

Salt Dough Detectives: Solving Recipe Mysteries!

Get ready to be a Salt Dough Detective! Today, we'll make awesome salt dough creations, but first, we have to solve some recipe mysteries using secret math codes!

Materials Needed:

- 2 cups All-Purpose Flour (Let's call this 'F')
- 1 cup Salt (Let's call this 'S')
- 3/4 cup Water (approximately - we might need a little more or less! Let's call this 'W')
- Large Mixing Bowl
- Measuring Cups (1 cup, 1/2 cup, 1/4 cup)
- Mixing Spoon
- Parchment Paper or Wax Paper
- Cookie Cutters (optional)
- Rolling Pin (optional)
- Access to an oven (for baking later, with adult supervision) OR microwave (for quick drying, with adult supervision) OR air dry space

Lesson Activities:

1. Cracking the Recipe Code (Introduction)

Every good recipe is like a code. Today, our code uses letters! We have:

- F = Flour
- S = Salt
- W = Water

Our basic recipe needs 2 cups of Flour and 1 cup of Salt. Let's figure out the total cups of dry ingredients. We can write this as a math problem: $F + S = \text{Total Dry Stuff}$. If $F = 2$ and $S = 1$, what is $F + S$?

(Guide the student: $2 + 1 = 3$. So, we have 3 cups of dry ingredients!)

2. Measuring Mission (Hands-On Practice)

Time to measure! Carefully measure 2 cups of Flour (F) and pour it into the bowl. Now, measure 1 cup of Salt (S) and add it to the bowl. Mix the dry ingredients ($F + S$) together with the spoon.

3. The Water Variable ('W')

Water ('W') is tricky! The recipe says about 3/4 cup, but sometimes we need a little more or less. 'W' is a variable – its exact amount might change slightly! Let's start by adding 1/2 cup of water. Mix it in. Is the dough sticky or crumbly? Let's add another 1/4 cup. How much water have we added in total? ($1/2 + 1/4 = 3/4$ cup). Knead the dough with your hands. If it's too sticky, add a tiny bit more flour. If it's too crumbly, add water one teaspoon at a time. The final amount of 'W' might be a little different than exactly 3/4 cup!

4. Algebra Puzzles & Doubling Fun!

Let's think like mathematicians:

- If we used 2 cups of Flour ($F=2$) and 1 cup of Salt ($S=1$), how many cups (C) of dry ingredients did we use? $C = F + S$. So $C = ?$ (Answer: 3)
- Imagine we wanted to make DOUBLE the dough for a friend! How much Flour (F) would we need? That's 2 times F ! ($2 \times 2 = 4$ cups). How much Salt (S) would we need? That's 2 times S ! ($2 \times 1 = 2$ cups).

5. Creating & Counting (Application)

Now the super fun part! Roll out your dough on parchment paper. Use cookie cutters or your hands to make shapes. Let 'x' be the total number of shapes you make. If you make 5 stars and 3 hearts, how many shapes did you make in total? $x = 5 + 3$. So $x = ?$ (Answer: 8)

6. Baking/Drying (Conclusion Prep)

Place your finished shapes on parchment paper on a baking sheet.

Instructions for Adult:

- **To Bake:** Bake at 250°F (120°C) for 2-3 hours, or until hard. Thicker pieces take longer.
- **To Microwave:** Place a few pieces at a time on parchment or a microwave-safe plate. Microwave on high for 10-15 second bursts, checking frequently. Let them cool. Repeat 2-3 times until hard (be careful, they get hot!). This works best for thinner pieces.
- **To Air Dry:** Leave in a warm, dry place for several days, flipping occasionally.

Once dry, you can paint your creations!

7. Mystery Solved! (Review)

Great job, Salt Dough Detective! We used letters like F , S , W , C , and x to stand for numbers today. That's algebra! We saw how $F + S = C$ helped us find the total dry ingredients, and how changing the amount of Water (W) was okay because it was a variable. You followed the recipe steps and solved our math mysteries!