Algebra Concepts – Unit 2, Lesson 1

Part-Whole Model Involving Addition and Subtraction

We will use two types of visual models in solving equations in the unit. One model is the part-whole model. The part-whole model can be used for addition, subtraction, multiplication and division. The part-whole model can also be used with fractions.

Here is what the model looks like.

|-------------------------------Whole----------------------------------|

Part	Part

Sometimes, you will be asked to find the *whole* while at other times you will be given the *whole* and asked to find one of the *parts.*

Class Example

Sarah is working on her stamina and comprehension for reading. Sarah has a goal to read 75 pages per day. So far today, Sarah has read 42 pages. How many additional pages does Sarah need to do to reach her goal?

|---------------------------------75------------------------------------|

42	?

Answer the question in a complete sentence.

Guided Practice 1

Dakota has set a goal to save $850 for a trip on February vacation. So far, Dakota has saved $125. How much does Dakota have left to save?

|-------------------------------$850----------------------------------|

$125	?

Answer the question in a complete sentence.

Guided Practice 2

Lew has set a goal to read 25 books between the months of September and December. Lew read 7 books in September and
5 books in October. How many books does Lew have left to read?

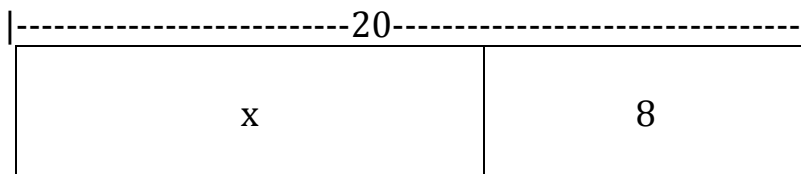|--------------------------------25----------------------------------|

7	5	?

Guided Practice 3

Abby went for an 8.2 mile hike with her friends to Lonesome Lake. After hiking for two hours, Abby came up a sign that indicated that Lonesome Lake was 4.8 miles away. How far had Abby hiked when she reached the sign?

This time, you are asked to build your own model including the question mark and total.

Guided Practice 4

Find the value of x.

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|---------------------------20--------------------------------|
|                              |                              |
|              x               |              8               |
|                              |                              |
|------------------------------|------------------------------|
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What equation could be used to match this situation?

Extension

Try solving these equations without a model. Use any method.

x – 2 = 10   x + 5 = 10

18 = 10 + t   8 - n = -2

Complete the pattern in the table.

Figure (n)	1	2	3	4	5	6	7	8	9
Tiles (t)		4		10		16	19		

Write a rule that would calculate the number of tiles in any figure (n).