



Composing and Decomposing Whole Numbers to 50

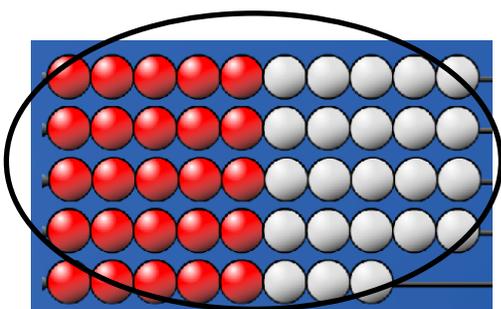
Mathematical Ideas

The ability to compose and decompose numbers is foundational to understanding numbers and their relationships.

Composing is when numbers are combined to create a larger number.
For example,

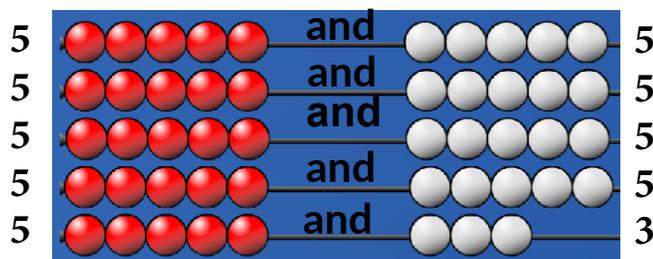


Decomposing is when a number is broken down into smaller numbers. A number can be decomposed in multiple ways. For example:



48 beads

can be decomposed as



Understanding numbers relative to place value is important when working with our decimal system.
For example,

48 can be thought of as 4 tens and 8 ones.



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Helpful Information

Tips

- Encourage your child to take the time to use the learning tools.
- Organized concrete and visual representations can help with understanding numbers and the relationships between numbers.

For example,



From this visual, you can spatially see that when one number increased, the other number is decreased.

Mathematical Words/Symbols

Attribute – a characteristic of an object (e.g., colour, size, thickness, or number of sides).

Digits – the numerals 0 to 9 that form numbers. For example, the digits 2 and 7 can form the two-digit numbers 27 and 72.

Place value – the value of a digit that appears in a number. The value depends on the position or place in which the digit appears in the number. For example, in the number 54, the digit 5 is in the tens place and represents 50.

Materials

Activity 1:

- Whole Number Rods
- Two sets of red number cards 2-4
- One set of black number cards 0-9

Activity 2:

- Rekenrek
- Two sets of red number cards 2-4
- One set of black number cards 0-9

Activity 3:

- Set learning tool
- Two sets of red number cards 2-4
- One set of black number cards 1-9

Activity 4:

- Money
- Two sets of red number cards 2-4
- One set of black number cards 0-9

Activity 5:

- Numberline

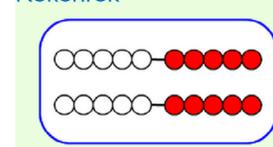
Activity 6:

- Colour Tiles
- Number cards 2-4

Whole Number Rods



Rekenrek



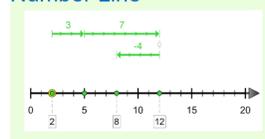
Set Tool



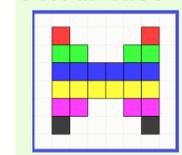
Money



Number Line



Colour Tiles





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How Am I Composed?

Activity 1

Set Up for the Activity:

- Open the Whole Number Rods learning tool.
- Shuffle two sets of red number cards 2 to 4 and place them face down in a pile.
- Shuffle one set of black number cards 0 to 9 and place them face down in a pile.

How to Do the Activity:

1. Have your child pick a card from each of the piles. The red card represents the tens digit of a number. The black card represents the ones digit of a number.
2. Ask your child to compose the number created in step 1 using the Whole Number Rods in three different ways.
3. Ask your child to compose the number created in step 1 using the least number of different rods.
4. Ask your child to compose the number created in step 1 using the greatest number of different types of rods.
5. Repeat activity as desired.

Example:

3	4
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34 composed three different ways

Your child may use friendly numbers such as 5 and 10 to compose the number and then look for other ways.



Using the least number of different rods



Using the greatest number of different rods

Let's Talk About It

How does knowing the numbers that compose to ten help you with composing other numbers?

What strategy did you use to create the train with the greatest number of different?



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Ways to Compose a Number Using a Rekenrek

Activity 2

Set Up for the Activity:

- Open the Rekenrek learning tool.
 - » Show 7 racks with all the beads on the right side.
- Shuffle two sets of red number cards 2 to 4 and place them face down in a pile.
- Shuffle one set of black number cards 0 to 9 and place them face down in a pile.

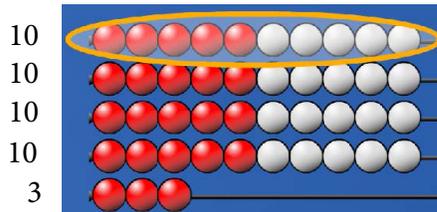
How to Do the Activity:

1. Have your child pick a card from each of the piles. The red card represents the tens digit of a number. The black card represents the ones digit of a number. This is the target number.
2. Have your child create the target number using the beads on the Rekenrek.
3. Ask your child to look at the beads and tell you what combinations of beads make up the target number. Encourage your child to make the target numbers in at least three different ways.
4. Repeat activity as desired.

Example:

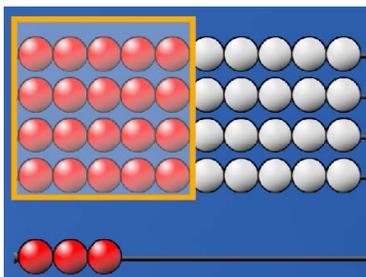


Target Number



20

20

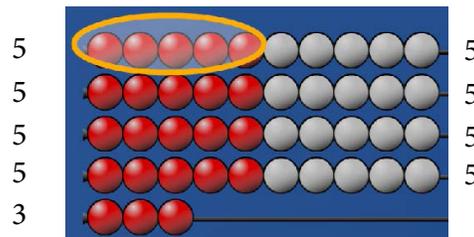


3

Your child may use as many 10s as possible to compose the number and then look at other ways.

5

5



5

5

5

5

3

5

5

5

5

Let's Talk About It

Can you have an equal number of beads on each rack? Why or why not?
Are there a lot of different ways to compose the target number? Why or why not?



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Composing Using the Set Tool

Activity 3

Set Up for the Activity:

- Open the Set learning tool and ensure you are in Create mode.
 - » Place six ten-frames on the workspace.
- Shuffle two sets of red number cards 2 to 4 and place them face down in a pile.
- Shuffle one set of black number cards 1 to 9 and place them face down in a pile.

How to Do the Activity:

1. Have your child pick a card from each of the piles. The red card represents the tens digit of a number. The black card represents the ones digit of a number. This is number to be composed.
2. Have your child move objects into ten-frames until the target number is reached. Ensure that there is at least one object in each ten-frame.
 - » Use the multipliers x2, x5, x10, and x1 as well as move objects as needed.
3. Have your child record the numbers that compose the target number. ‘
4. Ask your child to show another way to compose the target number using six ten-frames.
5. Ask your child to recompose the target number using the maximum number of filled ten-frames

Example:

Target Number: 39

10 and 7 and 8 and 9 and 3 and 2 compose 39

composing using six ten-frames

10 and 7 and 8 and 9 and 3 and 2 compose 39

10 and 9 and 8 and 2 and 1 and 9 compose 39

10 and 10 and 10 and 9 compose 39

composing using the maximum number of filled ten-frames

Your child may fill the four ten frames first then remove one object to make 39.

Let's Talk About It

How can the tens digits tell you the minimum number of ten-frames needed?
 What is the relationship between the different compositions of the number and making tens?



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Ways to Compose a Number Using Money

Activity 4

Set Up for the Activity:

- Open the Money learning tool.
 - » Customize the money tray to only show 1 cent coins, nickels, dimes, and quarters.
- Shuffle two sets of red number cards 2 to 4 and place them face down in a pile.
- Shuffle one set of black number cards 1 to 9 and place them face down in a pile.

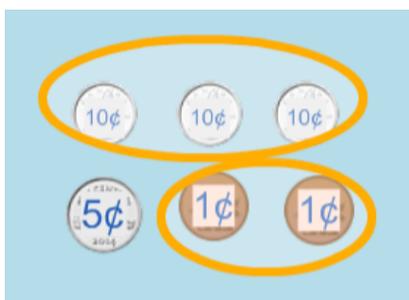
How to Do the Activity:

1. Have your child pick a card from each of the piles. The red card represents the tens digit of a number. The black card represents the ones digit of a number.
2. Have your child compose the number created in step 1 using money in three different ways. Ask your child to tell you the numbers that compose the number.
3. Repeat activity as desired.

Example:



30



5

2

25



10

2



20

5

10

2

Your child may use friendly numbers of 5 and 10 and then count up from that to compose the number.

Let's Talk About It

What patterns do you see with the numbers used to compose the number you picked?



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Composing 50 Using a Number Line

Activity 5

Set Up for the Activity:

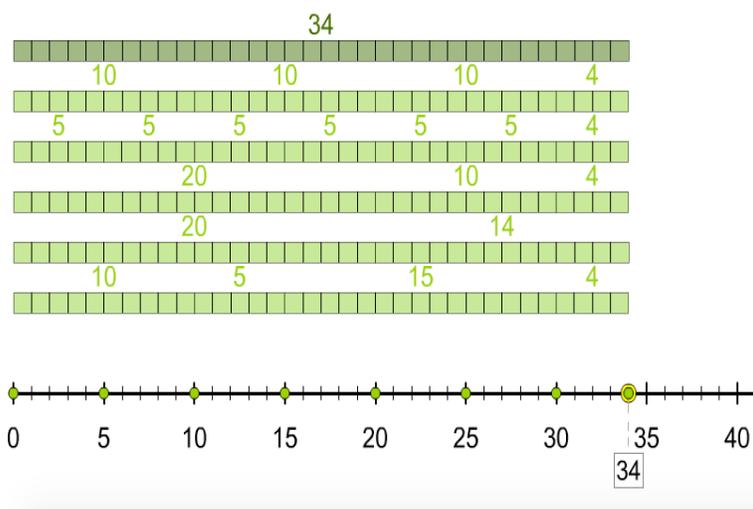
- Open the Number Line learning tool.
 - » Select 0 to 50
 - » Select number ribbon. 
 - » Put a point on one of the hash marks on the number line.

How to Do the Activity:

1. Ask your child to start at zero and drag the number ribbon to the point on the number line. Ensure your child notices that the value on the ribbon is the same value as the point on the number line.
2. Now ask your child to use two or more ribbons to make the same value.
 - » Your child may use the guidelines  to help see how each ribbon is connected to the number line.
3. Ask your child to make the same number five more times using different combinations of ribbons.
4. Repeat the activity changing the placement of the point on the number line.
 - » You may wish to only show the numbers on the number line by selecting  .

Example:

Make 34



Your child may find a pair of ribbons and then reverse its order to find another pair.

Let's Talk About It

- What patterns do you see?
- How can the number be composed in another way ?
- How can the number be composed using as many 5 or 10 ribbons as possible?



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Composing and Decomposing to 50 Using Colour Tiles

Activity 6

Set Up for the Activity:

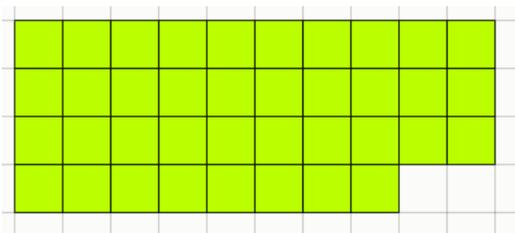
- Open the Colour Tiles learning tool.
 - » Select Few.
- Shuffle one set of number cards 2 to 4 and place face down.

How to Do the Activity:

1. Pick a number from 20 to 50. This is the target number.
2. Have your child move this number of same colour tiles into the workspace using the multipliers $\times 2$, $\times 5$, $\times 10$, and $\times 1$.
3. Pick a card.
4. Have your child change the number of tile colours used to match the number on the card.
 - » To change the colour select the tile(s) and the palette icon  .
5. Ask your child to describe how the original number has been decomposed. Record these numbers using the annotation tool.
6. Repeat as desired.

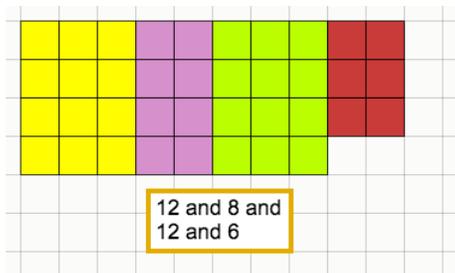
Example:

Target number: 38



4

different colours



Your child may have created 38 by using $\times 10$ four times and removing 2 tiles.

Let's Talk About It

- What is another way to compose the target number?
What is another way to decompose the target number?