



3D Satellite Project

Name: _____ Per: _____

Due Date: April 9th, 2020

Objective: Students will demonstrate understanding and creative talent by creating their choice of natural satellite (AKA moon). Students will identify the properties of the "Moon," as well as create an essay that elaborates on the requirements for life in order to explain how these factors can or cannot be realized 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 ALL PARTS OF THE PROJECT!** This is an individual project (no teams allowed).
2. Your model needs to be 3 dimensional (viewable from most angles)
3. Students must focus primarily on making a model of natural satellites within our solar system, with accurate & current information regarding your choice of satellite (*stay away from unknown moons*).
4. Your models must include a Placard (a.k.a. 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 (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); in other words, what is your moon made of?
 - 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 any other interesting details that you can find (your choice, but a minimum of 6, if applicable)
5. Your moon must be stabilized by a stand of your choosing and design. Your moon and placard should not be turned in without a stand of some sort. Your stand must be able to hold the weight of the moon.
6. Two page essay (5 paragraph minimum) explaining in detail "moon living." What is required for life to survive on your moon? After that, explain what **YOU THINK** would be the best way to have humans survive on your moon. This is an open-ended topic, and will go in whatever direction you choose. However, be sure add specific details to your ideas, and "don't bite off more than you can chew!" We will have 1-2 days in class to finalize any work for this essay, and I am always available after school or during lunch on certain days for help. If you become stuck with ideas, arrange time with me, so that you can run your ideas by me prior to finalizing your report. Please, do not try to arrange time to get ideas for your essay with only days before the project is due.

Grading: The project is worth **87 points**. **Remember, projects a large percentage of your grade, and should be taken seriously.** To receive full credit, ALL of the above requirements must be met with a quality effort. Missing any components listed above (see rubric for accurate requirements) or making a model lacking the 3-D aspect of the project will result in a reduced score. See rubric on the reverse side for grading information. Extra credit points may be awarded for those models and essays that go above and beyond the requirements (i.e., model is very close to the real thing, essay shows vivid detail and understanding of the concepts, etc.)

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.
- Your 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 make prior arrangements 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 | /12 | 0-4 points Model is 2 D or drawn on a flat surface. Model is of poor construction and/or is incomplete. | 5-8 points Model is 3 dimensional but is not viewable from most sides. Model is complete but is flimsy or falling apart. | 9-12 points 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 | /25 | 0-9 points Distinct features of satellite are missing or are modeled with little accuracy. Moon lacks proper shape. | 10-17 points Distinct (moon) features are represented with minor inaccuracies; color shows some accuracies | 18-25 points Distinct surface features are accurately depicted (moon); color is accurate and detailed |
| Satellite Information Placard & Essay | /35 | 0-14 points Satellite placard/essay is incomplete and/or written with pencil or ball point pen. Limited data 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 | 15-26 points Satellite placard is there but only offers (6-7) data facts. Man-made satellite only offers 3-4 components / features. Explanations of features are limited and/or are unclear. Sentences are at grade level but lack depth in content; essay show beginning or semi-detailed understanding of habitation issue. | 27-35 points 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; essay addresses most/all factors that affect habitation issue. |
| Display of Information | /10 | 0-4 points 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. | 5-7 points 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. | 7-10 points 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 | 0-1 points 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. | 2-3 points Effort is at grade level but details are limited or overlooked. Model shows effort and is complete. Minor mishaps in construction are viewable. | 4-5 points 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 _____/87

Comments: