Phone Cases!!

Intro Paragraph

Why did our group pick this topic? We picked this topic because we were thinking about phones cases and phones and what happens when we drop our phones. When you get a phone case, they say it's going to keep the phone safe, but the phone case does not do this sometimes. We have experienced this before, so we know how frustrating this can be. Our group thought of this topic to see which phone case brand will protect the phone the most. We are trying to finding the strongest and most protective phone cases.

Background Research

Our group researched how much a phone case weighs. A phone case weighs anywhere from a few grams to over 2.7 kilograms, with most standard cases falling between 1 and 2 ounces, approximately 28 to 57 grams. For everyday use, Thermoplastic polyurethane (TPU) phone cases are often preferred because of their shock-absorbing qualities and flexibility, which helps protect devices from minor drops. Polycarbonate cases provide excellent rigid protection, but might not cushion impacts as well. Choosing depends on whether you want more grip and shock resistance (TPU) or a solid, hard shell (polycarbonate), but our group did not get TPU for our experiment. The phone cases our group got were Hython, TENOC, SunStory, and SPIDER CASE. These cases are made from materials like Thermoplastic polyurethane, rubber-like plastic, hard polycarbonate.

Materials list

- 4 phone cases (Hython, TENOC, SunStory, and SPIDERCASE).
- 1 iPhone Xs Max

Question, Hypothesis, and Variables

Hypothesis: Our group thinks the Sun Story phone case will survive in a 18ft drop because it weighs the most.

The independent variable: The different phone case brands.

The dependent variable: The damage to the phone cases with the phone.Question: What phone case brand will survive in a 18ft drop?

The control variable: Dropping from around 18ft.

Detailed Procedures

1. Buy 4 phone cases like Hython, TENOC, SunStory, and SPIDERCASE.
2. Go to a garage that's at least 20 ft tall
3. Give the 4 phone cases to 4 group members.
4. Make observations on the phone cases before we drop.
5. 2 people go 18 ft above in the garage.
6. 2 people stay downstairs where the phone cases are about to drop.
7. Drop the phone case from 18 feet one at a time.
8. Make observations on what has happened.
9. Repeat with the other phone cases.

Data Table #1

Phone cases	cracked	broken	scraped
Hython	On the back of the phone it is cracked but nothing is cracked on the screen.	`	
SPIDERCASE	It was cracked on the back and the screen.	`	

Data Table #2

Phone cases	cracked	broken	scraped
SunStory		The back of the phone is that you can see little parts inside of the phone.	
TENOC		The back of the phone has glass shattered and you can see the inside.	

Results

- The Hython case kept the phone safe, on the front of the phone nothing was cracked
- The SPIDERCASE made more damage then the first phone case (Hython)
- The Sun Story case got a lot more cracks on the phone
- The least protective phone case was TENOC, the front and back was shattered from after being dropped.
- So our hypothesis was incorrect because we thought that Sunstory was going to be the most protective phone case because it was the heaviest. The most protective case ended up being the Hython case and Hython phone case weighs around 1.13 -1.29 ounces.

Conclusion Paragraph

After completing our experiment, we learned that the strongest phone case was Hython because it did not crack on the front of the phone, just the back of the phone. During our experiment, we noticed that all phone cases were hard. During one drop, the phone flipped around mid-air and landed on its front which could have impacted our results. After we dropped Hython, it was a little cracked on the bottom of the phone. This information is helpful for us to know which phone cases to buy to protect our phones. If someone did this experiment next year we would suggest they try more expensive phone cases that may be made out of stronger materials to see if that affects results. We would also suggest maybe having 4 different phones so it’s easier for you to know which phone case is better at protecting the phone.

Pictures

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Citations

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