

# Lab: The “Black Box”

## CONCEPTUAL PHYSICS: UNIT 1

**Introduction:** In science, computing, and engineering, a **black box** is a device, system or object which can be viewed in terms of its inputs and outputs (or transfer characteristics), without any knowledge of its internal workings. Its implementation is "opaque" (black). ([https://en.wikipedia.org/wiki/Black\\_box](https://en.wikipedia.org/wiki/Black_box) ) The “**Black Box**” metaphor is very appropriate in science. Imagine the first scientist to try and explain the functions of cell organelles, the inner workings of the atom, or the forces that hold our universe together.



**Procedure:** In this activity you will be explore the workings of a “Mystery Tube”. Your instructor will demonstrate the Mystery Tube to you and you will try and explain its inner workings. Complete the table below as your teacher performs the three demonstrations with the Mystery Tube. Start by sketching where the location of the 4 colored balls were to begin with. After the demonstration, draw what you observe and finally add your hypothetical explanation for how it worked.

	Sketch: Original position of 4 colored balls	Describe what is happening (you may sketch or describe)	Hypothetical explanation (you may sketch or describe)
Demo #1			
Demo #2			
Demo #3			