The Great Egg Drop

The Great Egg Drop

Name _____

Susan Disalvo

Problem:

There is a terrible drought in East Africa. The United Nations is working to get vitally needed medications into the refugee camps. It takes too long and it is too dangerous to bring the medications in by truck. It is also considered too dangerous to land a plane so it has been decided that the medications will be air-dropped. You are part of a team of engineers who have been asked to design a container that will protect the medications as they fall to the ground. You will model this problem using a raw egg. There are some volume and mass restrictions for the container and height requirements for the drop. It will be important to work well with your team in analyzing the problem; designing and building and testing your container; and analyzing your results.

You will be assigned to a team. Your design must not include changing the egg in any way (no tape on the egg, no nail polish, no hollow eggs, no hard-boiled eggs, etc….). You will write a lab report and produce a final product to demonstrate/describe your work.

Team Members

Scoring Rubric for Team Performance of The Great Egg Drop

Criteria:

1. Team engaged in brainstorming; analyzed ideas and selected plan
2. Team worked together to design solutions based on knowledge
3. Completed construction of container
4. Tested and evaluated solutions, variables identified.
5. Communicated results

	Not Yet	Almost There	Got It!!
Brainstorming; analyzed ideas and selected plan	No evidence that the team brainstormed and analyzed several plans	Team clearly brainstormed and analyzed several plans before selecting construction plan	Team brainstormed several good ideas, engaged in analysis and selected an effective construction plan
Team worked together to design solutions. Make decision based on knowledge.	No evidence of teamwork, did not make decisions based on knowledge. Some members of team did not participate.	Team shows good evidence of teamwork. Evidence that decisions were made based on knowledge. Most team members participated.	Excellent evidence of teamwork. Evidence that decisions were made based on knowledge. All team members contributed.
Completed construction of container	Team demonstrated an inability to construct a container in the time allotted	Team effectively used the time allotted to create a well-designed container	Team effectively used the time allotted to create a well-designed container
Tested and evaluated solutions. Correctly identified variables in laboratory report	Lab report was incomplete, failed to address variables and/or had incorrect information	Lab report is complete, addresses variables and provides correct information	Lab report is very well written, addresses variables, provides correct information and presents valid conclusions
Results communicated	Presentation was incomplete, inaccurate, or unprofessional.	Presentation was complete, mostly accurate and professional.	Presentation was outstanding, complete, accurate and professional.

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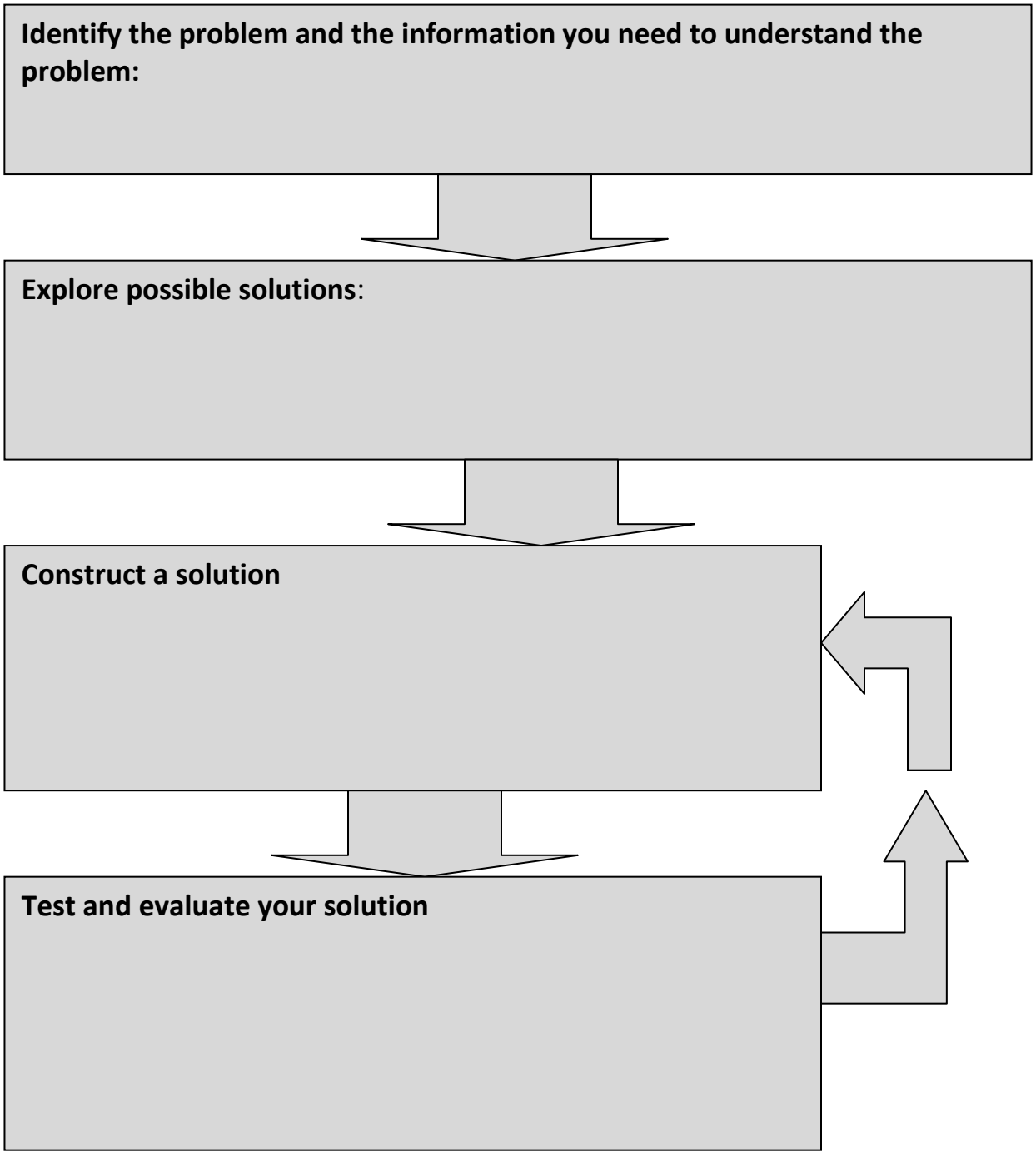

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Identify the problem and the information you need to understand the problem:

Explore possible solutions:

Your solution must:

- Fit inside a shoebox.
- Drop from increasing heights
- Drop from two stories without cracking the egg.

☐ **Solution Trial 1**

Draw your craft.

Trial Drop 1 Drop from 1 meter

1. **Did the egg survive the fall from 1 meter? _____**
2. **What was successful in the design?**

3. **What will you change?**

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Solution Trial 2

Draw your craft.

Trial Drop 2 Drop from stairway (3 meters)

4. **Did the egg survive the fall from 3 meters? _____**
5. **What was successful in the design?**

6. **What will you change?**

☐ **Solution Trial 3**

Draw your craft.

Trial Drop 2 Drop from stairway 2 stories (10 Meters)

7. **Did the egg survive the fall from 2 stories? _____**
8. **What was successful in the design?**

9. **What will you change?**

Class:_____________________ **Date** _______________________

Activity Observation Checklist

Activity : _______________________

Student	Assistance Needed			Teamwork			Focused on Task	
	None	Some	Much	Good	Fair	Poor	Yes	No

Scientific Process
Egg Drop Project
Analysis

NAME _____

Please write in complete sentences and be as thorough as possible!

1. What do you think the overall purpose of this project was for? _____

   _____

   _____

2. Review your packet if necessary. WRITE ONE SENTENCE that is an overall summary of what your group discovered. _____

   _____

   _____

3. WRITE ONE PARAGRAPH describing the procedure you followed during this project. Make sure to use enough detail about your materials and methods that someone else could repeat your procedure. _____

   _____

   _____

   _____

   _____

   _____

   _____

4. WRITE ONE PARAGRAPH that describes the hypothesis you used, what things you controlled , what the independent variable(s) was/were, and what the dependent variable was.

_____

_____

_____

_____

_____

_____

5. WRITE ONE PARAGRAPH that describe any problems or errors you had, how your results compared to other groups, and any suggestions for improving this project.

_____

_____

_____

_____

_____

_____

Scientific Process Name _____
Project Personal Reflection

1. How well did your group work together? _____
2. What went well? _____
3. What could be improved on? _____
4. Did everyone in your group participate? _____
5. Using a scale of 1-5, with one being the lowest and 5 the highest, rate the members of your group (including yourself) on their participation.

_____ _____

_____ _____

_____ _____

6. What was successful in the design of your container? _____

_____

7. What would you change if you did this project again? _____

_____