# Underwater Paper Magic

**Concept:** Density of Air and Water

**Materials:**

- Clear tank of water (5 or 10 gallon aquarium works well)
- Clear cup
- Colored tissue paper

**Thinking and Predicting Question:**

- Using the materials here, how can I dunk this paper in the water and keep it dry? How? (Typically, students will try to think of ways to cover the opening in the cup to keep the water out.)

**What to do:**

Crumple the tissue paper and push it into the cup. Pack it tightly so it does not fall out when you turn the


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Carefully raise the cup back to the top and remove it from the tank. Take out the tissue paper. Is it wet?

**What will happen:**

The tissue paper should remain dry.

**Why this happens:**

Water can only enter the cup if air escapes. Air is less dense than water, so it rises. Since it cannot rise out of the cup, the cup remains filled with air. Also, water is more dense than air, so it will not rise up into the cup.

**Discussion:**

Why didn't the tissue paper get wet?

# Underwater Paper Magic - Continued

**Vocabulary:**

**density –** amount of matter a substance contains relative to its volume

**Also try this:**

Submerge the cup without tissue paper in it. Keep the cup upside-down in the water, just as you did before. When the cup reaches the bottom, tilt it slightly to "pour" the air out. Students will see the air bubbles escape and rise to the top.

Name: _____

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**Directions:**

Crumple the tissue paper and push it into the cup. Pack it tightly so it does not fall out when you turn the cup upside-down.

Keeping the cup upside-down, submerge it in the water. Push the cup all the way to the bottom of the tank. (Do not turn the cup sideways or water will pour in.) Observe the paper inside the cup while it is un

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**What is**

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**Which is more dense: water or air?**

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**Why didn't the tissue paper get wet?**

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Name: _____

# Underwater Paper Magic – ANSWER KEY

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**What is**

**Density is the amount of matter a solid, liquid, or gas contains.**

**Which is more dense: water or air?**

**Air is less dense than water.**

**Why didn't the tissue paper get wet?**

**Water can only enter the cup if air escapes. Air is less dense than water, so it rises. Since it cannot rise out of the cup, the cup remains filled with air. Also, water is more dense than air, so it sinks/remains below the air in the cup.**