Guided Lesson Notes

Name:_____ **Date:**_____

Uncertainty in Measurement

Directions: Complete this study guide as you move through the lesson. By taking notes, you are more likely to remember what you are learning. The completed study guide can be used for practice activities and to prepare for quizzes and exams. Be sure to save each study guide so you can access it when you need it.

Essential Vocabulary

As you encounter these scientific terms in the lesson, enter the meaning and an example (or two) for each. You can even draw a picture. If there are other unfamiliar words you find, enter them in the blank spaces provided.

exact numbers	*measured numbers*
uncertainty	*error*
accuracy	*precision*

significant figures	*absolute error*
percent error	

Measured Numbers and Exact Numbers

What is an exact number?

How can an exact number be determined?

How can measured numbers be obtained?

Name four measuring devices that can be used to obtain measured numbers.

Which quantity can you be certain of an answer: exact number or measured number?

Why is there uncertainty in the value obtained by measuring the mass of an object on a scale?

Accuracy and Precision

Fill in the following descriptions of error and uncertainty.

Error is the _____ between the measured value and the _____ value. It tells how far a measurement is from a _____ value.

Uncertainty is the _____within which the true value of the measurement sits. The degree of uncertainty is affected in part by the quality of the _____.

What is accuracy?

What could lead to inaccurate measurements?

What is precision?

Percent Error

Fill out the table below for absolute error and percent error.

	Definition	Equation
Absolute error		
Percent error		

Name two uses of percent error.

Fill in the blanks about percent error.

The smaller the percent error, the closer the _____ is to the _____.

This can be used to evaluate the _____.