



An Early Childhood Science Experiment On

ABSORPTION



Intended for children ages 4-8, with adaptations for children ages 9-11

Includes detailed teacher instructions, video links, and step by step photos

The Concepts: During this activity, children will examine the concept of absorbing. They will also make predictions and follow the scientific method and predict what happens when primary colors combine to create secondary colors. Following the experiment, they explore the proper use of a dropper which can assist children in developing fine motor control. Finally, they will review their results and graph the outcome.

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A video link of this lesson and additional hands on science activities available on my **BLOG: handsonmindsoneducation.com**

The Set Up: For demonstration purposes you will need a small cup of water and a paper towel as well as a complete set up of the materials given to each pair of students. Each pair of students will need three small containers. . The shallower the container the better, I have found it best to use large lids or small baby food jars or portion cups as storage containers. Each group will also need a half of a paper towel torn lengthwise and folded in half. Each child will need a coffee filter or paper towel cut into any shape. You can cut them using any die cut machine.

Set up the two containers and fill them with two different primary colors of water.



The Discussion/Demonstration: Begin by telling the children they are going to see a magic trick. Pour a small amount of water on the table and explain that the paper towel you are holding is magical. Drop the paper towel on the spot of water on the table and tell the children to say abracadabra as you wipe up the water. Pick up the paper towel and explain that the paper towel made the water disappear. Explain that it wasn't

really magic, but the paper towel absorbed the water from the table. Have students repeat the word absorb and explain that when something absorbs, it picks up water. In this example the paper towel absorbed the water. Discuss other things that absorb (towels, sponges, etc.)

Continue the discussion by letting the students know that they will have a chance to experiment with absorbing colors. Demonstrate by placing two containers of colored water on the table with an empty container in the middle. Place one end of the folded paper towel in the container of yellow water and the other end on the container of blue water (push the towel ends into the bottom of the water container. Be sure the middle of the paper towel is resting in the empty container.



Watch and observe as the blue and yellow water absorb up the paper towel. When the colors meet, they will combine to form green. If you leave it alone, most of the water will transfer to the empty container filling it with the secondary color.

To continue the activity, give each pair of students a similar set up, but vary the primary colors you use so that you will create various secondary colors.

Interpreting The Data: When all groups are done, review the various combinations of primary colors used and the secondary colors that were produced.



blue and **yellow** produced **green**
blue and **red** produced **purple**
red and **yellow** produced **orange**

Extending The Activity: Give each child a dropper and a paper towel or coffee filter. You can also use a die cut machine to cut shapes out of the paper towels. Place the paper towel or coffee filter on a paper plate and teach children how to use the science tool A DROPPER.

Using A Dropper:

Step 1: Squeeze the bulb (end of the dropper). This pushes the air out of the dropper.

Step 2: With the bulb squeezed, place the other end of the dropper in the water.

Step 3: With the end in the water, let go of the bulb so that it is no longer squeezed.

Step 4: Air pressure from the room will push the water into the dropper.

Step 5: Remove the dropper from the water and squeeze the bulb to let the water out.



Instruct children to fill their droppers with colored water to decorate the paper towel or filter on the paper plate. Dry and laminate to create a stained glass window effect.

Bringing In The Math: Older children can count or use a stopwatch to measure how long it took for the two colors of water to absorb and combine to produce a secondary color. Younger children can count how many primary and secondary colors were used. You can also count and graph how many of each new color was produced. Graphing options include drawing the graph on the board and having children color in or placing an "X" in the box, using snapping cubes, or Post It notes on the board. You can also use a pocket chart.

COLOR GRAPH



The colors we made

Extension Activities: This same activity is filled with many concepts and can be repeated over and over again. For subsequent explorations try combining secondary colors to make new colors or even various shades of color.

Additional follow up activities can include predicting how many paper towels it will take to absorb various amounts of water. Pose questions such as how many paper towels will be needed to absorb 1/4 cup of water? 1/2 cup? 1 cup?

Record predictions and graph the data for each trial. Does it make a difference if you use different brands of paper towels?

Extending The Concept: Place a white carnation in a cup of colored water. Ask children to predict what might happen. Over the next few days, spend a moment looking at what happened. Over a few days, the carnation will turn the color of the water. Explain that all living things including humans need water to stay alive. The stem of the flower carries water to the flower to keep it alive. You can repeat the same experience with a stalk of celery. Cut off the end and place in the colored water. Be sure to leave the leaves on the top of the stalk so the children can see the leaves change color.