

Mars Pathfinder Egg Drop and Landing

Supplies

cereal boxes
string
eggs
scissors
pencils

10" balloons
newspaper
masking tape
rulers and/or meter sticks
hole punch

Object: To build a model of the Mars Pathfinder lander and test it. Encourage team work and problem solving.

1. Divide girls into groups of 4-6. Each group will build a lander.

After extensive testing NASA decided that the best shape for the Mars Pathfinder lander is a tetrahedron. No matter which side the lander falls on it will be level and the payload is secure.

2. To build the lander:

*Open the cereal box up. On one side of the box trace the triangle pattern and cut out.

Punch a hole in each corner.

*Fold the triangle into a tetrahedron to form a "lander."

*Tape closed one side of the tetrahedron about half way up.

*Place the egg in the lander and tape the other two side up halfway.

*Tie a 1 meter piece of string through the holes. Finish taping up the three sides.

3. Parachute

*Unfold a large piece of newspaper.

*Cut off the edge of the newspaper sheet to form a square.

*Cut off each corner of the square to form an octagon.

*Using four 1 meter pieces of string, tape each end of each string to adjacent corners of the octagon parachute.

4. Air bags

*Inflate four balloons and tie.

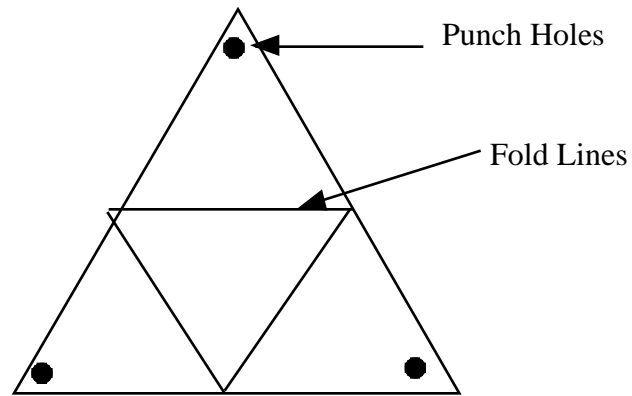
*Using tape rolled back on itself, tape each balloon to each face of the lander.

*Gather the four strings on the parachute and tie them to the string on the lander.

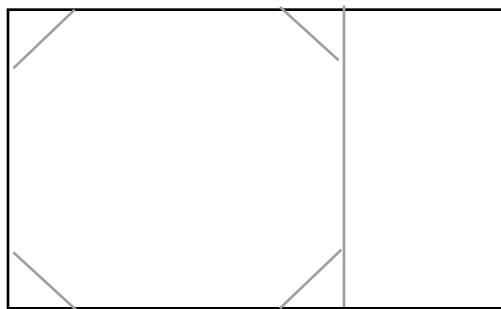
5. Entry, Descent and Landing

*Drop you "Pathfinder" from a high place and see if your payload (egg) survives!

Lander



Parachute - cut on the dotted lines



Add strings with tape - Repeat for all four sides.

