KEY

Quick Guide to ABCDE Paragraphs in Science - Gondola Challenge

Assertion: Make a claim (Repeat Part of the Question)

As the mass of the object increased, the balloon (gondola) took a longer time going from point A to point B.

part of the question. claim

Background: Describe what happened in the lab

In the lab a balloon, with a paper cup taped to the top of it, was filled with air, placed on a fishing line (via a straw), and released. The time it took the balloon to reach the roof was recorded. A paper clip was then attached to the paper cup and again the balloon was filled with air, released, and the time it took to reach the roof was recorded. A second paper clip was then attached to the cup and process started all over again. The addition of one paper clip at a time continued until the balloon did not reach the roof anymore.

simplified & clearly written procedure.

Citation: Cite sources including data, text, and diagrams (reference in your experiment) - It is important to relate this experiment to a scientific concept. Use some of the information below in your citation. Here are some of Newton's laws (according to Physics Classroom):

First Law of inertia *- An object at rest will stay at rest and an object in motion will stay in motion unless acted upon by an unbalanced force.*
Second Law *- When there is an unbalanced force there is acceleration. Acceleration is directly proportional to the net force and acceleration inversely depends on the mass of the object.*
Third Law *- For every action, there is an equal and opposite reaction.*

science term

According to "www.physicsclassroom.com" Newton's 2nd Law is defined as acceleration being directly proportional to the net force and inversely dependent on the mass of the object. As well, Newton's third law states that for every action, there is an equal and opposite reaction. **As shown in *Table 1*** – *The Effect of Mass on the Time it takes a Balloon to reach the Roof*, when the balloon was released with 1 paper clip attached it took the balloon 0.92 seconds to reach the roof and when the balloon was released with 8 paper clips attached it took the balloon 1.22 seconds to reach the roof.

} citing data with units.

Discussion: Discuss how your examples and citations relate to your topic or claim.

In the lab, when the air was released out of the balloon, the balloon moved in the opposite direction of the air. This can be explained using Newton's Third Law that for every action, there is an equal and opposite reaction. As well, as more paper clips were added to the "gondola" (paper cup), the more mass the object had and the slower the balloon moved from point A to point B. This can be explained using Newton's second law that acceleration depends inversely on the mass of the object.

← our lab's results

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End/Extension: Write a conclusion sentence (rephrase your claim).

rephrasing your assertion

In conclusion, the more mass an object has, the slower it will move from point A to point B. One extension to this activity would be to release the balloon from different angles, but keep the mass the same.