

# Mystery Matter

**Objective:** The students will participate in hands-on investigations to explore how different materials react when mixed with cold water. The students will try to identify their “mystery material” by observing its properties. Students will identify color, state of matter, and test for solubility.

**SOL Correlation:** Matter K.4a-d, 1.3, 2.3 a&c, 3.3, 5.4 b & c

## Materials:

Cold Water

13 Clear Plastic Cups for mixing

13 Cups for water

13 Plastic Spoons

13 Bowls

Fill each bowl with a sample of:

- soil
- sand
- grey gravel
- popcorn kernels
- shortening
- strawberry jello mix
- hot chocolate mix
- baking soda
- vegetable oil
- orange juice
- clear vinegar
- honey
- milk

## Lesson Development:

1. Arrange desks in a circle or U shape so students can rotate around to each of the 13 mystery materials. Place a cup of water, spoon, clear cup for mixing, and bowl of mystery material at each station. Also place the QR code to the website at each station.
2. Pass out recording sheet (page 4) and iPads. Students will also need a pencil for this activity.
3. Show the “Salt Dissolving” video from the website as a whole group. Discuss what it means to dissolve.
4. Have students predict what they think the material in the bowl is.

5. After predicting, the students will use the QR Scanner App on the second page of the iPad to link to the website for this activity. (Print Page 3 of this doc & cut out code for students.
5. Once on the site, click the arrow to “go to experiment”.
6. Students will follow the prompts on the site to identify their mystery material. Once they have identified the material, they will record it on the Recording Sheet.
7. Click the “Go Back” star on the website and follow steps 4 & 6 for the next mystery item. Continue until all substances have been identified. Review correct answers as a class afterward.

**Extension:**

- Test how these same materials will react when mixed with warm/hot water.
- Discuss density and how some materials sank to the bottom of the cup, while others rose to the top.



<b>Mystery Substance</b>	<b>Prediction: What do you think it is?</b>	<b>After Experimenting: What is the Mystery Substance?</b>
#1		
#2		
#3		
#4		
#5		
#6		
#7		
#8		
#9		
#10		
#11		
#12		
#13		