

Comparisons and Attributes

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Summary	Work with comparisons and comparison operators ($=$, \neq , $<$, $>$).
Goals	<ol style="list-style-type: none">1. To further develop children's understanding about comparison statements and the mathematical symbols for comparing numbers and number expressions2. Realize that some comparisons require making decisions about which attributes to focus upon.
Materials	Overheads, Handouts
Keywords	Describing Magnitudes Full Class Discussion Interpretation of Stories Production of Stories Small Group Work

Introduction:

In this class we will work with comparison statements and will continue to explore: mathematical symbols for greater than ($>$) and less than ($<$) and comparative terms (more than, less than, longer than, shorter than, bigger than, smaller than, taller than, shorter than, wider than, narrower than). We will focus on ambiguous situations where the choice of the attribute to be compared determines the comparison symbol to be used.

Activity Plan:

1. Make a comparison sentence [Whole Class]

Show pairs of sentences (on the overheads, Pages 1 and 2) and ask the children to volunteer to produce one or more single sentences about the situation, using a comparison word. Write their suggestions on the overheads, compare possible conflicting answers, and discuss children's suggestions, pointing out the best comparison sentences.

2. Comparison Statements [Whole Class]

Show the overhead on Page 3 and ask the children to volunteer to describe and complete comparative sentences about the amounts they see. Compare possible conflicting answers and discuss children's suggestions until they agree about a possible correct answer.

3. Comparison Symbols [Group Work]

Children work in pairs. They will be asked to fill out the handout on Page 4, stating what can be compared and completing the comparative sentences with words or with the appropriate comparative symbols.

4. Comparing different attributes & ambiguity [Whole Class]

Discuss children's answers to the handout questions from Page 4.

Show the overheads on Pages 5 to 8 and discuss the cases where, for the same problem, different symbols could be used, depending upon the different attributes one is comparing.

5. Introduce the Homework [Whole Class]

Distribute and briefly explain the goals of the homework (Page 9).

6. Reflections

The comparison symbols actually take on different meanings in different contexts and depending upon what is being compared.

The symbol $>$ can mean:

- Is greater than...
- Has more elements than...
- Is longer than...
- Is worth more than...
- Contains more liquid than...
- Is taller than...
- Is wider than...
- Weighs more than...
- Has a greater area than...
- Et cetera

The symbol $<$ can mean:

- Is smaller than...
- Has fewer elements than...
- Is shorter than...
- Is worth less than...
- Contains less liquid than...
- Is shorter than...
- Is narrower than...
- Weighs less than...
- Has a smaller area than...

Sally has 5 cousins.

Francisco has 3 cousins.

What can we compare about Sally and Francisco?

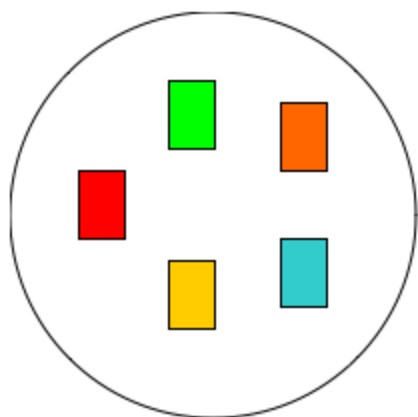
Let's write comparison sentences:

Luis' dog is 5 years old and weighs 13 pounds.
Alberta's dog is 3 years old and weighs 17 pounds.

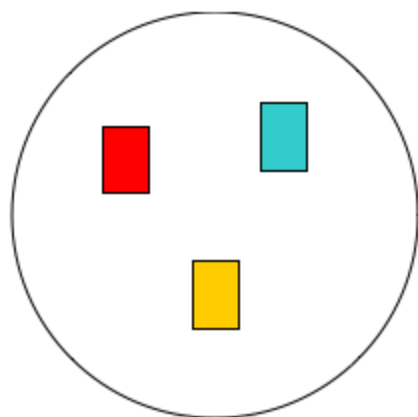
What about the dogs can we compare?

.....
.....

Let's write comparison sentences:



Sandra's Cards



Louis' Cards

What can we compare about the cards?

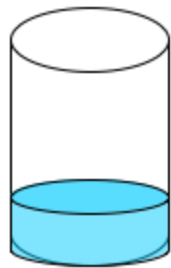
More or Less?

Sandra has cards than Louis.

Louis has cards than Sandra.

**Overhead and Handout: Comparing Volume and Height
(Page 4)**

Name: _____ Date: _____



Mary's glass of water



John's glass of water

What can we compare about Mary's and John's glasses?

.....

Complete with words:

Mary has water than John

..... has more water than

..... glass is taller than

John's glass is Mary's

Complete this without using words:

(Mary's water) (John's water)

(John's glass) (Mary's glass)

Overhead and Handout: Comparing Money (Page 5)

Name: _____ Date: _____



Joe's money



Sara's money

Who has...?	Joe	Sarah	Cannot tell
More money			
Less money			
More coins			
Fewer coins			
More brothers			
More dollar bills			
Fewer dollar bills			

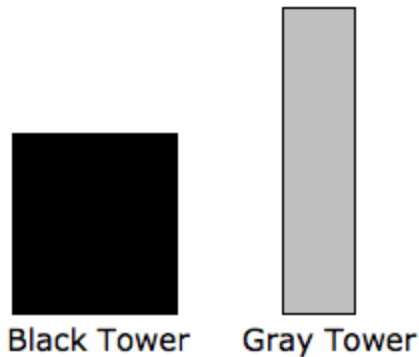
Use =, ≠, >, or < to answer the following.

(Sara's money) (Joe's money)

(Joe's money) (Sara's money)

Overhead and Handout: Comparing Geometric Figures
(Page 6)

Name: _____ Date: _____



What can we compare about the towers?

.....

Complete with words:

The Black Tower is than the Gray Tower.

The is taller than the

.....

Which symbol goes between the expressions?: =

> <

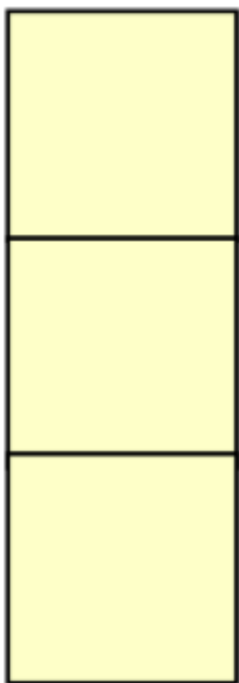
(height of the Gray Tower) (height of the Black Tower)

(width of the Black Tower) (width of the Gray Tower)

Overhead: Comparing with Diverse Units of Measure
(Page 7)

What can we compare about the blocks on the left side and the right side?

.....



Left side



Right side

Overhead: Comparing with Diverse Units of Measure
(Page 8)

What can we compare about the blocks on the left side and the right side?

.....



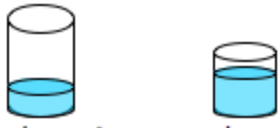

Left side



Right side

Name: _____ Date: _____

Complete the Table:

With Words	Without words
Glass has less water than glass Glass is taller than glass	 glass A glass B
Three plus five is less than ten.	
	$3 < 20$
5 dollars is more than 20 cents	
Triangleis taller than triangle Triangleis thinner than.....	 Triangle H Triangle R

Story	What can I compare here?
Benson's ice cream cones cost \$2.75 Richardson's ice cream cone cost \$1.55	The of the two ice cream cones.
Mary lives 4 blocks from the school. Tito lives 2 blocks from the school.	