



## THE CAT IN THE HAT by Dr. Seuss

Boys and girls always realize at the end of Dr. Seuss's stories that he is a very fair player. The cat cleans up the mess he has created and we can't help but wonder how he was able to do all the magical things that he did. Was it an accident that the fish landed in the pot, or did he plan it that way?

You can work some magic with your students and then show them how you did your trick. You can help them perfect careful and accurate observation skills. In a simple way, you can teach them about two difficult concepts, inertia and direction of force. When you are finished, they will be able to perform the trick themselves and explain it to others.

**MATERIALS:** a 1 cm flexible plastic hoop cut from a 2-liter bottle, a bottle with a narrow neck (Snapple™ bottle), one small piece of chalk or small coin

**ACTIVITY:** Place flexible plastic hoop on mouth of bottle; center a small piece of chalk on the top of the loop directly over the mouth of the bottle. Hit the hoop from under the chalk by hitting the hoop on its inside with your finger (but holding your finger on the outside of the hoop before hitting). Let students watch carefully where you hit the hoop. Let students try to get the chalk in the bottle. Those who were careful observers will be able to do it. The chalk is at rest, showing inertia; it will not move unless you apply a force. A hit on the outside of the hoop will force the hoop and the chalk to go up; a hit on the inside of the hoop will allow the chalk to fall directly down into the bottle as the hoop flies out of the way!

**TEACHER NOTES:** Younger children will have trouble balancing the chalk or coin on the hoop. They can successfully do the same experiment with a measuring cup, metal pie plate, four to five inch paper cup, and a small potato. Make a stack with the cup on the bottom, then the pie plate, then the cup upside on the pie plate, and the potato on top of the cup. Quickly pull the pie plate off the measuring cup; the paper cup should come with it and the potato should fall into the measuring cup. For both experiments, practice is necessary until you are successful!

**SOURCE:** INVITATIONS to SCIENCE INQUIRY, 2nd ed., Tik L. Liem, p. 367.

**STANDARDS:**

**BSL:** 1.1, 1.3, 1.4, 1.11, 1.13, 4.6, 9.7, 12.1, 12.2, 12.4

**NCTM:** 4d, 11a

**SCS:** A1, B1, B2, D1, H2, H4

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