

NELSON

Leaps AND Bounds TOWARD Math Understanding



**Student Resource
Sampler: *Number***
**(Topics 1–3,
Draft Material)**

Leaps AND Bounds TOWARD Math Understanding

With Leaps and Bounds, mathematics intervention is as easy as 1, 2, 3!

Representing Whole Numbers Diagnostic Tool

1. Find 2 descriptions in the chart that match each number. Write the 2 letters for the matching descriptions in the blanks.

a) 13	_____	B. 3 hundreds + 13 ones
b) 18	_____	C. 20 + 4
c) 24	_____	D. 4 tens + 2 ones
d) 36	_____	E. 1 ten + 3 ones
e) 42	_____	F. 3 hundreds + 2 tens + 1
f) 63	_____	G. 10 + 6
g) 103	_____	H. 3 hundreds + 3 tens
h) 313	_____	I. 4 tens + 3 ones
i) 330	_____	J. 100 + 3
j) 331	_____	K. 300 + 30

2. Write each amount using numbers (e.g., 412).

a) five _____

b) seventeen _____

c) fifty-four _____

d) seventy-one _____

e) one hundred seventeen _____

f) seven hundred one _____

3. Write a number to match each model.

a) _____

b) _____

4. Do the two 5s in the number 55 have the same value? Explain your thinking. _____

5. Write a number to match each description.

a) 3 in the tens place _____

b) 3 in the tens place, 2 in the ones place _____

c) 2 in the tens place, 1 in the hundreds place _____

d) 3 in the hundreds place, 4 in the ones place _____

6. Fill in the blank to make each statement true.

a) 20 is _____ tens.

b) 37 is 2 tens and _____ ones.

c) 46 is _____ tens and 6 ones.

d) 143 is 13 tens and _____ ones.

e) 510 is _____ tens.

f) 200 is _____ hundreds or _____ tens.

Step 1: Administer the diagnostic assessment

Teacher's Resource

Representing Numbers to 1000 Pathway 1 OPEN-ENDED

Kristen sold 305 tickets to the concert. Aki sold 530.

You will need

- base ten blocks
- a place value chart

How are 305 and 530 alike?

How are 305 and 530 different?

Choose 305 or 530. Tell Model it in as many ways as you can.

Representing Numbers to 1000 Pathway 1 GUIDED

A number like 402 might tell how many students are in a school. You can model and show 402 in many ways.

Standard Form _____ Expanded Form _____

402 is 4 hundreds + 2 ones.

You will need

- base ten blocks
- a place value chart

Remember

- 1 ten is 10 ones.
- 1 hundred is 10 tens.
- You add the hundreds, tens, and ones parts of the number to know the size of the number.
- e.g., 402 = 4 hundreds + 2 ones
- to 402 there are 3 digits: 4, 0, and 2.

Try These

1. Write each number in standard form.

a) 1 hundred + 1 one = _____

b) 2 hundreds + 2 tens = _____

c) 9 hundreds + 9 ones = _____

d) 6 hundreds = _____

2. a) Model 501 using 6 base ten blocks. Sketch your model.

Write the expanded form: _____

b) Model 150 using 6 base ten blocks. Sketch your model.

Write the expanded form: _____

c) Model 132 using 6 base ten blocks. Sketch your model.

Write the expanded form: _____

d) Model 132 using 15 base ten blocks. Sketch your model.

Write the expanded form: _____

Student Resource

Step 2: Select the intervention pathway

Why might students struggle with representing whole numbers?

Students might struggle with representing whole numbers for any of the following reasons:

- Written conventions for numbers are based on place value.
- It is not immediately obvious why the value of a digit changes depending on its place in a numeral. For example, the value of the 3 in 302 is different from the value of 3 in 203.
- The digit 0 has no value but can be used as a place holder in numerals.
- A variety of representations may have the same value.

Diagnostic Tool: Representing Whole Numbers

Use the diagnostic tool to determine the most suitable intervention for representing numbers. Provide Diagnostic Tool: Representing Whole Numbers, Teacher's Resource pages vi and vii, and have students complete it in writing or orally. Have place value materials available for students to use (e.g., base ten blocks, 10-frames, place value charts).

Intervention Pathways

The purpose of the intervention pathways is to help students represent two-digit or three-digit numbers in a variety of ways so that ultimately they can do the same with four-digit numbers. There are 3 pathways:

- Pathway 1: Representing Numbers to 1000
- Pathway 2: Representing Numbers to 100
- Pathway 3: Representing Numbers to 20

Use the chart below for the Key to Pathways on Teacher's Resource pages vi and vii to determine which pathway is most suitable for each student or group of students.

Diagnostic Test Results

If students struggle with Questions 1a-c, 2a-c, 3a-c, 4a-c, 5a-c, 6a-c, 7a-c, 8a-c, 9a-c, 10a-c, 11a-c, 12a-c, 13a-c, 14a-c, 15a-c, 16a-c, 17a-c, 18a-c, 19a-c, 20a-c, 21a-c, 22a-c, 23a-c, 24a-c, 25a-c, 26a-c, 27a-c, 28a-c, 29a-c, 30a-c, 31a-c, 32a-c, 33a-c, 34a-c, 35a-c, 36a-c, 37a-c, 38a-c, 39a-c, 40a-c, 41a-c, 42a-c, 43a-c, 44a-c, 45a-c, 46a-c, 47a-c, 48a-c, 49a-c, 50a-c, 51a-c, 52a-c, 53a-c, 54a-c, 55a-c, 56a-c, 57a-c, 58a-c, 59a-c, 60a-c, 61a-c, 62a-c, 63a-c, 64a-c, 65a-c, 66a-c, 67a-c, 68a-c, 69a-c, 70a-c, 71a-c, 72a-c, 73a-c, 74a-c, 75a-c, 76a-c, 77a-c, 78a-c, 79a-c, 80a-c, 81a-c, 82a-c, 83a-c, 84a-c, 85a-c, 86a-c, 87a-c, 88a-c, 89a-c, 90a-c, 91a-c, 92a-c, 93a-c, 94a-c, 95a-c, 96a-c, 97a-c, 98a-c, 99a-c, 100a-c, 101a-c, 102a-c, 103a-c, 104a-c, 105a-c, 106a-c, 107a-c, 108a-c, 109a-c, 110a-c, 111a-c, 112a-c, 113a-c, 114a-c, 115a-c, 116a-c, 117a-c, 118a-c, 119a-c, 120a-c, 121a-c, 122a-c, 123a-c, 124a-c, 125a-c, 126a-c, 127a-c, 128a-c, 129a-c, 130a-c, 131a-c, 132a-c, 133a-c, 134a-c, 135a-c, 136a-c, 137a-c, 138a-c, 139a-c, 140a-c, 141a-c, 142a-c, 143a-c, 144a-c, 145a-c, 146a-c, 147a-c, 148a-c, 149a-c, 150a-c, 151a-c, 152a-c, 153a-c, 154a-c, 155a-c, 156a-c, 157a-c, 158a-c, 159a-c, 160a-c, 161a-c, 162a-c, 163a-c, 164a-c, 165a-c, 166a-c, 167a-c, 168a-c, 169a-c, 170a-c, 171a-c, 172a-c, 173a-c, 174a-c, 175a-c, 176a-c, 177a-c, 178a-c, 179a-c, 180a-c, 181a-c, 182a-c, 183a-c, 184a-c, 185a-c, 186a-c, 187a-c, 188a-c, 189a-c, 190a-c, 191a-c, 192a-c, 193a-c, 194a-c, 195a-c, 196a-c, 197a-c, 198a-c, 199a-c, 200a-c.

Intervention Pathways

Use Pathway 1: Representing Numbers to 1000 Teacher's Resource pages vi and vii Student Resource pages vi and vii

Use Pathway 2: Representing Numbers to 100 Teacher's Resource pages vi and vii Student Resource pages vi and vii

Use Pathway 3: Representing Numbers to 20 Teacher's Resource pages vi and vii Student Resource pages vi and vii

Teacher's Resource

Step 3: Choose an open-ended intervention or guided intervention based on your students' learning preferences or your instructional situation

Representing Numbers to 1000

Pathway 1
OPEN-ENDED

Kristen sold 305 tickets to the concert. Aki sold 530.



You will need

- base ten blocks
- a place value chart

How are 305 and 530 alike?

How are 305 and 530 different?

Choose 305 or 530. Tell as many things about it as you can. Model it in as many ways as you can.

Tell

Model

For more information and full Table of Contents, visit www.nelson.com/leapsandbounds

Representing Numbers to 1000

Pathway 1
GUIDED

A number like 402 might tell how many students are in a school. You can model and show 402 in many ways.

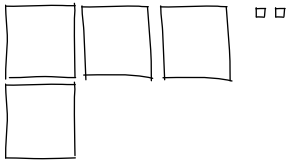


Standard Form Expanded Form
402 is 4 hundreds + 2 ones

• Make a model.

Hundreds	Tens	Ones

• Sketch the model.



You will need

- base ten blocks
- a place value chart

Remember

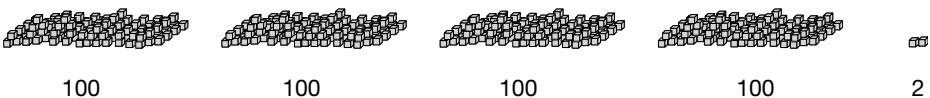
- 1 ten is 10 ones.
- 1 hundred is 10 tens.
- You add the hundreds, tens, and ones parts of the number to know the size of the number.
e.g., $402 = 4 \text{ hundreds} + 2 \text{ ones}$
- In 402 there are 3 digits: 4, 0, and 2.

• Make other models.

402 is also 3 hundreds + 10 tens + 2 ones.

Hundreds	Tens	Ones

402 is also a lot of ones.



Try These

1. Write each number in **standard form**.

a) 1 hundred + 1 one = _____

b) 2 hundreds + 2 tens = _____

c) 9 hundreds + 9 ones = _____

d) 6 hundreds = _____

standard form

the usual way we write numbers
e.g., 231

2. a) Model 501 using 6 base ten blocks. Sketch your model.

Hundreds	Tens	Ones

Write the **expanded form**:

_____ hundreds + _____ tens + _____ ones

b) Model 150 using 6 base ten blocks. Sketch your model.

Hundreds	Tens	Ones

Write the expanded form:

c) Model 132 using 6 base ten blocks. Sketch your model.

Hundreds	Tens	Ones

Write the expanded form:

d) Model 132 using 15 base ten blocks. Sketch your model.

Hundreds	Tens	Ones

Write the expanded form:

expanded form

a way to write numbers that shows the value of each digit
e.g., 2 hundreds + 3 tens + 1 one
or
 $200 + 30 + 1$

3. a) Model another number using 6 base ten blocks.
Sketch your model.

Hundreds	Tens	Ones

Write the standard form: _____

Write the expanded form:

- b) Model a number greater than 6 using 6 blocks.
Sketch your model.

Hundreds	Tens	Ones

Write the standard form: _____

Write the expanded form:

- c) Model your number from part b) using 15 blocks.

Hundreds	Tens	Ones

Write the standard form: _____

Write the expanded form:

FYI

If you can represent numbers in lots of ways, you will be able to add, subtract, multiply, and divide. You will also understand the numbers better.

4. Write a number that fits the clue.
Model it with base ten blocks in 2 ways.
Sketch your models.

- a) a little more than one hundred _____

Sketch:	Sketch:
---------	---------

- b) about two hundred _____

Sketch:	Sketch:
---------	---------

- c) more than fifty-one but less than eighty-two _____

Sketch:	Sketch:
---------	---------

5. Draw a line to match each clue with a number.

- | | |
|--|-----|
| a) The tens digit is 0. | 762 |
| b) The ones digit is the greatest it can be. | 203 |
| c) The hundreds digit is greater than 5. | 520 |
| d) The number has 2 tens. | 219 |
| e) 6 blocks can be used to model the number. | 510 |

6. Make up a number for each clue.

- | | |
|---|-------|
| a) The tens digit is greater than the ones digit or the hundreds digit. | _____ |
| b) 10 blocks are needed to model the number. | _____ |
| c) The hundreds digit is 8. | _____ |
| d) The ones digit is the least it can be. | _____ |

Representing Numbers to 100

Pathway 2
OPEN-ENDED

42 people are at the pool. 24 people are in the gym.



How are 42 and 24 alike?

How are 42 and 24 different?

Choose 42 or 24. Tell as many things about it as you can.
Model it in as many ways as you can.

Tell	Model

You will need

- base ten blocks
- a place value chart
- linking cubes

Representing Numbers to 100

Pathway 2
GUIDED

A children's book by Margaret Mahy is called *17 Kings and 42 Elephants*. You can model and show 42 in many ways.



Standard Form

42

is

Expanded Form

4 tens + 2 ones

- Make a model.

Tens	Ones

- Sketch the model.

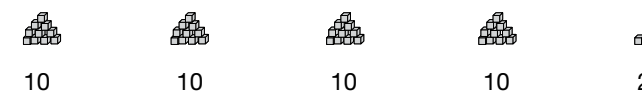


- Make other models.

42 is also 3 tens + 12 ones.

Tens	Ones



42 is also a lot of ones.



You will need

- base ten blocks
- a place value chart
- linking cubes

Remember

- 1 ten is 10 ones.
 → 
- You add the tens and ones parts of the number to know the size of the number.
- Each part is called a digit. In 51, the digits are 5 and 1.

Try These

- Write each number in **standard form**.

a) 1 ten + 1 one = _____

b) 2 tens = _____

c) 4 tens + 5 ones = _____

d) 5 tens + 4 ones = _____

e) 9 tens + 9 ones = _____

standard form
the usual way we
write numbers
e.g., 31

2. a) Model 71 using 8 base ten blocks. Sketch your model.

Tens	Ones

Write the **expanded form**: ____ tens + ____ ones

b) Model 26 using 8 base ten blocks. Sketch your model.

Tens	Ones

Write the expanded form: ____ tens + ____ ones

c) Model 80 using 8 base ten blocks. Sketch your model.

Tens	Ones

Write the expanded form: ____ tens + ____ ones

d) Model 44 using base ten blocks. Sketch your model.

Tens	Ones

Write the expanded form: ____ tens + ____ ones

e) Model 44 using 17 base ten blocks. Sketch your model.

Tens	Ones

Write the expanded form: ____ tens + ____ ones

expanded form
a way to write
numbers that shows
the value of each
digit
e.g., 3 tens + 1 one
or
30 + 1

3. a) Use 8 blocks to model a number greater than 8.
Sketch your model.

Tens	Ones

Write the standard form:

Write the expanded form:

b) Model the number in part a) using 17 blocks or 26 blocks.
Sketch your model.

Tens	Ones

Write the standard form:

Write the expanded form:

4. Model a number that fits the clue.
Sketch your model.

a) a little less than nineteen b) about 10 more than sixteen

Sketch:

Sketch:

5. Draw a line to match each clue with a number.

- | | |
|--|----|
| a) The ones digit is 0. | 18 |
| b) The number has 2 tens. | 32 |
| c) The ones digit is greater than 6. | 70 |
| d) The number can be modelled with 5 blocks. | 24 |

6. Make up a number for each clue.

- | | |
|---|-------|
| a) The tens digit is 6. | _____ |
| b) The ones digit is greater than the tens digit. | _____ |
| c) The ones digit is 5. | _____ |

FYI
If you can represent
numbers in lots
of ways, you will
be able to add,
subtract, multiply,
and divide. You will
also understand the
numbers better.

Representing Numbers to 20

Pathway 3
OPEN-ENDED

12 birds are sitting on one branch of a tree.
18 birds are on another branch.



How are 12 and 18 alike?

How are 12 and 18 different?

Choose 12 or 18. Tell as many things about it as you can.
Model it in as many ways as you can.

Tell	Model

You will need

- counters
- 10-frames

Representing Numbers to 20

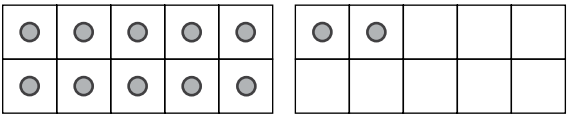
Pathway 3
GUIDED

12 students are sitting at picnic tables.



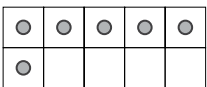
Standard Form Expanded Form
12 is 1 ten + 2 ones

- Use two 10-frames to show 12.



6 describes the number of students at one table.

- Use one 10-frame to show 6.
6 is 0 tens + 6 ones.

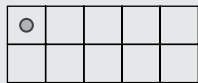


You will need

- counters
- 10-frames

Remember

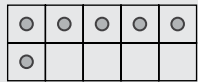
- Fill up a 10-frame starting at the top left.



- Fill up the first row before you start the second row.

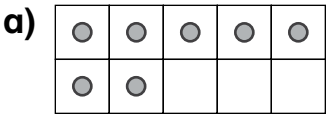


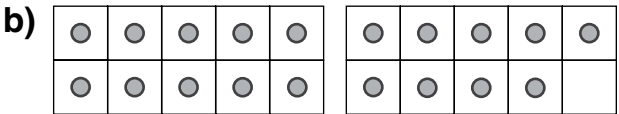
- Fill up the second row starting at the left.

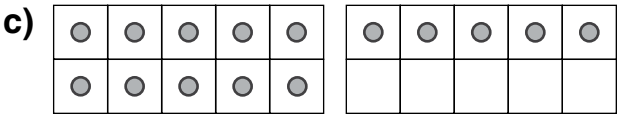


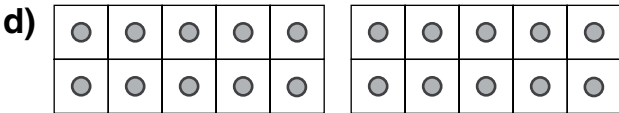
Try These

1. Write the number for each model.









2. Model each number using counters on 10-frames. Write the number of tens and ones in each.

a) 11

___ tens + ___ ones

b) 19

___ tens + ___ ones

c) 8

___ tens + ___ ones

d) 17

___ tens + ___ ones

e) 4

___ tens + ___ ones

f) 15

___ tens + ___ ones

g) 7

___ tens + ___ ones

Remember
You might not always need to use both 10-frames.

3. a) Model a number using one or two 10-frames. Choose a number you did not use in Question 2.

Write the number of tens and ones.

___ tens + ___ ones

b) Model another number using one or two 10-frames. Choose a number you have not modelled yet.

Write the number of tens and ones.

___ tens + ___ ones

4. Write 2 numbers to match each clue. Use the numbers 1 to 20.

a) One 10-frame is a bit more full than the other.

b) Only complete rows are filled with counters.

c) Most of one 10-frame is full.

d) Most of two 10-frames are full.

e) One 10-frame is much more full than the other.

f) There are more ones than tens.

FYI
Using 10-frames to represent numbers can help you see how the numbers relate to numbers like 10 and 20.

Skip Counting to 1000

Pathway 1
OPEN-ENDED

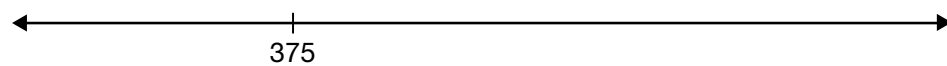
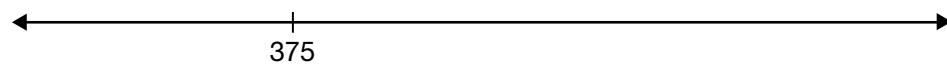
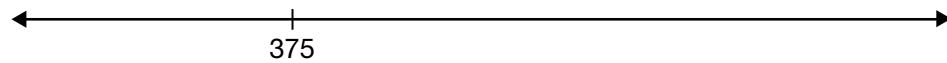
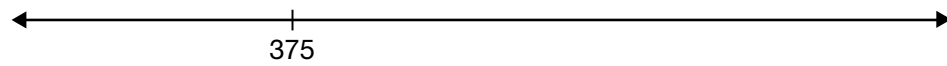
You can skip count to figure out the number of cents in groups of coins.



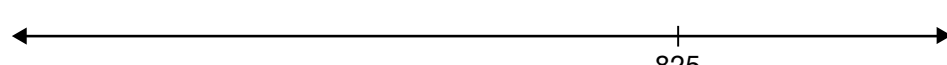
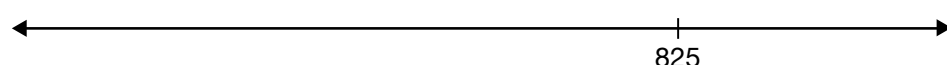
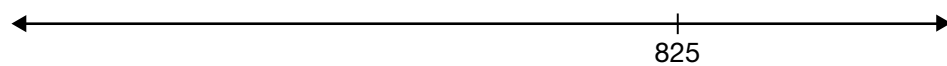
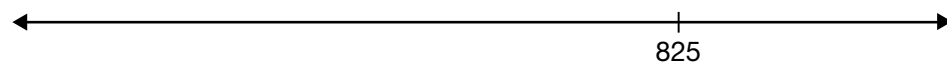
You will need

- base ten blocks (optional)
- number lines

- Skip count forward from 375. Show as many ways as you can.



- Skip count back from 825. Show as many ways as you can.



What do you notice about the digits that change in the numbers? Tell as many things as you can.

Skip Counting to 1000

Pathway 1
GUIDED

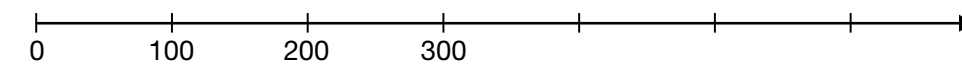
You skip count when you are trying to count a group quickly.



You will need

- number lines
- base ten blocks
- play coins (quarters)

You also skip count to put numbers on a number line.



- To skip count forward by 100s or 10s, you must put on an extra 100 or an extra 10 each time.

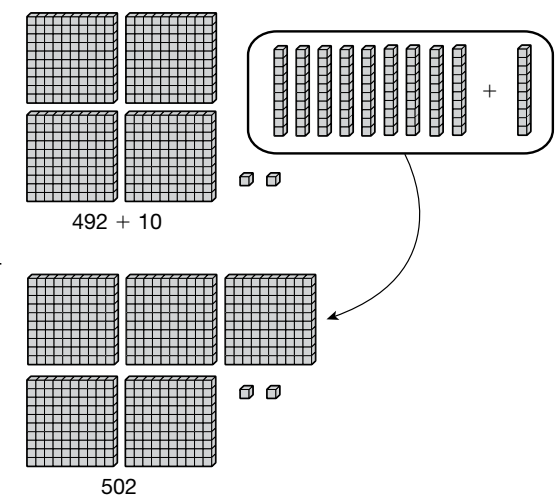
To count forward by 100s from 462, you could say **462, 562, 662, ...**

To count forward by 10s from 462, you could say **462, 472, 482, 492, ...**

If you want to add another 10 after 492, you will have 10 tens and can trade them for 1 hundred. The next number is 502.

4 hundreds + 10 tens + 2 ones = 5 hundreds + 0 tens + 2 ones

$\begin{matrix} +10 & +10 & +10 & +10 & +10 \\ \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright \\ 462, & 472, & 482, & 492, & 502, & 512, \dots \end{matrix}$



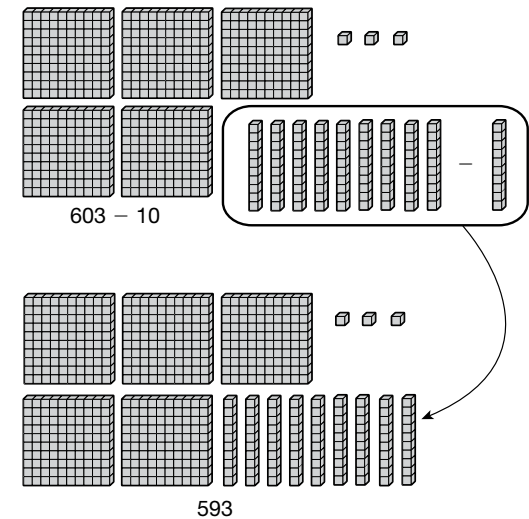
- Skip counting backward by 100s or 10s works the same way, but you have one fewer 100 or 10 each time.

To count backward by 100s from 633, you could say 633, 533, 433,

To count backward by 10s from 633, you could say 633, 623, 613, 603, If you want to remove another 10 after 603, you need to think of one of the hundreds as 10 tens, and take away one of the tens.

6 hundreds + 0 tens + 3 ones = 5 hundreds + 10 tens + 3 ones

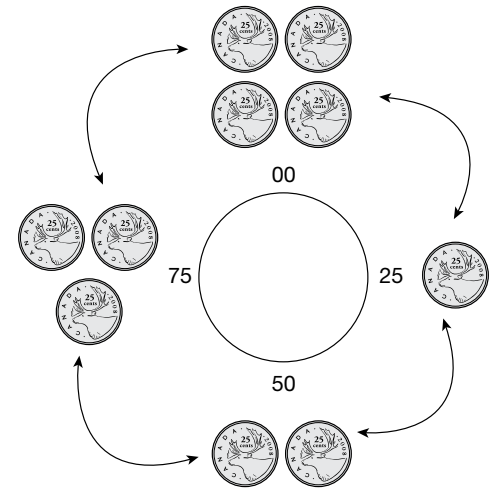
633, 623, 613, 603, 593, 583, ...



- To skip count forward and backward by 25, think about quarters and the numbers 25, 50, 75, and 100.

To skip count forward by 25s from 325, you would count 325, 350, 375, 400, ...

- To skip count backward by 25s, you go in reverse. 875, 850, 825, 800, 775, 750, ...

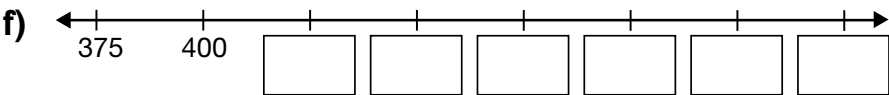
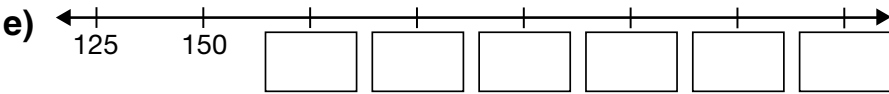
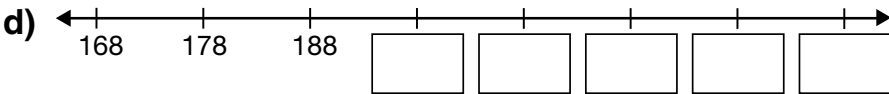
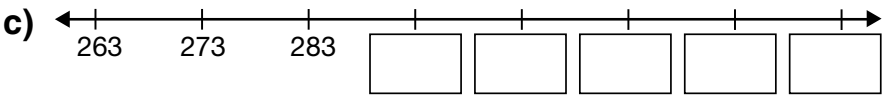
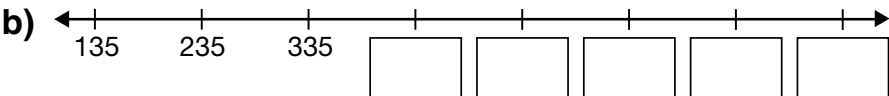
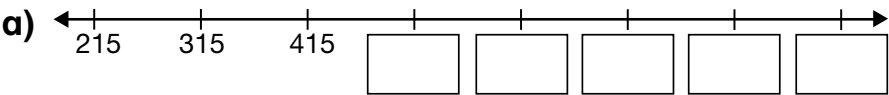


Remember

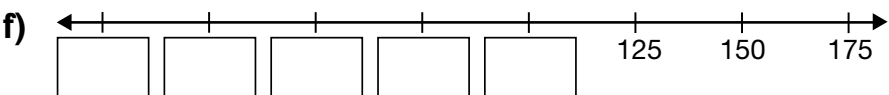
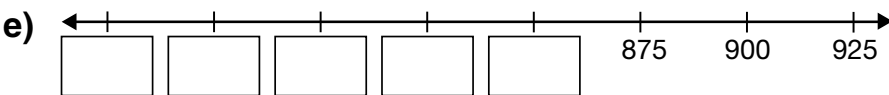
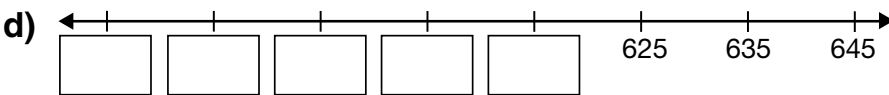
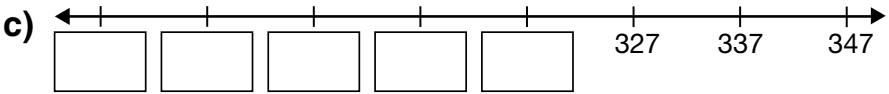
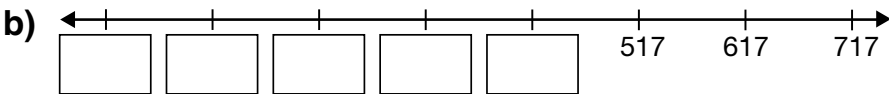
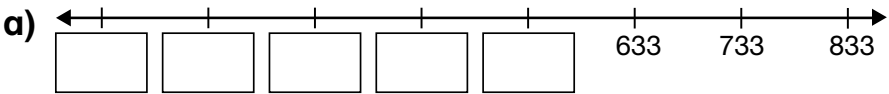
- When you count by 100s, the tens and ones digits don't change.
- When you count by 10s, the ones digit doesn't change.
- When you count by 25s, think about quarters.

Try These

- Count forward to continue each skip counting pattern.



- Count backward to continue each skip counting pattern.



3. There is a mistake in these counting by 10s patterns.
Correct the mistake.

a) 378, 388, 398, 3108, 3118, 3128, ...

b) 723, 713, 703, 793, 783, 773, ...

4. You skip count from 325 to 525.
List the numbers you would say in between.
Show as many solutions as you can.

5. Why is skip counting forward or backward by 10 the same
as adding or subtracting 10?

6. Sometimes when you skip count by 10s, the hundreds
digit changes (180, 190, 200, 210).
Sometimes it doesn't (180, 190, 200, 210). When does
it change? Why?

FYI

Skip counting is a way to use patterns to add or subtract without actually thinking about the addition or subtraction.

Skip Counting to 100

Pathway 2
OPEN-ENDED

You can skip count to figure out the number of dollars and cents in groups of coins.



- You will need
- base ten blocks
 - 100 chart
 - 100 bead chain

• Skip count forward from 35. Show as many ways as you can.

← 35 →

← 35 →

← 35 →

← 35 →

• Skip count down from 85. Show as many ways as you can.

← 85 →

← 85 →

← 85 →

← 85 →

What do you notice about the digits that change in the numbers? Tell as many things as you can.

Skip Counting to 100

Pathway 2
GUIDED

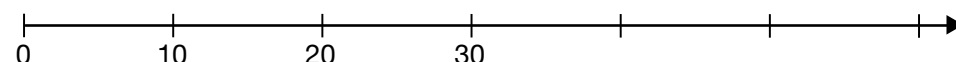
You skip count when you are trying to count a group quickly.



You will need

- number lines
- 100 chart

You also skip count to put numbers on a number line.



- To skip count forward by 10s, you must put on an extra 10 each time.

To count by 10s, you could say **32, 42, 52, 62**

Notice that it is the **tens** digit that changes.

If the numbers are on a 100 chart, you just go down one row.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

- To count forward by 5s or 2s on the 100 chart, you use the grey numbers for 5s or the striped ones for 2s.

To count by 5s, you might count **45, 50, 55, 60, 65**,

To count by 2s, you might count **82, 84, 86, 88, 90**,

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Remember

- When you count by 10s, the ones digit does not change.
- When you count by 5s, the ones digits flip back and forth between 2 digits.
- When you count by 2s, there is a pattern in the ones digits (2, 4, 6, 8, 0).

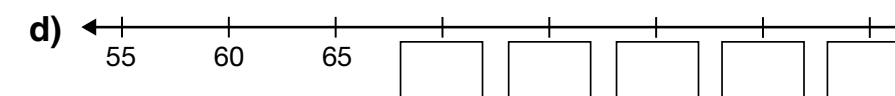
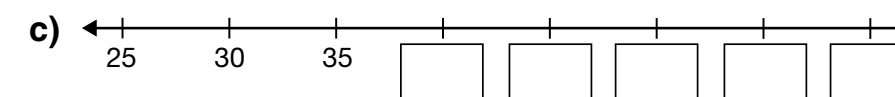
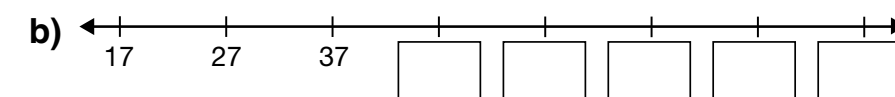
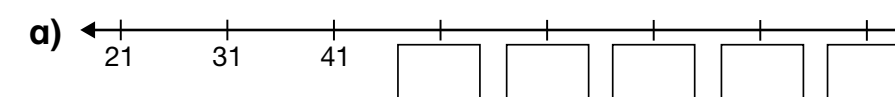
- To count backward, you use the same numbers as counting forward, but go the other way.

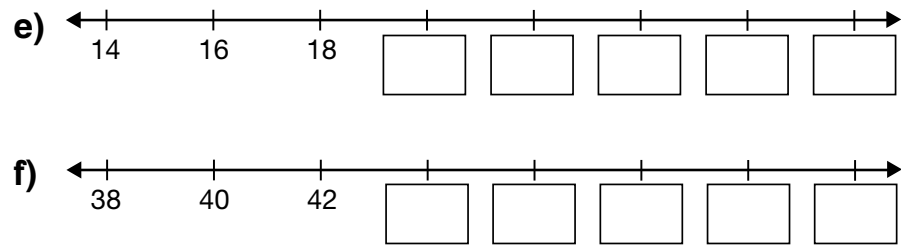
To count back by 5s from 75, you would say

75, 70, 65, 60,

Try These

- Count forward to continue each skip counting pattern.

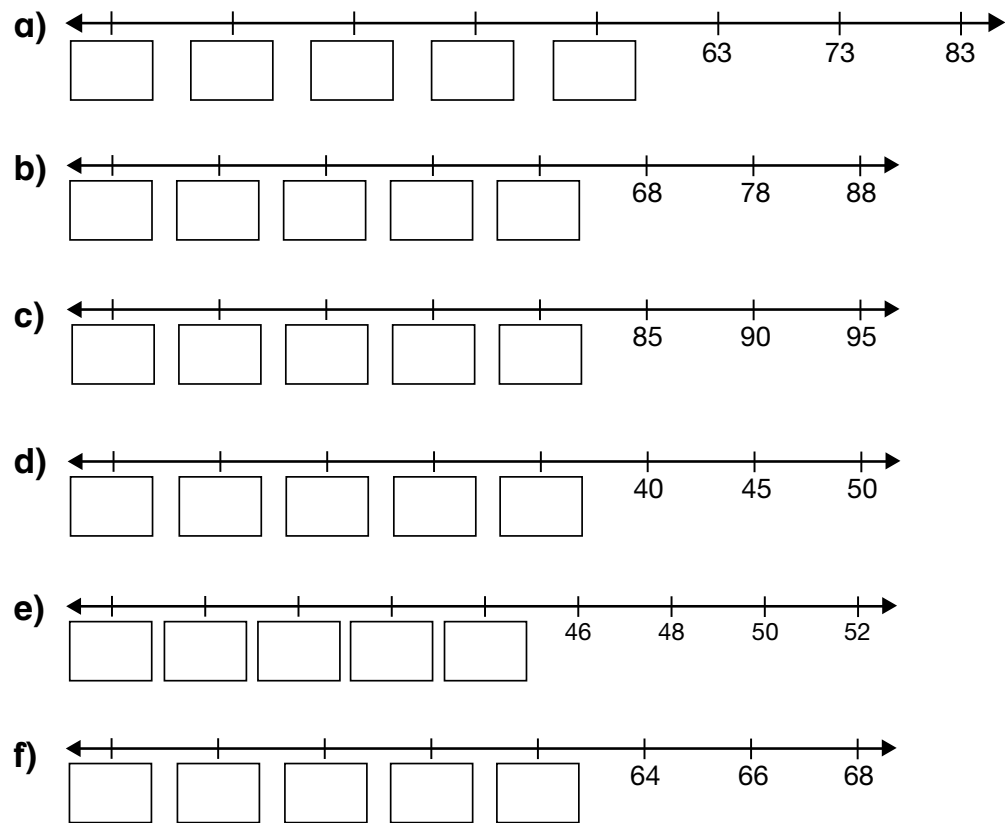




FYI

Skip counting is a way to use patterns to add or subtract without actually thinking about the addition or subtraction.

2. Count backward to continue each skip counting pattern.



3. There is a mistake in these counting by 5s patterns. Correct the mistake.

a) 35, 40, 45, 410, 415, 420, ...

b) 95, 90, 85, 80, 85, ...

4. You skip count from 34 to 54.
List the numbers you would say in between.
Show as many solutions as you can.

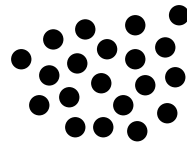
5. Why is skip counting forward or backward by 10 the same as adding or subtracting 10?

6. Why does the ones digit keep changing from 5 to 0 or 0 to 5 when you skip count by 5s?

Skip Counting to 20

Pathway 3
OPEN-ENDED

Use 20 counters.



Show as many ways as you can to count the counters.
Write all the numbers you say for each way you count.

You are “it” in a game of hide-and-seek. You count down starting at 20. You want to count faster than by 1s. What might you count by? Write down all the numbers you say.



What other ways could you count?

You will need

- counters
- 10-frames

Skip Counting to 20

Pathway 3
GUIDED

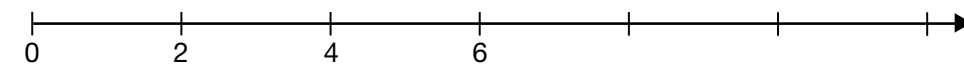
You skip count when you are trying to count a group quickly.



You will need

- counters
- play coins (pennies and nickels)
- 10-frames

You also skip count to put numbers on a number line.



There are lots of ways to count. Sometimes we start at 1 and sometimes we start at other numbers.
Sometimes we count more than one at a time.

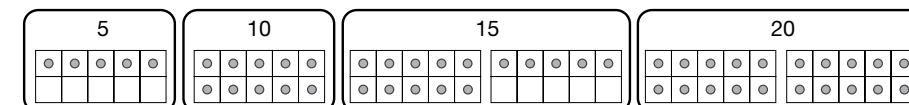
- To count by 2s, you need to go up by 2 each time.
To count by 2s starting at 4, you would say
4, 6, 8, 10, 12, 14, ...

There is a pattern in the ones digits.

This is called skip counting because you skip some of the counting numbers:

4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, ...

- To count forward by 5s, think of the numbers 5, 10, 15, 20.



- To count backward, you use the same numbers as counting forward, but you go the other way.
To count backward by 2s from 16, you would say
16, 14, 12, 10, 8, 6, ...

Try These

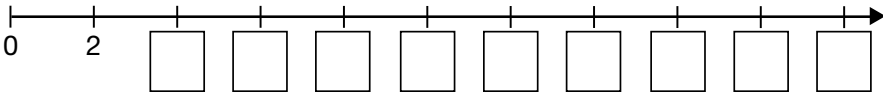
1. Sketch the groups of buttons or use counters. Count them in groups of 2. Write the numbers you would say.

a) 6 groups of 2 buttons

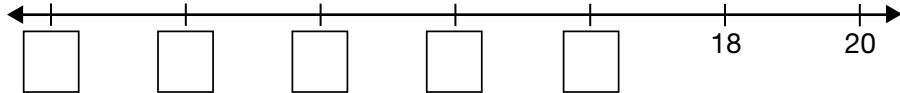
b) 8 groups of 2 buttons

c) 9 groups of 2 buttons and 1 extra button

2. Continue the skip counting pattern on the number line.



3. Continue the skip counting pattern on the number line.



4. You start at 4 and skip count by 2s. Write 3 numbers you will *not* say.

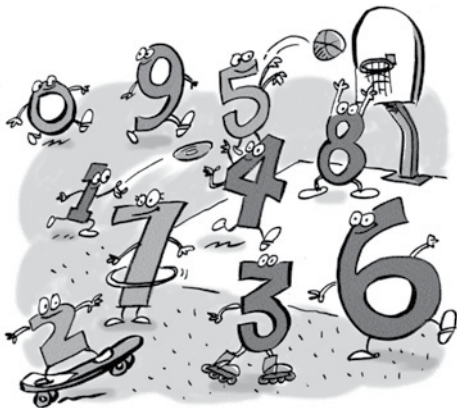
Comparing and Ordering to 1000

Pathway 1
OPEN-ENDED

Maya gives these clues about 2 numbers:

- Both numbers have the same 3 digits.
- One number is *much* greater than the other.

What could the 2 numbers be?
List a few possible answers.



You will need

- base ten blocks
- a place value chart
- number lines

Pick one of your sets of numbers.
How do you know which number is greater?

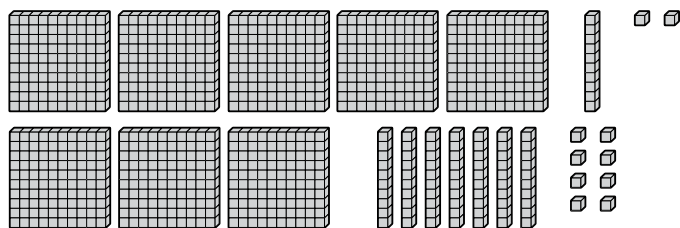
Pick one of your sets of numbers.
How do you know that the greater number is *much* greater?

Comparing and Ordering to 1000

Pathway 1
GUIDED

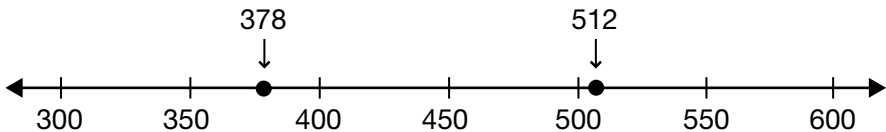
One school has 512 students.
Another school has 378 students.
You can compare the numbers to decide
which school has more students.

- Model the numbers with base ten blocks and compare.



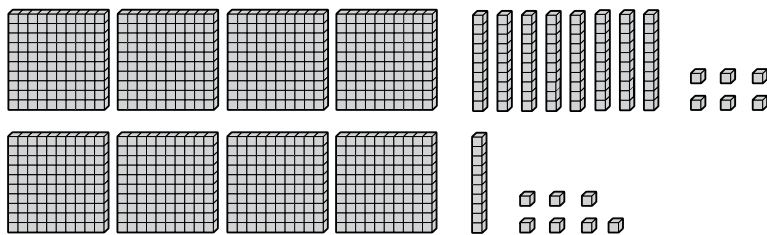
The number with more larger blocks is greater.
 $512 > 378$

- Compare both numbers to a nearby number.
512 is more than 500.
378 is less than 500.
- Use a number line.
512 is to the right on the number line.



Try These

1. Which number is greater, 486 or 417?



Both numbers have _____ hundreds.

_____ has more tens than _____.

_____ is more than 480.

_____ is less than 480.

Which symbol makes the statement true? Circle it. $486 > < 417$

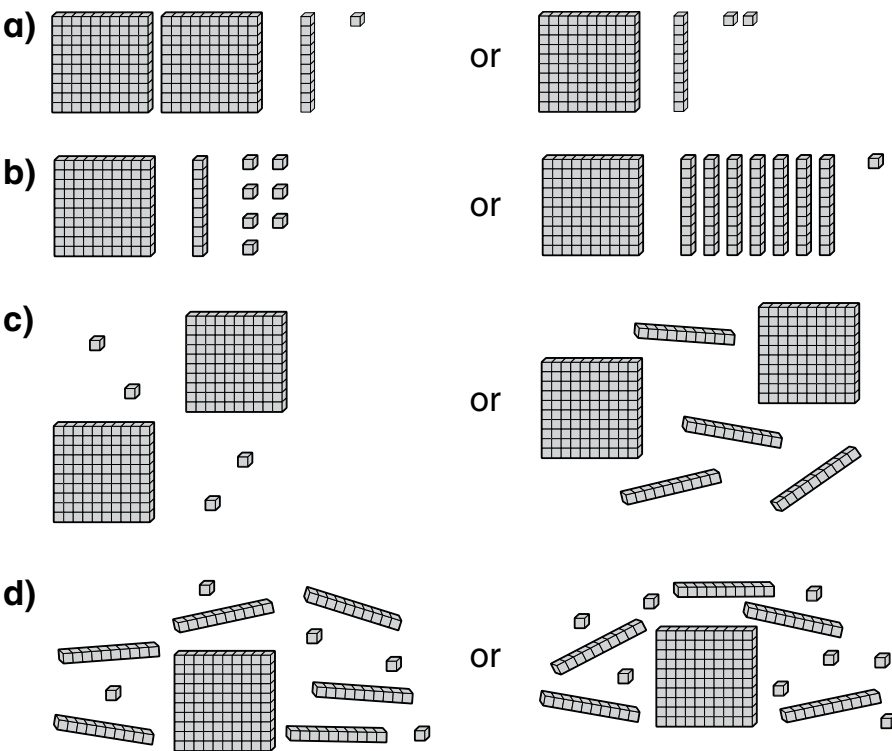
You will need

- base ten blocks
- a place value chart
- blank number lines

Remember

- Check the hundreds first to decide which is greater.
- Check the tens or ones only if you need to.
- More blocks does not mean a bigger number.

2. Circle the greater number in each pair.



3. Circle the greater number in each pair.

- a) 513 or 531
b) 881 or 188
c) 113 or 311
d) 372 or 327
e) 66 or 65

4. Write $>$ or $<$ to compare the 2 numbers. Explain your answer.

a) 572 417

b) 705 750

FYI

Comparing numbers is useful when you have a choice about which of 2 things to buy or get. It also helps you decide if answers make sense when you add and subtract.

c) 5■1□4■1

5. List 3 numbers that are greater than the given number.

- a) 132 _____
- b) 299 _____
- c) 317 _____
- d) 972 _____

6. Name a number that is greater than the first number and less than the second number. You can use the number line to help.

- a) 678 _____ 872
600 700 800 900
- b) 412 _____ 589
400 500 600
- c) 671 _____ 681
600 700
- d) 612 _____ 618
600 630

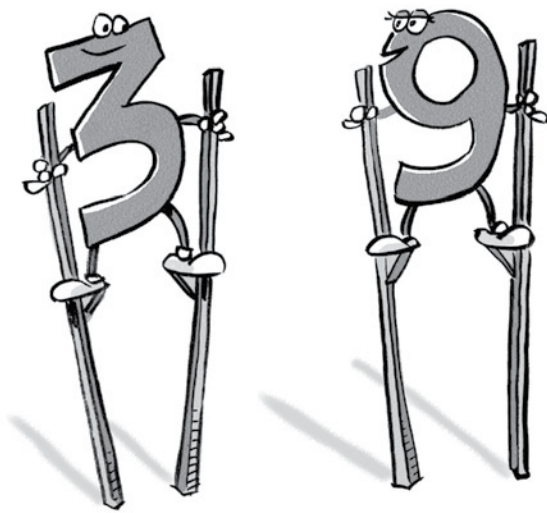
7. Use all of the given digits to make 3 different three-digit numbers. Then put the numbers in order.

- a) Use 1, 3, and 5.
Your 3 numbers: _____
3 numbers in order: _____
- b) Use 1, 3, and 9.
Your 3 numbers: _____
3 numbers in order: _____
- c) Use 2, 5, and 0.
Your 3 numbers: _____
3 numbers in order: _____

Comparing and Ordering to 100

Pathway 2
OPEN-ENDED

Jeff says that a two-digit number with a 3 in it is *usually* less than a number with a 9 in it. Do you agree? Explain your answer.



You will need

- base ten blocks
- a place value chart
- blank number lines

Comparing and Ordering to 100

Pathway 2
GUIDED

One student has 51 books.
Another student has 37 books.
You can compare the numbers to decide which student has more books.



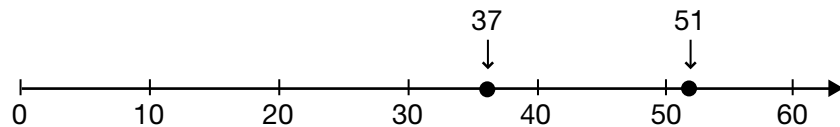
- Model the numbers with base ten blocks and compare.



The number with more larger blocks is greater.
5 tens is more than 3 tens.
 $51 > 37$

- Compare both numbers to a nearby number.
51 is more than 50; 37 is less than 50.

- Use a number line.



51 is to the right on the number line.
51 is past 50 and 37 is before 50.

You will need

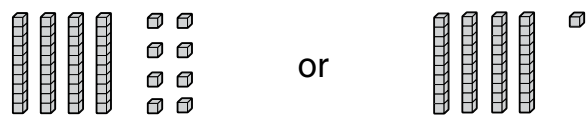
- base ten blocks
- a place value chart
- blank number lines

Remember

- Check the tens first to decide which is greater.
- Check the ones only if you need to.
- More blocks does not mean a bigger number.

Try These

- Which number is greater, 48 or 41?



Both numbers have _____ tens.

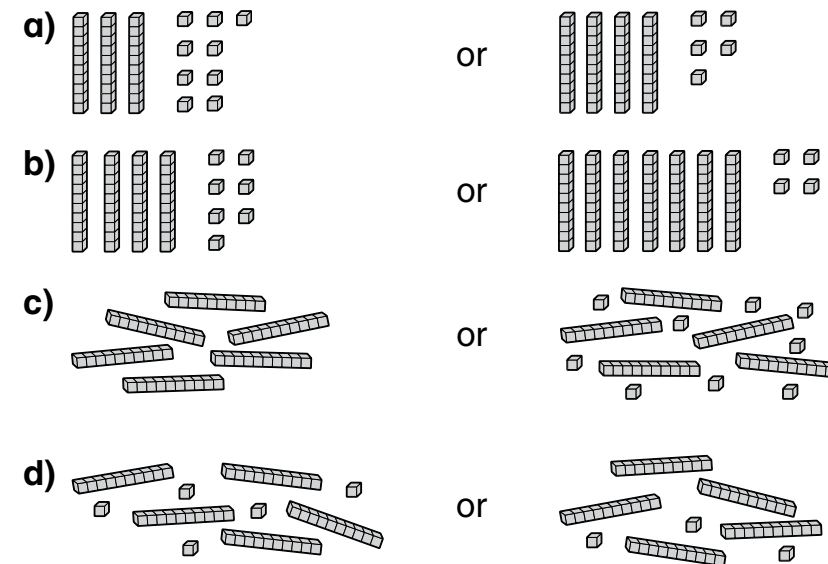
_____ has more ones than _____.

_____ is more than 45.

_____ is less than 45.

Which symbol makes the statement true? Circle it. $48 > < 41$

- Circle the greater number in each pair.



- Circle the greater number in each pair.

a) 51 or 15

b) 81 or 88

c) 21 or 11

d) 32 or 27

e) 6 or 5

- Write $>$ or $<$ to compare the 2 numbers. Explain your answer.

a) $72 \square 47$

b) $40 \square 49$

c) $5 \square 4$

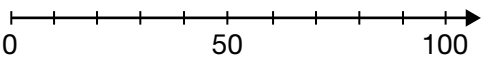
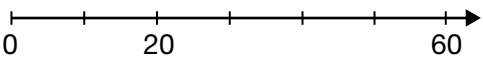
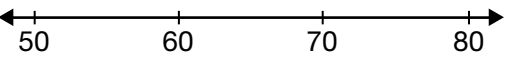
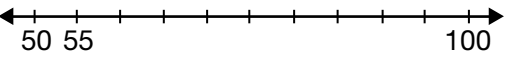
FYI

Comparing numbers is useful when you have a choice about which of 2 things to buy or get. It also helps you decide if answers make sense when you add and subtract.

5. List 3 two-digit numbers that are greater than each number.

- a) 34 _____
- b) 29 _____
- c) 37 _____
- d) 97 _____

6. Name a number that is greater than the first number and less than the second number. You can use the number line to help.

- a) 67 _____ 87 
- b) 41 _____ 58 
- c) 61 _____ 68 
- d) 65 _____ 78 

7. a) Make 3 numbers using 2 cards at a time.

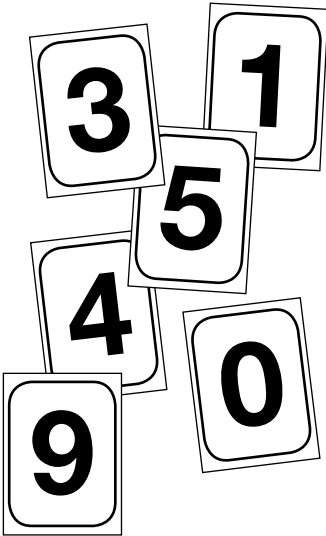
Which number is the greatest? _____

b) Make 3 more numbers using the cards.

Which number is the greatest? _____

c) Is it possible to make a greater number?
Tell why or why not.

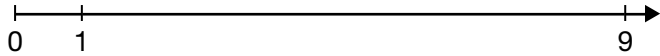
8. There are more numbers between 51 and 61 than between 47 and 57. Do you agree or disagree?
Explain your thinking.



Comparing and Ordering to 20

Pathway 3
OPEN-ENDED

Two numbers are farther apart than 1 and 9.
What could the greater number be?
List as many answers as you can.
Explain your answers.



You will need

- counters
- 10-frames
- number lines

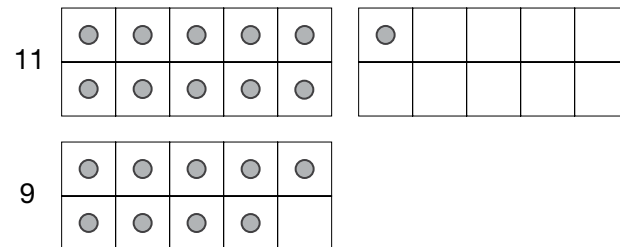
Comparing and Ordering to 20

Pathway 3
GUIDED

One group has 11 children.
Another group has 9 children.
You can compare the numbers to
decide which group has more.



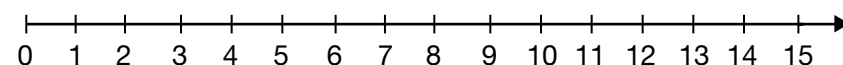
- Model the numbers and compare.



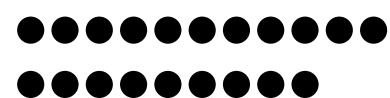
$$11 > 9$$

- Compare both numbers to a nearby number.
 $11 > 9$ since 11 is more than 10 and 9 is less than 10.

- Use a number line.
11 is to the right of 9 on a number line.



- Line up the number of counters and compare.



$11 > 9$ since there are leftovers.

- Count to see which number you say first.

1, 2, 3,
4, 5, 6, 7, 8,
9, 10, 11

You will need

- counters
- 10-frames
- number lines

Remember

- There are different ways to compare numbers.
- You can use models or counting.

Try These

- Circle the greater number in each pair.

a) or

c) or

b) or

d) or

- Circle the greater number in each pair.

- a) 12 or 8 e) 7 or 15
b) 15 or 17 f) 17 or 9
c) 9 or 2 g) 20 or 13
d) 10 or 12 h) 1 or 8

- Name a number that is a little bit less than each number.

- a) 14 _____ c) 15 _____
b) 10 _____ d) 8 _____

- Name a number that is a little bit more than each number.

- a) 18 _____ c) 12 _____
b) 10 _____ d) 3 _____

- a) Make 2 numbers using 2 cards at a time.

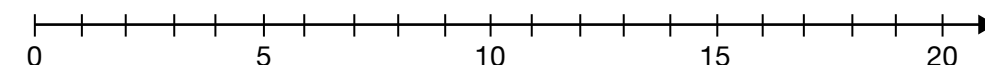
Which number is greater? _____

- b) Make 3 more numbers using the cards.

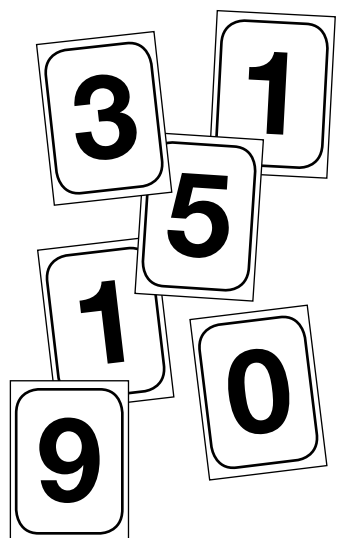
Which number is the greatest? _____

- Name a number that is greater than the first number and less than the second number. Use the number line below.

- a) 3 _____ 8 c) 9 _____ 16
b) 14 _____ 18 d) 15 _____ 18



- There are more numbers between 0 and 10 than between 10 and 20. Do you agree or disagree? Explain your thinking.

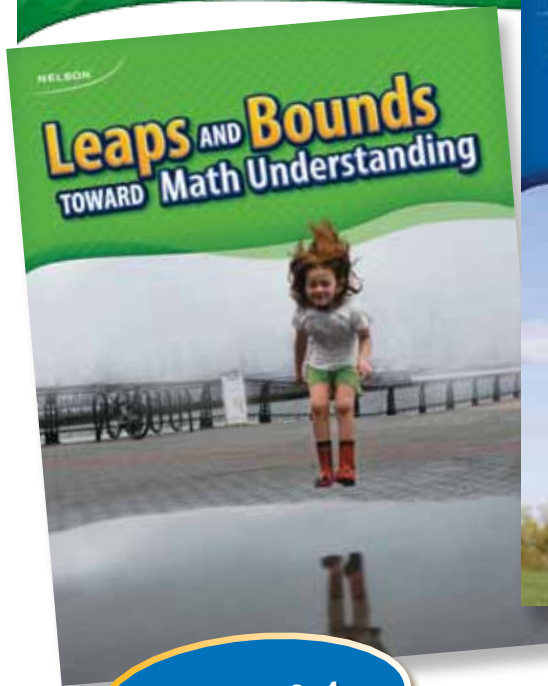


FYI

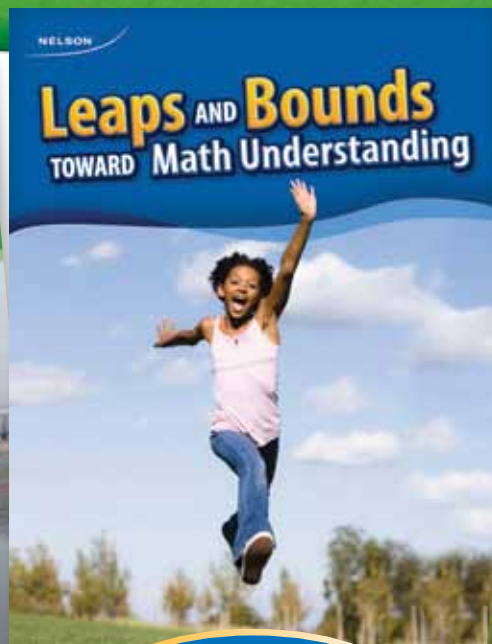
Comparing numbers is useful when you have a choice about which of 2 things to buy or get. It also helps you decide if answers when you add and subtract make sense.

Leaps AND Bounds TOWARD Math Understanding

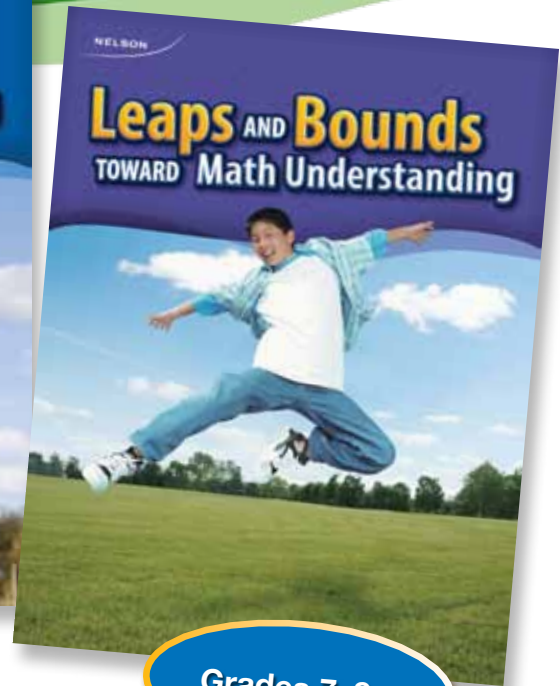
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Grades 3-4



Grades 5-6



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