

## At Home Math: Fraction and Decimal Activities for Grades 2-5

Below are math activities to do at home related to fractions and decimals. They provide an opportunity for you to engage in problem-solving with your child, using familiar contexts and materials found at home. Suggested grade levels are indicated for each activity, but students vary widely in what they find engaging and challenging. Many of these activities can be modified to be appropriate for both younger and older children.

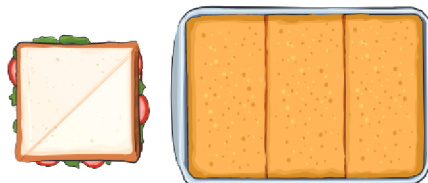
While you work with your child, show curiosity about their ideas. Let them take the lead. Ask questions like *“What do you notice?”*, *“Why do you think that?”*, *“How did you figure that out?”*, and *“What do you think we should do next?”* Encourage your child to come up with new questions to ask in order to extend the activity.

### Grade 2 Activities

**Flags and Fractions** Many nations’ flags and nautical flags are divided into fractional parts, such as halves, thirds, or fourths. You and your child might like to hunt for flags in books, online and around your neighborhood. You can find pictures of flags in an encyclopedia, an atlas, or on a website pertaining to flags. Find flags that are clearly divided into fractional parts, and then ask questions such as these: *“How much of this flag is blue?”*, *“What color is half of that flag?”*, and *“Is that flag partitioned into halves or thirds?”* Your child might draw the flags on graph paper, color them, and label fractional parts.



**Finding Fair Shares** Your child can practice partitioning objects into equal shares. Ask your child, *“Let’s cut your sandwich into halves. How many different ways can we cut your sandwich so it becomes two equal pieces?”* and *“Can we cut this pan of cornbread into thirds? ... What about fourths?”*



## Grade 3 Activities

**Fractions Every Day** Take advantage of any natural opportunities to use fractions as they arise. You and your child can share and compare strategies for solving problems such as these:

- If you cut a whole pizza into 6 equal slices and ate 3 of the slices, what fraction of the pizza did you eat?
- If you want to share 10 cookies among four people, how can you share them equally? How much does each person get?
- The gas tank in our car holds 12 gallons, but right now it is only one fourth full. How many gallons of gas do we need to buy to fill up the tank?

**Making a Whole** You can help your child figure out ways to combine fractions to make a whole, such as  $\frac{1}{2} + \frac{1}{2} = 1$  while cooking. If a recipe calls for one cup (or one-half cup) of an ingredient, pretend that the measuring cup that holds that amount is missing or broken. Ask your child how else you could measure that amount. What other cups might be combined (for example,  $\frac{1}{3} + \frac{1}{3} + \frac{1}{3} = 1$ , or  $\frac{1}{4} + \frac{1}{4} =$

1)? You might check the prediction by pouring those amounts into the one-cup measure to see whether they fill the cup exactly.

**Fraction Scavenger Hunt** You and your child might investigate where and when you use fractions in your home. You might have a scavenger hunt to locate fractions on such things as measuring cups, tools, food packages, in newspapers, and so on.

## Grade 4 Activities

**Fraction and Decimal Scavenger Hunt** Be on the lookout for examples of fractions or decimal numbers in your world—in the kitchen, a toolbox or a sewing kit, on food, in magazines and newspapers, or on different websites. Take these opportunities to talk with your child about what the fraction or decimal means.

**Fair Shares** You can help build your child's understanding of fractions by capitalizing on everyday situations that involve fractions. Issues of fairness often offer good examples of fractions. For example:

- After making a batch of brownies and giving away part of the batch to the neighbors, you want to divide what's left equally among 3 people. What is  $\frac{1}{3}$  of 18 brownies?
- What if you want to divide what's left equally among 6 people? What is  $\frac{1}{6}$  of 18 brownies?
- Three people are sharing a pizza:  $\frac{1}{3}$  has mushrooms,  $\frac{1}{3}$  has pepperoni, and  $\frac{1}{3}$  has onions. What might the pizza look like?

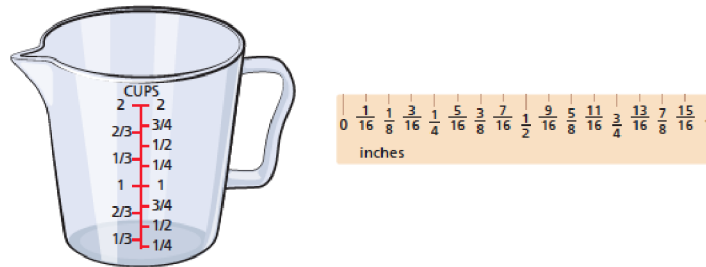
Encourage your child to draw pictures to solve these problems.

**Fractions in the Kitchen** Cooking is another great way to learn about fractions. Ask your child questions such as, “How can we measure  $\frac{1}{2}$  cup?” Look together at how the fractions appear on a measuring cup. Doubling recipes or cutting them in half can help your child understand relationships such as  $\frac{1}{2}$  cup +  $\frac{1}{2}$  cup =  $\frac{1}{1}$  cup.

$$\frac{1}{2} \text{ cup} + \frac{1}{2} \text{ cup} = 1 \text{ cup} \text{ or } 2 \times \frac{1}{2} \text{ cup} = 1 \text{ cup.}$$

## Grade 5 Activities

**Fractions on a Number Line** You and your child can look for examples of number lines (with fractions, whole numbers, or unnumbered marks) such as those on measuring cups, speedometers, gasoline gauges, rulers, and thermometers. Talk together about what the fractions mean or what numbers the marks represent when you use these measuring tools.



**How Far?** While traveling, ask your child questions about how far you've gone or how far you need to go. For example, if you are going somewhere that is 4 blocks away, point out when you have gone  $2\frac{1}{4}$  blocks and ask how many more blocks you have to go to reach your destination.

**Estimating Sums and Differences** As you encounter fractions in everyday life (such as cooking or measurement), ask your child questions about sums or differences. For example, if you're cooking, ask your child if you have enough (sugar, flour, milk) for the recipe; about how much more is needed; what the total number of (cups) of dry ingredients would be.

**Everyday Decimals** You can build on your child's understanding of decimals by looking for everyday examples of decimals and talking about what they mean. Discuss problem situations that involve decimals as they arise. Look in the newspaper or online at the weather statistics for your area. Ask: *"What is the average amount of precipitation for the month? How much rain or snow has there been so far this month? How close are we to the average?"*

**Multiplying and Dividing with Fractions** Look for familiar and interesting situations that you can use as a basis for exploring multiplying and dividing with fractions with your child. For example, when you are cooking with your child, ask questions like these:

- This recipe calls for  $\frac{1}{2}$  cup of flour. We are going to triple the recipe. How much flour do we need? ( $3 \times \frac{1}{2} = \underline{\quad}$ )
- We have 3 cups of milk. This recipe for muffins calls for  $\frac{1}{2}$  cup of milk, how many batches of muffins can we make? ( $3 \div \frac{1}{2} = \underline{\quad}$ )

- This recipe calls for 2 cups of flour. We are going to make only  $\frac{1}{2}$  of a recipe. How much flour do we need? ( $\frac{1}{2} \times 2 = \underline{\hspace{2cm}}$ )
- This recipe calls for  $\frac{1}{2}$  cup of milk. We are going to make only half of a recipe. How much milk do we need? ( $\frac{1}{2} \times \frac{1}{2} = \underline{\hspace{2cm}}$ )

Encourage your child to draw pictures to solve these problems.

**Multiplying and Dividing Decimals** Look for familiar and interesting situations that you can use as a basis for exploring problems that involve multiplying and dividing with decimals with your child. Here are some examples:

- The box of crackers costs \$2.35. We are going to buy 3 boxes. How much will 3 boxes of crackers cost? ( $3 \times \$2.35 = \underline{\hspace{2cm}}$ )
- Our bill at the restaurant is \$69.18. We are going to split the bill evenly among our 3 families. How much does each family have to pay? ( $\$69.18 \div 3 = \underline{\hspace{2cm}}$ )