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The Scientific Graphic Organizer for Practical Work

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The Scientific Graphic Organizer for Practical Work

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Problem:

Assessing students’ science reports hardly aligns with targeted goals of practical work. Writing (and assessing) a report is time consuming. If we want to verify whether students did what was intended, and learned what was aimed for, what other options do we have?

SGO:

To address some problems with written science reports, I developed the SGO: a pre-structured but simplified lab journal, providing a schematic for reporting the essentials of the practical.

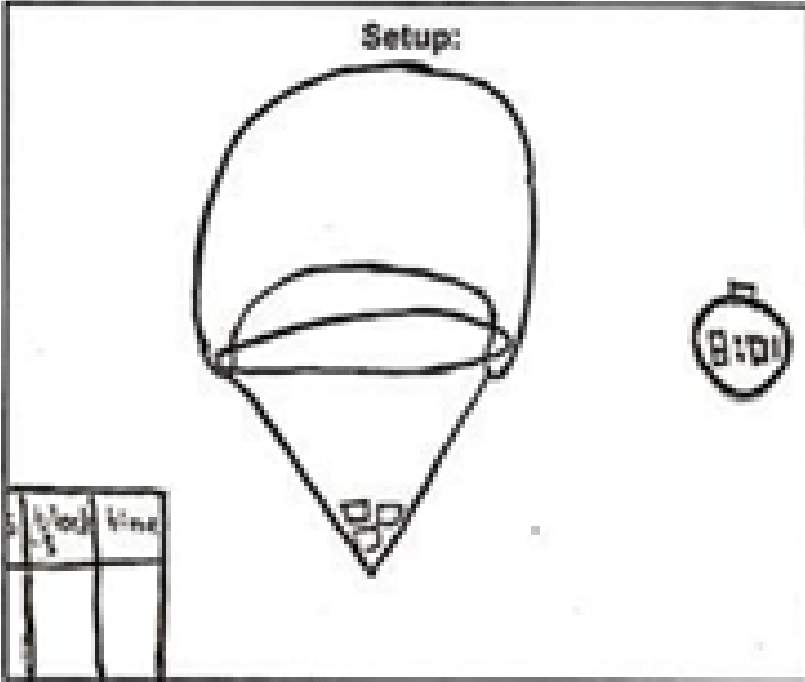
Name(s):Date:Title: Design CRV

Research Question:
What is the relationship between the weight and the fall velocity?

Theory:
The heavier the CRV, the faster it falls.

Quantities:
Independent variable: Weight of CRV
Dependent variable: Fall velocity
Controlled variable(s): cone, parachute

Materials:
• The cone
• Parachute
• Weight
• Stop watch
• Result table
•
•
•

Setup:


Procedure:
1 Make a paper cone. Adjust size (radius)
2 Find a parachute of different materials.
3 Attach different weight to the cone.
4 Drop the CRV with the parachute. Time it.
5 Change the drop height. Time all of them.
6 Write down the results and compare them.
7 Radius change but keep same drop height.
8 Design result sheet with drop height, radius, time, blocks.

* Change 1 thing at a time.

Notes and Comments

Explanatory video

Teacher's perspective

The physics teacher

Digital sgo

Two views:

Two short videos (QR) showcase the designer’s perspective and a teacher’s firsthand experience with classroom practices.

	Report	SGO
Constructive alignment	-	+
Focus on experiment	+/-	+
Learning to write a report	+	-
Time effective	-	+
Display students’ understanding	+/-	+/-
Students not proficient in English (EAL)	+/-	+

Conclusion:

The SGO is a useful tool for students, teachers and researchers. It provides all essential information to produce a fair judgement of the attainment of the learning goals without the necessity to write an extensive lab report.

Observations, measurements and calculations:

Graph:

Analysis & trend:

About accuracy and precision:

Conclusion(s):

What I wanted to say as well:

