

SHELTER DESIGN

The Space Exploration mission to Omicron Theta IV was dropped off on that planet 2 weeks ago, and started out living in the tents which they brought with them. Unfortunately, this has not been successful. There is one sort of large native bird, rather stupid, that always perches on any structure it sees. Since these birds weigh an average of 1,000 pounds each, this has resulted in several crushed tents, as well as two crushed explorers. Since the two who were killed were their design engineers, they have radioed back to us for our help.

The team has discovered that the only plant that grows there produces a sort of stiff, cardboard-like leaf (about 36" by 60"), a thin, pliable vine, and a sap which yields a sticky, gooey, glue-like substance when cooked. The mission has sufficient food for the 6 months they must stay there, but they must build some kind of shelter to replace the tents.

OBJECTIVE

Design the shelter for the Space Exploration Mission and build a model of the space station.

MATERIALS

1. 12 - Index Cards
2. String (24 inches)
3. Glue

(For Testing)

1. Weights of some sort (Books, Weights, Bricks, etc...)

TOOLS

1. Ruler
2. Scissors

LIMITATIONS

1. Your shelter must provide a floor and roof, and have an opening on at least one side.
2. You must have at least 25 square inches of floor space. (Account for space lost due to columns, etc.)
3. The inside height of the shelter should be at least 5 inches.
4. You may coat the walls, roof and floor with glue.
5. You may not fill the columns with glue.

INSTRUCTIONS

1. Groups of 2 or 3 students work best.
2. Students will brainstorm solutions.
3. Students will sketch a design for your shelter.
4. Students will construct their shelter model from the materials provided.
5. Students will submit their model for testing. (This will be done by slowly adding measured

amounts of weight until the model begins to crush.)