Name _____



Every engineering design model has errors—but this isn't the same as making a mistake! Learn the common types here.

PART A

Review the chart below, then respond to the questions.

TYPE OF ERROR	CHARACTERISTICS	EXAMPLES
Systematic Error	 Predictable (repeated) Affects how accurate a measurement is (accurate = how close it is to the real value?) 	 ★ Instrument is old or not calibrated ★ You only survey a very small group of people
Random Error	 Not predictable Affects how precise a measurement is (precise = same result with multiple measurements) 	 ★ A reading on a scale fluctuates ★ You estimate a measurement when it falls between two markings on an instrument

- **1.** After the first set of trials, Richie realizes that the moisture sensor is not calibrated correctly. All of the readings are 1% higher than they should be. What type of error is this?
- 2. When Deja is testing the device, she notices that the reading for the level of a chemical fluctuates between two quantities. What type of error is this?
- **3.** When Monica is testing the device, she accidentally knocks one of the wires out of place so the device's alarm does not sound. What type of error is this?

PART B

Copy this chart on a separate sheet and fill it out to summarize the sources of error in your project.

TYPE OF ERROR	EXAMPLES IN OUR PROJECT
Systematic Error	
Random Error	