

**Project FOCUS
Best Lessons
SECOND GRADE**

Title of Lesson: Liquid Mixtures

Theme: Physical Science

Unit Number: 1 **Unit Title:** Properties of Matter

Performance Standard(s) Covered (enter codes):

S2P1

S2CS6

S2CS1

Enduring Standards (objectives of activity):

Habits of Mind

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

Content (key terms and topics covered):

Types of Matter, Mixtures, Dissolving, Separation of Mixtures

Learning Activity (Description in Steps)

Abstract (limit 100 characters): Students discover what happens when different solids are added to water.

Details: I did this towards the end of the unit when students are already very confident with what the 3 types of matter are and their properties. We had previously gone over dissolving and separating solid mixtures, but my students thought that all powdered solids dissolved in liquid.

Preparation/Procedure:

I moved the desks in the class into pods of 3/4 desks. Each pod received 4 water bottles filled with some water, and 4 dixie cups filled with 4 different substances (oil, liquid kool-aid, salt, and sand). I also added green food coloring to one of the water bottles, so that the oil separation would be more noticeable.

We reviewed the properties of solids and liquids, and what happened when things dissolved. I also told them that some liquid mixtures could be separated.

Each student was then given a data sheet where they recorded the state of matter that the additives were in. They all also collaborated as a pod to hypothesize what they thought was going to happen once they added it to water (would it dissolve or change color or would they be able to separate it).

Each student then added an ingredient to individual water bottles and were instructed to shake the bottle up. They then recorded on the data sheet what they observed. I then showed them using a coffee filter how you could separate the sand/water mixture and that by using a spoon, you can separate the oil/water mixture. We also went over how the kool-aid changed the color of the water, and how you could no longer distinguish the kool-aid from the original water.

Though this lesson is a little longer, my students really enjoyed predicting what was going to happen, and seeing if they were right. Overall, I think this a good lesson to help them understand the properties of liquid mixtures. This experiment requires you to be active, moving from pod to pod and encouraging them to think critically.

Materials Needed (Type and Quantity):

- 4 water bottles per pod (approx. 20 bottles)
- dixie cups
- salt
- kool-aid mixture
- sand
- oil
- coffee filter

Notes and Tips (suggested changes, alternative methods, cautions):

Safety:

Make sure you tell your students that they cannot drink or taste any of the things that you have put on their table

Alternative Methods:

You could try to teach them the vocabulary of heterogeneous and homogenous, I decided that that was not a feasible option for my students.

Suggested changes:

The only thing I might have done differently was to make the data sheets a little bigger because I forgot how large their handwriting is. Also, maybe replaced the liquid Kool-aid with powdered Kool-aid because many of the students thought that the liquid kool-aid had dissolved into the water because we had previously done a lesson where we made Kool-Aid.

Sources/References:

- 1)
- 2)
- 3)