Accuracy Brochure
Assignment Description
Integrated Science I

Name _____
Date_____ Period____
Teammates_____
_____
_____

Introduction

The absolute, exact size or temperature, etc. of an object cannot be known. The best we can hope for is a narrow estimate. Any measuring instrument has a limit to how accurate a reading it can provide.

You work for the Marketing Division of Acme Corp., which makes measuring instruments (triple beam balance, thermometer, caliper, spring scale or meter stick). Your boss tells you the Sales Division needs spec sheets and instructions to ship with each product. For some reason customers are looking specifically for accuracy and precision information. You are assigned to a team to develop a brochure for one of the instruments.

Essential Question	Can we know and describe an object?
Unit Questions	What is measurement error and how do we deal with it?
Content Questions	What is the difference between accuracy and precision? What factors affect accuracy? What factors affect precision?

Learning Goals

- Determine the degree of accuracy that can be obtained using a given instrument. (PS1) (NH GLE - S:SPS1:8:1.2)
- Information Use: The student will use information–gathering techniques in collecting, analyzing, organizing and presenting information. (CCC.5)
- Communication Skills: The student will use a variety of methods, appropriate to the purpose and audience, to communicate or demonstrate his/her learning effectively. (CCC.3)

The Assignment

Your team will **develop a brochure** that explains accuracy issues around your assigned instrument. The requirements are listed below.

Brochure Requirements

Content

- Discussion of the accuracy and precision of instrument (in other words, how many decimal places are certain, uncertain, etc.)
- Measurement data of various objects to use for analysis
- Analysis of errors associated with the instrument
- Product Spec Summary
- How to minimize error when taking measurements

Cooperation and Participation

- Assign roles for each team member
- Track contributions of members

Design and Layout

- 3 fold brochure layout
- Sources cited properly
- Plenty of images!

Accuracy Brochure Grading Rubric

Integrated Science

Name _____
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_____
_____

	Thinking Like a Scientist, Accuracy and Precision	INFORMATION USE	COMMUNICATION SKILLS
5	The student has such a complete and detailed understanding of accuracy and precision that he/she regularly integrates and applies his information to other concepts and/or has demonstrated the ability assist others in their learning.	• **routinely** "goes above and beyond" with appropriate available resources and technologies. • models for and assists others	• **independently** engages a variety of audiences. • communicates knowledge through a range of modes including, but not limited to, writing and speaking.
4	The student has a complete and detailed understanding of the information important to accuracy and precision and demonstrates the ability to apply this understanding to some situations.	• demonstrates skill and adaptability with appropriate information-gathering, analysis and presentation practices. • exhibits the willingness to "take a risk" to **extend beyond typical methods**.	• effectively exhibits his/her knowledge through a comfort level with both written and spoken forms delivered to **multiple audiences**.
3	The student has a working, but not detailed, understanding of the information important to accuracy and precision.	• **regularly** uses appropriate information from a range of available sources. • uses information effectively to communicate knowledge. • solves problems using a variety of appropriate, available technologies.	• effectively communicates his/her learning through writing **and** speaking to **specific audiences**.
2	The student has a basic understanding of accuracy and precision, but he/she has misconceptions about some of the information.	• has **basic** knowledge of gathering and using information. • **inconsistently** processes or presents information. • **or** has yet to demonstrate effective use of available resources to convey knowledge.	• effectively communicates his/her knowledge to specific audiences through writing or speaking, yet not in both. • may be **inconsistent** in both modes, but is "**almost there**."
1	The student's understanding of accuracy and precision is incomplete or contains significant misconceptions that limit understanding.	• shows **limited** understanding of information use and/or gathering methods. • has some knowledge of appropriate presentation technologies. • is unable to integrate these.	• attempts and can demonstrate **limited** ability in either written or spoken modes. • is either inconsistent or has significant gaps in communication.
0	No judgment can be made about the student's understanding of accuracy and precision.	No Evidence of Proficiency	No Evidence of Proficiency
N/A	The student's understanding has yet to be assessed.	Not Yet Assessed	Not Yet Assessed