

To Infinity and Beyond—Space Station Project- 2012

It is the year 2412. We now have the ability to shuttle people to any place in the solar system. We are turning each planet into a destination for either vacation or permanent residence. Some planets will have colonies on them, some will orbit around their planet, yet others will have colonies on one of the local moons. You have been put in charge of colonizing one of the seven solar system planets other than Earth. You decide which location is best for your colony and how to sustain it and all of its inhabitants. All stations have to be self-reliant. (No getting supplies sent in from Earth—there isn't enough to support the people living there.)



Your final project includes the following:

1. Filled in **Excel Spreadsheet** with all researched information
2. A detailed **diagram** of your colony/space station-hand drawn or in Google SketchUp.
3. A **PowerPoint/Poster Presentation** (which will be displayed) describing the basic facets of your colony/space station as an advertisement to gain potential colonists.

EXCEL SPREADSHEET—fill in the “student” column and the “fill in your information here” column.

- This is how and where I grade your information. The information should be clear, in complete sentences if it requires description and quite detailed (notice the point value for each box).

DIAGRAM—draw a top down view of your station (required) and a side view (optional).

- If hand-drawn
 - Neatly drawn in ink/marker (not pencil, use a ruler and/or compass)
 - On unlined paper—to be included on your poster
 - Label all sections of station (energy, gravity, recreation, living, etc.)
- If in SketchUp
 - Must be able to look at a top down view showing rooms/layout
 - Must also be able to view of the overall design of the colony/space station—please do not download a design off of SketchUp.
 - Label all sections of station (energy, gravity, recreation, living, etc.)

PowerPoint/Poster Presentation—Using PowerPoint, create slides to include on a poster which will be displayed in the hall as an informative advertisement for your colony. You must include information from all sections of your spreadsheet, a picture of your colony and a picture of your planet and/or moon.

- Planet and/or Moon description
 - ☼ Size, location, composition of planet and atmosphere, atmospheric pressure, density, gravity, distance from the sun, travel time from earth (at today's space flight speed)
 - ☼ If colonizing a moon, include planet **and** moon description
- Space Colony Overview (What is the purpose of your colony? How will it work?)
 - ☼ Permanent colony or vacation colony (What is its theme?)
 - ☼ How many inhabitants, what types of professions
 - ☼ How will you maintain a stable society? (government, laws, schools, security)
- Gravity Regulation
 - ☼ Humans cannot survive for an extended period without normal earth gravity. The space station must correct for this. How?
- Energy supply (Describe how you harness the energy.)
 - ☼ Should be renewable if possible, practical and use resources available on your planet/moon. Describe how this process works in scientific terms.
 - ☼ Be sure to list the major uses of the energy and the approximate percentage allocated to each use.
- Water supply
 - ☼ Must find water on planet or live from very limited resources brought from earth.
 - ☼ You must decide how much to bring (How much do humans consume on a daily basis? –for sanitation, cooking, etc.)
- Food supply
 - ☼ Must be renewable and provide a balanced diet.
 - ☼ How will you grow or farm the food? Make sure it can be done in the limited area of your station.
 - ☼ Consider how many calories people need per day and how many vitamins, minerals and calories different foods provide and the space it takes to grow food.
- Conservation/Environmental Protection
 - ☼ How will you maintain your colony ecosystem? (Remember—nothing can be shipped in from Earth—they've got enough problems)
 - Air quality
 - Water quality
 - Temperature
 - Soils
 - Sustainable food supply
 - Waste disposal/Recycling (garbage, human/animal waste, gases)
- Recreation
 - ☼ Exercise
 - ☼ Entertainment
- Bibliography
 - You should have at least 1 source per scientific section. (Google is not a source—the websites you find using Google are your sources.)