

## Unit 3 – Fractions

TB: Textbook

WB: Workbook

EP: Extra Practice

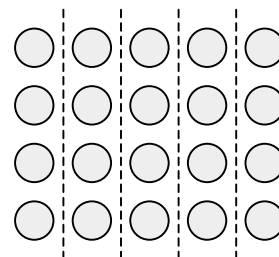
Lesson	Objectives	Materials	Resources	Standards
<b>Chapter 1 : Equivalent Fractions</b>				<b>3 days</b>
3.1a Equivalent fractions	<ul style="list-style-type: none"> <li>Review fractions.</li> <li>Review equivalent fractions.</li> </ul>		TB: p. 77-79 WB: p. 67-68	NS 1.5 NS 1.7 MR 2.3
3.1b Comparing fractions	<ul style="list-style-type: none"> <li>Review simplest form of a fraction.</li> <li>Review comparing fractions.</li> </ul>		TB: p. 77-79 WB: p. 69-70	NS 1.5 NS 1.9 MR 3.2
3.1c Practice A	<ul style="list-style-type: none"> <li>Review fractions.</li> <li>Review equivalent fractions.</li> <li>Review simplest form.</li> <li>Review comparing fractions.</li> </ul>		TB: p. 80 EP: p. 37-38 Tests: p. 55-60	NS 1.5 NS 1.7 NS 1.9 MR 2.3 MR 3.2
<b>Chapter 2 : Adding and Subtracting Fractions</b>				<b>3 days</b>
3.2a Adding related fractions	<ul style="list-style-type: none"> <li>Review addition and subtraction of like fractions.</li> <li>Add related fractions.</li> </ul>	<ul style="list-style-type: none"> <li>Fraction bars</li> <li>Fraction circles</li> </ul>	TB: p. 81-84 WB: p. 71-72	NS 1.5 NS 1.9 MR 3.2
3.2b Subtracting related fractions	<ul style="list-style-type: none"> <li>Subtract related fractions.</li> </ul>	<ul style="list-style-type: none"> <li>Fraction bars</li> <li>Fraction circles</li> </ul>	TB: p. 85-86 WB: p. 73-74	NS 1.5 NS 1.9 MR 3.2
3.2c Practice B	<ul style="list-style-type: none"> <li>Practice adding and subtracting fractions.</li> <li>Solve word problems involving fractions.</li> </ul>		TB: p. 87 WB: p. 75-76 EP: p. 39-44 Tests: p. 61-66	NS 1.5 MR 2.2 MR 2.4 MR 2.6
<b>Chapter 3 : Mixed Numbers</b>				<b>1 day</b>
3.3a Mixed numbers	<ul style="list-style-type: none"> <li>Understand mixed numbers as the sum of a whole number and a proper fraction.</li> <li>Read and interpret number lines involving mixed numbers.</li> <li>Order mixed numbers.</li> <li>Add a mixed number to a whole number.</li> <li>Subtract a mixed number from a whole number.</li> </ul>	<ul style="list-style-type: none"> <li>Fraction bars</li> <li>Fraction circles</li> <li>Rulers in centimeters and inches</li> <li>Apples or other objects</li> </ul>	TB: p. 88-89 WB: p. 77-78 EP: p. 45-46 Tests: p. 67-72	NS 1.7 NS 1.9 MR 2.2 MR 2.3 MR 2.6 MR 3.2 MR 3.3

**Chapter 6**

**Fraction of a Set**

In *Primary Mathematics (Standards Edition) 3B*, students learned to find the fraction of a set by dividing the set up into equal parts and then finding the amount in the fractional part.

To find  $\frac{1}{5}$  of a set of 20 objects, we can divide the set of 20 into 5 equal parts and determine how many objects there are in one part.

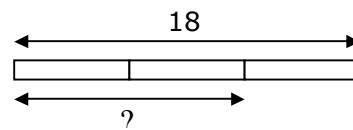


To find  $\frac{3}{5}$  of 20, we also divide the set of 20 into 5 equal parts. Then we determine how many objects there are in three parts.

In this unit, students will learn to interpret  $\frac{1}{5}$  of 20 as  $\frac{1}{5} \times 20$  and  $\frac{3}{5}$  of 20 as  $3 \times \frac{1}{5}$  of 20.

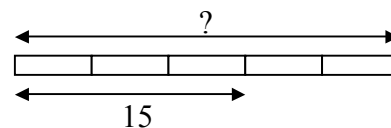
Students will also learn to use fraction bars to solve word problems involving fractions. Each fractional part of the bar is a unit, similar to the unit in the part-whole model for multiplication and division.

For example, to find  $\frac{2}{3} \times 18$ , we can draw a bar, and divide it into thirds, or 3 units. Knowing the value of 3 units (18) we can find the value of 1 unit and of 2 units.



$$\begin{aligned} \frac{3}{3} &= 3 \text{ units} = 18 \\ \frac{1}{3} &= 1 \text{ unit} = 18 \div 3 = 6 \\ \frac{2}{3} &= 2 \text{ units} = 6 \times 2 = 12 \end{aligned}$$

The part-whole model is also used to find the whole given a fractional part. For example, if we know that  $\frac{3}{5}$  of some number is 15, we can use the model to find the number. We can draw a bar, divide it into fifths, and label 3 units as 15. Then we see that we can find  $\frac{1}{5}$ , or 1 unit, by dividing by 3, and then find the total (5 units) by multiplying the value for 1 unit by 5.



$$\begin{aligned} \frac{3}{5} &= 3 \text{ units} = 15 \\ \frac{1}{5} &= 1 \text{ unit} = 15 \div 3 = 5 \\ \frac{5}{5} &= 5 \text{ units} = 5 \times 5 = 25 \end{aligned}$$

Students will use the part-whole model to understand and solve word problems of up to 2-steps involving the fraction of a set.

**Lesson 3.6g More Word Problems**

**Objectives**

Solve word problems that involve finding the whole when given the value of a fractional part.

**California Standards**

**NS 1.5:** Explain different interpretations of fractions, for example, parts of a whole, parts of a set, and division of whole numbers by whole numbers; explain equivalence of fractions.

**MR 1.0:** Students make decisions about how to approach problems.

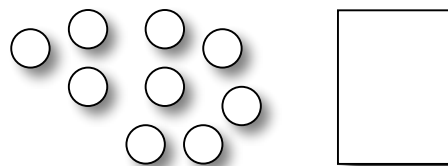
**MR 2.0:** Students use strategies, skills, and concepts in finding solutions.

**MR 3.0:** Students move beyond a particular problem by generalizing to other situations.

**Teaching Strategies**

**Find a fractional part or a whole when given another fractional part**

Display or draw 9 objects, such as discs.  
 Tell students that there are more, but we do not know how many more; the rest are hidden. You can draw a box or square to indicate the ones that are hidden.  
 Tell students that we do know that the 9 we can see make up  $\frac{3}{5}$  of the objects.  
 Ask students how many total discs there are, and then ask how we can show this with a diagram.



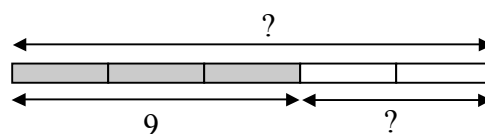
Lead them to see that they can draw a bar divided into 5 equal parts, each representing one-fifth. We know that 9 objects are three-fifths of the total. We can find what each fifth is, and then what the total is.

To find the number of objects that are hidden, we can use either of the following methods:

Once we find the total, we can find the number of hidden objects by subtraction:  
 $15 - 9 = 6$

Or, once we find the value of 1 unit, we can find the value of 2 units by multiplication:

$2 \text{ units} = 3 \times 2 = 6$



$\frac{3}{5}$  of the total (3 units) = 9

$\frac{1}{5}$  of the total (1 unit) =  $9 \div 3 = 3$

$\frac{5}{5}$  of the total (5 units) =  $3 \times 5 = 15$

$\frac{2}{5}$  of the total (2 units) =  $3 \times 2 = 6$