

# Space Habitation Milky-Way Galaxy

## Student Worksheet

### Read the following

You have reached your final destination!!! All of your planning and dreams have finally come true as you prepare to step foot on a planet that no human has ever stepped foot on before! But you realize that all the risk, time and effort to reach your destination is only the beginning.

As a Star Fleet Commander, your first responsibility is to build your Space Colony or Space Station.

Your first order of business is to design a model of the space habitat (colony or station.) This model must be 14-16 inches across and all areas must be interconnected. Remember that you are out in space – so you cannot just open the door and go outside to another area. Try to incorporate as many mathematical shapes as possible in your design (square, triangle, etc.) Remember, the theory is that math is the universal language. If contact with alien beings is made, the shapes in your habitat will serve as a message to them, conveying that we are a civilized and peaceful settlement.

### Materials

paper towel rolls  
juice bottles  
aluminum foil  
popsicle sticks  
styrofoam containers  
dowel rods  
balloons  
straws  
twine/fishing line  
tape  
scissors

### Mathematical Space for Alien Communication

Cylinder  
Octagon  
Pyramid  
Square  
Hexagon  
Triangle  
Circle  
Pentagon

# Space Habitation Milky-Way Galaxy (cont'd)

## Student Worksheet

### Requirements of Space Habitat

- 3 docking ports
- command area
- living areas (eat, sleep, etc)
- recreation area
- power generation area

### Procedures

1. Each individual in the group should submit 3 sketches of the habitat. (A top-view will best represent the layout of your design.)
2. Into each design, try to incorporate as many mathematical shapes as possible.
3. Select one space colony or station design.
4. Build the station or colony.
5. Suspend your space station or space colony in space.
6. Complete the discussion questions stated below.

### Discussion

1. What materials did you use to construct your habitat? \_\_\_\_\_

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2. Explain the shape of your habitat. How will this demonstrate that the inhabitants within are civilized and exist as a peaceful settlement? \_\_\_\_\_

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3. What considerations were made to ensure that all areas would be interconnected? \_\_\_\_\_

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