

# Comparisons

## Comparisons

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Summary	Comparisons and comparison operators: =, ≠, <, >.
Goals	1. Learn conventions for comparing numbers and number expressions 2. Realize that some comparisons require making decisions about which attributes to focus on.
Materials	Overheads
Keywords	Describing Magnitudes Full Class Discussion Interpretation of Symbols Small Group Work

### Introduction:

In this class we will explore: mathematical symbols for greater than (>), less than (<), equals to (=) and is not equal to (≠); comparative terms (more than, less than, longer than, shorter than, bigger than, smaller than). We will also focus on ambiguous situations where the choice of the attribute to be compared determines the comparison symbol to be used.

### Activity Plan:

#### 1. Comparison Symbols [Whole Class]

= and ≠ : Show pairs of amounts of objects (using the overheads on Pages 1-5) and ask the children to suggest what comparison symbol should be inserted in each case.

> and < : Show the overheads on Pages 6 and 7 and ask the children to try to find out what each symbol means.

Show the overheads on Pages 8 to 15, discuss them with the children, guiding them to the correct use of the comparison symbols.

## 2. Comparison Symbols [Group Work]

Children work in pairs. They will be asked to fill out the handout on Page 16 with the appropriate comparative term.

## 3. Comparing Different Attributes & Ambiguity [Whole Class]

Briefly discuss children's answers to the handout questions.

Show the overheads on Pages 17 to 20 and discuss the cases where, for the same problem, different symbols could be used, depending upon the different attributes one is comparing.

## 4. Introduce the Homework (Pages 21 & 22)

The homework requires students to pay attention to the attribute being compared. Sometimes the attribute is explicitly given (the number of candies). Sometimes the student must determine the attribute.

## 5. Reflections

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

Greater than can mean:

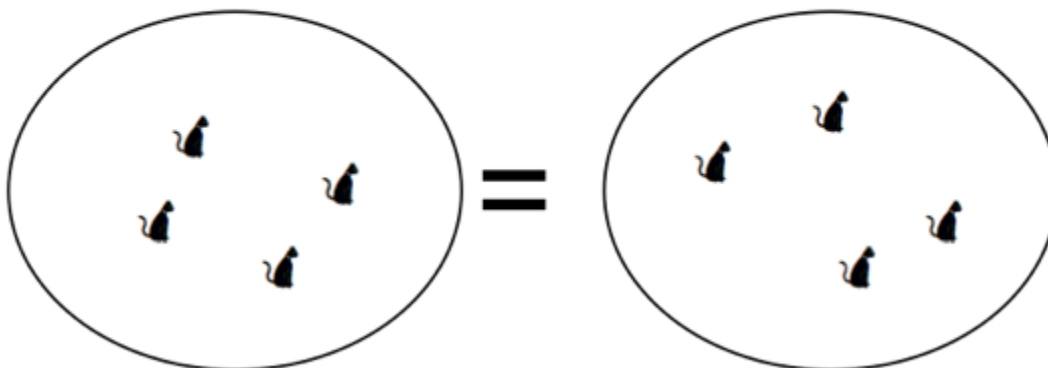
- Has more elements...
- Is longer than...
- Is worth more than...
- Contains more liquid than...

Equal to can mean:

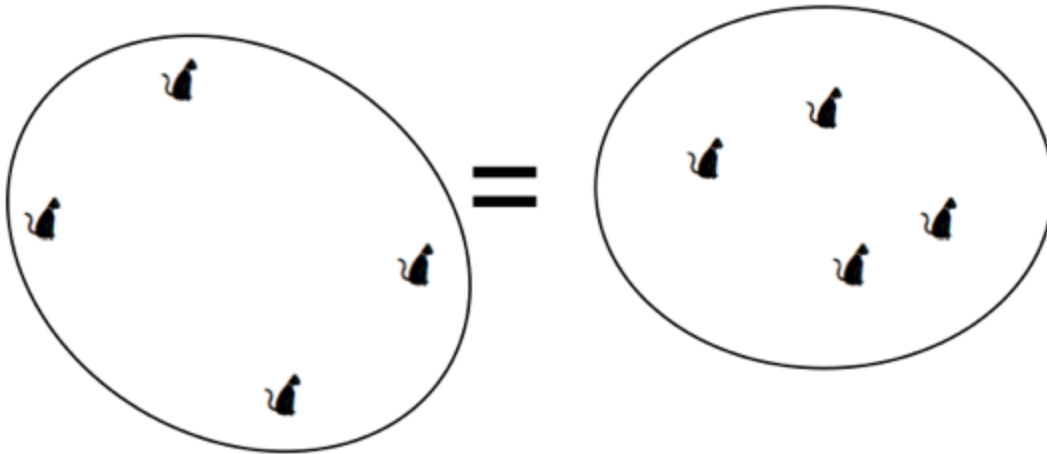
- Has the same number of elements...
- Is the same length as...
- Is worth the same as...
- Contains the same amount of liquid as...

## Overhead: Equals- An Obvious Case

(Page 1)

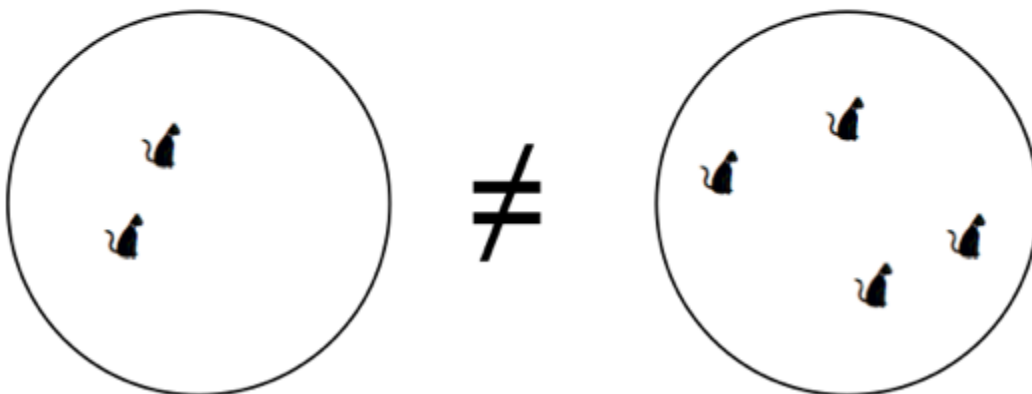


Does the circle matter?

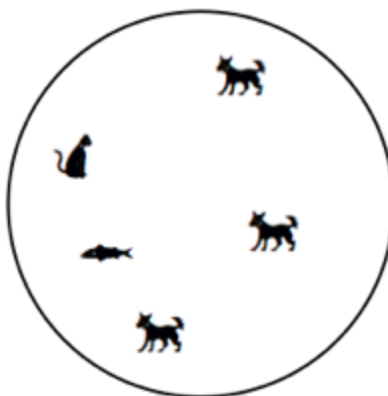


Overhead: Inequality

(Page 3)



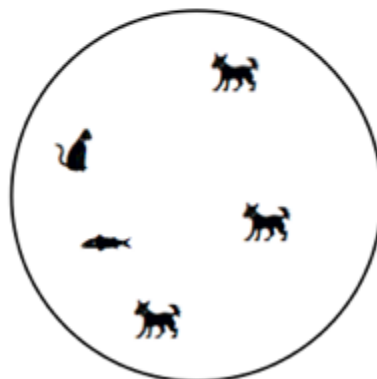
What Counts?



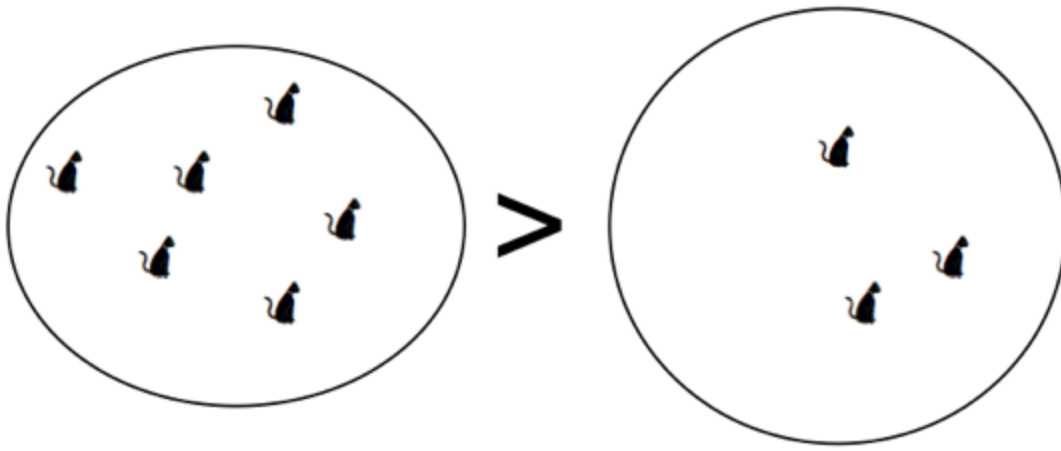
“How many” could be what matters.



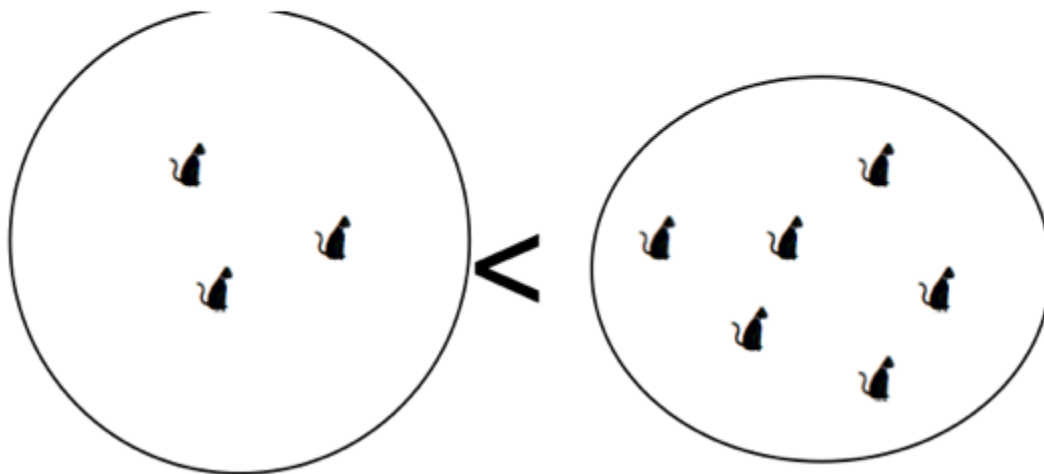
=



**Overhead: What does the symbol  $>$  mean? (Page 6)**



**Overhead: What does the symbol  $<$  mean? (Page 7)**



Find a symbol that could go between the numbers:

9                      7

Which symbol(s) for comparing can go between the numbers?

$>$        $<$        $=$        $\neq$

Can you find another one?

**Overhead: The Same Numbers, In Reverse Order**  
(Page 9)

Find a symbol that could go between the numbers:

7                      9

Which symbol(s) for comparing can go between the numbers?

$>$        $<$        $=$        $\neq$

Can you find another one?

$$6+2 = 8 + 1$$

A student wrote this.

Do you think what she wrote is right or wrong?

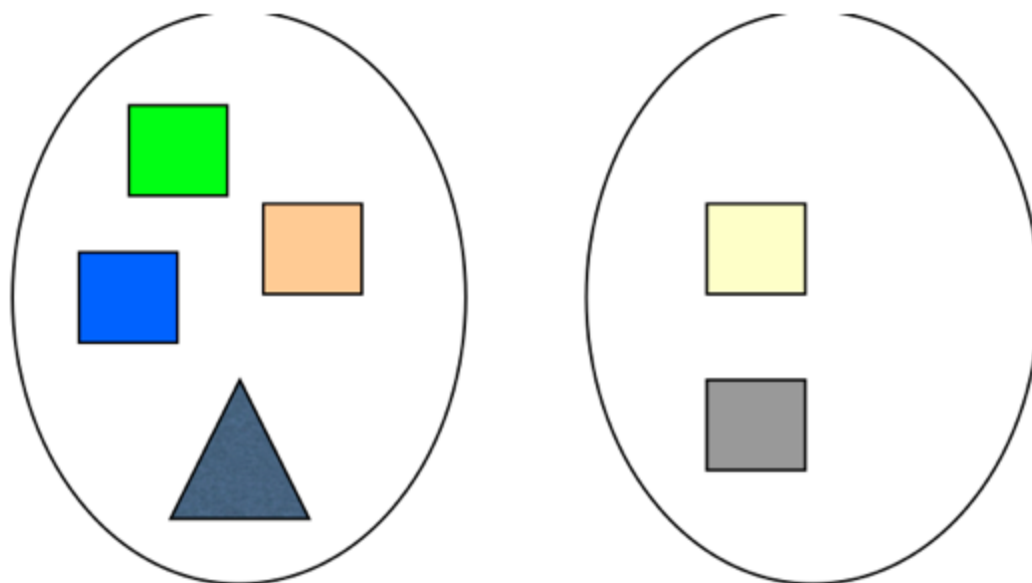


$$2+3 < 5$$

True or false?

A student wrote this.

Do you think what she wrote is right or wrong?

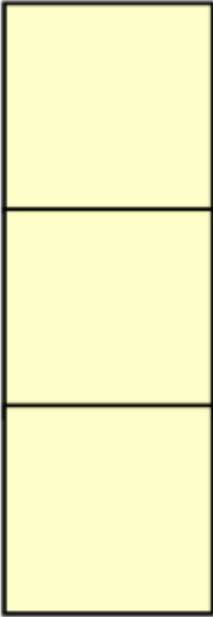


$>$     $<$     $=$     $\neq$

Find a symbol that could go between the two sets.

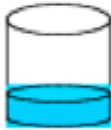
**Overhead: Comparing Blocks**

**(Page 13)**



**Overhead: Comparing Liquids**

**(Page 14)**



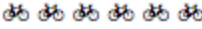
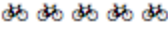








# Overhead and Handout: Using Comparison Symbols

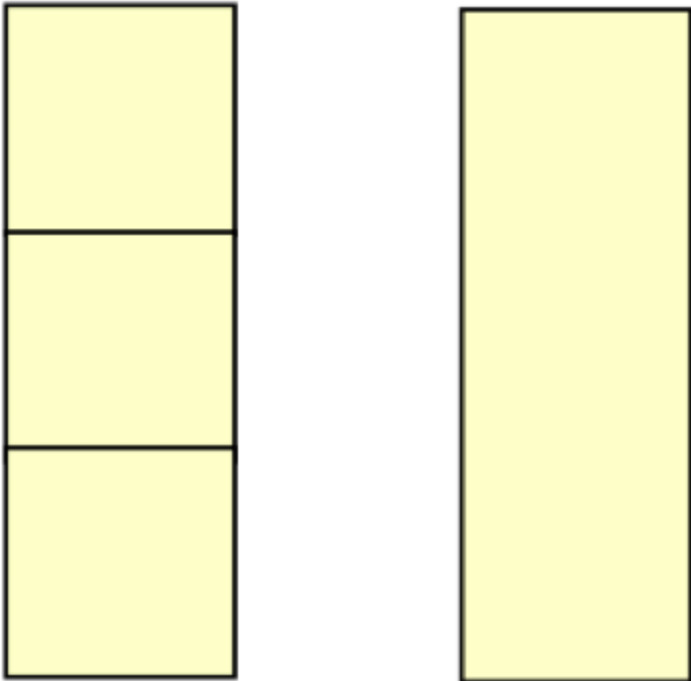
(Page 16)

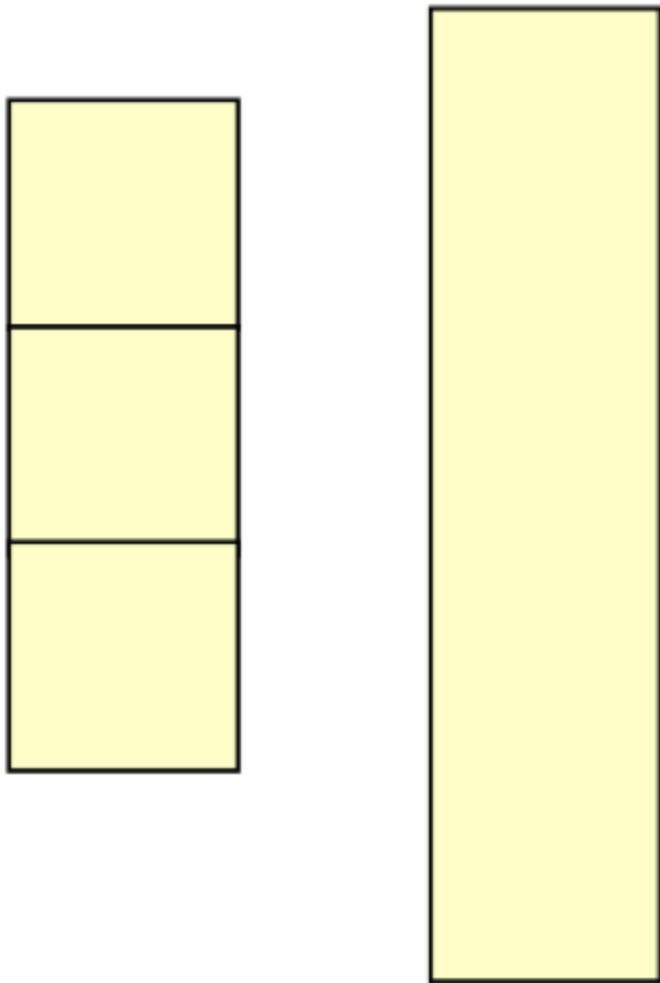
Name: \_\_\_\_\_ Date: \_\_\_\_\_

For each pair of objects, insert the correct comparison symbol: =, > or <

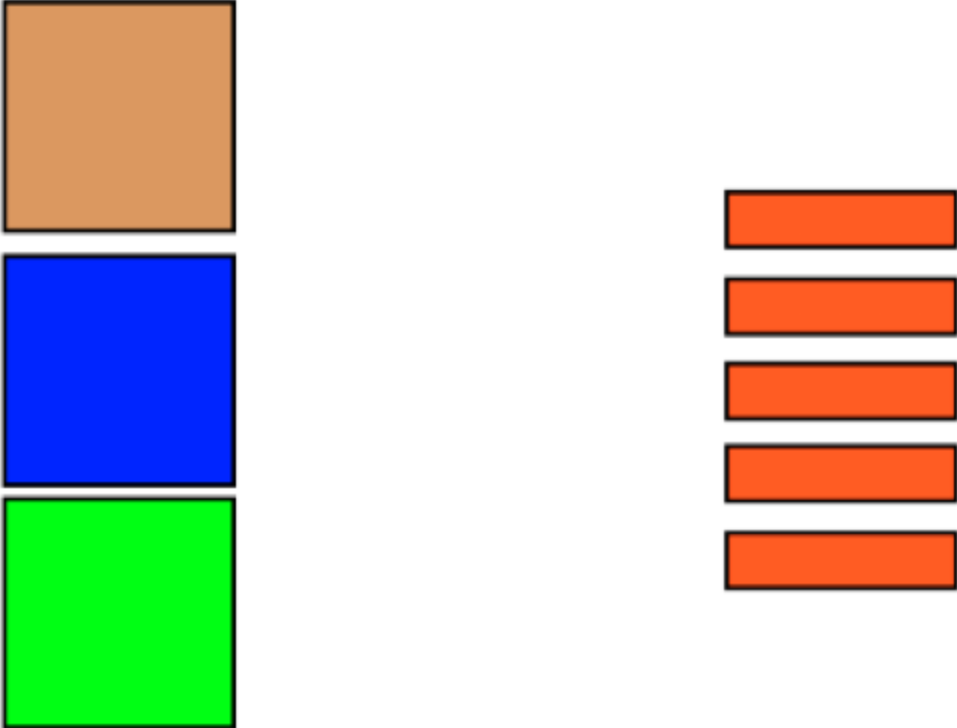
		
		
5		5
		
$3 - 2 + 2$		3
50 cents		2 dollars
3		5
30		$10 + 10 + 10$
		

**What can be compared?**





What can be compared?





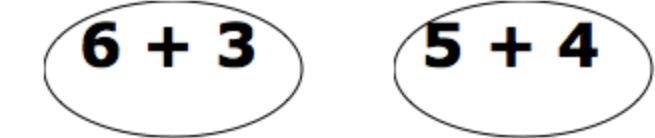
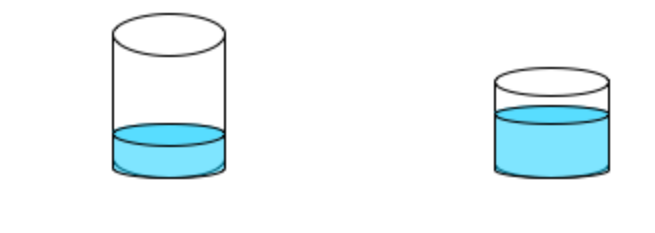

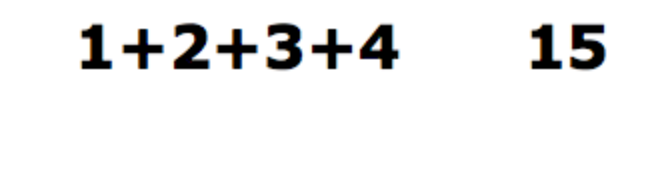
3 cents + 4 cents + 2 cents + 40 cents

2 dollars




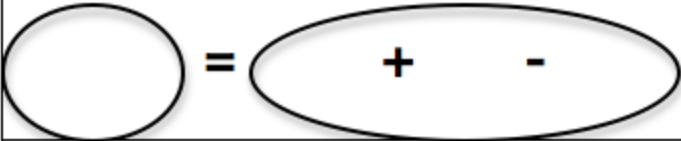

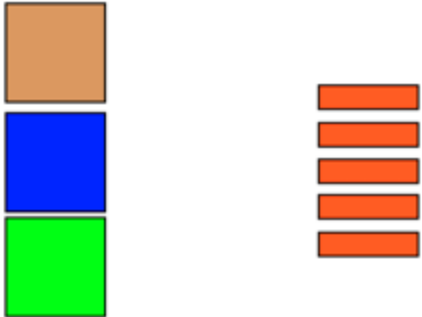
**Overhead and Homework: Comparing Sets, Number Expressions, and Amounts** (Page 21)

Name: \_\_\_\_\_ Date: \_\_\_\_\_

$>$ $<$ $=$	<b>What I Compared</b>
	The number of boxes.
	
	
	The amount of water.
	The size of the glasses.
	

**Overhead and Homework: Comparing Sets, Number Expressions, and Amounts** (Page 22)

Name: \_\_\_\_\_ Date: \_\_\_\_\_

$>$ $<$ $=$	<b>What I compared</b>
	
$=$	The number of stars.
	The amount of money.
	The amount of money.
$<$	The line length.
	[Be careful!]