



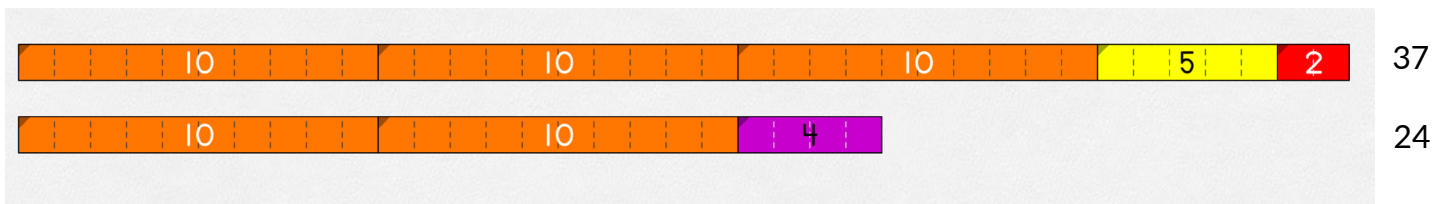
Comparing and Ordering Whole Numbers to 50

Mathematical Ideas

Comparing quantities or amounts in terms of more, fewer, or the same as helps with understanding the relationship between numbers.

Quantity is related to 'how many' rather than size, shape, or position.

Numbers can be compared by determining which one is greater than, less than, or equal to another number. For example,



37 is greater than 24
 $37 > 24$

24 is less than 37
 $24 < 37$

Sometimes it is useful to arrange numbers in ascending or descending order.

For example,

20, 30, 40, 50 is arranged in ascending order (least to greatest)

50, 40, 30, 20 is arranged in descending order (greatest to least)

Understanding place value can help with comparing and ordering numbers.

In our decimal number system the value of a digit depends on its place, or position, in the number.

Each place has a value of 10 times the place to its right.

For example in the number 42

- the digit 2 is in the ones place
- the digit 4 is in the tens place

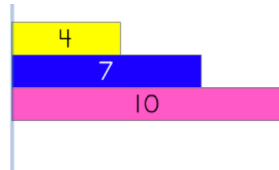


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Helpful Information

Tips

- Learning tools are used to explore mathematical ideas and are a way for children to share their thinking. Encourage your child to take the time to use the learning tools for each activity.
- Organized concrete and visual representations allow your child to use their spatial sense to deepen their understanding of number and the relationships between numbers.



4 is less than 7 ($4 < 7$)
 10 is greater than 7 ($10 > 7$)

Mathematical Words/Symbols

Fewer – less than ($<$)

More – greater than ($>$)

Same as – equal to ($=$)

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

Mathematical Statement – consists of numbers and symbols defining a relationship of equality or inequality. An example of equality is $3 + 5 = 2 + 6$. An example of inequality is $3 + 5 < 2 + 5$.

Place value – the value of any digit depending on its location in a number e.g., for the number 84 the place value of the 8 is 80.

Materials

Activity 1:

- Set Tool
- Number Cards

Activity 2:

- Colour Tiles
- Number Cards

Activity 3:

- Money
- Number Cards

Activity 4:

- Rekenrek
- Bead Cards

Activity 5:

- Whole Number Rods
- Number Cards

Activity 6:

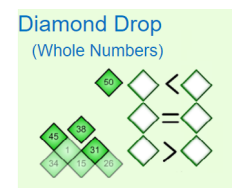
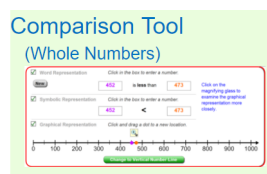
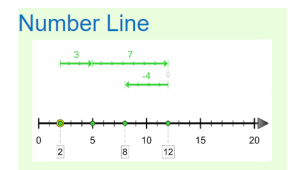
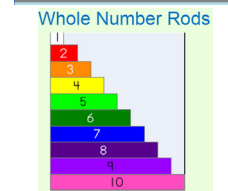
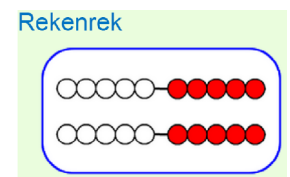
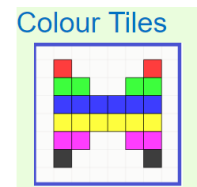
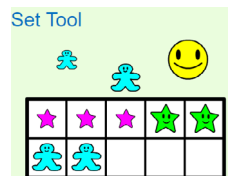
- Number Line
- 10-Frame Cards

Activity 7:

- Comparison Tool (Whole Numbers)

Activity 8:

- Diamond Drop (Whole Numbers) Game





Comparing and Ordering Whole Numbers to 50

Comparing Using the Set Tool

Activity 1

Set Up for the Activity:

- Open the Set learning tool.
 - » choose the Create mode (default)
- Shuffle two sets of number cards 1 to 4 and place face down in a pile. These will be the tens digits.
- Shuffle one set of number cards 0 to 9 and place face down in a pile. These will be the ones digits.

How to Do the Activity:

1. Have your child pick one card from each pile and create a 2-digit number.
2. Represent this number using ten-frames and the multiplier feature in the Set tool.
3. Have your child explain the mathematical steps used to create the number and record these steps using the annotation tool.
 - » leave this number representation on the workspace
4. Repeat steps 1 to 3.
5. Compare the two numbers represented.

Example:

$10 + 10 + 10 + 10 - 1 = 39$

$10 + 10 + 3 = 23$

39 is greater than 23.

Your child may add or skip count.

Let's Talk About It

How do the 10-frames help you know which number is greater?

How can we change the objects so both representations are of the same number?



Comparing and Ordering Whole Numbers to 50

Comparing Using Colour Tiles

Activity 2

Set Up for the Game:

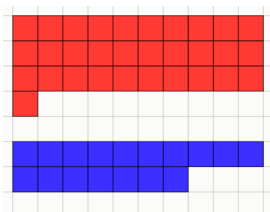
Numbers of Players: 2

- Open the Colour Tiles learning tool.
 - » use the annotation tool to draw a score chart on one side of the workspace.
- Shuffle two sets of number cards 0 to 4 and place face down in a pile. These will be the tens digits.
 - » if zero is picked then the number only has a ones digit
- Shuffle one set of number cards 0 to 9 and place face down in a pile. These will be the ones digits.

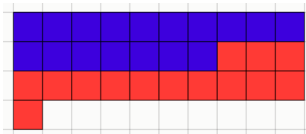
How to Play the Game:

1. Player 1 picks one card from each pile and creates a 2-digit number.
2. Player 1 represents this quantity using the colour tiles.
 - » organize the tiles in rows of ten
3. Player 2 picks one card from each pile and creates a 2-digit number.
4. Player 2 represents this quantity using the colour tiles.
 - » organize the tiles in rows of ten
5. The players decide which quantity is greater.
6. The player with the least number of tiles highlights those tiles and slides them on top of the other player's tiles.
7. The players count the uncovered tiles. The player who had the greatest number of tiles wins one point for each uncovered tile.
8. The total points won are recorded on the scorecard using tallies.
9. Remove the game tiles before the next round.
10. Repeat steps 1 to 9 four times.
11. Count the tally marks on the scorecards. The person with the greatest number of tally marks wins the game.

Example:



Player 1: 3 1



Player 2: 1 7

Player 1 has the greatest number of tiles. Player 2's tiles are moved onto Player 1's tiles.

Your child may count the tens and then the ones to determine the number of points.



Player 1 earns 14 points.

Let's Talk About It

How do you know who has more tiles?

What strategy did you use to count the number of points?



Comparing and Ordering Whole Numbers to 50

Money Game

Activity 3

Set Up for the Game:

Numbers of Players: 2

- Open the Money learning tool.
 - » customize to show only the nickel and 1 cent
 - » use the annotation tool to create a score card (bank) as shown in the example
- Shuffle two sets of number cards 1 to 8 and place face down in a pile.

How to Play the Game:

1. Player 1 picks two cards. The first card is the quantity of nickel coins to be moved onto Player 1's workspace. The second card is the quantity of 1 cent coins to be moved onto Player 1's workspace.
2. Player 2 picks two cards. The first card is the quantity of nickel coins to be moved onto Player 2's workspace. The second card is the quantity of 1 cent coins to be moved onto Player 2's workspace.
3. Each player determines the money value of the coins. The player with the greatest money value moves all the coins into that player's bank account.
4. Play three rounds.
5. The players count the number of coins in their bank accounts. Count one point for each nickel. Count two points for each 1 cent.
6. The player with the greatest number of points wins the game.

Example:

Round 1

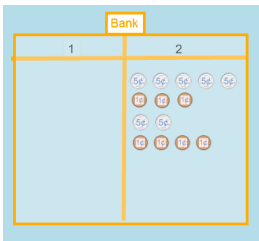


Player 1

Player 2

Player 1: 14¢

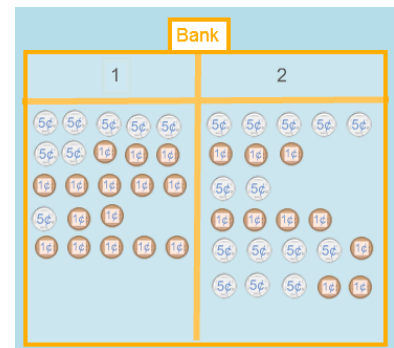
Player 2: 28¢



Player 2 puts the coins from Round 1 in the bank.

Your child may count by twos first and then count on by ones to determine the number of points.

After Round 3



Player 1: counts 15 1 cent coins by 2s for 30 points and then counts on by ones for 8 nickels with a total count of 38 points
 Player 2: counts 10 1 cent coins by 2s for 20 points and then counts on by ones for 14 nickels with a total count of 34 points
 Player 1 wins the game.

Let's Talk About It

- What strategy did you use to decide who had the most money?
 What strategy did you use to decide who had the most points?
 Why is it possible to win if you have fewer coins?



Comparing and Ordering Whole Numbers to 50

Comparing Beads

Activity 4

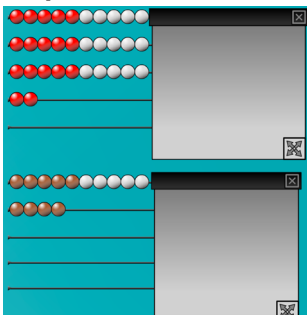
Set Up for the Activity:

- Open the Rekenrek learning tool.
 - » add racks until there are 10 racks on the workspace
 - » select the settings icon
 - » use the left colour palette to change the bead colours of the last five racks
 - » adjust the racks so there is a gap between the first five and the second five racks
- Shuffle two sets of number cards 0 to 4 and place face down in a pile. These will be the tens digits.
 - » if zero is picked then the number only has a ones digit
- Shuffle one set of number cards 0 to 9 and place face down in a pile. These will be the ones digits.

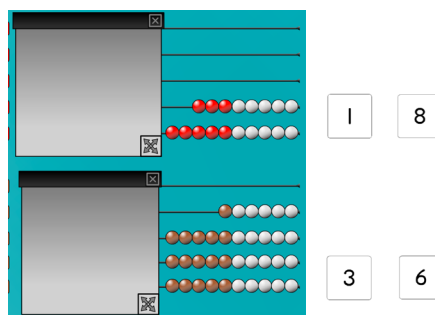
How to Do the Activity:

1. Have your child determine the total number of beads on five racks.
2. Have your child pick one card from each pile, create a 2-digit number and represent this quantity using the beads on the first five racks of the Rekenrek.
 - » place a shade over the unused beads on the first five racks (Shade 1)
3. Repeat steps 1 and 2 using the second set of racks.
4. Have your child decide which quantity is greater.
5. Ask your child to predict the number of beads under shade 1.
6. Slide shade 1 over the beads from step 2. Count the uncovered beads to check the prediction.
7. Repeats steps 5 and 6 for shade 2.
8. Have your child decide which quantity is greater.
9. Remove the shades and slide all the beads to one side.
10. Repeat as desired.

Example:



32 is greater than 14



36 is greater than 18

Your child may use the benchmarks of 5 and 10 to help represent the quantities and then compare.

Let's Talk About It

- What strategies did you use to represent your numbers?
- How did you know which set of beads was greater?
- What strategies did you use to predict the number of hidden beads?
- How did you determine the actual number of beads?
- How did the comparison change from the first comparison to the second comparison?



Comparing and Ordering Whole Numbers to 50

Ordering Using Whole Number Rods

Activity 5

Set Up for the Activity:

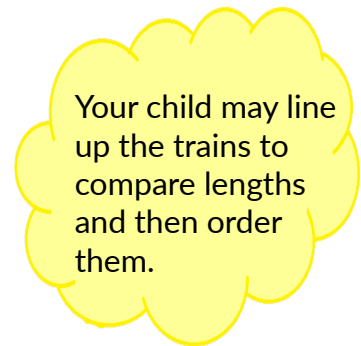
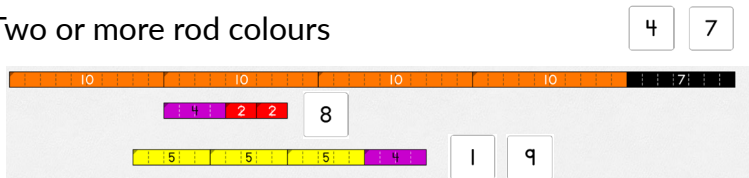
- Open the Whole Number Rods learning tool.
 - » be sure the rod labels are turned on (the default)
- Shuffle two sets of number cards 0 to 4 and place face down in a pile. These will be the tens digits.
 - » if zero is picked then the number only has a ones digit
- Shuffle one set of number cards 0 to 9 and place face down in a pile. These will be the ones digits.

How to Do the Activity:

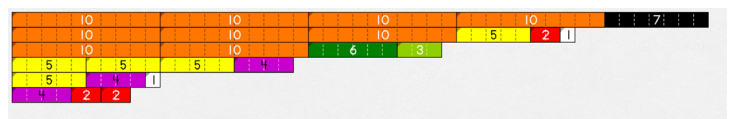
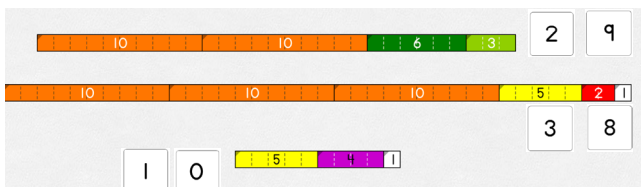
1. Have your child pick one card from each pile, create a 2-digit number and represent this quantity using at least two colours of Whole Number Rods horizontally to form a train.
2. Repeat step 1 until there are 3 trains on the workspace.
3. Have your child pick one card from each pile, create a 2-digit number and represent this quantity using at least three colours of Whole Number Rods to form a train.
4. Repeat step 3 until there are 6 trains on the workspace.
5. Ask your child to identify the longest and shortest trains.
6. Have your child order the trains from least to greatest or greatest to least.

Example:

Two or more rod colours



Three or more rod colours



Ordered from greatest to least from top

Let's Talk About It

- How did you choose the rods for each train?
- How do you know which train is longest?
- What strategies did you use to order your numbers?



Comparing and Ordering Whole Numbers to 50

Comparing Using a Number Line

Activity 6

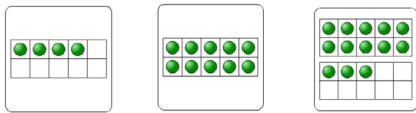
Set Up for the Activity:

- Open the Number line learning tool.
 - » select 0 to 50
 - » select the number ribbon format
 - » select drop dashes
- Shuffle two sets of 10-frame cards 0 to 16 and place face down in a pile.

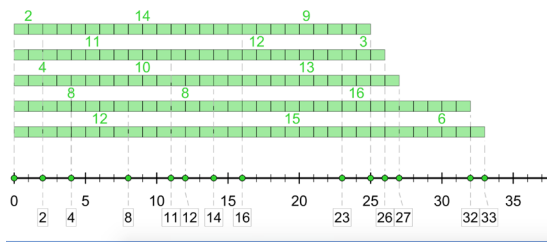
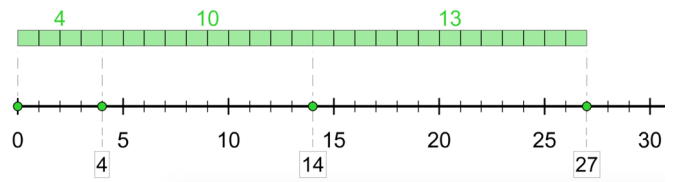
How to Do the Activity:

1. Ask your child to pick 3 cards from the pile and determine the number that is represented by all 3 cards altogether.
2. Have your child verify this number on the number line by:
 - » representing the first card using the number ribbon starting at zero;
 - » representing the second card by extending the number ribbon by the second amount;
 - and
 - » representing the third card by further extending the number ribbon.
3. Repeat steps 1 and 2 until there are five ribbons on the workspace.
4. Ask your child to reorder the ribbons so they are ordered greatest to least or least to greatest.
5. Repeat the task as desired.

Example:



Number represented by these cards: 27



Numbers ordered greatest to least starting from the bottom: 33, 32, 27, 26, 25

Your child may determine 27 by counting tens and then counting the ones.

Let's Talk About It

What strategies did you use to determine the quantities represented by the 10-frames?
 What strategies did you use to order the numbers?



Comparing and Ordering Whole Numbers to 50

Comparison Tool (Whole Numbers)

Activity 7

Set Up for the Activity:

- Open the Comparison Tool (Whole Numbers).
 - » have Word, Symbolic and Graphical Representations all selected
 - » choose to work with the horizontal number line

How to Do the Activity:

1. Place two different numbers between 21 and 50 into the Word Representation boxes.
2. Together with your child, read aloud the Word Representation.
3. Ask your child to describe how these numbers are shown on the number line.
4. Have your child drag one of the points on the number line to another location and describe what happened to the Word Representation and the Symbolic Representation.
5. Repeat step 4 a few times.
6. Select New and repeat steps 2 to 5.
7. Place two different numbers less than 50 into the Word Representation boxes. Put the larger number in the box to the right of the inequality. The symbol representation at this point should be 'smaller number < larger number.' Point this out to your child.
8. Using the same two numbers from step 7, switch the numbers putting the smaller number on the right and the larger number on the left.
 - » ask your child to describe how the inequality changed
 - » ask your child to explain what happened to the points on the number line
9. Change to a vertical number line. Have your child describe how the points are shown on the vertical number line representing this inequality.
10. Ask your child choose to work with the horizontal or the vertical number line.
11. Hide the Symbolic and Graphical Representations. Select the NEW button.
12. Ask your child to describe what is hidden.
13. Have your child select representations to check.
14. Repeat steps 10 to 13 as desired.

Example:

Word Representation *Click in the box to enter a number.*
 25 is less than 37

Symbolic Representation *Click in the box to enter a number.*
25 < 37

Graphical Representation *Click and drag a dot to a new location.*

0 5 10 15 20 25 30 35 40 45 50

Your child may notice that when the smallest and largest numbers are rearranged the inequality words and sign change.

Let's Talk About It

- Why does moving a point on the number line change the numbers in the boxes?
Which number on a horizontal number line is the greater number - the one on the right or the one on the left? Why?
Which number on a vertical number line is the greater number? Why?



Comparing and Ordering Whole Numbers to 50

Diamond Drop - Whole Numbers

Activity 8

Set Up for the Game:

- Open the Diamond Drop - Whole Numbers.
 - » choose 0 to 50

How to Play the Game:

1. Numbers will drop down in diamond shapes.
2. Drag the numbers (diamonds) to make as many true mathematical statements as possible (less than, equal to, greater than).
3. Game is played until no more diamonds can drop or as desired.
4. Review any mismatches at the end of the game.

Example:

Number of matches = 2

Your child may focus on one type of equation (e.g., $>$) and try placing all the numbers using that comparison only.

Let's Talk About It

Which expressions were easiest to create?

When might you move a diamond from one statement to another?