



LUNAR RESUPPLY MISSION



PARTICIPANT HANDOUT

TEAM NAME: _____

LUNAR LANDER NAME: _____

1. The total cost of the materials used cannot be more than half the total cost of the materials given.
2. (Optional) The total mass of the lander cannot be more than half the total mass of the materials (not including the egg).
3. Approximately 25% of the egg must be showing.
4. (Optional) If multiple landers succeed in successfully delivering their payload the one with the least mass wins.

MATERIALS GIVEN

Participants are to fill in the total number of units of each of the materials given and calculate the total cost of all materials given.

Materials	Cost per unit (A)	Number of units given (B)	Cost of Materials (A x B)
Paper	\$200 000		
Straws	\$100 000		
Cotton balls	\$100 000		
String	\$50 000		
Tape	\$300 000		
Popsicle sticks	\$100 000		
Bubble wrap	\$2 000 000		
Elastic bands	\$50 000		
Fabric scraps	\$1 000 000		
Paper clips	\$25 000		
Pipe cleaners	\$50 000		
Cardboard	\$500 000		
Balloon	\$2 000 000		
Total cost of all materials given:			

DESIGN



MATERIALS USED

Participants are to fill in the total number of units planned as per their design.

Participants then calculate the total cost of all planned materials.

Materials	Cost per unit (A)	Number of units per design (C)	Cost of Materials (A x C)
Paper	\$200 000		
Straws	\$100 000		
Cotton balls	\$100 000		
String	\$50 000		
Tape	\$300 000		
Popsicle sticks	\$100 000		
Bubble wrap	\$2 000 000		
Elastic bands	\$50 000		
Fabric scraps	\$1 000 000		
Paper clips	\$25 000		
Pipe cleaners	\$50 000		
Cardboard	\$500 000		
Balloon	\$2 000 000		
Total cost of materials used:			

REFLECTION QUESTIONS

1. How did you decide what materials to use?

2. Did your team prioritize safety, budget, or weight? Why did you make this choice?

3. Did anything change from your original design? Why?

4. Did redesigning your lunar lander put you over budget?

5. Were you surprised by the results of the launch?

6. If you were to redo the activity, what changes would you make?

7. What would you do differently if there were no budget constraints?

8. What are three things you learned over the course of this activity?

