Islamic Educational College

Jabal Amman / Al-Jubeiha

Math Booklet

First Semester

2025-2026

Grade 3

My name is:

_____

Math Department	Chapter 1 / lesson 1
	Outcomes: Describe how an increasing pattern grows and continue the pattern.
	Date: / /

Number Patterns

Write the numbers that come next.

1. 1, 3, 5, 7, 9, 11, 13, 15 ...

2. 2, 4, 6, 8, 10, 12, 14, 16 ...

3. 24, 34, 44, 54, 64, 74, 84 ...

4. 3, 6, 9, 12, 15, 18, 21, 24 ...

5. 35, 40, 45, 50, 55, 60, 65 ...

6. 11, 22, 33, 44, 55, 66, 77 ...

7. 9, 19, 29, 39, 49, 59, 69 ...

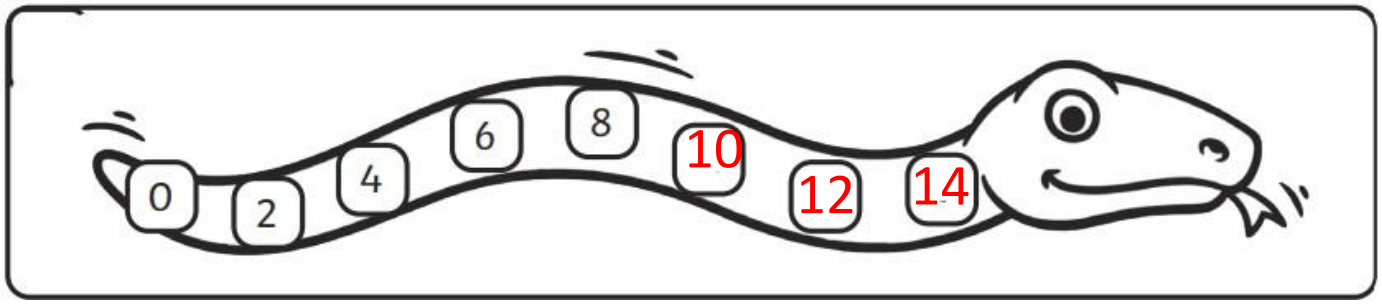
 Math Department	**Chapter 1 / lesson 2**
	Outcomes: Create and compare patterns that have the same rule.
	Date: / /

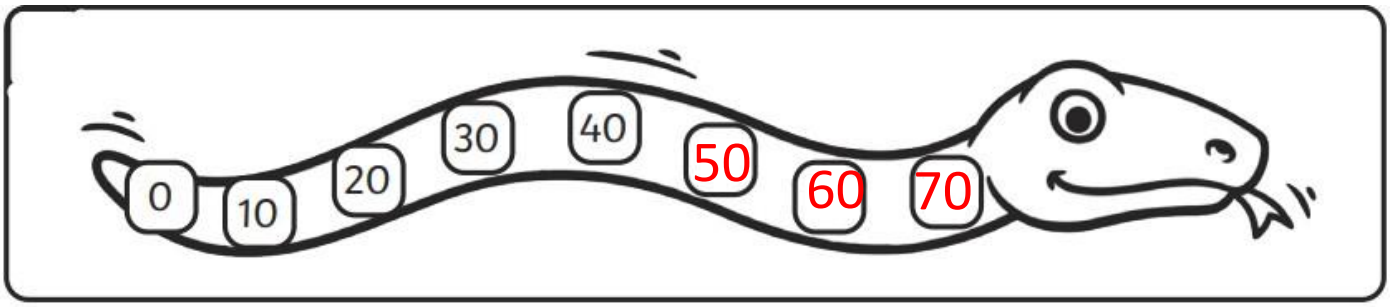
Exercise 1: Complete the following patterns. Then write each pattern's rule.

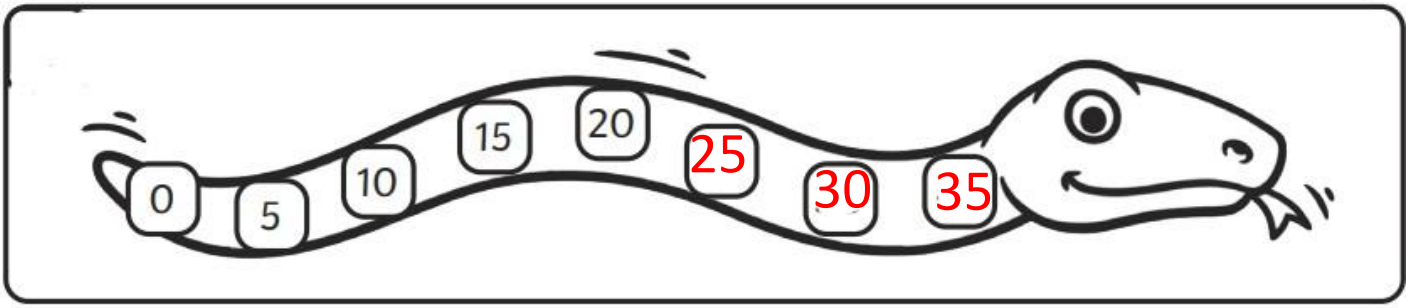
14	18	22	26	30	34	Rule: Add 4
28	26	24	22	20	18	Rule: Subtract 2
65	70	75	80	85	90	Rule: Add 5
36	30	24	18	12	6	Rule: Subtract 6
90	93	96	99	102	105	Rule: Add 3

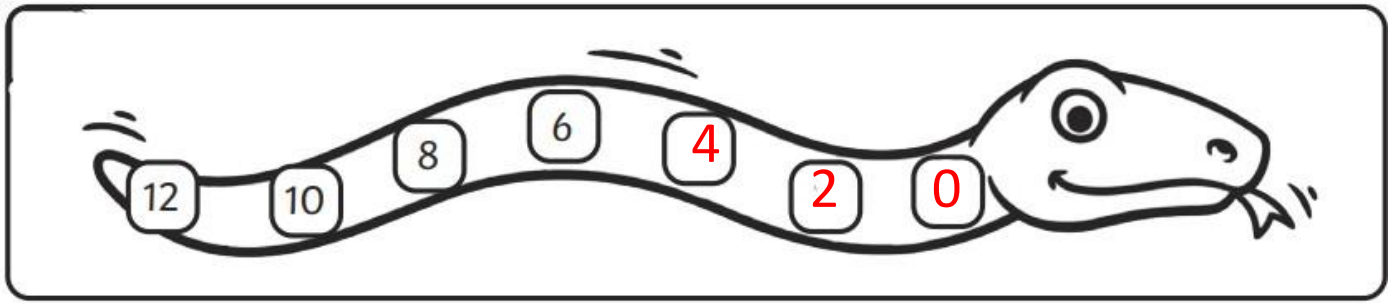
Math Department	Chapter 1 / lesson 3
	Outcomes: Create and describe increasing patterns.
	Date: / /

Exercise 1: Complete then color:









 Math Department	**Chapter 1 / lesson 4**
	Outcomes: Describe how a decreasing pattern gets smaller, and continue the pattern.
	Date: / /

Exercise 1: Fill in the missing numbers:

a) 2, 4, 6, 8, 10, 12, 14, 16, 18

b) 23, 28, 33, 38, 43, 48, 53, 58

Exercise 2: What kind of pattern is this? You can choose from an increasing pattern or a decreasing pattern.

a) 5, 10, 15, 20, 25, 30

This is increasing pattern

b) 100, 90, 80, 70, 60, 50

This is decreasing pattern

c) 40, 42, 44, 46, 48, 50

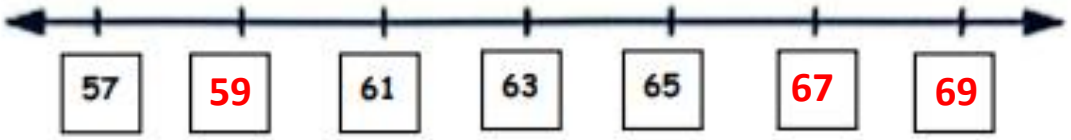
This is increasing pattern

Math Department	Chapter 1 / lesson 5
	Outcomes: Show a pattern in a way that can help you solve a problem.
	Date: / /

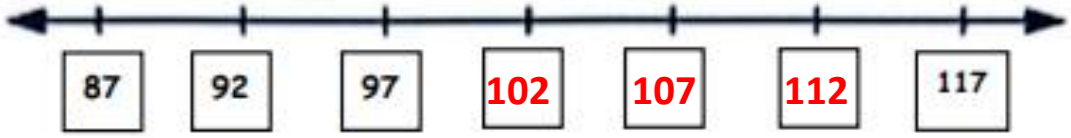
0

Exercise 1: Write the missing number:

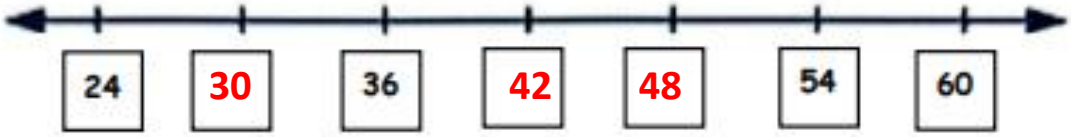
a)



b)



c)



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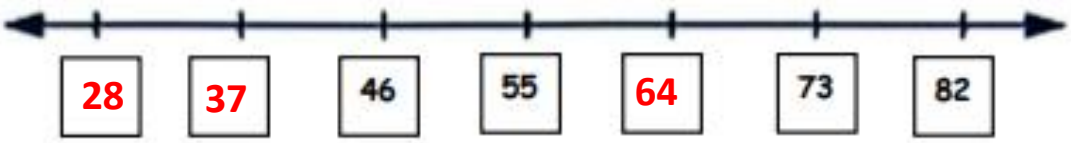

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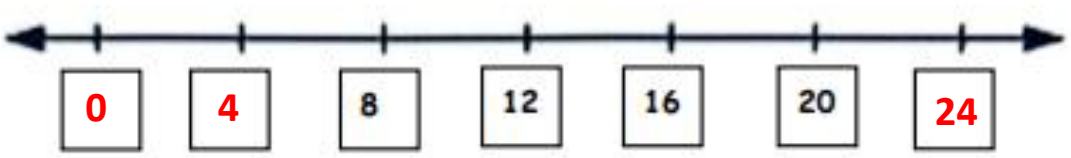


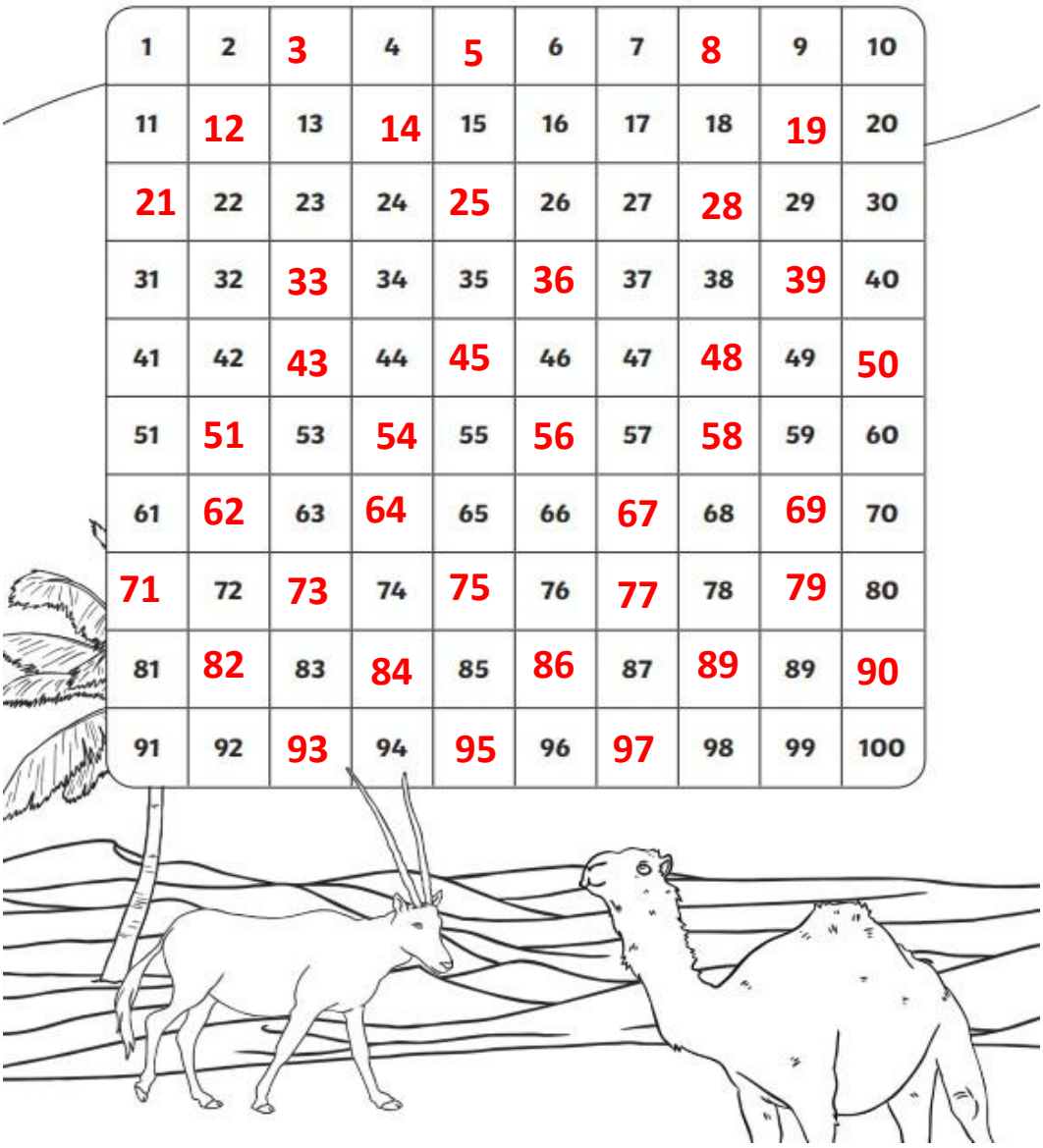
Math Department

Chapter 1 / lesson 6

Outcomes: Show increasing and decreasing patterns on a 100 chart.

Date: / /

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	51	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	89	89	90
91	92	93	94	95	96	97	98	99	100



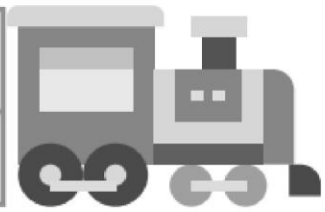
Math Department	Chapter 2 / lesson 1
	Outcomes: Show increasing and decreasing patterns on a 100 chart.
	Date: / /

1 138

Hundreds	Tens	Ones
1	3	8

2 530

Hundreds	Tens	Ones
5	3	0

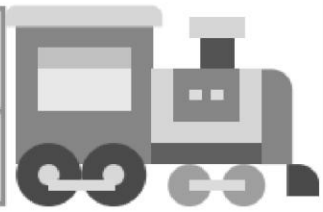


3 904

Hundreds	Tens	Ones
9	0	4

4 62

Hundreds	Tens	Ones
-	6	2



5 446

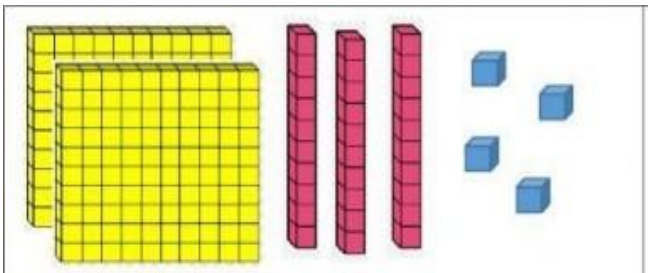
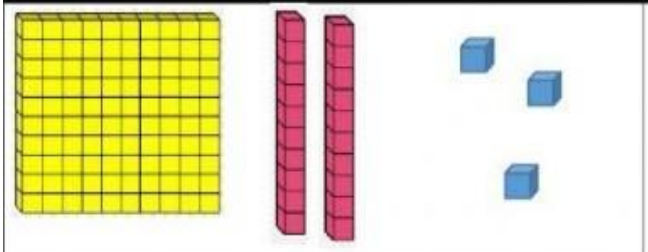
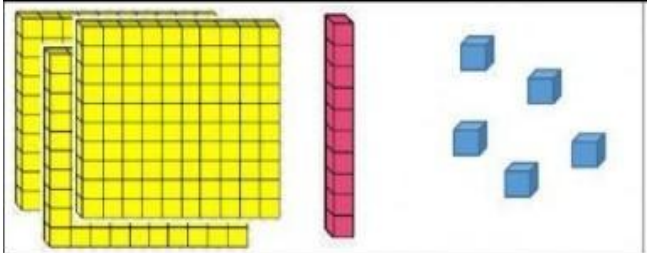
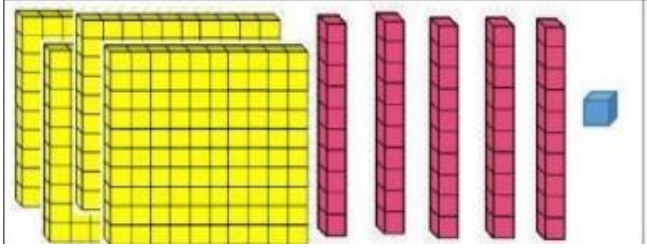
Hundreds	Tens	Ones
4	4	6

Math Department

Chapter 2 / lesson 2

Outcomes: Use regrouping to rename numbers.

Date: / /

	hundreds	tens	ones
	2	3	4
	1	2	3
	3	1	5
	4	5	1

Chapter 1

Lesson 1

Describing Increasing Patterns

GOAL

Describe how an increasing pattern grows and continue the pattern.

1. Fill in the missing numbers in each pattern.

a) 1, 4, 7, 10, 13, 16, 19, ...

b) 2, 4, 6, 8, 10, 12, ...

c) 5, 10, 15, 20, 25, 30, 35, ...

d) 3, 7, 11, 15, 19, 23, ...

2. A pattern starts at 4 and increases by 5 each time. Write the first 6 numbers in the pattern.

4, 9, 14, 19, 24, 29

3. Write a pattern rule for each pattern.

a) 8, 12, 16, 20, 24, ...

+4 Add 4

b) 15, 20, 25, 30, 35, ...

+5 Add 5

c) 7, 17, 27, 37, 47, ...

+10 Add 10

4. Fill in the missing numbers. Then write a pattern rule.

a) 6, 9, 12, 15, 18, 21

Pattern rule: +3 Add 3

b) 5, 7, 9, 11, 13, 15, 17

Pattern rule: +2 Add 2

At-Home Help

An **increasing pattern** is a pattern that gets greater each time.
For example, 2, 4, 6, 8, ... is an increasing pattern. The 3 dots at the end show that the pattern continues.

A **pattern rule** is a description of how a pattern starts and how it continues.
For example, "Start at 2 and add 2 each time" is a pattern rule.

Chapter 1
Lesson 2

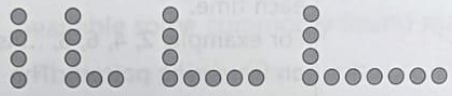
Creating Patterns for a Pattern Rule

GOAL

Create and compare patterns that have the same rule.

You will need counters.

1. Karen used counters to make a pattern.



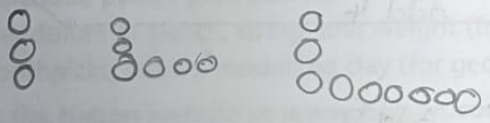
a) Write Karen's pattern using numbers.

4, 6, 8, 10, ...

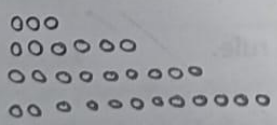
b) Write Karen's pattern rule.

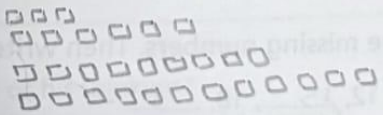
Add 2

c) Use counters to make a different pattern for Karen's pattern rule. Sketch your pattern.



2. A pattern rule is "Start at 3 and add 3 each time." Sketch 2 different picture patterns that have this rule.





At-Home Help

Different patterns can have the same pattern rule. For example, both of these patterns have the rule "Start at 2 and add 2 each time."

Chapter 1
Lesson 3

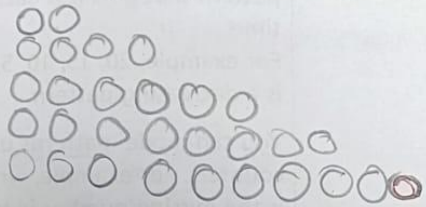
Creating Increasing Patterns

GOAL

Create and describe increasing patterns.

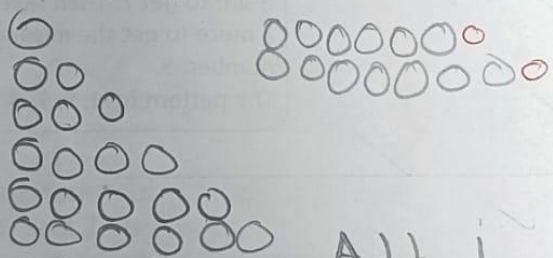
You will need counters.

1. a) Make a pattern with 30 or more counters.
Sketch your pattern. Then write a pattern rule.



Pattern rule: Add 2

b) Make a different pattern with 30 or more counters.
Sketch your pattern. Then write a pattern rule.



Pattern rule: Add 1

2. Write 3 different patterns that have the number 5 in them.

Pattern 1: 1,2,3,4,5,6. Add 1

Pattern 2: 5,10,15,20,25. Add 5

Pattern 3: 2,5,8,11,14. Add 3

Chapter 1

Lesson 4 Describing Decreasing Patterns

GOAL

Describe how a decreasing pattern gets smaller, and continue the pattern.

You will need counters.

1. Fill in the missing numbers in each pattern.

a) 18, 16, 14, 12, 10, 8, ...

b) 28, 23, 18, 13, 8, 3, ...

c) 35, 31, 27, 23, 19, 15, ...

d) 17, 14, 11, 8, 5, 2, ...

2. A pattern starts at 75 and decreases by 10 each time. Write the first 6 numbers in this pattern.

75, 65, 55, 45, 35, 25, ...

3. Fill in the missing numbers. Then write a pattern rule.

a) 10, 8, 6, 4, 2, 0

Pattern rule: −2

b) 16, 13, 10, 7, 4, 1

Pattern rule: −3

4. Henry baked 24 cookies. He gave away 4 cookies each day. How many days can Henry give away cookies? Use a decreasing pattern.

~~6~~ days

24, 20, 16, 12, 8, 4, 0

At-Home Help

A **decreasing pattern** is a pattern that gets less each time.
For example, 20, 15, 10, 5, 0 is a decreasing pattern.

You can model patterns using counters. For example, what is the missing number in the pattern 11, 9, 7, _____, 3, 1?
Start with 11 counters. Take away 2 to get 9. Take away 2 more to get 7. Then take away 2 more to get the missing number: 5.
The pattern is 11, 9, 7, 5, 3, 1.

Chapter 1 Lesson 5

Showing Patterns on Number Lines and Grids

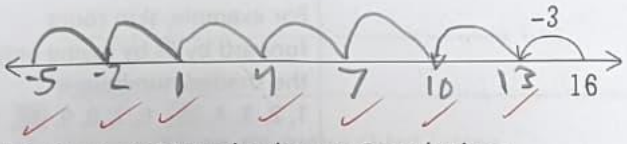
GOAL

Show a pattern in a way that can help you solve a problem.

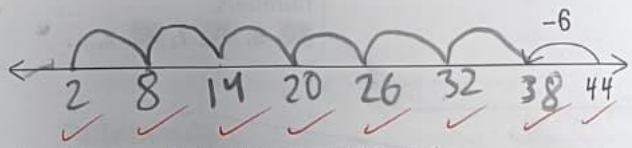
You will need pencil crayons.

1. Use a number line to show each pattern.

a) Start at 16 and subtract 3 each time.



b) Start at 44 and subtract 6 each time.



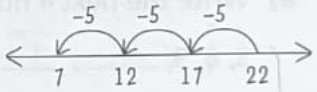
2. A pattern rule is "Start at 40 and subtract 7 each time."
Does the pattern described by this pattern rule include the number 6? No
Use the grid to show how you know.

				5			
			12				
		19					
	26						
33							40

At-Home Help

You can model patterns using number lines and grid squares. For example, a pattern rule is "Start at 22 and subtract 5 each time." Does the pattern described by this pattern rule include the number 7?

Solution 1: Start at 22 on a number line, and jump back 5 each time.



The pattern includes the number 7.

Solution 2: Use 22 grid squares, and shade groups of 5. After you shade each group, count how many squares are left not shaded.

There are 7 squares left not shaded, so the pattern includes the number 7.

Chapter 1

Lesson 6 Patterns on a 100 Chart

GOAL

Show increasing and decreasing patterns on a 100 chart.

You will need pencil crayons.

1. The shaded numbers on the 50 chart show an increasing pattern.

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

a) Write the next 4 numbers in the pattern.

3, 6, 9, 12, 15, 18, 21, ...

b) Write a pattern rule.

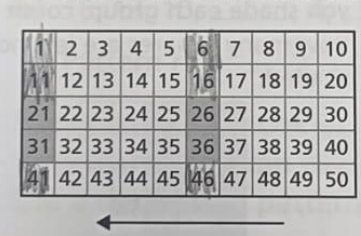
Add 3

At-Home Help

Skip counting is when you count in a pattern by saying only the number at the end of each group. You "skip" the other numbers.

For example, skip count forward by 5s by saying only the shaded numbers:
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, ...
Skip count backward by 2s by saying only the shaded numbers:
10, 9, 8, 7, 6, 5, ...

2. The shaded numbers on the 50 chart show a decreasing pattern.



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

a) Write the next 4 numbers in the pattern.

36, 31, 26, 21, 16, 11, 6, 1

b) Write a pattern rule.

subtract 5

Chapter 2

Lesson 1 Representing Numbers

GOAL

Represent 3-digit numbers in different ways.

1. Write each number as a numeral.

a) three hundred twenty-one 321 ✓

b) two hundred ninety-five 295 ✓

c) five hundred sixty 560 ✓

2. Write each number using numerals and words.

a) four hundred twenty-three

✓ 423 4 hundreds 2 tens 3 ones

b) seven hundred sixty-six

✓ 766 7 hundreds 6 tens 6 ones

3. Luke has one hundred forty-three model cars in his collection. Write the number of cars using numerals and words.

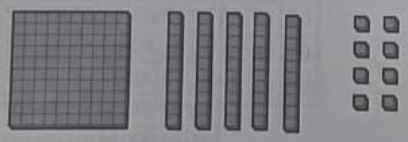
✓ 143 1 hundred 4 tens 3 ones

4. Write the numeral for each model.

a)

240 ✓

b)



158 ✓

At-Home Help

A **numeral** is the written symbol for a number. For example, 4, 16, and 392 are numerals.

A **digit** is one of 0, 1, 2, 3, 4, 5, 6, 7, 8, or 9.

You can show numbers in different ways. For example, the numeral 274 has three digits: 2, 7, and 4. The digit 2 in 274 means two hundred. The digit 7 in 274 means seventy. The digit 4 in 274 means four. The number 274 is read *two hundred seventy-four*. It can be written as 2 hundreds 7 tens 4 ones.

Chapter 2
Lesson 2

Representing and Renaming Numbers

GOAL

Use regrouping to rename numbers.

You will need base ten blocks. If you do not have base ten blocks, just sketch your model.

1. There are 521 flowers in Nala's garden.

a) Model 521 with the least number of blocks. Sketch your model.

Hundreds	Tens	Ones
5	2	1

b) Regroup 1 hundreds block as 10 tens blocks. Sketch your new model.

Hundreds	Tens	Ones
4	12	1

2. There are 134 houses on Robert's block.
Model 134 in 2 different ways. Sketch your models.

Hundreds	Tens	Ones
1	3	14

Hundreds	Tens	Ones
1	2	14

At-Home Help

Regrouping is when you trade 10 smaller units for 1 larger unit, or trade 1 larger unit for 10 smaller units.
For example, 2 tens and 12 ones can be regrouped as 3 tens and 2 ones.

You can rename a number by regrouping. For example, the numeral 474 can be written as 4 hundreds 7 tens 4 ones. You can rename 474 by regrouping:

- Regroup 1 hundred as 10 tens:
  3 hundreds 17 tens 4 ones
- Regroup 1 ten as 10 ones:
  4 hundreds 6 tens 14 ones
- Regroup 2 hundreds as 20 tens:
  2 hundreds 27 tens 4 ones