding with room for improvement	good understanding with room for improvement	substantial understanding
	0	1	2	3	4
The student restated the problem in his/her own words.					
The student brainstormed more than one idea.					
The student created and labeled a sketch to use as a "blueprint."					
The student included notes about problems that occurred and their solutions.					
The student tested the model to make sure <ul style="list-style-type: none"> • it was built to scale • it accurately represented the colony • it contained buildings, fences, and other structures • it had one moveable part • the moveable part could be moved at least five times • it was attractive and neat. 					
The student evaluated how he/she could make it better next time.					



Rubric for *Model of a Colony*

Name _____

Date _____



Oral Communication Rubric	no evidence	limited understanding	some understanding with room for improvement	good understanding with room for improvement	substantial understanding
	0	1	2	3	4
5.1 The student will listen, draw conclusions, and share responses in subject-related group learning activities. a) Participate in and contribute to discussions across content areas. b) Organize information to present reports of group activities. c) Summarize information gathered in group activities.					
5.2 The student will use effective nonverbal communication skills. a) Maintain eye contact with listeners. b) Use gestures to support, accentuate, and dramatize verbal message. c) Use posture appropriate for communication setting.					
5.3 The student will make planned oral presentations. a) Determine appropriate content for audience. b) Organize content sequentially or around major ideas. c) Summarize main points before or after presentation. d) Incorporate visual aids to support the presentation. e) Use grammatically correct language and specific vocabulary.					

Standards of Learning

English (2002)

Oral Language

- 5.1 The student will listen, draw conclusions, and share responses in subject-related group learning activities.
- Participate in and contribute to discussions across content areas.
 - Organize information to present reports of group activities.
 - Summarize information gathered in group activities.

Reading

- 5.7 The student will demonstrate comprehension of information from a variety of print resources.
- Develop notes that include important concepts, summaries, and identification of information sources.
 - Organize information on charts, maps, and graphs.

Writing

- 5.8 The student will write for a variety of purposes to describe, to inform, to entertain, and to explain.
- Choose planning strategies for various writing purposes.
 - Organize information.
 - Demonstrate awareness of intended audience.
 - Use precise and descriptive vocabulary to create tone and voice.
 - Vary sentence structure.
 - Revise writing for clarity.
 - Use available technology to access information.

History and Social Science (2001)

United States History to 1877

Exploration to Revolution: Pre-Columbian Times to the 1770s

- USI.5 The student will demonstrate knowledge of the factors that shaped colonial America by
- describing the religious and economic events and conditions that led to the colonization of America;
 - comparing and contrasting life in the New England, Mid-Atlantic, and Southern colonies, with emphasis on how people interacted with their environment;
 - describing colonial life in America from the perspectives of large landowners, farmers, artisans, women, indentured servants, and slaves;
 - identifying the political and economic relationships between the colonies and England.

Science (2003)

Scientific Investigation, Reasoning, and Logic

- 5.1 The student will plan and conduct investigations in which
- rocks, minerals, and organisms are identified using a classification key;
 - estimations of length, mass, and volume are made.
 - appropriate instruments are selected and used for making quantitative observations of length, mass, volume, and elapsed time;
 - accurate measurements are made using basic tools (thermometer, meter stick, balance, graduated cylinder);
 - data are collected, recorded, and reported using the appropriate graphical representation (graphs, charts, diagrams);
 - predictions are made using patterns, and simple graphical data are extrapolated; and
 - manipulated and responding variables are identified; and
 - an understanding of the nature of science is developed and reinforced.

Mathematics (2001)

Measurement

- 5.11 The student will choose an appropriate measuring device and unit of measure to solve problems involving measurement of
- length-part of an inch ($\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$), inches, feet, yards, miles, millimeters, centimeters, meters, and kilometers;
 - weight/mass-ounces, pounds, tons, grams, and kilograms;
 - liquid volume-cups, pints, quarts, gallons, milliliters, and liters;
 - area-square units; and
 - temperature-Celsius and Fahrenheit units.
- Problems also will include estimating the conversion of Celsius and Fahrenheit units relative to familiar situations (water freezes at 0°C and 32°F , water boils at 100°C and 212°F , normal body temperature is about 37°C and 98.6°F).

Standards for Technological Literacy

- Standard 1: Students will develop an understanding of the characteristics and scope of technology.
- Standard 6: Students will develop an understanding of the role of society in the development and use of technology.
- Standard 9: Students will develop an understanding of engineering design.
- Standard 20: Students will develop an understanding of and be able to select and use construction technologies.