

## **THE EGG TRICK**

### **Introducing Inductive and Deductive Reasoning**

**OVERVIEW.** This Fire-Starter can be used in many different classes in many different ways, to introduce students to inductive and deductive reasoning. I have used it in a **history class** to illustrate the transition from medieval thinking to the Scientific Revolution. I have also used it in a **conflict resolution class** to stimulate discussions and inquiries concerning perceptions, labeling, and stereotyping. It seems appropriate for a **science class** illustrating the scientific method, or a **mathematics class** covering logic.

**EQUIPMENT NEEDED.** For this Fire-Starter you need a blown-out egg. If you are not familiar with how to get such a thing, here's how. Take a regular egg. Make one hole in one end with a straight pin or a straightened smallish paper clip. At the other end make a slightly bigger hole, perhaps three or four punctures. Then stick the pin or paper clip all the way through the egg to pierce the yolk. Now grip the egg firmly but gently and blow hard through the smaller hole. Keep blowing until all of the white and yolk are out. You should rinse out the egg and let it dry, to make sure there is no liquid left inside.

**THE EGG TRICK.** With an appropriate introduction ("Let's take a break and practice some creative thinking") hold up the egg, being careful to cover the holes with your fingers. Ask the students to identify what you are holding in your hand. ("An egg.") Then ask them to tell them as many things as they can about this egg in one minute – they can just shout out one- or two-word descriptors. As they do this, write what they say on the board in full view. Without making it noticeable, divide their responses into **inductive data** (color, size, shape) versus **deductive conclusions** (hardness, fragility, good to eat, yucky inside, and so on). When they run out of input or the time is up, ask for a student volunteer to come forward. Ask the student if she knows about egg shampoos, if she is allergic to eggs on her skin, and so on. Then, calming everyone down, hold the egg over the student's head in one hand and smash it with your other hand. Show them the empty egg.

**PROCESSING.** Depending on what the Fire-Starter is being used for, this is a good time to point out the difference between the two lists of characteristics on the board. One list is **inductive data based on observations**, the other list presents **deductive characteristics based on assumptions** about the nature of the egg. It is important to make sure the students understand that deductive reasoning is not inherently bad reasoning. (Point out and ask for examples of how we use this type of reasoning every day: We cross the street when we have the green light, because we assume those with the red light will stop.) You can also locate deductive reasoning in the Bible-centered thinking in Europe during the Middle Ages, in racism and political stereotyping, in literary texts, in the formal rules of logic or mathematics, and so forth.

**ENRICHMENT.** Depending on the class, it might be appropriate next to have the students read a short detective story. These typically first use inductive reasoning (gather evidence) then deductive reasoning (assume who is guilty and set a trap). I have used *The Dancing Men* (Sherlock Holmes), by A. Conan Doyle, for this.

**REFERENCE:** Thomas Cathcart and Daniel Klein. *Plato and a Platypus Walk into a Bar*. New York: Penguin Books, 2007, pages 29-40.

—Submitted by John R. Bohannon (VT)