MYSTERIOUS MIXTURE DEMO

GOAL: Demonstrate how things on a micro scale affect your senses (how you see in this case) on a macro scale.

MATERIALS:

Frame with mixture of iron beads and non-magnetic powder inside
Strong magnet
Smaller magnet for visitors

PROCEDURE:

Set-up:

1. Make sure you have the frame and magnet out.

2. Make sure the mixture in the frame is well mixed and the magnet is nowhere near the frame.

During the demonstration:

1. Ask visitors to look at the "stuff" in the frame – ask them what color it is and how many different types of materials are in the frame.

2. Then use the magnet to separate the two mixtures. Allow visitors to try it themselves with the smaller magnet. Now ask them again what color the mixture is and how many materials are in the mixture.

Clean-up:

1. Gather all materials and return to storage.

EXPLANATION:

This is as simple as it seems. The mixture is made of black iron particles and white non-magnetic particles. When mixed together the particles are indistinguishable and the mixture appears gray. However when the magnet is used to separate the iron particles it becomes clear that there are two materials – one white and one black. This introduces the idea that things too small to see can make a difference. All of the other materials we will talk about use the same concept of something on a microscopic scale determining macroscopic properties.

WHAT COULD GO WRONG?

Be careful not to scratch the glass of the frame with the magnet.

Make sure the magnet isn't drawn to quickly to the glass the force could, in rare instances, break the glass.

GENERAL MAINTENANCE:

No issues