

INTRODUCTION

Welcome to **Understanding Fractions Book 6**. This book has been designed for Year 6 students, although it may also be helpful in reinforcing fractional concepts for children who are experiencing some difficulties or providing more challenging activities and understandings for Year 5 students.

The activities in this book allow students to explore and play with fractional relationships and to come to their own understandings. Students are encouraged to analyse shapes, relationships and numbers. They are also encouraged to develop their skills in communicating, reasoning and problem solving.

Whereas the earlier levels in this series depend primarily upon visual input for students to construct a framework for understanding fractions, Book 6 directs students to self-discovery of the operational algorithms and the move from simpler to more complex fractions.

Your organisation of students may vary as you continue to use this resource. The tasks have been designed to be completed in small groups or pairs as the student exchange of ideas increases the power of learning as it uncovers a variety of problem solving strategies. Working together also allows students to answer one another's questions about the directions and concepts. You may, however, prefer that some tasks be completed individually. When this is the case, bring the students back together on completion of the task and share understandings and experiences. This will help you identify students who require further assistance and will also reinforce the skills that have been taught. Other students will be ready to expand on the concepts they have understood.

It is recommended that at the conclusion of each lesson, you focus more on discussion of students' results than correction of individual pages. Encourage students to focus more on their strategies than just on getting the right answer.

Assessment is multifaceted and this resource encourages a range of strategies for assessing students. Each lesson is part of this process. You can gather valuable information by listening to student's explanations, observing their thinking and examining their writing and reflections. These assessment tools are some methods of exploring student progress and modifying instruction to suit the needs of your students.

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E D U C A T I O N

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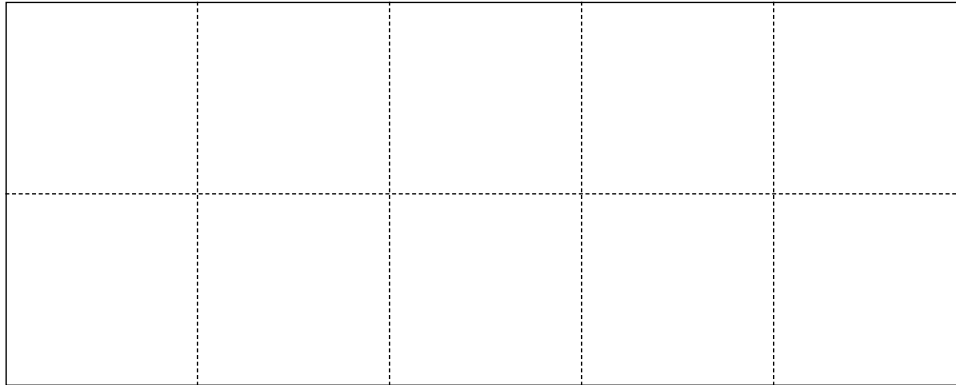
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LESSON
1

FOCUS: Review tenths

MATERIALS: Tiles

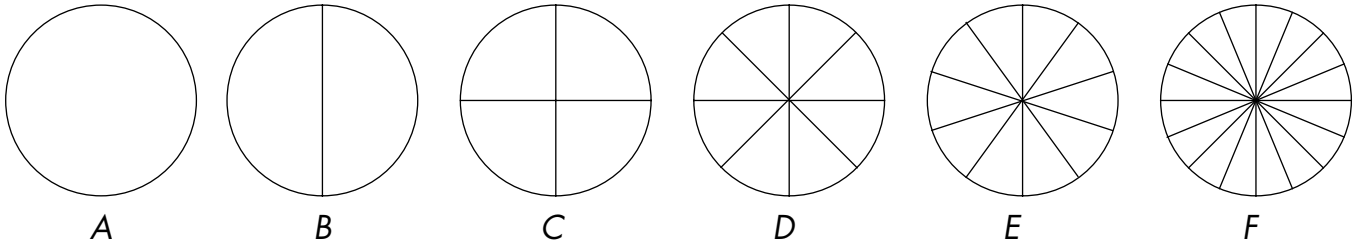


1. The rectangle is divided into 10 parts. What fraction is each part? _____
2. Label each section of the rectangle with both a decimal and a common fraction.
3. Use your tiles to make two models of this rectangle on your desk. How many whole rectangles do you have? _____
4. Is each tile $\frac{1}{10}$ (0.1) of each rectangle? _____
5. How many tenths are there in both rectangles? _____
6. Solve the problems. Use the tiles to show your work.

<ol style="list-style-type: none"> a. $0.2 + 0.2 + 0.2 + 0.2 =$ _____ b. $0.2 + 0.2 + 0.2 + 0.2 + 0.2 =$ _____ c. $0.5 + 0.5 =$ _____ d. $0.2 + 0.2 + 0.2 + 0.2 + 0.2 + 0.2 =$ _____ e. $0.6 + 0.6 =$ _____ f. $\frac{2}{10} + \frac{2}{10} + \frac{2}{10} + \frac{2}{10} =$ _____ g. $\frac{5}{10} + \frac{5}{10} =$ _____ h. $4 \times 0.2 =$ _____ i. $5 \times 0.2 =$ _____ j. $2 \times 0.5 =$ _____ k. $6 \times 0.2 =$ _____ 	<ol style="list-style-type: none"> l. $2 \times 0.6 =$ _____ m. $4 \times \frac{2}{10} =$ _____ n. $2 \times \frac{5}{10} =$ _____ o. $0.8 \div 0.2 =$ _____ p. $1 \div 0.2 =$ _____ q. $1 \div 0.5 =$ _____ r. $1.2 \div 0.2 =$ _____ s. $1.2 \div 0.6 =$ _____ t. $\frac{4}{10} \div \frac{2}{10} =$ _____ u. $1 \div \frac{5}{10} =$ _____
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LESSON
2

FOCUS: Review common fractions and decimal fractions; equivalent fractions
MATERIALS: Crayons or textas, ruler



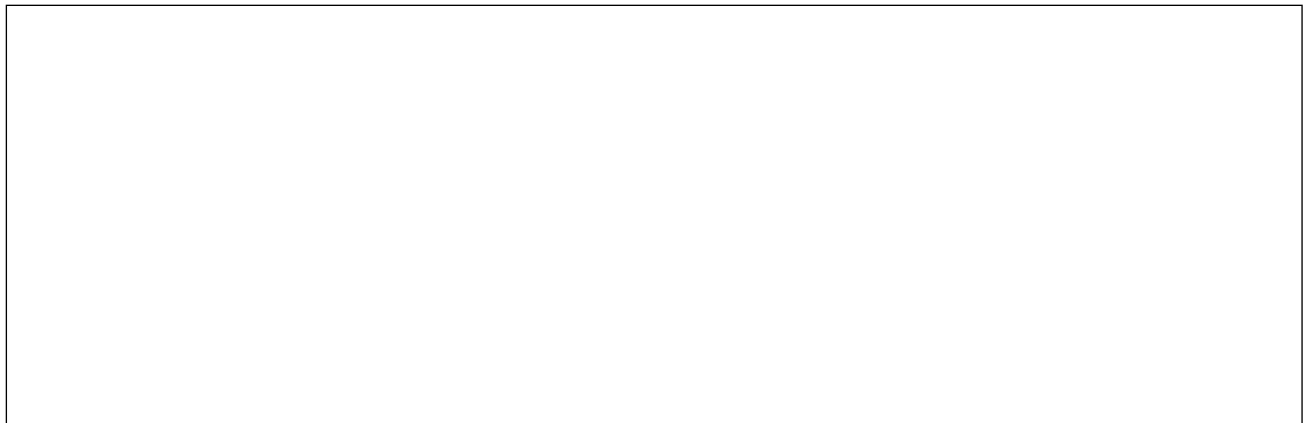
1. a. Write a common fraction to describe one of the equal parts of each circle.
Write a decimal fraction for circle *E*.

A _____ *B* _____ *C* _____ *D* _____ *E* _____ *F* _____

- b. Are all the circles the same size? _____

When two figures are equal in size and shape, they are **congruent**.

- c. Draw two circles that are congruent and two circles that are not congruent.



- d. Shade half of circles *A–F*. List all the fractions shown in the circles that equal $\frac{1}{2}$.

_____, _____, _____, _____

- e. Divide circle *A* into sixths. How many sixths equal $\frac{1}{2}$? _____

Write this as a number sentence. _____

- f. List five more fractions that equal $\frac{1}{2}$. _____, _____, _____, _____, _____

- g. List all the fractions shown in the circles that equal $\frac{1}{4}$. _____, _____

- h. List five more fractions that equal $\frac{1}{4}$. _____, _____, _____, _____, _____

- i. List all the fractions shown in the circles that equal 1.

_____, _____, _____, _____, _____

- j. List five more fractions that equal 1. _____, _____, _____, _____, _____

2. Solve the problems.

a. $\frac{2}{2} + \frac{3}{3} = \underline{\hspace{2cm}}$

b. $\frac{1}{2} + \frac{2}{4} = \underline{\hspace{2cm}}$

c. $1 \div \frac{1}{2} = \underline{\hspace{2cm}}$

d. $\frac{10}{10} \div 0.1 = \underline{\hspace{2cm}}$

e. $3 \div 0.1 = \underline{\hspace{2cm}}$

f. $\frac{1}{2} + \frac{5}{10} = \underline{\hspace{2cm}}$

g. $\frac{4}{4} + \frac{5}{5} = \underline{\hspace{2cm}}$

h. $2 \times (\frac{3}{6} + \frac{4}{8}) = \underline{\hspace{2cm}}$

i. $\frac{3}{3} \div \frac{1}{2} = \underline{\hspace{2cm}}$

j. $1 \div \frac{1}{10} = \underline{\hspace{2cm}}$

k. $1 \div 0.2 = \underline{\hspace{2cm}}$

l. $\frac{1}{4} + \frac{2}{8} = \underline{\hspace{2cm}}$

m. $3 \times (\frac{5}{5} + \frac{8}{8}) = \underline{\hspace{2cm}}$

n. $\frac{1}{2} \times (2 \times \frac{3}{6}) = \underline{\hspace{2cm}}$

o. $(2 \times \frac{4}{4}) \div \frac{1}{2} = \underline{\hspace{2cm}}$

p. $2 \div \frac{1}{10} = \underline{\hspace{2cm}}$

q. $2 \div 0.2 = \underline{\hspace{2cm}}$

r. $\frac{1}{4} + \frac{4}{16} = \underline{\hspace{2cm}}$