



Which is the best size to
use?

M1-21 PHYSICS

Testable Question & Purpose

Question: What bubble wrap shape work best in cushioning impact?

Purpose: My purpose is to see which size of bubble wrap is the best to use and use when packaging items.

Abstract

The problem in my experiment is which bubble wrap size is the best. Then the purpose of this was to find the best size. Next to see which size to use when packaging items. This can help people know what to use for a certain type of item. My hypothesis is that the large circle bubble wrap will do the best. I have to wrap 20 eggs in small circles. 20 eggs in medium circle. Then 20 eggs in large circle. Then I drop all 60 eggs and record the results. The results were the small circle did the worst and then the medium circle did better but the large circle did the best. The results show the large circle did the best. So in conclusion the best size was large because no eggs broke and with the other sizes they didn't do as good as the large circle.

Hypothesis

If the egg is wrapped in the large circle bubble wrap, then the egg won't break as much as the other sizes because, the large circles are bigger than the other circles and has more cushioning in it.

Materials

1. Standard bubble wrap with small circles
2. Standard bubble wrap with medium circles
3. Oversized bubble wrap with large circles
4. 60 eggs
5. High stool, balcony, or similar elevated platform
6. Masking tape
7. For 1 egg 16cm by 16cm sheet of bubble wrap
8. For 20 eggs 32cm by 160cm sheet of bubble wrap.

Procedures

- ▶ 1. Wrap 20 eggs in small circle bubble wrap.
- ▶ 2. Drop each egg
- ▶ 3. Then record the data for each drop
- ▶ 4. Next wrap 20 eggs in large circle bubble wrap
- ▶ 5. Then drop each egg
- ▶ 6. Last record the data
- ▶ 7. Now wrap eggs in square bubble wrap
- ▶ 8. Then drop each egg
- ▶ 9. Last record data

Variables

The variables in the experiment can and play an effect in the experiment. The controlled variable in the experiment is height of the drop of the egg and using an egg each time. The height has to be the same each time because if it's not then the impact won't be the same. Then use an egg time because if I don't use an egg and use something else it won't be the same. Then the independent variable is the variable I change. The independent variable is the size of the bubble wrap. If the bubble wrap is small circles, large circles, or square bubble wrap. Also the other part of my independent variable is the way that I wrap the egg in bubble wrap because I might have to wrap the egg different with each size of the bubble wrap. Then my dependent variable is if the egg breaks or not. This is my dependent variable because this changes on its own I don't change this. These are my variables and they can play an effect on my experiment.

Pictures- small pictures



Pictures-medium circle



Pictures- large circles

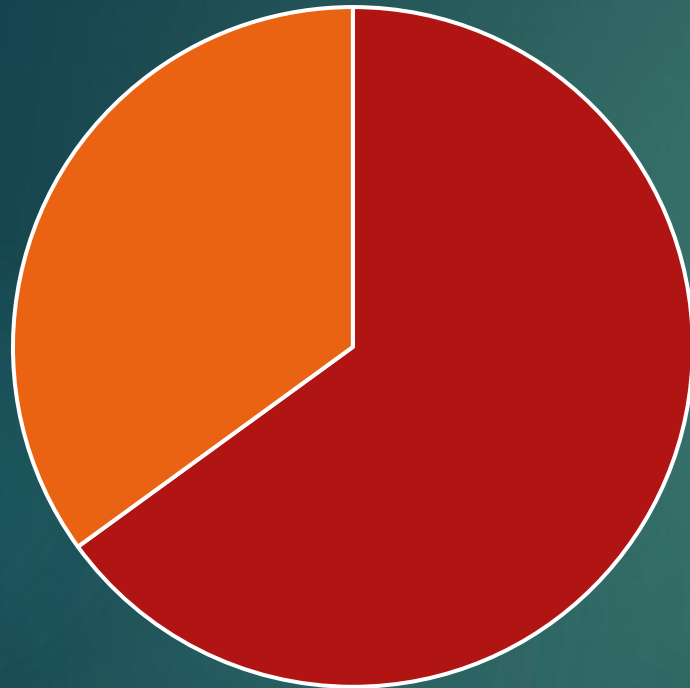


How the eggs got wrapped



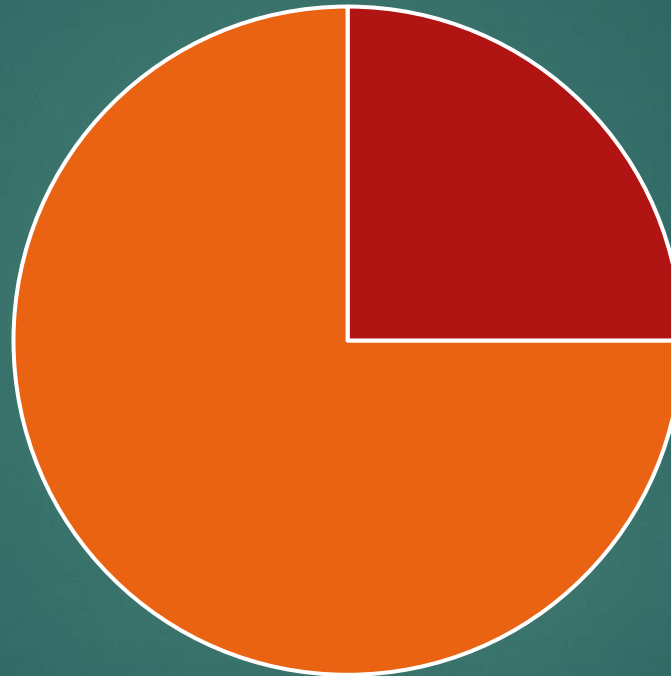
Results (Graph)

small bubble



break no break

medium bubble



break no break

large bubble



break no break

Results

In the experiment for small circle 35% didn't break. So about 35% of the time its not going to break. Next medium circles 75% didn't break. So about 75% of the time its not going to break. Then large circles 100% didn't break every egg survived and no eggs broke with this size. So the results show that the large circle is the best to use.

Conclusion

My hypothesis was supported because the large circle did the best. I said the large circle will do the best because there is more cushioning to stop the impact the diameter is the biggest. No eggs broke with the large circle so that's why the hypothesis is correct.

Sites Noted

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By Reading the Guide below You'll Learn What the Different Sizes, Grades and Qualities Are and Which Ones Are the Right Types of Bubble Wrap to Use When Moving and Shipping Items. "Different Sizes of Bubble Wrap and When to Use Them." Transit Systems Inc. N.p., n.d. Web. 14 Sept. 2016.

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