

**A group of students each measured the temperature for a beaker of boiling water as shown below. The actual boiling point of pure water is  $100^{\circ}\text{C}$ .**

**Student 1 recorded  $97.5^{\circ}\text{C}$ .**

**Student 2 recorded  $97.1^{\circ}\text{C}$ .**

**Student 3 recorded  $97.2^{\circ}\text{C}$ .**

**CLAIM:** Is this data accurate and/or precise?

What is the percent error for the average of these measurements?

**EVIDENCE:** How far apart are the data points?

How close are they to the true value?

**REASONING:** Explain how you to set up the percent error equation.

How many significant figures did you need in your answer? Why?

**A group of students each measured the mass of a beaker on a triple beam balance. The actual mass of the beaker is 274.570 grams.**

**Student 1 recorded 274.612 g.**

**Student 2 recorded 275.119 g.**

**Student 3 recorded 273.989 g.**

**CLAIM:** Is this data accurate and/or precise?

What is the percent error for the average of these measurements?

**EVIDENCE:** How far apart are the data points?

How close are they to the true value?

**REASONING:** Explain how you to set up the percent error equation.

How many significant figures did you need in your answer? Why?

**A group of students each measured the volume of a rock by displacement.  
The actual volume of the rock was 7.82 ml.**

**Student 1 recorded 7.83 ml.**

**Student 2 recorded 7.85 ml.**

**Student 3 recorded 7.80 ml.**

**CLAIM:** Is this data accurate and/or precise?

What is the percent error for the average of these measurements?

**EVIDENCE:** How far apart are the data points?

How close are they to the true value?

**REASONING:** Explain how you to set up the percent error equation.

How many significant figures did you need in your answer? Why?

**Three groups of students calculated the specific heat of copper based on data collected during a lab activity. The actual specific heat of copper is  $0.385 \text{ J/g}^\circ\text{C}$ .**

**Group 1 calculated the specific heat to be  $0.429 \text{ J/g}^\circ\text{C}$ .**

**Group 2 calculated the specific heat to be  $0.327 \text{ J/g}^\circ\text{C}$ .**

**Group 3 calculated the specific heat to be  $0.299 \text{ J/g}^\circ\text{C}$ .**

**CLAIM:** Is this data accurate and/or precise?

What is the percent error for the average of these measurements?

**EVIDENCE:** How far apart are the data points?

How close are they to the true value?

**REASONING:** Explain how you to set up the percent error equation.

How many significant figures did you need in your answer? Why?

**A group of students each calculated the volume of a balloon using its circumference. The actual volume of the balloon is 1.5 Liters.**

**Student 1 calculated the volume to be 1.7 L.**

**Student 2 calculated the volume to be 1.4 L.**

**Student 3 calculated the volume to be 1.6 L.**

**CLAIM:** Is this data accurate and/or precise?

**EVIDENCE:** How far apart are the data points?

How close are they to the true value?

What is the percent error for the average of these measurements?

**REASONING:** Explain how you to set up the percent error equation.

How many significant figures did you need in your answer? Why?

**A chemistry student repeated the same chemical reaction three times.  
The theoretical yield for the reaction was 87.2 grams.**

**Reaction 1 produced 73.95 grams.**

**Reaction 1 produced 81.26 grams.**

**Reaction 3 produced 79.44 grams.**

**CLAIM:** Is this data accurate and/or precise?

What is the percent error for the average of these measurements?

**EVIDENCE:** How far apart are the data points?

How close are they to the true value?

**REASONING:** Explain how you to set up the percent error equation.

How many significant figures did you need in your answer? Why?