

(資料)

MYP Science 10 Investigation

Design your own experiment

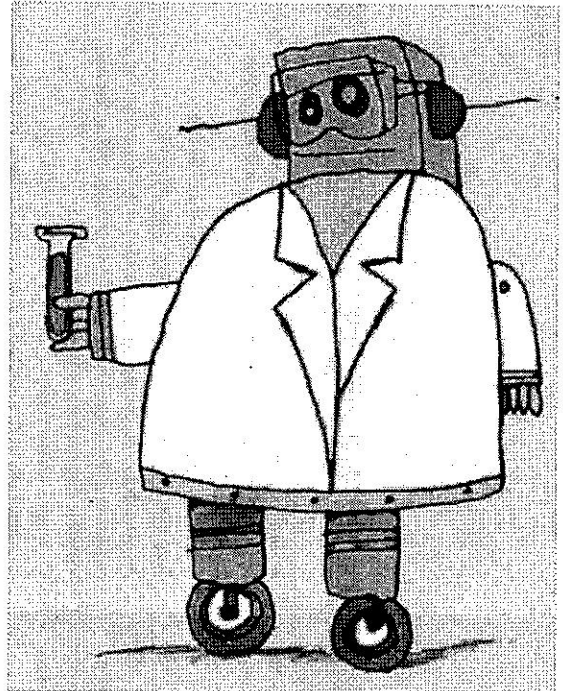
Name:

"Be a scientist: make your own force meter" [Online Image] Instructables, Date accessed: 19.07.2010
<<http://www.instructables.com/id/Be-a-scientist%3A-make-your-own-force-meter/>>

Your task

For this experimental design task, we will investigate the properties of a tennis ball.

- You are free to choose how and what to investigate, however the experimental procedures need to be **SAFE**.
- Each student may use up to 10 tennis balls for their experimentation.
- How each ball will be used for the investigation needs to be clearly described in the experimental method.
- Students may use other equipment available in the SciTech Building upon consultation with the teacher.



Your practical lab design must,

1. Recognize the purpose of the investigation with an **introduction**, which contains a *hypothesis* in answer to the *research question*.
2. Contain a step by step *detailed* experimental **method** that will allow anyone who reads it to perform the exact same experiment.
3. Identify the **relevant variables** and explains how to *manipulate* them.
4. Comment on the **reliability** and/or **validity** of the method used.
5. Suggest ways you could **improve** the method for *further inquiry* upon completion of the experimental design.

The Due Date for this investigation is: September 7th, 2010

MYP SCIENCE 10 ASSESSMENT RUBRIC

Investigation: Design your own experiment

Name:

Criterion D: Scientific Inquiry

Level	Descriptor	Indicators	Criterion D Self-Assessment Level
0	The student does not reach a standard described by any of the descriptors given below.		
1-2	The student attempts to recognize the purpose of the investigation and makes references to variables but these are incomplete or not fully developed. The method suggested is partially complete . The evaluation of the method is either absent or incomplete .	<ul style="list-style-type: none"> An introduction articulating the purpose of the experiment along with the hypothesis in response to the research question is incomplete. Relevant variables are not clearly identified. Comments on the reliability of the method is incomplete Suggested improvements of the method is incomplete 	
3-4	The student recognizes the purpose of the investigation and provides an explanation/prediction but this is not fully developed. The student acknowledges some of the variables involved. The method suggested is complete and includes appropriate materials/equipment. The evaluation of the method is partially developed .	<ul style="list-style-type: none"> An introduction articulating the purpose of the experiment is provided with a hypothesis that attempts to respond to the research question. Variables that can be measured are identified. Comments on the reliability of the method is provided Improvements to the method is mentioned however not fully developed 	
5-6	The student recognizes and attempts to articulate the purpose of the investigation, formulates a simple hypothesis , and explains the hypothesis using logical reasoning. The student identifies the relevant variables and explains how to manipulate them. The student comments on the reliability and/or validity of the method. The student suggests improvements to the method and makes suggestions for further inquiry when relevant.	<ul style="list-style-type: none"> A clear introduction articulating the purpose of the experiment is provided with a clearly defined hypothesis in response to the research question. Relevant variables that can be measured are identified and manipulated with supporting diagrams. Comments on the reliability of the method is fully developed Improvements to the method are provided that provide avenues for further inquiry 	

Teacher Comments/Justification of Achievement Level