



Playdough Mix Design (Concrete Mix Design for Children)

Fourth and Fifth Grade



Activity By: Smart School House
Website: <https://www.smartschoolhouse.com/diy-crafts>



Materials Required:

Aloe Dough:

1. Aloe
2. Cornstarch
3. Mixing Bowl and spoon

Ice Cream Play Dough:

1. 1 cup pre-made frosting
2. $2\frac{3}{4}$ cup of powdered sugar
3. Mixing Bowl and spoon

Dish Soap Putty:

1. $1\frac{1}{2}$ tablespoons of dish soap
2. 2 tablespoons of corn starch
3. Mixing Bowl and spoon

Sand Slime:

1. One 5 ounce bottle of clear Elmer's School Glue
2. Colorful craft sand
3. Contact solution
4. Baking soda
5. Mixing bowl and spoon

Activity Preparation:

Fourth Grade:

1. While the adult is proportioning the materials for the different mix designs, have the child split the ingredients into fractions with the same denominator. For example, have a pile of cornstarch and ask the child to split the pile into halves or fourths. After they have split the piles, discuss the similarities of fractions and decimals.
2. During the activity, discuss with the child how in real life people mix ingredients together in order to make concrete, similar to how you are making the play dough. Discuss how different ingredients make different products just like the different play doughs you are creating!
3. After the activity, use the playdough to add and subtract fractions with like denominators.

Fifth Grade:

1. During the activity, discuss with the child how in real life people mix ingredients together in order to make concrete, similar to how you are



making the play dough. Discuss how different ingredients make different products just like the different play doughs you are creating!

2. After the activity, use the playdough to have the child divide it into different fractions and discuss what fraction they just created. The adult can divide the playdough into different proportions and ask the child to add the playdough together. The fractions do not need to have like denominators. For example, divide the playdough into fourths. Ask the child to add $\frac{1}{4} + \frac{1}{4}$ and ask them what the fraction is now. Then have them add that $\frac{1}{2}$ of playdough and $\frac{1}{4}$ of the playdough and ask them what the fraction is.

Standards in this activity:

Mathematics:

Fourth Grade:

Number & Operations: Decompose a fraction in more than one way into a sum of fractions with the same denominator using concrete and pictorial models and recording results with symbolic representations. Use fraction models to add and subtract fractions with like denominators in real-world and mathematical situations. Represent, read and write decimals up to at least the hundredths place in a variety of contexts.

Fifth Grade:

Number & Operations: Represent decimal fractions using a variety of models and make connections between fractions and decimals. Recognize and generate equivalent decimals, fractions, mixed numbers, and fractions less than one in various contexts. Add and subtract fractions with like and unlike denominators, mixed numbers and decimals to solve real-world and mathematical problems.

Science & Engineering Practices:

Fifth Grade: Conduct an investigation to determine whether the mixing of two or more substances results in new substances.

Aloe Dough



In a small mixing bowl, combine 2 table spoons of aloe and 3-4 tablespoons of corn starch. Consider this your trial batch! Mix the two ingredients together as best as you can for about 10 seconds. If it seems too runny, slowly add in more corn starch. Then, you'll need to get your hands in the Aloe Dough to mix the rest. Based on how it feels, add either more aloe or corn starch until it reaches a soft and squeezable dough in your hands.

Ice Cream Play Dough



Add the powdered sugar to the frosting in slow increments using the dough hook attachment on your mixer, continually scraping the sides of the bowl. Before you add all of the powdered sugar, touch the play dough and if it feels at all sticky, add the rest of the powdered sugar in. Once you've added all of the powdered sugar, the play dough will begin to look just like ice cream in your mixer. Roll it into one big ball and make sure it is not crumbly or sticky. If you added too much powdered sugar, don't worry! Simply sprinkle a little olive oil onto the play dough.

Dish Soap Silly Putty



Mix the dish soap and corn starch together as best as you can for about 10 seconds. Once it becomes difficult to stir, get your hands in there! Work the putty until all of the ingredients in the bowl are combined thoroughly. Because all dish soap formulas can vary, it's ok if you need to add a little more. If the putty is too dry, add a tiny bit more dish soap to it. If the putty is too runny, add a tiny bit more corn starch to it. After adding more of either ingredient, mix the putty by hand for a few moments.

Sand Slime



Empty the entire bottle of clear Elmer's School Glue into a bowl. Add 1 teaspoon of baking soda and stir until the baking soda is completely mixed in with the glue. Add 2 tablespoons of colored sand. Stir the mixture again until the sand is evenly distributed. Add 1 tablespoon of contact solution. This is where the magic begins and the slime will develop into a ball! Pick up the slime and if it is too sticky add another $\frac{1}{2}$ tablespoon of contact solution.