

## MIXTURES – MIXTURES AND SOLUTIONS UNIT

Lesson Title: Mixtures – Mixtures and Solutions Unit

Length: 50 minute period

Age Group: 5th grade

Materials Needed: water bottle, strips of paper with mixture items, journals, blackboard

Standards - Science:

- 4D1a - Investigate and describe what happens to the properties of materials when several materials are combined to make a mixture, such as table salt and pepper; various kinds of nuts, chocolate pieces, and coconut; sugar dissolved in milk

Standards - Arts:

- 1:1b - Demonstrate accurately movement sequences that use the elements of dance to interpret literal ideas
- 1:3b - Explain the purpose and meaning of specific movements in a variety of dances
- 2:3b - Demonstrate ways in which the knowledge and skills of other content areas are related to those of dance

Learning Objectives: Performance Tasks for this Lesson:

The Student Will:

Cognitive Affective Artistic

- Understand definition of a mixture and what materials compose them
- Distinguish mixtures from solutions • Follow directions
- Cooperate
- Work together • Use dance concepts as pathway, locomotor and shapes to create a movement phrase in groups

Assessment Criteria for this lesson:

- Questions asked orally throughout the lesson
- Journaling
- Questions will be asked about this on the post test
- Different classroom management techniques (eg: lights off, count to 3, raising hands) • For each group's movement phrase, the audience must guess what mixture they represent. The ability to do so shows that they have completed their task successfully

How will you introduce your lesson's concept?

- Brainstorm what a mixture is.
  - o They are the form for most things in nature, eg: rocks, air, ocean
  - o They are substances held together by physical forces, not chemical
- The molecules enjoy being near each other, but their chemical structure does not change when they

mix

(5 mins)

Why are you studying this?

- Mixtures are everywhere around us, things that we may not even realize are mixtures.
- Students need a basic understanding of such mixtures for when we progress into the solution lesson and later on when they learn science in higher grades.

Integrated Activities:

Exploration Activity: (18 minutes)

- We will define several types of mixtures on the board:
  - o Solutions are mixing of a solvent and a solute (salt and water).
  - o Suspensions are mixtures of solid and a liquid in which the solid doesn't dissolve (soil and water).
  - o Emulsions are a type of suspension of two non-mixing liquids into layers when settled (oil and vinegar).
  - o Colloidal Dispersions appear like solutions (homogeneous) but are not and they do not settle (mayo, clay and water)
- Hand out strips of paper with different mixture items on them to each group (16 strips per group)
- Students must group together as many strips as possible and label which type of mixture they are. They will write these in their journals
- Discuss as a class our favorite 3

Target Activity: (17 minutes)

- Move desks and break up the students into five groups, each one assigned a mixture.
- Using pathway, shape, and locomotor movement each group will create a movement phrase (roughly 16 counts) representing that mixture. Half of the group does one mixture item and the other half does the other. Both will be performed at the same time, showing how the two items come together in a mixture but remain distinct.
- Each group will perform their phrase while the other students have to guess which mixtures they are.

Culminating Activity: (3 minutes)

- Oral discussion of what a mixture is and what the students learned/did today.
- Ending thought: "Can a mixture be a solution or can a solution be a mixture?"

Assessment:

- Have students write three things they learned in their journals. (7 minutes)

COFFEE CREAM  
SALT WATER  
CLAY OIL  
VINEGAR SAND  
SOIL SUGAR  
NOODLES TEA