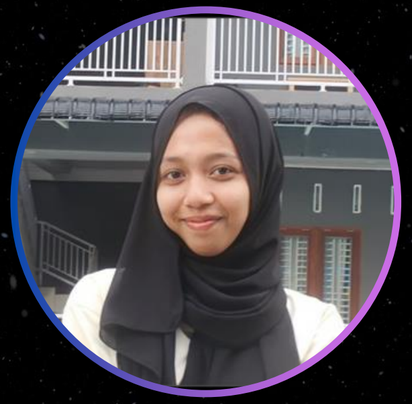
LATO-LATO MOTION TRIALS IN ZERO GRAVITY

Asian Try Zero-G 2024

Meet Our Team



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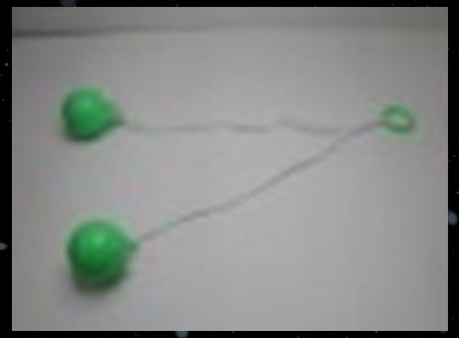
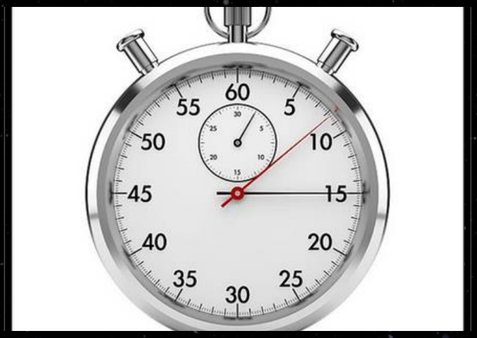
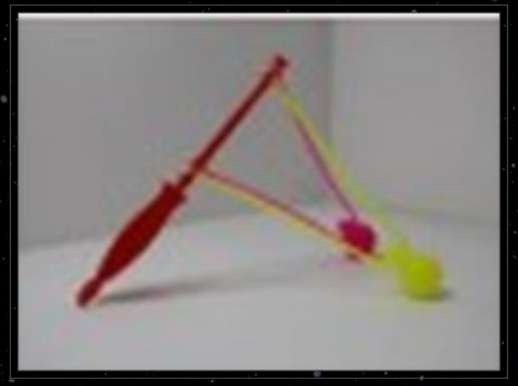
Experiment Equipment



Rope Clackers



Stopwatch



Stick Clackers

Experiment Procedure

Rope Clacker

Stick Clacker

Start

Take Lato-lato and place two fingers on the Lato-lato strap

Successfull

1 See the shape of the rope on Lato-lato in zero gravity (for Rope Clacker).

2. Align 2 Lato-lato balls to make them playable.

3. Play Lato-lato by moving your hands up and down at various times using the stopwatch.

4. Analysis of perfectly elastic collisions produced by lato-lato

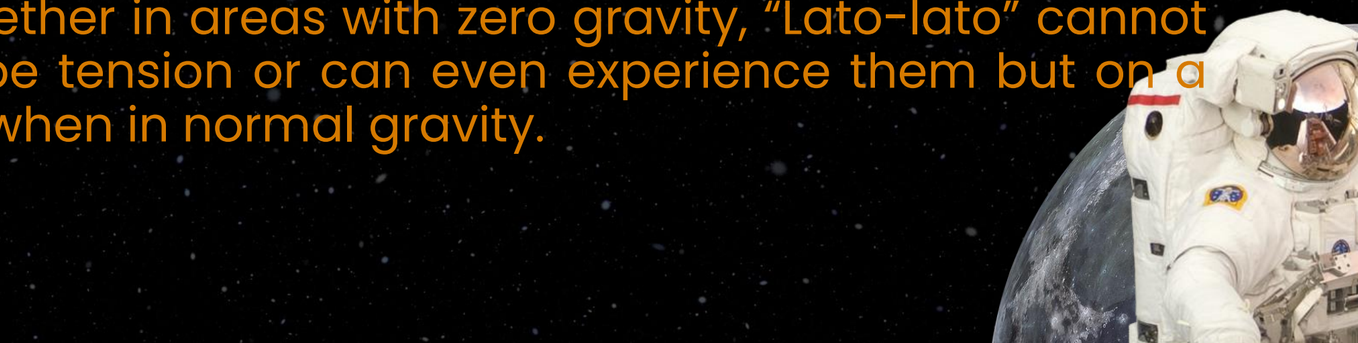
Document experimental results

Successfull

End

Hypothesis

The law of conservation of momentum reads: if there is no external force acting on a system, then the momentum of the system will always remain constant. One example of the application of this law is found in a toy, namely “Lato-lato”. In “Lato-lato” the law of conservation of momentum is related to Newton's 3rd law. Due to the existence of Newton's 3rd law in the law of conservation of momentum, a “Lato-lato” will experience a perfectly elastic collision. This experiment relates to Newton's 2nd law where the force is affected by mass and gravitational acceleration, and Newton's 3rd law where the action force is directly proportional to the reaction force but in different directions. Therefore, to get a perfect collision in zero gravity space requires the analysis of Newton's 2nd and 3rd laws as a benchmark to predict the chances of success of the experiment. Based on this, we conclude that the chances of success of this experiment are greater than the chances of failure. The events and laws contained in “Lato-lato” are possible due to gravity. But this also needs clear proof of how much gravity affects the “Lato-lato” toy. Whether in areas with zero gravity, “Lato-lato” cannot experience perfect elastic collisions and rope tension or can even experience them but on a smaller scale compared to those produced when in normal gravity.



Comparison of Results With Hypothesis

Hypotheses made in accordance with the results obtained

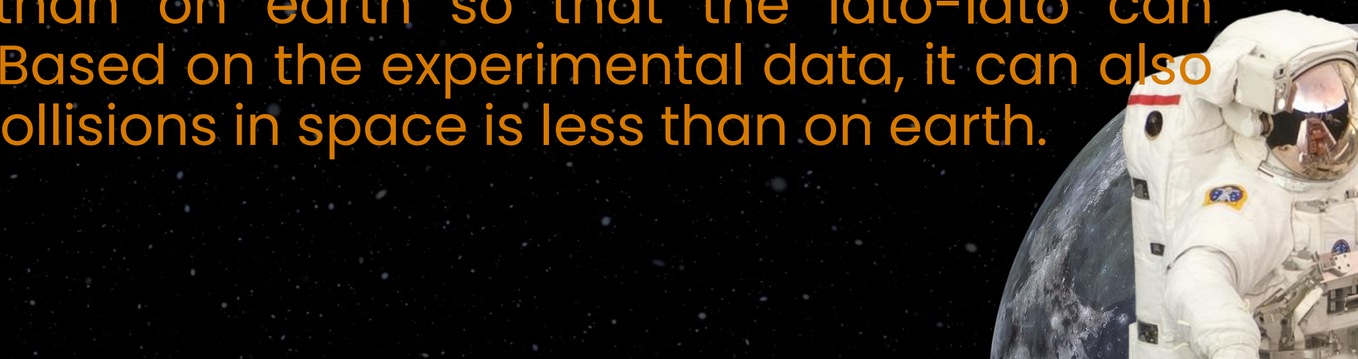
Comparison of Results With Hypothesis

Latos in space can still experience a bouncy collision, which is consistent with the law of conservation of momentum, and Newton's 2nd and 3rd laws.

$$\sum \vec{F} = \vec{m}\vec{a}$$

$$\vec{F}\,aksi = -\vec{F}\,reaksi$$

From the equation above, it can be seen that the micro-force of lato-lato in zero gravity is influenced by mass, velocity, and gravitational acceleration. So that the force F in space must be greater than on earth so that the lato-lato can experience a perfect bouncy collision. Based on the experimental data, it can also be seen that the intensity of lato-lato collisions in space is less than on earth.



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THANK YOU

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