3D Satellite Project

Name: _____ **Per:** ____

Due Date: April _____, 2018

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 determine what is necessary to make that moon habitable in the future.

Requirements to receive FULL CREDIT

1. Must be turned in on time, **NO LATE WORK ACCEPTED** for full credit.
2. Model must be 3 dimensional (viewable from most angles)
3. Must focus primarily on making a model of natural satellites within our solar system, with accurate information regarding your choice of satellite.
4. Must include a Placard (information display) that includes at a minimum the following:
   - *Name of the planet that your chosen moon belongs to*
   - *How far away it orbits that planet (in both kilometers and miles)*
   - *How long it takes to make 1 full revolution (minutes, hours, days, etc.)*
   - *Size (in diameter; both miles and kilometers), and size comparison to our moon (if you are not doing Luna)*
   - *Chemical and/or material composition of surface, core and atmosphere (if it has one)*
   - *List of some additional moons orbiting the same planet that your moon belongs to*
   - *Date of your moon's discovery (if applicable)*
   - Any other interesting details that you can find (your choice; minimum of 3)
5. Your moon must be stabilized by a stand of your choosing and design. Your moon and placard must not be turned in without a stand of some sort. Your stand must be able to hold the weight of the moon.
6. 1-2 page essay (5 paragraph minimum) explaining in detail what is required for life to survive on that 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 one day in class to finalize any work for this essay, and I am always available after school and during lunch on certain days for help.

Grading: The project is worth **60 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.

Materials: This project is to be completed at home with the use of common household materials or with inexpensive craft store materials. Use recycled materials if available. Please be creative and crafty but make something sturdy so it can be successfully transported to school to be shared and graded. If you plan on including the planet in the model, try to only make 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, etc…

Restrictions:

- Overall size of moon model can be no larger than 25cm x 25cm x 25 cm.

- Placard/Satellite information **must be typed or neatly printed in ink** (no pencil).

- Models may NOT use foods that are perishable, attract ants, spoil, or create a mess in the classroom.

- All models must be complete, accurate, neat, and on time to receive full credit.

Transporting to Class: Bring your model to class during the week of April _____ (Monday – Thursday). If you are going to be out of town past the due date, please arrange a prior due date with the teacher.

Name: _____ Period _____ Date _____

3D Satellite Model Project Rubric

Project Choice: Moon / Satellite

Assignment	Points	Poor	Average	Excellent
Construction and Design of Satellite Model	/10	**0-3 points** Model is 2 D or drawn on a flat surface. Model is of poor construction and/or is incomplete.	**4 - 7 points** Model is 3 dimensional but is not viewable from most sides. Model is complete but is flimsy or falling apart.	**8-10 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	/15	**0 - 5 point** Distinct features of satellite are missing or are modeled with little accuracy. Moon lacks round shape.	**6 - 10 points** Distinct (moon) features are represented with minor inaccuracies.	**11 - 15 points** Distinct surface features are accurately depicted (moon).
Satellite Information Placard & Essay	/25	**0-8 points** 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	**9-17 points** 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 show beginning or semi-detailed understanding of habitation issue.	**18-25 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. 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	/6	**0-2 point** 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.	**3-4 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.	**5-6 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	/4	**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 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 _____/60

Comments: