RECORD SHEET

Activity 1: Measurements in Science

Name   Date   Class

Key Questions

Chapter _____

_____

Activity _____

_____

I Think

1. Do you agree with Carlos, with Chantel, or with neither? _____
What is your reason?

_____

_____

_____

Explore Your Ideas

Experiment 1: How long does it take for a pendulum to make 10 back and forth swings?

1. How long did it take for your pendulum to make 10 complete back and forth swings?

_____

Make Sense of Your Ideas

1. Why do you think different students in the class obtained different values for their measurement?

_____

_____

_____

2. What suggestions do you have for improving the method used to make the measurements?

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_____

3. Write down the method the class decides is the best one for making the measurement.

_____

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_____

Explore Your Ideas

Experiment 2: Repeat Experiment 1.

1. How long did it take for your pendulum to make 10 complete back and forth swings?

_____

Make Sense of Your Ideas

Look over the data in the new class table.

Think about the answers to the next questions and discuss them with your partner.

1. Are all the posted values exactly the same, or is there some variation in the values?

_____

2. If there is some variation in posted values, do you think it is possible for your class to repeat this experiment so that everyone would measure the exact same value? Why or why not?

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_____

3. Suppose your class needed to decide on a single *best* value for the time it takes the pendulum to swing back and forth 10 times. What value should be used? Why do you think so?

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4. Last year, eight teams of students measured how long it took for a pendulum to swing back and forth 10 times. They all used the same procedure for their measurements. Below is a table listing their values.

Table: Time for 10 Back and Forth Swings of the Pendulum			
Team	Time (s)	Team	Time (s)
A	15	E	14
B	14	F	16
C	9	G	15
D	16	H	15

The class then tried to decide on a single *best* value for its measurement. They wondered what to do about Team C's value because it was so very different from all the other measurements. Team C admitted they were careless in how they made their measurement.

Do you think Team C's measured value should be included in determining the best value for the class? Why or why not?

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_____

My Ideas

The key question for this activity is:

> **When you measure something, can you obtain an exact value?**

1. Based on what you learned in this activity, answer the key question.

_____

_____

_____

_____

2. Suppose you repeated the experiment in this activity. What would you do differently so you could report the best value for the time?

_____

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