

## Drawing a Conclusion Lesson (using Science Fair Projects)

**Context:** This lesson came out of a teacher request for me to teach students how to draw conclusions for their science fair projects and how to verbalize those conclusions on paper. I completed this lesson in a fourth grade classroom with both regular and special education students (including speech/language students). The target population is upper elementary grades that participate in science fair projects.

**Instructions:** Copy the “Drawing a Conclusion Chart” and “Drawing a Conclusion Worksheet” pages front and back, enough for each student in the class. Using the visual chart, demonstrate a quick experiment talking through and teaching each step leading to drawing a conclusion.

An easy experiment to demonstrate is “Will water and oil mix?” (the **Problem** or question).

**Hypothesis:** Either yes they will or no they will not mix (let each student decide).

**Procedure** to test hypothesis: Need clear jar with water, small bottle/jar of cooking oil, plastic spoon. After pouring oil into the water jar, stir liquids with a spoon and let students observe the results.

**Data** (facts) to point out: The oil separates from the water and rises to the top or floats on the water.

Discussion: Lead a discussion about the density of liquids (having students reason through the observed results before giving them your reasonings). Oil and water have different densities. A drop of oil weighs less than a drop of water the same size. The liquid that is less dense will float on top of the denser liquid. The oil is less dense than the water so it rises to the top.

Drawing a **Conclusion:** We gather all of the facts to answer the question asked in the problem and to explain what has been learned. Examples: “Oil and water do not mix because they have different densities” or “Oil floats on water (instead of mixing) because it is less dense.”

### Target Vocabulary Words:

**Conclusion** – making a decision after looking at (considering) all of the facts, or the answer to the question using the facts (data)

**Data** – facts collected together

**Density** (dense) – the quantity of something in a given space or area

**Fact** – information that is always true, or the results observed

**Hypothesis** – someone’s best guess based on their current knowledge

**Problem** – the question you want to answer

**Procedure** – the way of doing something, a series of steps