EGG DROP PROJECT

In this challenge you will be asked to design and build a capsule that will transport a raw egg from an altitude of 20 feet to a concrete surface. The design should be such that the egg will survive the impact. You will work in groups of 1 – 4. **NO MORE THAN 4 STUDENTS SHALL WORK IN A GROUP.**

Student Name _____ Student Name _____

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PART 1: Independent Work

Each student will do research on a particular celestial object in which to land on. (Planet, Asteroid, Meteor or Comet) Each student will write their own paper using the Florida Writes Format. Paragraphs should include: Introduction, description of the object, description of the atmosphere, description of its composition (what it is made of), and why your group should land on the particular planet. **NO GROUP CAN GO ON UNTIL ALL REPORTS ARE TURNED INTO MR. FATOLITIS.**

PART 2: Independent Work

Each student will do independent research on the different methods NASA uses to land on celestial objects. Methods will include those used by the lunar module of the Apollo missions, the air bag method used by the mars Pathfinder Sojourner mission, the method used by the Mars Phoenix mission, the landing method used by the Mars Curiosity mission, and the method used by the Deep Impact mission. Each student is to choose one. Students will write their own paper using the Florida Writes Format. Paragraphs should include: Introduction, describe the landing method used, explain why this method was used, justify why you should use this method for your lander, conclusion.

PART 3: Discuss with your group your finding. Complete the following sentence:

We choose to land on _____ because _____

_____

_____

_____

PART 4: Design a mission patch

Based on your mission objectives in PART 3, design a mission patch that matches what you plan to accomplish. Your entire group will need to contribute to this piece.

PART 5: Design your capsule

On a piece of paper, design what your capsule is going to look like. Include a materials list and proper measurements in your drawing.

Part 6: Build your capsule

You and your team will build the capsule as designed in PART 5.

CONSTRAINTS:

- ✓ Must not be larger than 25 cm X 25 cm X 25 cm.
- ✓ Must weigh between 200 gm – 1000 gm.
- ✓ Diameter of the parachute cannot be larger than 10 cm.
- ✓ Must land in an upright position.
- ✓ Egg must be intact after landing.
- ✓ Hatch must be accessible.
- ✓ No more than 10% of the total construction weight can be made of foam. (this includes Styrofoam, pillow stuffing, bedding material)
- ✓ Must land perfectly intact with no cracks or loose pieces.
- ✓ Must be decorated to look like a planetary lander.
- ✓ NO food items of any kind can be used as any part of the capsule.

PART 7: Test your capsule

Each group will maintain a record of each test drop. It should include the speed in which the capsule traveled its attitude as it fell and at what attitude it hit the ground. Also recorded will be the accessibility of the hatch.

PART 8: Final Drop

Your grade will be based on the final drop.