BRIDGES IN MATHEMATICS 2

GRADE 2 SUPPLEMENT

Set A7 Number & Operations: Numbers to 1,000 on a Line or Grid

Includes

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Skills & Concepts

★ locate numbers to 1,000 on a hundreds grid or number line

★ use patterns in place value to compare and order whole numbers

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Bridges in Mathematics Grade 2 Supplement
Set A7 Numbers & Operations: Numbers to 1,000 on a Line or Grid

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Bridges in Mathematics is a standards-based K–5 curriculum that provides a unique blend of concept development and skills practice in the context of problem solving. It incorporates the Number Corner, a collection of daily skill-building activities for students.

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Set A7 ★ Activity 1

ACTIVITY

Mystery Numbers on a 101–200 Grid

Overview

Students work together to identify some mystery numbers on a 101–200 grid and then complete two related worksheets. In order to find the identities of the mystery numbers, students have to discover for and use number patterns.

Skills & Concepts

★ locate numbers to 1,000 on a hundreds grid or number line

★ use patterns in place value to compare and order whole numbers

You'll need

★ 101–200 Grid (page A7.6, see Advance Preparation)

★ What's Missing? 101–200 (pages A7.4 and A7.5, class set)

★ overhead pens in several different colors

★ sticky notes

Advance Preparation Run 1 copy of the 101-200 Grid on a transparency. Cover the following numbers on the grid with sticky notes trimmed to roughly ¾" × ¾": 125, 140, 172, and 196.

Instructions for Mystery Numbers on a 101–200 Grid

1. Ask students to sit where they can see the screen. Place the 101–200 Grid on display at the overhead and give students a minute to pair-share observations. What do they notice about the display? Then invite volunteers to share their observations with the class.

Set A7 Numbers & Operations: Numbers to 100 on a Line or Grid Blackline Run 1 copy on a transparency.

101–200 Grid

101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124		126	127	128	129	130
131	132	133	134	135	136	137	138	139	
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171		173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195		197	198	199	200

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Activity 1 Mystery Numbers on a 101–200 Grid (cont.)

Students *Some of the numbers are covered up!*
It starts with 101 and goes up to 200.
It's like the number chart on our calendar board, but the numbers are higher.

Alesha *I know what the first number is that's covered up—it's 125!*

2. When the identity of one of the secret numbers comes up, ask students to talk with their neighbors about the conjecture. Do they agree? Why or why not? As they share with the class, press them to explain their answers. (If no one volunteers a guess about any of the mystery numbers, direct their attention to the first one and ask a volunteer to guess its identity.)

Teacher *Talk with your partners for a minute. Do you agree with Alesha that the mystery number in the third row is 125?* (Gives students time to talk.) *Who'd like to tell us whether or not they agree with Alesha and explain why? Sam?*

Sam *I think it's 125 because it's in the same row with all the other numbers that end in 5.*

Paulina *I think it's 125 because it's in the 20's row.*

Drexler *It's 125 because it comes right after 124. 125 comes after 124.*

3. When there's general agreement about the identity of the first secret number, remove the sticky note so students can see that it is 125. Draw their attention to each of the other secret numbers one by one. For each, ask students to pair-share conjectures, and then have volunteers share and explain their thinking.

4. Once all the mystery numbers have been identified and uncovered, ask students to think about what helped them solve the mysteries. What kinds of clues did they use to guess the identity of each number?

Students *You can just look at what number comes before it.*
You can look at the number that comes after, too.
I look at the row going up and down to see what all the other numbers have at the end.

Teacher *So you look at the column to see what the other numbers have in the 1's place?*

Students *Yep!*
I also look at what they have in the 10's place.
Every row has a different number in the 10's place up 'til the end. Like it's all 20's in the 125 row, except when you get to 130.

5. Chances are, students relied heavily on place value patterns to identify the mystery numbers. Now that they can see all the numbers, ask them to find and describe other place value patterns they can find.

6. Distribute copies of the What's Missing? 101–200 worksheets. Review both sheets with the class. Once students understand what to do, have them go to work. Circulate to provide guidance as needed, and encourage them to help one another as well. Ask them to share and compare their answers with at least one other person when they're finished. If they don't agree on some of the answers, ask them to work together to find the correct solution.

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Activity 1 Mystery Numbers on a 101–200 Grid (cont.)

Set A7 Operations & Numbers: Numbers to 1000 on a Line or Grid Blackline Run a class set. Do not run back-to-back.

NAME _____ DATE _____

What's Missing? 101–200 page 1 of 2

1 Fill in the missing numbers on the grid below. Use what you know about number patterns to help.

101	102		104	105	106	107	108	109	110
	112	113	114	115	116		118	119	120
121	122	123		125	126	127	128		130
131		133	134	135		137	138	139	140
141	142	143		145	146	147	148	149	
151	152	153	154		156	157		159	160
161	162		164	165	166	167	168	169	170
171	172	173	174		176	177		179	180
	182	183	184	185	186		188	189	190
191	192	193	194	195		197	198		200

2 Describe at least 3 different patterns you see on the grid.

Set A7 Operations & Numbers: Numbers to 1000 on a Line or Grid Blackline Run a class set. Do not run back-to-back.

NAME _____ DATE _____

What's Missing? 101–200 page 2 of 2

3a Which is greater, 180 or 108? _____

b How do you know?

4a Which is less, 122 or 127? _____

b How do you know?

5. Paul's family found 112 shells on the beach on Monday, 143 shells on Tuesday, and 104 shells on Wednesday.

a Which day did they find the most shells? _____

b Which day did they find the least shells? _____

6. On Thursday, Paul's family found 182 shells. On Friday, they found 140 shells. Here's a list of how many shells they found each day.

112, 143, 104, 182, 140

Put the numbers of shells in order from least to most.

_____, _____, _____, _____, _____

least most

CHALLENGE

7. What number is 28 more than 131? How could you write a number sentence to show that?

8. What number is 16 less than 159? How could you write a number sentence to show that?

INDEPENDENT WORKSHEET

See Set 7A Independent Worksheets 1 and 2 for more practice using place value patterns to compare and order whole numbers.

NAME _____ **DATE** _____

What's Missing? 101–200 page 1 of 2

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	112	113	114	115	116		118	119	120
121	122	123		125	126	127	128		130
131		133	134	135		137	138	139	140
141	142	143		145	146	147	148	149	
151	152	153	154		156	157		159	160
161	162		164	165	166	167	168	169	170
171	172	173	174		176	177		179	180
	182	183	184	185	186		188	189	190
191	192	193	194	195		197	198		200

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NAME _____ **DATE** _____

What's Missing? 101–200 page 2 of 2

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112, 143, 104, 182, 140

Put the numbers of shells in order from least to most.

_____, _____, _____, _____, _____

least most

CHALLENGE

7 What number is 28 more than 131? How could you write a number sentence to show that?

8 What number is 16 less than 153? How could you write a number sentence to show that?

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101–200 Grid

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141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200

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Set A7 ★ Activity 2

ACTIVITY

What's My Number?

Overview

Students use the number line to guess a secret number you've written on a slip of paper before the game. Although the game is quite simple, you can modify the numbers to challenge nearly any group of second graders.

Skills & Concepts

★ locate numbers to 1,000 on a hundreds grid or number line

★ use patterns in place value to compare and order whole numbers

You'll need

★ What's My Number? Gameboard (page A7.10, 1 copy run on a transparency)

★ black overhead pen

★ whiteboard and markers

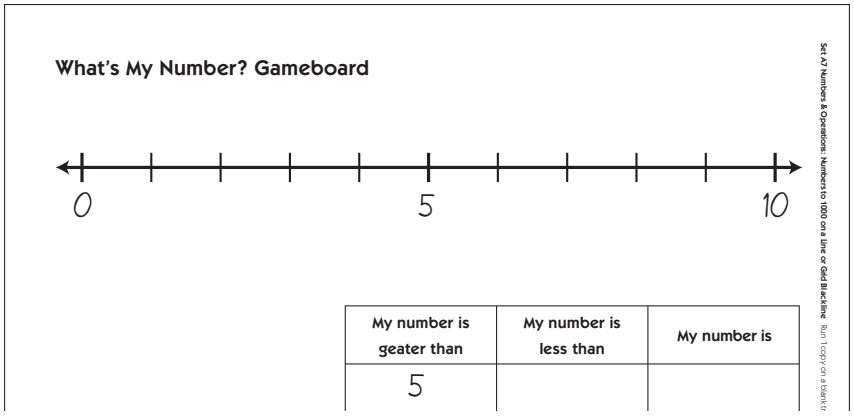
★ 6 or 7 small slips of scratch paper (see Advance Preparation)

Advance Preparation Write the number 7 on one of the slips of paper and the number 43 on another. Fold both and put them in 2 different pockets. Keep the other slips close at hand; this game goes very quickly.

Instructions for What's My Number?

1. Ask children to sit where they can see the screen. Place the What's My Number? Gameboard on display. Label one end of the number line 0 and the other end 10. Explain that you have a number between 0 and 10 written on a piece of paper in your pocket, and you're going to give the class a chance to guess what it is.

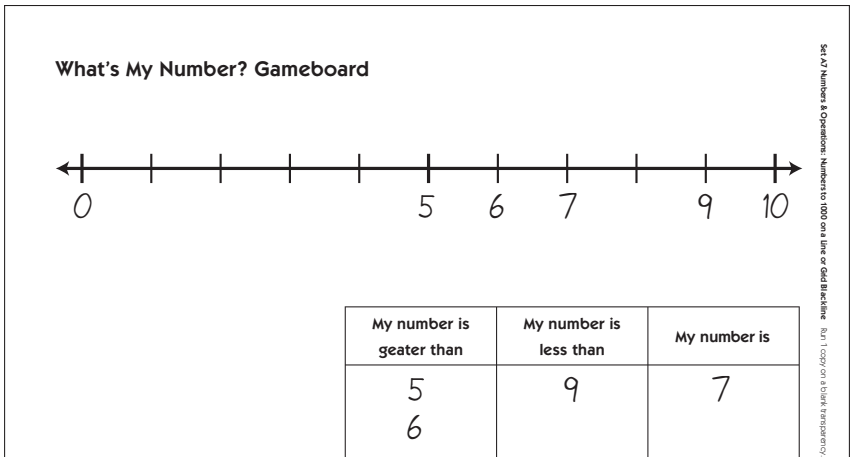
2. Ask students to raise their hand if they have a guess, and call one of them up to write his or her guess where it belongs on the number line. Respond by writing the number the child just guessed in the appropriate column on the chart below the number line.



3. Repeat step 2, calling on a different child each time, until someone guesses your secret number correctly. It won't take students long to realize that they can use the information on the number line and

Activity 2 What's My Number? (cont.)

the chart to narrow the range of possibilities so they can "zero in" on the number. When they do, pull the slip of paper with 7 written on it out of your pocket and show it to the class.



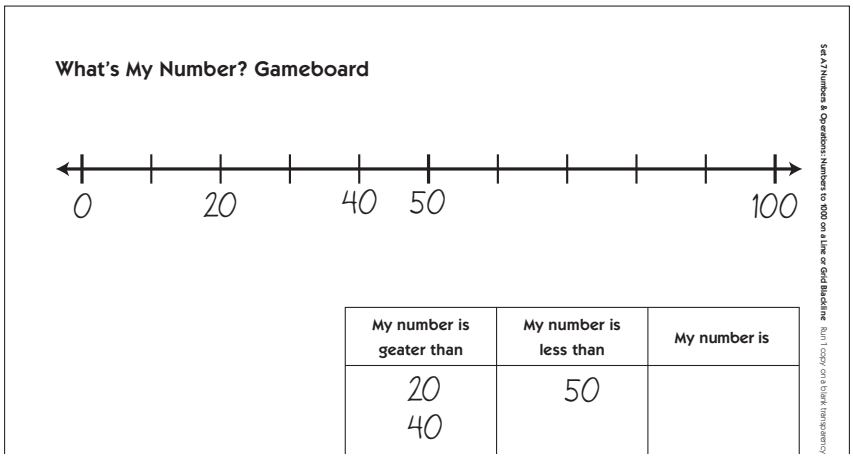
4. Erase the overhead, and write 0 at one end of the line and 100 at the other. Tell students you have a number between 0 and 100 in your other pocket. Ask them to pair-share guesses and then call on a volunteer to share his or her guess with the class.

> ***Marcus*** *I think it's 50 because that's right in the middle.*

5. Talk with students about where the guess should be entered on the number line, and invite the student who made the guess to come up and record it on the overhead, working with support from the class if necessary.

6. Respond by writing the number the child just guessed in the appropriate column on the chart below the number line.

7. Repeat steps 5 and 6 until the class has narrowed the range to 40 and 50. Then let students know that it's okay to guess numbers that don't correspond to marks already on the line, if that hasn't already come up.



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Activity 2 What's My Number? (cont.)

Students *I don't get it!*
There aren't any other marks!
How can your number be more than 40 but less than 50?

Teacher *You've done a great job of narrowing the range really quickly. My number is between 40 and 50.*

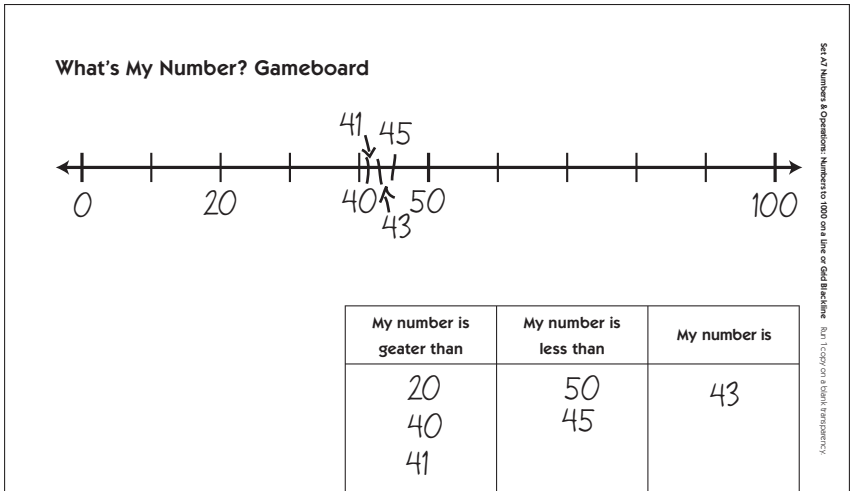
David *But there aren't any more marks between 40 and 50.*

Teacher *It's okay to make some marks of your own on this line. Do you have a guess?*

David *I think it's 45.*

Teacher *Come on up and make a mark where you think it belongs and label it with your guess.*

8. Continue in this fashion until someone identifies your number exactly. Then show students the slip of paper. If the number line gets crowded, encourage students to write their guesses above and below the line and draw arrows to the marks they've made if necessary.



9. Play several more rounds of the game, as time allows. Erase the overhead each time and write a new number on a slip of paper. You may want to stick with numbers between 0 and 100. If that's very easy for your class, try labeling one end of the number line with 100 and the other with 200 and choosing a secret number in that range.

Extensions

- Play the game many times with your class. This is a great "sponge activity."
- Let students lead the game. (If you decide to do this, have them whisper their secret number in your ear before they start.)
- Experiment with other ranges of numbers, like 200–300, 300–400, 400–500, and so on. The overhead number line doesn't accommodate much more than a range of 100, so if your students are ready for more, draw a giant number line on the whiteboard, along with a greater than and less than chart, and work with a range of 0–500, or even 0–1,000.

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What's My Number? Gameboard

My number is greater than	My number is less than	My number is

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NAME _____ **DATE** _____

Set A7 ★ Independent Worksheet 1

INDEPENDENT WORKSHEET

Number & Operations What's Missing? 901–1,000

1 Fill in the missing numbers on the grid below. Use the patterns you know to help.

901		903		905	906	907		909	910
911	912	913	914	915		917	918	919	920
	922	923	924	925	926			929	930
931	932	933		935	936		938	939	940
941		943	944		946	947	948	949	950
951	952	953	954	955		957	958	959	960
961	962	963		965	966	967	968		970
	972	973	974		976	977		979	980
981	982		984	985	986	987	988	989	
991	992	993	994	995		997	998	999	1000

2 Describe at least 3 different patterns you see on the grid.

(Continued on next page.)

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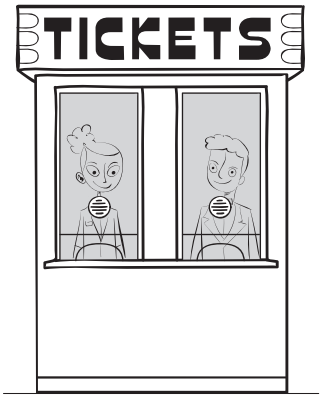
Independent Worksheet 1 What's Missing? 901–1,000 (cont.)

3 The carnival in our town started last week. The chart below shows how many tickets they sold each day.



Day	Number of Tickets
Saturday	978 tickets
Sunday	995 tickets
Monday	932 tickets
Tuesday	905 tickets
Wednesday	937 tickets

a Which day did they sell the most tickets? _____

b Which day did they sell the least tickets? _____

c Put the number of tickets they sold each day in order from least to greatest.

_____, _____, _____, _____, _____

least greatest

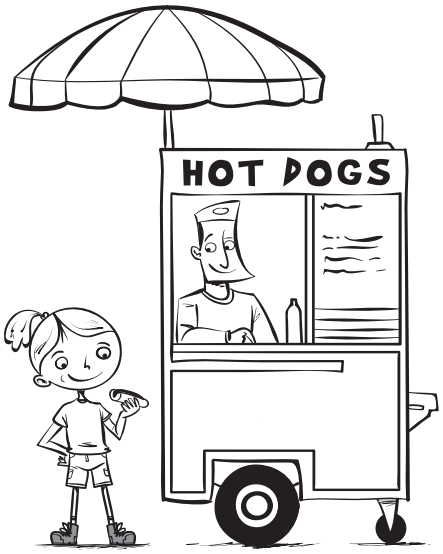
4 The people who came to the carnival bought 909 hot dogs on Saturday, 990 hot dogs on Sunday, 943 hot dogs on Monday, and 934 hot dogs on Tuesday.

a Which is greater, 909 or 990? _____

b How do you know?

c Which is less, 943 or 934? _____

d How do you know?



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NAME _____ **DATE** _____

Set A7 ★ Independent Worksheet 2

INDEPENDENT WORKSHEET

Number & Operations What's Missing? 10–1,000

1 Fill in the missing numbers on the grid below. Use the patterns you know to help.

10	20		40	50	60		80	90	100
	120	130	140		160	170	180	190	
210		230	240	250		270	280		300
310	320	330		350	360		380	390	400
	420	430	440		460	470	480	490	
510	520		540	550		570		590	600
610		630	640	650		670	680	690	700
710	720	730		750	760	770	780		800
810		830	840		860		880	890	900
910	920		940	950	960	970	980		1000

2 Describe at least 3 different patterns you see on the grid.

(Continued on next page.)

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Independent Worksheet 2 What's Missing? 10–1,000 (cont.)

3 Have you ever wondered how much a tiger weighs? Have you ever thought about how heavy a grizzly bear is compared to an alligator? The chart below shows the weights of 7 different mammals in kilograms. (A kilogram is a little more than 2 pounds.) Use the information to answer the questions below.

Animal	Weight
Siberian Tiger	230 kilograms
Alligator	270 kilograms
Harbor Seal	170 kilograms
Camel	725 kilograms
Grizzly Bear	680 kilograms
Emperor Penguin	30 kilograms
Gray Wolf	36 kilograms

a Put the weights of these animals in order from least to greatest.

_____, _____, _____, _____, _____, _____, _____

least greatest

b Which animal on the chart weighs the most? _____

c Which animal on the chart weighs the least? _____

d Which animal weighs more, a Siberian tiger or an alligator?_____

e Which animal weighs less, a grizzly bear or a camel? _____

(Continued on next page.)

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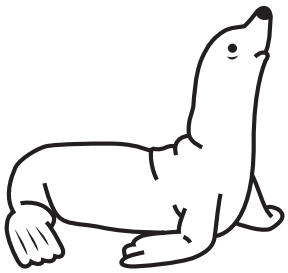
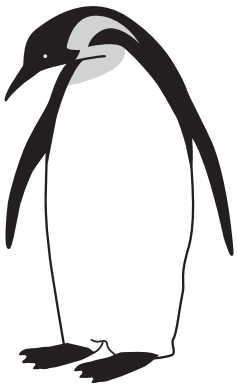
Independent Worksheet 2 What's Missing? 10–1,000 (cont.)

4 Use numbers, pictures, and/or words to show how you got the answer.

a Which would weigh more, 3 harbor seals or 2 Siberian tigers?



b Which would weigh less, 5 Emperor penguins or 1 harbor seal?



5 Which animal on the chart would you most like to have for a pet? Why?

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