



Comparing and Ordering Whole Numbers to 20

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,



17 is greater than 14
 $17 > 14$

14 is less than 17
 $14 < 17$

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

9, 15, 16, 19 is arranged in ascending order (least to greatest)

19, 16, 15, 9 is arranged in descending order (greatest to least)

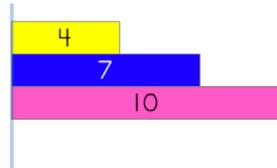


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Helpful Information

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 ($=$)

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 $3 + 5 < 2 + 5$.

Materials

Activity 1:

- Set Tool

Activity 2:

- Pattern Blocks

Activity 3:

- Colour Tiles
- Finger Cards 8 to 20

Activity 4:

- Whole Number Rods
- Tally Cards 8 to 20

Activity 5:

- Rekenrek
- Number Cards 7 to 20

Activity 6:

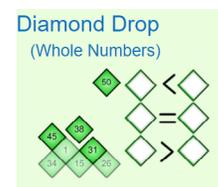
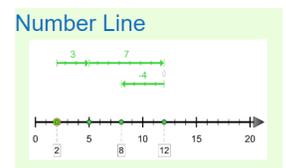
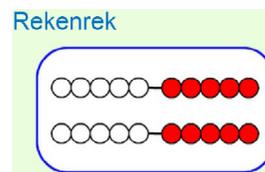
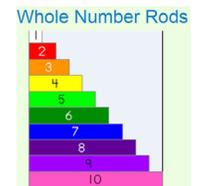
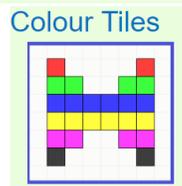
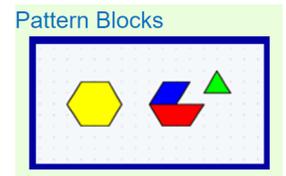
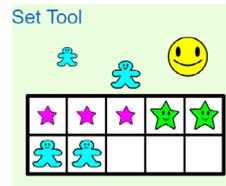
- Whole Number Rods
- Number Cards 8 to 20

Activity 7:

- Number Line
- Dice Cards 8 to 20

Activity 7:

- Diamond Drop (Whole Numbers) Game





Comparing and Ordering Whole Numbers to 20

Comparing Using the Set Tool

Activity 1

Set Up for the Game:

Number of Players: 2-3

- Open the Set learning tool.
 - » choose the Auto feature

How to Play the Game:

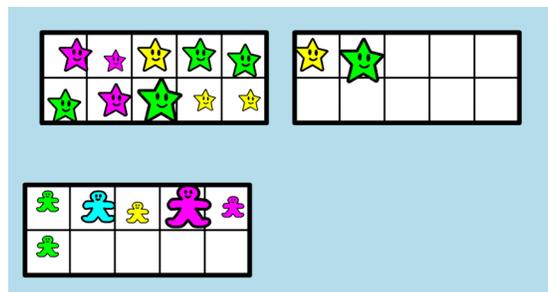
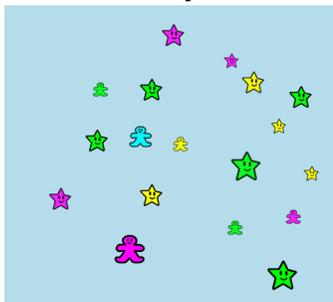
1. Each player picks one of the shapes to use in the game.
 - » If only two players, deselect the unused shape.
2. Enter a number between 15 and 20 in Number of Objects. Hit Enter or select New.
3. The players group the objects by shape.
4. Players count the number of objects in each group.
5. Players compare the quantity in each group. The player who has the least number of objects wins the round and earns one point.
6. Select all the objects and move them to the recycle bin.
7. Repeat the steps; however, this time the player with the greatest number of objects will win the round and earn one point.
8. The game ends when one player earns 10 points.

Example:

Player 1: gingerbread

Player 2: star

Number of Objects: 18



Player 1: 12 stars
Player 2: 6 gingerbread

Your child may organize the objects using ten-frames and then compare.

There are fewer gingerbread.
Player 2 earns a point.

Let's Talk About It

- How do you know how many objects you have?
- How do you know who has fewer?
- How do you know who has more?
- How can we change the objects so we each have the same?



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One More or One Fewer Pattern Blocks

Activity 2

Set Up for the Activity:

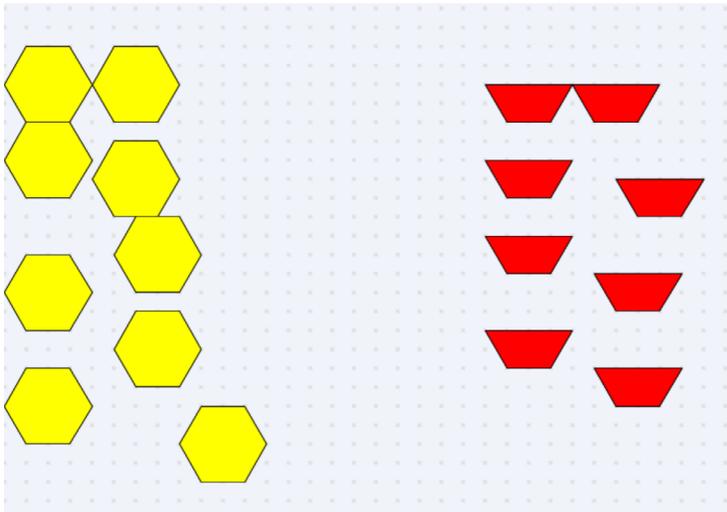
- Open the Pattern Blocks learning tool.
 - » place 8 to 20 blocks of one shape in the workspace

How to Do the Activity:

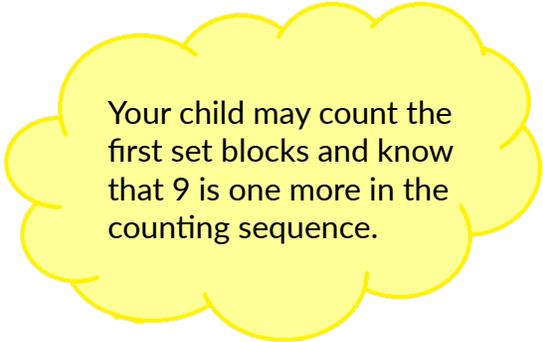
1. Ask your child to tell you how many blocks are in your set.
2. Have your child pick a different pattern block and make a set that is one more than your set.
3. Repeat several times having your child create sets that are one more, one fewer, or the same as your sets.
4. Repeat the activity having your child create the first set and challenging you to make the required set.

Example:

Set 1: 8 trapezoids



Set 2: 9 hexagons
one more block



Let's Talk About It

How did you know how many blocks you needed?
Would it make a difference if you use two kinds of blocks? Why or why not?



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Comparing Using Whole Number Rods

Activity 4

Set Up for the Game:

Number of Players: 2

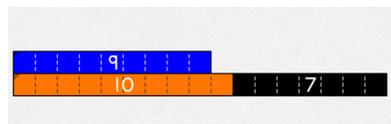
- Open the Whole Number Rods learning tool.
 - » use the annotation tool to draw a score chart on one side of the workspace
 - » be sure the rod labels are turned on (the default)
- Shuffle two sets of tally cards 8 to 20 and place them face down in a pile.

How to Play the Game:

1. Player 1 picks one card from the pile and represents this quantity using two whole number rods horizontally to form a train.
2. Player 2 picks one card from the pile and represents this quantity using two whole number rods to form a train.
3. The players compare their trains.
4. The player with longest train wins a point.
 - » use a tally mark on the score chart to record the point
 - » if the lengths are the same both players get a point
5. Move the trains into the recycling bin before the next round.
6. Play 5 to 10 rounds. Vary whether the longer or short train wins the round.
7. Compare tallies on the score charts. The person with greatest number of tallies wins the game.

Example:

Round 5: longest train wins



Player 1
Player 2

Player 1: 9 rod train

Player 2: 17 rod train

17 is greater than 9 so player 2 earns the point.

The child compares the quantities by seeing spatial differences.

Let's Talk About It

- How do you know who has the longer train?
- How can you make your train the same length as mine?
- Who has more points at the end of this round?



Comparing and Ordering Whole Numbers to 20

Ordering Beads

Activity 5

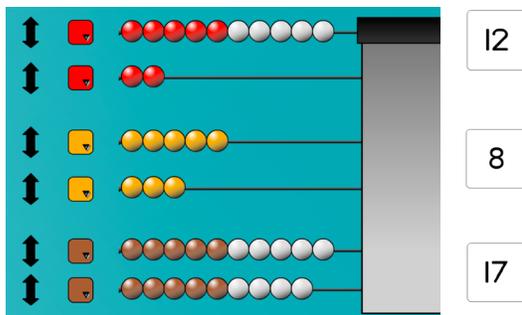
Set Up for the Activity:

- Open the Rekenrek learning tool.
 - » add racks until there are 6 racks on the workspace
 - » select the settings icon
 - » use the left colour palette to change the bead colours of the second and third pairs of rack so that each pair is a different colour
- Shuffle number cards 7 to 20 and place face down in a pile.

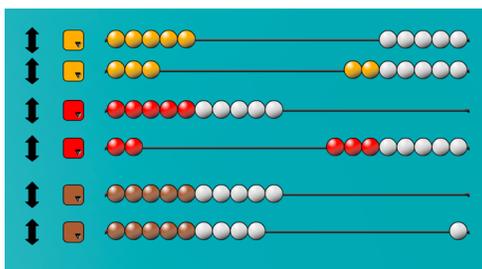
How to Do the Activity:

1. Ask your child to draw a card and tell you the number that is shown.
2. Have your child represent this number using two racks on the Rekenrek.
3. Repeat activity using a new pair of racks each time.
4. Use the shade to cover the unused beads.
5. Ask your child which rack has the most beads and which rack has the fewest beads.
6. Remove the shade.
7. Have your child move the racks to show the beads in order from least to greatest or from greatest to least.
8. Slide the beads back to the right side of the racks.
9. Repeat as desired.

Example:



Numbers Ordered



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

Let's Talk About It

How did you choose to use the two racks to represent the number?

What strategy did you use to order the beads?

Look at the beads we didn't use (on the right side). What numbers are represented? How are they ordered?



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Ordering Using Whole Number Rods

Activity 6

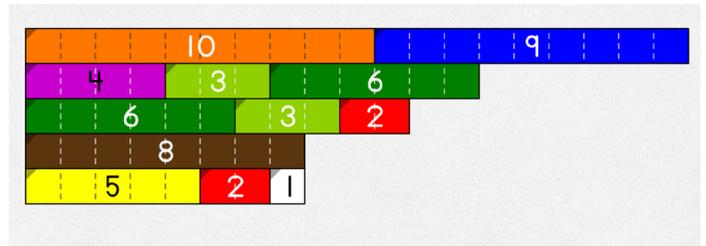
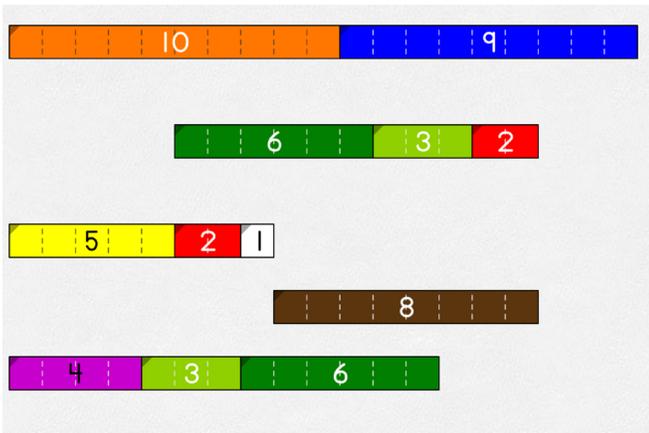
Set Up for the Activity:

- Open the Whole Number Rods learning tool.
 - » be sure the rod labels are turned on (the default)
- Shuffle two sets of number cards 8 to 20 and place face down in a pile.

How to Do the Activity:

1. Have your child pick a card from the pile and represent this quantity using whole number rods horizontally to form a train.
2. Repeat step 1 until there are 5 trains on the workspace.
3. Ask your child to identify the longest and shortest trains.
4. Have your child order the trains from least to greatest or greatest to least.

Example:



Ordered from greatest to least

Your child may line up the trains to compare lengths and then order them.

Let's Talk About It

How do you know which train is longest?
What strategy did you use to order your numbers?



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Comparing Using a Number Line

Activity 7

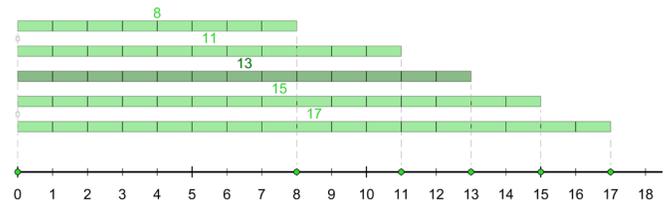
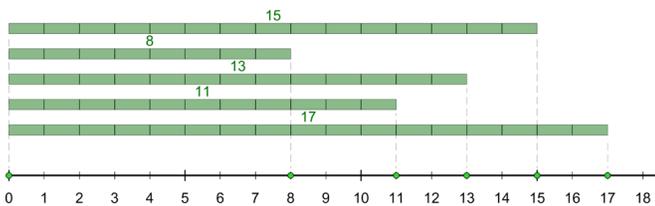
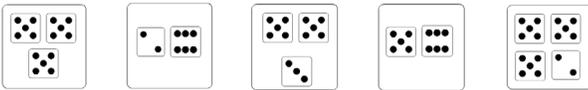
Set Up for the Activity:

- Open the Number Line learning tool.
 - » select 0 to 20
 - » select the number ribbon format 
- Shuffle one set of dice representation cards from 8 to 20 and place face down in a pile.

How to Do the Activity:

1. Ask your child to pick one card from the pile.
2. Have your child represent this quantity using the number line tool.
3. Repeat 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.
6. Repeat steps 1 to 5 using the magnitude bar  instead of the number ribbon.

Example:



ordered greatest to least starting from the bottom

Your child may order the ribbons by using the number sequence.

Let's Talk About It

- What strategy did you use to order the numbers?
Name another number that could fit between your greatest and least numbers. Where would it go?
What number would be one greater than your longest ribbon?
What number would be one less than your shortest ribbon?



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Diamond Drop – Whole Numbers

Activity 8

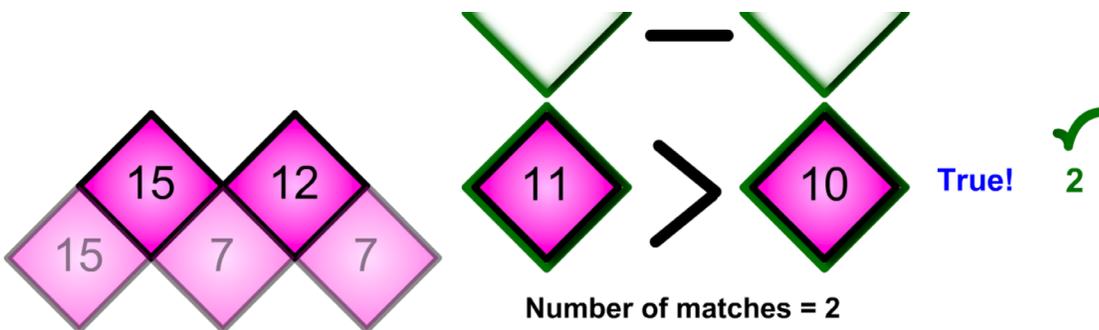
Set Up for the Game:

- Open the Diamond Drop – Whole Numbers.
 - » choose 0 to 20

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:



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

Why was it quicker or easier to create $>$ (greater than) and $<$ (less than) mathematical expression than $=$ (equal to) equations?

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