



# The Four Question Research Strategy

From: Cothron, Giese, and Rezba, *Students and Research*, 2000.

Identify your area of research interest:

1. \_\_\_\_\_? What materials and tools are readily available for conducting experiments on \_\_\_\_\_?  
*your area of research interest*

**Response:**

*Materials:*

*Tools:*

2. How do(es) \_\_\_\_\_ act? What do(es) it do? What can you observe about \_\_\_\_\_?  
*your area of research interest* *your area of research interest*

**Response:**

3. How can you change the set of materials to affect the action of \_\_\_\_\_?  
*your area of research interest*

**Materials:**  
*one per column*

What can you change about the material to change the way your research interest behaves?


4. How can you measure or describe the response of **your research interest** to the change?  
*Keep in mind the materials and tools you have on hand to make measurements.*

**Response:**

5. What tools do you have available to observe and measure **your research interest's response**?

**\*\* Remember to define how you will define your qualitative variables.**





# Experimental Design Diagram

From: Cothron, Giese, and Rezba, *Students and Research*, 2000.

*The Experimental Design Diagram is a concise way to describe an entire experiment.*

**Title:** The Effect of \_\_\_\_\_ (IV) on \_\_\_\_\_ (DP)

**Hypothesis:**

**Independent Variable:** \_\_\_\_\_ (unit of measure: \_\_\_\_\_ )

**Levels of Independent Variable, Including the Control**

(control)				
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**How many repeated trials for each of the IV levels**

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**Dependent Variable:** \_\_\_\_\_ (unit of measure: \_\_\_\_\_ )

**Constants:**

*Potential Variable      Level held constant      Potential Variable      Level held constant*

**Safety Considerations:**

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**Measurement Tools Needed:**

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