



# 3D Satellite Project

Name: \_\_\_\_\_ Per: \_\_\_\_\_

Due Date: April 11th, 2019

**Objective:** Students will demonstrate their understanding by creating their choice of natural satellite (AKA... moon). Students will identify the properties of the "Moon," as well as the requirements for life in order to explain how these factors can or cannot be achieved on their "Moon."

## Requirements to receive FULL CREDIT

1. Must be turned in on time, **NO LATE WORK ACCEPTED** for full credit; **YOU HAVE 5 WEEKS TO COMPLETE!**
2. Model must be 3 dimensional (viewable from most angles)
3. Students must make a model of a natural satellite (moon) within our solar system, with accurate information regarding your choice of satellite. Do Not choose a moon with limited data and details.
4. Your models must include an attached Placard (information display) that includes at a minimum the following:
  - Name of the chosen moon
  - Name of the planet that your chosen moon belongs to
  - How far away your moon orbits that planet on average (**IN BOTH MILES AND KILOMETERS**)
  - How long it takes for your moon to make 1 full rotation and revolution (minutes, hours, days, etc.)
  - Size (in diameter; both miles and kilometers), AND size comparison to our moon (if you're not doing Luna)
  - Explain chemical/material composition of the moon's surface, layers, core and atmosphere. (if applicable)
  - Include a list of some additional moons orbiting the same planet that your moon belongs to.
  - State the date of your moon's discovery (if applicable)
  - List (5) other interesting details that you can find (your choice, but a minimum of 5)
5. Your moon model should be displayed on a stand or attached to something. Your stand must be able to hold the weight of the moon and your placard must be attached to the display for max credit. Your moon model and placard must be displayed together and your moon should not be flimsy or falling over when viewed. Be careful with the materials used to ensure they stay connected.
6. 1-2 page essay (5 paragraph minimum) explaining in detail what is required for life to survive on your chosen moon. This is an open-ended topic and can go in the direction you choose based on your observations of the moon. Things to consider are the important life elements such as weather, composition of moon, atmosphere, surface features, resources available, distance and time to get there, and any other life value or concern. Be sure add specific details to your ideas to support if it is possible to colonize or to support reasons why it may not be possible to colonize. We will have one day in class to finalize any work for this essay, and I am always available to help you with ideas for both the model and the essay.

**Materials:** The majority of this project is to be completed at home with the use of common household materials, or with inexpensive craft store materials. You can choose to use recycled materials if available. Please be creative and crafty, but make something sturdy enough to be successfully transported to school for grading. If you plan on including the planet in the model, restrict your included planet to a side/half model of the planet, with the moon attached to it. Styrofoam balls can be purchased at stores such as Walmart, Michael's, Hobby Lobby, Dollar Tree, Amazon, etc...

**Restrictions:**

- The overall size of moon model can be no larger than 25cm x 25cm x 25 cm, give or take a couple of centimeters.
- You placard/satellite information **must be typed or neatly printed in ink** (no pencil writing).
- Your models may NOT use foods that are perishable, attract ants, spoil, or create a mess in our classroom.
- All models must be complete, accurate, neat, and on time to receive full credit.

**Transporting to Class:** You are allowed to bring your completed models to my class at any time after introduction of this project. If you are going to be out of town at and past the due date, please arrange a prior arrangement with your teacher to get it turned in on time. The point to all of this: **DO NOT PROCRASTINATE ON THE PROJECT.**

Name: \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

## 3D Satellite Model Project Rubric

Project Choice: Moon / Satellite

Assignment	Points	Poor	Average	Excellent
Construction and Design of Satellite Model	/13	<b>0-4 points</b> Model is 2 D or drawn on a flat surface. Model is of poor construction and/or is incomplete.	<b>5-9 points</b> Model is 3 dimensional but is not viewable from most sides. Model is complete but is flimsy or falling apart.	<b>10-13 points</b> Model is 3 dimensional and can be viewed from most angles. Model is intact and sturdy. Model clearly represents the intended satellite of choice.
Accuracy of Satellite Model	/20	<b>0-7 points</b> Distinct features of satellite are missing or are modeled with little accuracy. Moon lacks round shape.	<b>8-14 points</b> Distinct (moon) features are represented with minor inaccuracies.	<b>15-20 points</b> Distinct surface features are accurately depicted (moon).
Satellite Information Placard & Essay	/30	<b>0-11 points</b> Satellite placard/essay is incomplete and/or written with pencil or ball point pen. Limited facts (4-5) or components (1-2) are available. Sentences lack depth in content or are poorly written/below grade level; essay does not address habitation issue	<b>12-23 points</b> Satellite placard is there but only offers (6-7) facts. Man-made satellite only offers 3-4 component/features. Explanations of features are limited and/or are unclear. Sentences are at grade level but lack depth in content; essay shows beginning or semi-detailed understanding of habitation issue.	<b>24-30 points</b> Satellite placard is full of information/facts (8-10+) and is written/typed at or above grade level. Sentences are insightful and do not repeat facts. Man-made satellite offers a variety of components /features and each is purposefully explained; essay addresses most/all factors that affect habitation issue.
Display of Information	/7	<b>0-3 points</b> Information is displayed but is sloppy or is displayed a part from the model. Display is ripped, smudged, or displayed haphazardly. Not viewable with the model or requires holding to view; stand is poorly design.	<b>4-5 points</b> Information is displayed neatly but has a few noticeable mistakes/ errors. Display is not attached to the model but is viewable as a component of model; stand is sturdy, and holds only the moon.	<b>6-7 points</b> Information is carefully crafted and displayed. Information is a part of the model and/or is easily viewable with model. Display of information is neatly positioned for viewer; stand holds both the moon and the placard.
Overall Effort and/or Creativity	/5	<b>0-1 points</b> Overall effort to match the real object or realism of model is limited. Creativity is lacking and/or model was quickly thrown together. Model is incomplete.	<b>2-3 points</b> Effort is at grade level but details are limited or overlooked. Model shows effort and is complete. Minor mishaps in construction are viewable.	<b>4-5 points</b> Effort is at or above grade level. Model clearly took effort to create and complete. Model shows realism and quality is displayed throughout. The work of an all-star!

Total \_\_\_\_\_/75

Comments: