Part 1 Overview

The basic idea of Part 1 is simple: students are required to design a colony or space station capable of supporting a human population on another planet or on a moon of another planet and to write a report about their colony. The project can replace or supplement a final exam for a larger, multi-week astronomy unit.

The unit is designed to be used in conjunction with a science textbook that covers the solar system. It includes assignments and lessons. The lessons are optional and not critical to the success of the student projects. They are included to provide basic background information to students who do not have access to textbooks about the solar system. Teachers with good texts should feel free to examine the lessons and use any that are useful to them and to disregard the others.

The assignments are designed to help students work their way through the project. It is a good idea to give students several days to complete each assignment. When used in conjunction with a textbook and/or other assignments, assignments 1 through 4 can be spaced 1 week apart. It is best to give the students around four to six weeks to work on the 4 assignments and the final project. Ideally, students will be thinking about this project the whole time they are studying astronomy.

In the course of completing this project students will: research a particular planet or moon (assignment 1); decide what resources must be provided to support human life on it and evaluate the resources available on the planet to determine what additional needs must be provided (assignment 2); visualize what the planet and their colony will look like (assignment 3); imagine themselves as a member of the colony and write about a typical day (assignment 4); construct a model of their colony using recycled materials and write an expository narrative describing their colony (final project).

To get high quality projects, it is important that students are thinking about it and working on it the entire time that you allot for its completion. Large projects are most successful when they are broken down into smaller assignments. This is why there are the four preliminary assignments. If desired, teachers can count these as homework assignments. The assignments are an important part of the overall project. Completing them will not only help students improve the quality of the final projects, but will allow instructors to cover many state standards for reading and language arts while teaching science.

Classroom space can be an issue with this project, especially when students are allowed to work on their projects during class time. If space is a major issue you can allow students to choose between making a model or a poster of their colony. Usually about one third of the students will choose to make a poster, which cuts down on the amount of space needed to construct and store the models.

Students can choose which planet they will colonize, but you may need to limit the number of students working on the same planet so that every planet except Earth is colonized by at least one student.

The projects are intended to be constructed individually, but you should encourage students to collaborate on their planet research and to share design ideas. Group projects might be worth attempting, especially if classroom space is an issue, but you will need to modify some of the instructions to make them appropriate for group assignments.

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