Star Crusher Building Instruction Effectiveness and Feasibility

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INTRODUCTION

Purpose

The purpose of this report is to analyze the feasibility of the Star Crusher instructions being used by 12/13-year-olds for basic aerodynamic concept lessons in science class.

Problem

Students of local middle school currently do not have physical tools that help students understand basic aerodynamic concepts for lessons in science class. The students must be able to set-up, build, and clean-up waste from the visual aid in no more than one 40-minute class. With the primary function of the Star Crusher plane being to aid in teaching aerodynamic concepts to the students, it is important that the students use the remaining classes during the week to discuss the aerodynamic concepts.

The presented solution involves using the Star Crusher plane building instructions to help students create their own visual aid. The Star Crusher plane would be used as a visual aid for the subsequent lessons throughout the week.

Scope

The Star Crusher plane is a futuristic-looking paper plane with instructions containing 43 individual steps. The instructions will be evaluated based on: build time, flight distance, durability, and number of steps followed correctly.

DISCUSSION

Build Time

Explanation

The build time of the Star Crusher is critical for this application because of the 40-minute time constraint that has been set.

Data

Jack- 8:44 (People around)
Spencer- 8:49 (Isolated)
Ethan- 16:12 (Pictures only)
Sean- 10:30

Interpretation

Distance Flown

Explanation

The objective of this lesson is to teach students the concepts of aerodynamics. By measuring the distance flown for each plane will determine if the plane can accurately show the aerodynamic concepts.

Data

Interpretation

Durability

Explanation

Because the planes will be used throughout the week, the durability of the plane must be sufficient enough to withstand frequent use during the lessons.

Data

Plane	Drops Until Bend
1	3
2	1
3	2
4	2
5	3
6	5
7	6
8	1
9	4
10	2

Interpretation

Understandability

Explanation

These experiments will be presented to middle schoolers with no real understanding of aerodynamics, and as such must be enough to capture interest, but simple enough to understand.

Data

	1	2	3	4	5	6	7	8	9	10
Difficulty Rating										

1 → Easy, 10 → Hard

Interpretation

CONCLUSION

Summary

Conclusions

Recommendation