Mystery Tube

Objective
The students will be able to use inquiry to discover the scientific method.

Lab Preparation
This lab takes a bit of preparation, a handy man, and trips to your local hardware stores. You will want to do this lab as a review of the scientific method. This lab was passed to me from a county science workshop. I chose this lab because the students found it interesting and it helps reinforce understanding of the scientific method while incorporating strategies for all types learning.

Creating the Mystery Tube
PVC tubes are cut into 12 inch segments and holes are drilled through them at both ends. Strings are intertwined (can use a bead to do this) inside the tube and put through the holes. This causes one end of the string to disappear into the tube when one end is pulled (this is difficult to explain in words). There are caps on either ends or tape so the students cannot see inside the tube, hence the “mystery”. These tubes can be re-used every year!

Introduction (Teacher led instruction)
First, demonstrate the mystery tube for them, allow them to see it but not touch. Ask them the question, “How do you think this works? What is happening inside the tube?” Have them write down the question and observations. Some students will immediately get it but ask them to keep their ideas to themselves at first. Never allow them to look inside the tube!

Exploring the Scientific method (independent)
Students are asked to write down their observations, collect data (quantitative and qualitative), draw diagrams, construct a hypothesis, Test the hypothesis; write down the steps for the experiment they create, analyze the data and write a conclusion.

Conducting the experiment (cooperative learning)
Next they will have the hands on opportunity to build their own mystery tube. Give them string, tape, paper towel roll cardboard, hole puncher, and paperclips or beads if you choose. Allowing them to work with a partner on this will get the best results.