Geodesic Domes

Name: _____

Problem: _____

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Key Words: compression force, reinforcement, tension

Hypothesis: _____

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Materials: 30 straws paper clips masking tape ruler scissors

Procedures:

1. View the video “Buckminster Fuller”

2. What geometric shape is used to construct geodesic domes? _____

3. Why are triangles such strong shapes? _____

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4. Explain how a geodesic dome is created using triangles. _____

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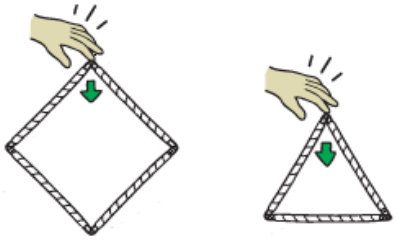
5. Using the straws and paper clips, create a square and a triangle. Push a paper clip inside one end of a straw. Link another clip to the first clip and push the second clip into the end of a second straw.

6. Test the two geometric shapes by pressing down as shown in the diagram.



7. Which object kept its shape the best? _____

8. Explain why did this occurred? _____

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9. Develop a strategy for making the square stronger by using one or two more straws. Describe your strategy. _____

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10. Modify then test the square following your strategy.

11. Describe how did your strategy affected the strength of the square. _____

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12. Explain how would you use straws and paper clips to create a geodesic dome? _____

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13. Cut the remaining straws into thirds. Tip: *Measure the length of a straw. Divide the length by 3. That will be the length of each segment.*

14. Create a geodesic dome using the straws and paper clips. You may use small amounts of tape only as reinforcements.

15. Discuss the outcome of your dome (*positives and negatives*) and how you could improve your design. _____

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State Your Conclusions (tell whether your hypothesis held true, answer the problem, tell what you learned, and apply this to a real world situation)