# FRACTION BARS® GLASSES

Fraction Bars®, a program of games and manipulative materials which has been used widely in schools since 1973, now has a new learning aid, Fraction Bar® Glasses. This drinking glass shows seven different types of Fraction Bars, and these bars become shaded when liquid is poured into the glass. This provides a natural opportunity for children to ask and answer questions about fractions.

Have you ever filled a glass for someone and had to ask them how much they wanted? You might say, "Do you want a whole glass?" or "Do you want half a glass?"

Have you ever started pouring and said "Say when?" Well those days are over! Now, with the Fraction Bars Glasses you can be precise about these situations. The glass shown here is more than 1/3 full and the milk is almost at the 1/2 mark.

Lots of questions involving fractions can be posed and answered by using the Fraction Bars® Glasses. These glasses can be used to answer the following questions (answers on back). Also, they will provide ideas for creating more questions involving fractions.
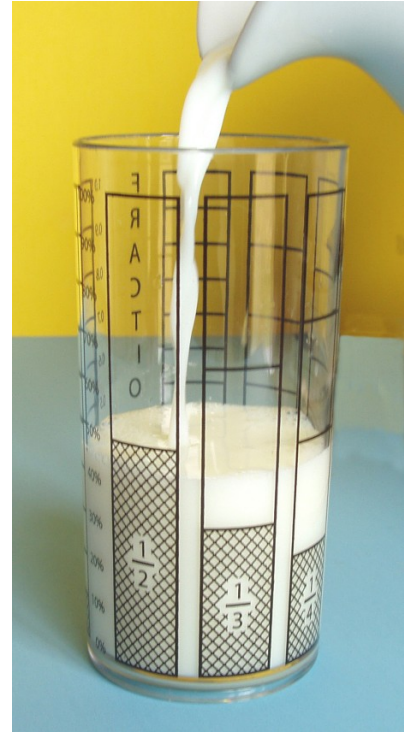
1. Zeron and Molly both have a full glass of juice. If Zeron drinks 1/10 of a glass and Molly drinks 1/12 of a glass, who drinks the greater amount?

2. Cluto complained when she received 3/4 of a glass of pear juice. She said she asked for 9/12 of a glass of pear juice. Did she have a right to complain?

3. Hoka has 2/3 of a glass of juice. Is his glass more or less than half full?

4. Hoka has 1/2 of a glass of milk and Molly has 1/3 of a glass of milk. If Molly pours her milk into Hoka's glass, how much milk will be in Hoka's glass?

5. Sokee has 1/3 of a glass of orange juice and Zeron has 1/4 of a glass of orange juice. If they combine their orange juice into one glass, how much more orange juice will they need for a full glass?

6. Hoka has .3 of a glass of rootbeer and Cluto has .8 of a glass of rootbeer. If Cluto pours half of her drink into Hoka's glass, how much rootbeer will Hoka have?

7. Zeron has 1/2 of a glass of soda and he pours some into Hoka's glass until Hoka has 1/3 of a glass. How much soda does Zeron have left?

8. Hoka has 7/12 of a glass of water and Molly has 1/2 of a glass of water. If Hoka pours his water into Molly's glass to fill it up, how much water will he have left in his glass?

9. Zeron pours 2/3 of a glass of chocolate milk and drinks it. Then he pours 1/6 of a glass of chocolate milk and drinks it. How much chocolate milk does he drink?

10. Cluto pours 1/4 of a glass of milk and drinks it. How many times must she do this before she has drunk a whole glass of milk?

11. Cluto wants each of her 7 friends to have 1/3 of a glass of apple juice. How much apple juice does she need for her friends?

12. Hoka has 5/12 of a glass of blueberry juice and Molly has 1/2 of a glass of blueberry juice. Who has less blueberry juice?

13. After being poured a full glass of orange juice, Molly drank 30%. What percent of her juice did she have left?

14. Molly had .9 of a glass of cranberry juice. She drank .1, then .2, and finally .3 of a glass. How much juice was left?

15. Simthy filled her glass to the 100% mark and use it to water 5 plants. If each plant received the same amount of water, what percent of a glass of water did each plant receive?

16. Zeron fills 4/5 of his glass with milk and then pours half of it into the cat's dish. What fraction of a glass of milk was left in his glass?

17. Cluto's father used 1 ½ glasses of milk in a pancake mix to make up a batch of 30 pancakes for his family. The next day he wanted to make only 15 pancakes. How much milk should he use in the pancake mix?

18. Hoka used his Fraction Bars glass to measure the amount of rain. In one storm he collected 1/6 of a glass of water and in another he collected 5/12 of a glass. What was the total amount of rain he collected?

19. Cluto filled a glass up to the 1/2 mark with water. Then she poured part of it into a second glass until the water was at the 1/3 mark. She noticed that the amount of water left in the first glass was at one of the marks on the glass. What is the fraction for this mark?

20. After Simthy filled her glass to the one-third mark, she noticed that there were two other bars on the glass that had marks for fractions equal to 1/3 of a glass. What are these two fractions?

Answers: 1. Zeron **2.** No **3.** more **4.** $\frac{5}{6}$ of a glass **5.** $\frac{5}{12}$ of a glass **6.** .7 of a glass **7.** $\frac{1}{6}$ of a glass

8. $\frac{1}{12}$ of a glass **9.** $\frac{5}{6}$ of a glass **10.** 4 times **11.** $2\frac{1}{3}$ glasses **12.** Hoka **13.** 70% **14.** .3 of a glass

15. 20% **16.** $\frac{2}{5}$ **17.** $\frac{3}{4}$ of a glass **18.** $\frac{7}{12}$ of a glass **19.** $\frac{1}{6}$ or $\frac{2}{12}$ **20.** 2/6 and 4/12

The Fraction Bars Glasses Applet, pictured below, can be found on the following two websites and accessed without passwords:
http://qualitymathproducts.com/products/Fraction_Bars/Fraction_Bars_Drinking_Glasses.html. and
fractionbars.com

With this interactive applet, either glass can be filled and one glass can be poured to the other for answering questions involving fractions. This applet has its own set of questions and an audio Help feature that has illustrations for obtaining answers to the questions.