

GAP CLOSING

Comparing and Ordering Whole Numbers

**Junior / Intermediate
Student Book**

Module 4

Comparing and Ordering Whole Numbers

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Diagnostic

1. Circle the greater number.

a) 4503 or 4305

b) 8923 or 9238

c) 4003 or 3004

d) 20 003 or 23 000

e) 1548 or 15 408

f) 16 248 or 8416

2. List 3 numbers between each pair of numbers.

a) 6889 _____ 7000

b) 17 894 _____ 18 113

3. The first number is greater. List all possibilities for each of the missing digits.

a) 112 > 8047

b) 423 > 3984

c) 423 > 4627

d) 1453 > 17 219

e) 53 45 > 53 298

4. List three numbers that are just a bit less than the first one.

a) 4002 _____

b) 37 140 _____

5. Circle the number that is correct.

- | | |
|------------------------------------|------------------|
| a) closer to 4500 than to 4600 | 4553 or 4510 |
| b) closer to 1010 than to 1020 | 1018 or 1012 |
| c) closer to 2500 than to 2600 | 2559 or 2517 |
| d) closer to 32 000 than to 31 000 | 31 025 or 31 812 |
| e) closer to 40 000 than to 50 000 | 43 199 or 47 002 |
| f) closer to 18 400 than to 18 500 | 18 412 or 18 477 |

6. Agree or disagree? A number with two 9s in it is always greater than a number with two 8s in it. Explain your thinking.

Comparing Numbers to 10 000

Learning Goal

- selecting appropriate strategies to compare and order numbers below 10 000.

Open Question

Fill in the blanks using each digit 0, 1, 2, ..., 9 once to make all the statements true.

$$\square 142 > 412 \square$$

$$\square 100 > \square 294$$

$$3302 > \square 9 \square 4$$

$$1004 > 1 \square 02$$

$$\square 003 > 493 \square$$

$$6231 > \square 229$$

Do it another way.

$$\square 142 > 412 \square$$

$$\square 100 > \square 294$$

$$3302 > \square 9 \square 4$$

$$1004 > 1 \square 02$$

$$\square 003 > 493 \square$$

$$6231 > \square 229$$

Do it another way.

$$\square 142 > 412 \square$$

$$\square 100 > \square 294$$

$$3302 > \square 9 \square 4$$

$$1004 > 1 \square 02$$

$$\square 003 > 493 \square$$

$$6231 > \square 229$$

Think Sheet

Sometimes we want to compare numbers greater than 1000.

For example, to decide if a town with a population of 4213 people has more or fewer people than one with 4108 people.

$4213 > 4108$ since 4213 is a bit more than 4 thousand 2 hundred (or 42 hundred) and 4108 is not as much as 42 hundred. 4200 is 100 more than 4100, but 4108 is only 8 more than 4100.

Thousands	Hundreds	Tens	Ones
4	2	1	3
4	1	0	8

Both numbers have the same number of thousands, but 4213 has more hundreds than 4108.

It does not matter that 4108 has more ones than 4 213; what matters is the comparison of the greater place values.

We can compare numbers by estimating or comparing both to another number.

- Estimating: $4213 > 4108$ since 42 hundred and a little bit more is greater than 41 hundred and a little bit more.
- Comparing both to another number: $7003 > 999$ since 7 thousand is more than 1000, but 999 is less than 1000.

1. Write a number that fits the rule:
 - a) greater than 2200 but less than 2300
 - b) greater than 8030 but less than 8100
 - c) greater than 1204 but less than 1210

2. Circle the greater number. Fill in each blank with a digit other than 0.

a) 5205 or 998

b) 1515 or 1105

c) 2034 or 1728

d) 1□36 or 2□21

e) □42 or □438

3. The distances between numbers on this number line show how far apart they really are. Estimate to name a number that might be at the mark. Explain.



4. Use all four digits to create four numbers. Put them in order from least to greatest.



5. List a number you might compare both of the given numbers to to decide which is greater. Then circle the greater number.

a) 1 356 and 2 900 _____

b) 517 and 8 482 _____

c) 4 023 and 4 060 _____

d) 4 73 and 45 _____

e) 2 14 and 3 17 _____

6. You are comparing a 4-digit number to 3047.

You can ask about only one of the 4 digits of the other number but you have to say whether the number is greater or less than 3047.

Which digit would you ask for? Why?

7. You know that 17 > 48. The missing digits are 2, 4, 8, 0.
List four possibilities for the arrangement of the digits.

Comparing Numbers to 100 000

Learning Goal

- selecting appropriate strategies to compare and order numbers below 100 000.

Open Question

Fill in the blanks using each digit 0, 1, 2, ..., 9 once to make all the statements true.

$$\square 1\ 342 > 41\ 27\square$$

$$\square 1003 > \square 2\ 954$$

$$33\ 002 > \square 9\square 14$$

$$10\ 034 > 1\square 021$$

$$\square 0\ 02\square > 49\ 317$$

$$62\ 031 > \square 2\ 029$$

Do it another way.

$$\square 1\ 342 > 41\ 27\square$$

$$\square 1\ 003 > \square 2\ 954$$

$$33\ 002 > \square 9\square 14$$

$$10\ 034 > 1\square 021$$

$$\square 0\ 02\square > 49\ 317$$

$$62\ 031 > \square 2\ 029$$

Do it another way.

$$\square 1\ 342 > 41\ 27\square$$

$$\square 1\ 003 > \square 2\ 954$$

$$33\ 002 > \square 9\square 14$$

$$10\ 034 > 1\square 021$$

$$\square 0\ 02\square > 49\ 317$$

$$62\ 031 > \square 2\ 029$$

Think Sheet

If we compare two numbers, such as 35 210 and 34 153, we see that $35\ 210 > 34\ 153$ since 35 210 is a bit more than 35 thousand and 34 153 is not as much as 35 thousand.

Both numbers have the same number of ten thousands, but 35 210 has more thousands than 34 153.

Ten thousands	Thousands	Hundreds	Tens	Ones
3	5	2	1	0
3	4	1	5	3

It does not matter that 34 153 has more tens than 35 210; what matters is the comparison of the greater place values.

We can compare numbers by estimating, or comparing both to another number:

- Estimating: $42\ 135 > 31\ 043$ since 42 thousand and a little bit more is greater than 31 thousand and a little bit more.
- Comparing both to another number: $27\ 003 > 9999$ since 27 thousand is more than 10 000, but 9999 is less than 10 000.

1. Write a number that fits the rule:

- greater than 22 000 but less than 23 000
- greater than 80 030 but less than 80 100
- greater than 12 004 but less than 12 010

2. Circle the greater number. Fill in each blank with a digit other than 0.

a) 52 105 or 9984

b) 15 015 or 11 055

c) 20 034 or 17 289

d) 1 356 or 2 218

e) 942 or 4 138

3. The distances between numbers on these number lines show how far apart they really are. Estimate to name a number that might be at the mark. Explain.



4. Use all five digits to create four numbers. Put them in order from least to greatest.

0 3 1 5 9

5. List a number you might compare both of the given numbers to to decide which is greater. Then circle the greater number.

a) 41 356 and 32 900 _____

b) 51 417 and 8 898 _____

c) 14 003 and 18 920 _____

d) 473 and 1 245 _____

e) 2 154 and 3 117 _____

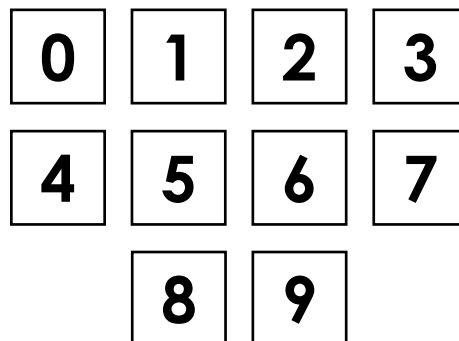
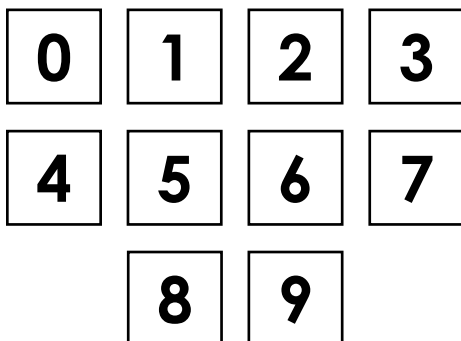
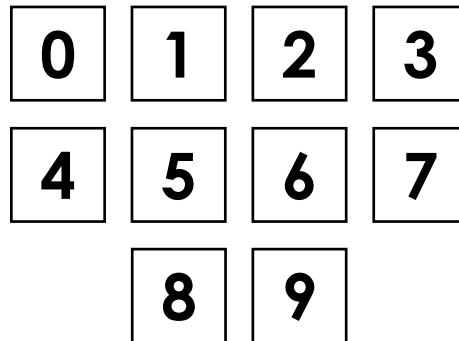
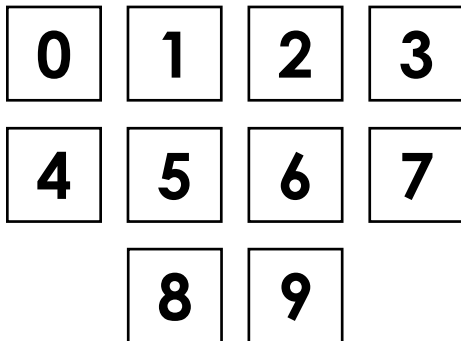
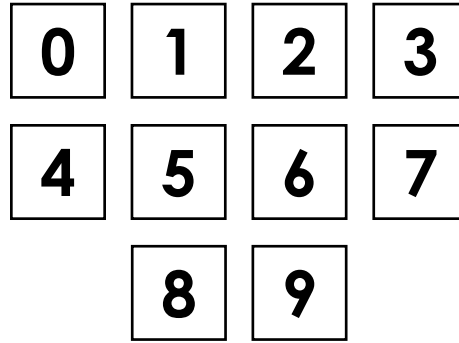
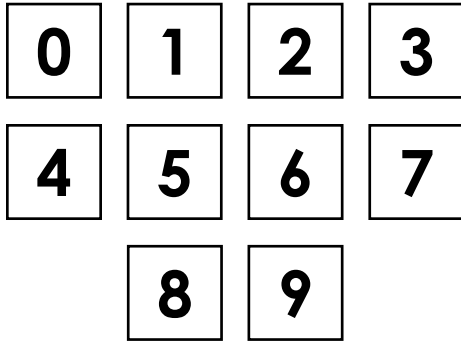
6. You are comparing a 5-digit number to 30 047.

You can ask about only one of the 5 digits of the other number but you have to say whether the number is greater or less than 30 047.

Which digit would you ask for? Why?

7. You know that 317 > 948. The other digits are 0, 2, 5, and 6. List four possibilities for the arrangement of the digits.

Number Squares



Place Value Chart (1)

Thousands		Ones		
Tens	Ones	Hundreds	Tens	Ones

Thousands		Ones		
Tens	Ones	Hundreds	Tens	Ones

Place Value Chart (2)

Thousands	
Hundreds	
Tens	
Ones	

Thousands	
Hundreds	
Tens	
Ones	

