Grade 2 Curriculum Overview

Operations and Algebraic Thinking

- Add and subtract within 1,000.
- Add and subtract from memory within 20.
- Add and subtract with unknown addends, subtrahends and minuends.
- Know that subtraction is the inverse of addition.
- Determine whether a number is odd or even by pairing.
- Solve addition problems using the associative and commutative properties.
- Solve addition and subtraction problems using models.
- Determine which operation is used to make the number sentence true.
- Extend number sentence patterns.
- Identify number patterns on a hundred chart.

Numbers & Operations in Base Ten

- Understand the place value of each numeral in a three-digit number.
- Identify 10 tens as an equal value to 100.
- Identify the value of each place in numbers such as 300 (e.g. 300 = 3 hundreds, 0 tens, 0 ones).
- Skip count by 2's, 5's, 10's and 100's.
- Fill in numbers using "before, between, and after"
- Represent numbers in expanded form.
- Compare each place value of two three-digit numbers by using the symbols for more than, less than or equal to.
- Mentally add and subtract 10 or 100 to any given number up to 900.
- Read and write whole numbers to 1,000.
- Show values with pictured one, ten and hundred blocks.
- Show equivalent representations of numbers (e.g. 67 = 5 tens and 17 ones).
- Compare whole numbers by using the symbols for greater than, less than, or equal to.
- Order numbers from least to greatest.
- Use the inverse relationship between addition and subtraction to solve problems.
- Complete fact families.
- Determine whether the estimation to a solution is reasonable.
- Solve word problems.
- Add three numbers with up to two digits each.
- Add and subtract with zero.
- Use and construct arrays as a foundation to multiplication.
- Translate word and picture problems into number sentences.
- Show ten more and ten less than a given number.
- Demonstrate multiplication by using repeated addition.
- Place mixed numbers on a number line.
- Find the numerical difference between numbers on a number line.
- Use Punch-Out Sticks (provided in book) to model problems.
- Recognize and compare fractions from ¼ to 2 ½.
- Place fractions on a fraction number line.
- Identify the fractional part of a whole (e.g. 1/2 of a circle).
- Match one whole to its equivalent fractions (e.g. 1 = 5/5 = 3/3).
- Identify the fractional divisions of a square: halves, thirds, quarters, sixths, eights, tenths.
- Translate a number word to its corresponding numeral (e.g. two hundred sixty-six = 266).

Measurement & Data

- Estimate lengths using the correct unit of measurement (e.g. a child would be about a meter in length).
- Measure to determine how much longer one object is than another.
- Determine reasonable estimates in customary and metric units.
- Compare units of measurement in terms of shorter and longer.
- Determine the appropriate unit of measurement to use (e.g. is the length of your yard measured in feet or inches?).
- Write the time using both analog and digital clocks to the nearest five minutes, using a.m. and p.m.
- Show relationships of time (e.g. months in a year).
- Read a calendar by identifying the day and date.
- Determine the length of time intervals (e.g. 10:00 a.m. to 2:00 p.m. is 4 hours).
- Add and subtract units of time.
- Express time in terms such as 15 minutes after 2 o'clock, or a quarter past 2 o'clock.
- Use terms such as early or late as they relate to a given time.
- Determine the time of an events as it relates to a.m. or p.m.
- Identify what time of day a.m. and p.m. represent.
- Order events sequentially on a time line.
- Solve word problems using dollars, quarters, dimes, nickels and pennies.
- Use the symbols for dollars and cents.
- Choose the correct coins to purchase a given item.
- Compare equivalent coins and bills (e.g. 10 pennies = 2 nickels).
- Relate the fraction of a dollar to a coin (e.g. 1/4 dollar = 1 quarter).
- Estimate costs.
- Add and subtract money.
- Identify all coins, including half-dollars, and count money.
- Read a thermometer.
- Estimate values of length, weight, cost, volume, and time.
- Interpret data on a picture graph and a bar graph with up to four categories.
- Record data using a tally chart.
- Transfer data from a chart to a bar graph.
- Read a pictograph where a symbol represents more than one unit.
- Predict future events using the data from past events.
- Determine whether events are certain, possible, impossible, most likely, least likely or equally likely.

Geometry

- Identify and compare the attributes of shapes such as number of angles.
- Identify triangles, quadrilaterals, pentagons, hexagons, cubes, spheres, pyramids and rectangular prisms.
- Count the number of squares in a rectangle that has been partitioned into rows and columns.
- Partition circles and rectangles into equal portions (e.g. halves or fourths).
- Determine equal portions of the whole (e.g. half of).
- Take apart and put together shapes to make other shapes (e.g. divide a rectangle into 2 triangles).
- Identify congruent and similar shapes.
- Determine the perimeters of triangles and rectangles.
- Describe the spatial relationship among objects (e.g. to the right or left of, inside, above, below).
- Use ordered pairs to locate points on a map.

Extras: Hundred Chart, Punch-Out Sticks, Addition and Subtraction Flash Cards, Math Facts Sharpener Sheets, Dalmatian Station Attribute Page.

2nd Grade

IMPORTANT!
Instructions for Parents

- To use Summer Math Skills Sharpener, simply tear off a page and have your child complete both sides. The program is designed to be used *3-4 days per week for 10 weeks*.
- Our math books support the Common Core Curriculum and the Standards of all 50 states. Therefore, some materials may not have been presented to your child. **Please allow your child to skip concepts not yet learned. Introduce new concepts only if your child shows readiness.**
- Check answers immediately for optimal feedback. You may want to offer small incentives to your child for pages successfully completed. An answer sheet is provided at the back of the book. A Lesson Tracker has been included for your convenience.
- **Help pages** have been added at the front of the book to clarify certain concepts.

- Allow your child to use a calculator only for those problems using this icon.

- **Hundred Chart**: Problems designated with this icon are to be used with the chart at the back of the book. Your child may use buttons, beans, coins, etc. as markers.

- **Dalmatian Station**: Problems with this icon are to be used with the Dalmatian chart at the back of the book. Your child may use buttons, beans, coins, etc. as markers.

- **Punch-Out Sticks**: Punch-out sticks have been provided to assist with visualizing some concepts. When this icon appears, simply have your child count out the required number of sticks and manipulate them to suit the problem.

- **Hands-on**: The problems with this designation indicate a short activity using ordinary household items.

- **Mental math**: Problems with this icon are to be solved without pencil and paper.

- Addition and subtraction flash cards are provided for extra practice.
- "Math Facts Sharpener" pages are located at the back of the book. Have your child complete one side of each of the five pages weekly.
- Adjust this book to your vacations, etc. Presentation of mixed concepts on every page ensures that all skills are reinforced. Therefore, pages may be used in any order.
- If your child experiences difficulty with a few concepts that have been taught in the classroom, address the problem with his or her teacher in the fall; more consistent problems indicate that a tutor may be needed.

GRADE 2 HELP PAGES

TEN BLOCKS

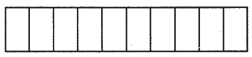
What are they?

In most schools, children use commercially produced base – ten blocks. After many hands-on experiences, children learn to recognize their symbolic representation on paper.

Examples:

13 = 1 ten + 3 ones

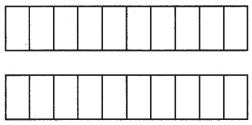
Base-ten representation:



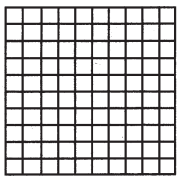
1 ten + 3 ones

20 = 2 tens + 0 ones

Base-ten representation:



2 tens + 0 ones

Hundred Flat  **represents 100**

What is the purpose?

Counting and grouping large collections of different kinds of materials help children see that they can count by ones or, more efficiently, group and count when faced with large quantities. Both methods have the same result. Recognizing groups and organizing materials (for easier counting) help children discover that 10 is the basis of our place value system.

See “Instructions to Parents” on how to use punch-out sticks (provided at the back of this book) for manipulation.

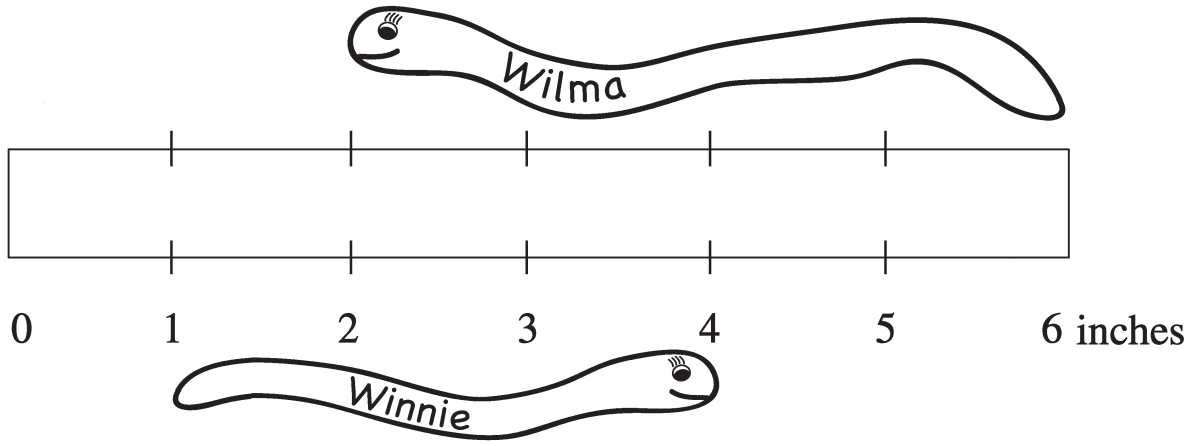
Lesson #10

1. A. $\begin{array}{r} 673 \\ -\ 617 \\ \hline \end{array}$ B. $\begin{array}{r} 267 \\ -\ 53 \\ \hline \end{array}$

2. I am thinking of a number between 34 and 40. It is an even number. It is not 36. What is the number?

_____

3.



How much longer is Wilma the worm than Winnie the worm? _____

4. A. 70 - ☐ = 60 B. 700 - ☐ = 600

5. Look at the time on this clock: **10:05 am**

Now write the time that is 10 minutes later: ☐ : ☐

6. Fill in the missing number: 50, 100, 150, _____ , 250

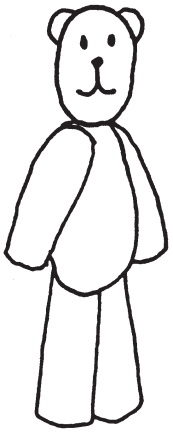
Lesson #10 (continued)

7. A. $\begin{array}{r} 209 \\ +\ 84 \\ \hline \end{array}$ B. $\begin{array}{r} \text{[illegible]}\ 28 \\ 2 \\ +11 \\ \hline \end{array}$

8. Circle the largest number: 669 696 966

9. A. If you had a quarter and a nickel, how much money would you have? Give your answer in cents using the correct sign. _____

B. If you had a 5 dollar bill and a 10 dollar bill, how much money would you have? Be sure to use the correct sign. _____

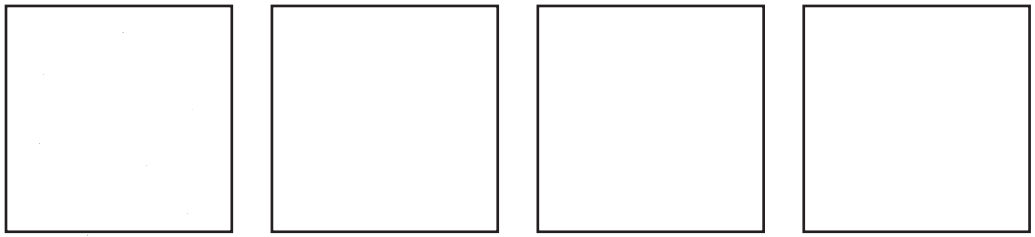


10. If a stuffed bear costs $3.95, you could <u>estimate</u> that it costs: (Circle the better answer.)

A. about $3.00 B. about $4.00

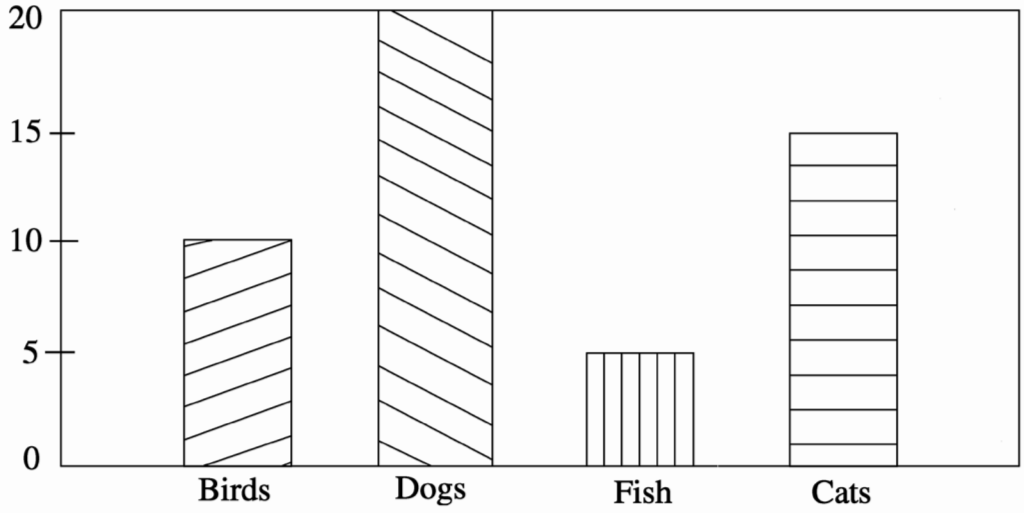
11. Abbie bought 6 starfish for her fish tank. She now has 13. How many did she start with? _____

12.  Show four ways to divide a square into halves.



Lesson #17

1. Pets owned by all Second Graders at Ferry School



Look at the bar graph above and answer the questions.

A. How many more dogs than fish? _____

B. How many cats and dogs? _____

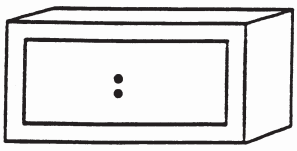
C. How many more cats than birds? _____

2.

A. What time is it? _____

B. What is another way to say this time? _____

C. Write this time on the digital clock.



3. A. $\square - 5 = 7$

B. $42 - 26$

4. Put the numbers in order from least to greatest:

204 214 201 211

_____ _____ _____ _____

Lesson #17 (continued)

5. A. 391 + 53 B. 391 - 53

6. 

If △ = 20, what is △ + △ ? _____

7. 9 + 1 + 7 = _____

8. Double these numbers to finish the chart. The first one has been completed for you.

10	20
20	
30	
40	

9. How many 5's are there in 45? (Hint: Count by 5's) _____

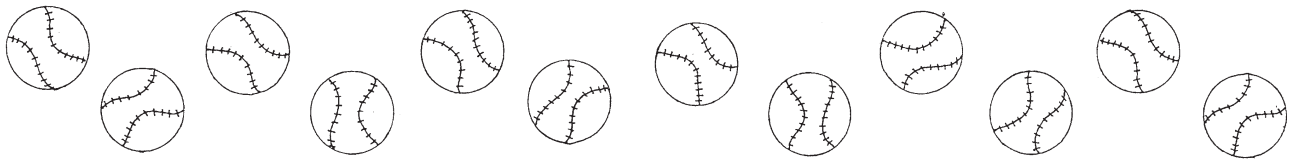
10. 20 equals: 2 tens and 0 ones or _____ sets of 10.

11.  Take 12 Punch-out sticks. Divide them into 2 equal groups. How many are in each group? _____ Now try 3 groups. How many are in each group? _____ Now try dividing them into 4 equal groups. How many are there in each group this time? _____

Lesson #33

1. A. With a pencil divide the set of balls below into **3** equal groups. How many are in each group?

_____



B. Use a crayon or marker to divide them into **2** equal groups. Now how many are in each group?

_____

2. **Tally** the number of ladybugs below. _____

3. Write this numeral: eight hundred sixty-eight. _____

4. Look at the circles below and answer the question that follows.

What do the circles show? Underline all that are true.

A. 3 x 4 B. 3 + 3 + 3 + 3 C. 4 x 4 D. 2 x 4 E. 4 x 3

5. Using these two subtraction number sentences, make two addition number sentences to complete the **fact family**.

8 – 5 = 3 8 – 3 = 5 _____ _____

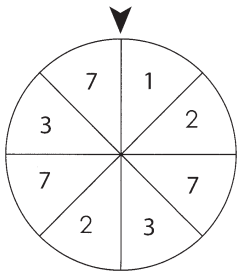
6. If (2 + 3) + 4 = 9, what is 2 + (3 + 4)? _____

Lesson #33 continued

7. A. What is a **reasonable** estimate for 42 + 38? Circle: **70** **80** **90**

   B. Is 10 a **reasonable** estimate for 21 – 9? _____

8. If you spin this number wheel:

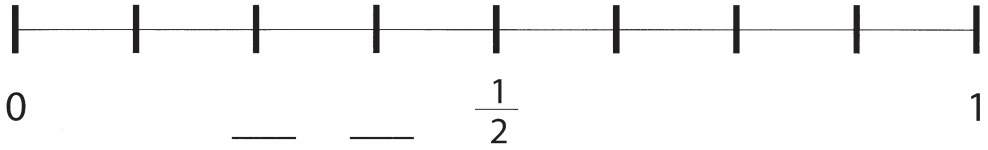


   A. The arrow will **most likely** point to _____

   B. The arrow will **least likely** point to _____

   C. There's an **equal chance** the arrow will point to number _____ or _____

9. A. Place these two missing fractions on the number line below: $\frac{3}{8}$, $\frac{1}{4}$



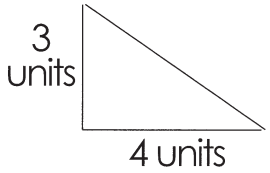
   B. Which is **greater**, $\frac{3}{8}$ or $\frac{1}{4}$? _____

10. Match:

A. 10 ones =	100
B. 10 tens =	1,000
C. 10 hundreds =	10

11. The **perimeter** (distance around) of this triangle is 12 units. What is the **length** of the third side?

_____ units

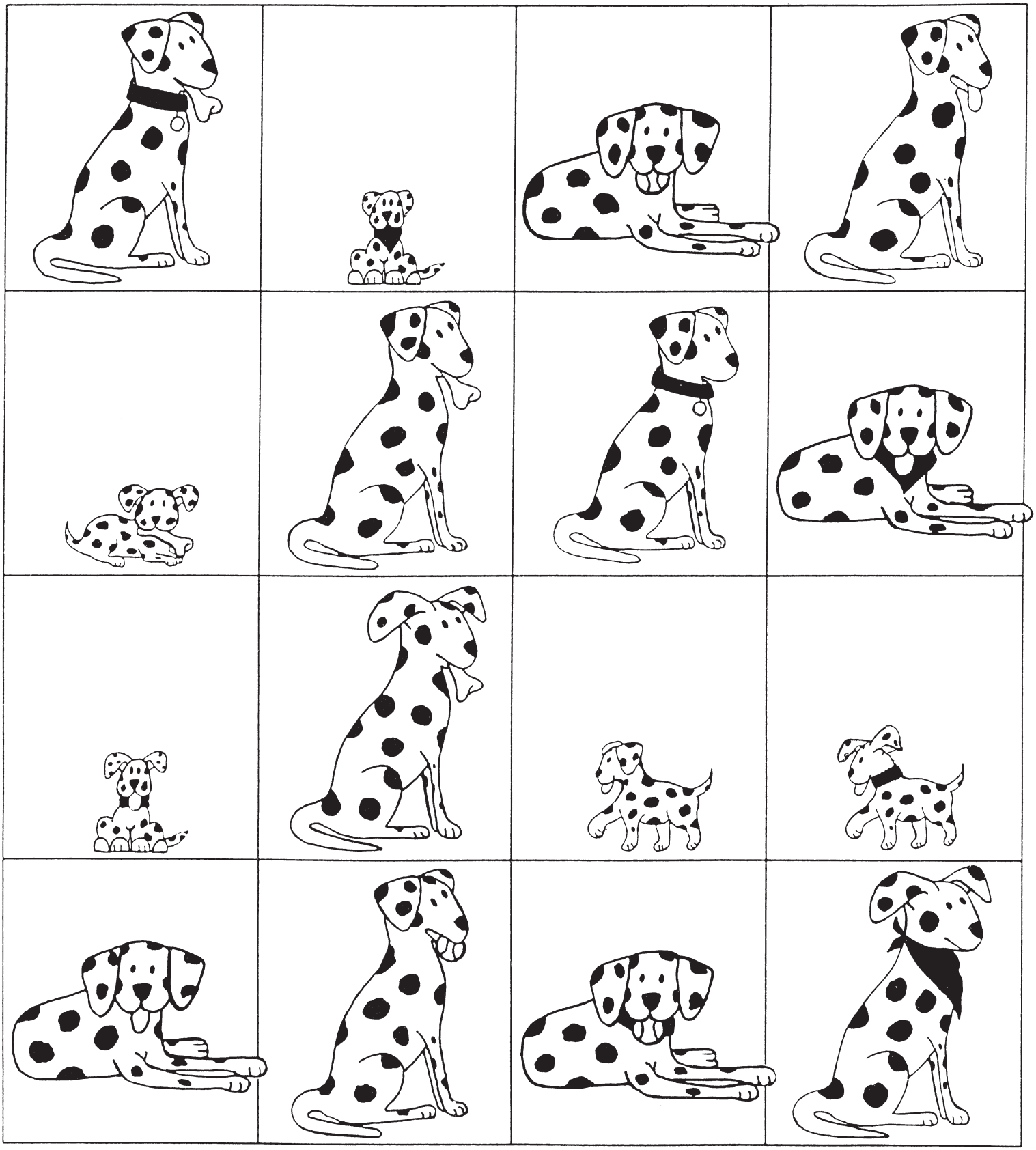


12. If you are eating dinner, is it A.M. or P.M.? _____

Hundred Chart

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

Dalmatian Station



Math Facts Sharpener • Grades 1 and 2

0 +5	2 +4	9 +9	0 +1	3 +6	6 +8
8 +7	0 +10	1 +3	7 +7	4 +5	2 +6
9 +8	8 +1	0 +7	4 +3	5 +6	7 +6
8 +5	1 +6	2 +3	5 +5	6 +4	7 +3
9 +4	0 +2	4 +7	6 +1	9 +7	5 +8
7 +1	5 +9	2 +7	8 +9	4 +1	7 +9
8 +3	1 +2	6 +6	3 +7	5 +1	3 +4

To use, cut along the dotted lines.

5

$$\begin{array}{r} 1 \\ +\,1 \\ \hline \end{array}$$

4

$$\begin{array}{r} 1 \\ +\,2 \\ \hline \end{array}$$

3

$$\begin{array}{r} 1 \\ +\,3 \\ \hline \end{array}$$

8

$$\begin{array}{r} 1 \\ +\,4 \\ \hline \end{array}$$

7

$$\begin{array}{r} 1 \\ +\,5 \\ \hline \end{array}$$

6

$$\begin{array}{r} 1 \\ +\,6 \\ \hline \end{array}$$

11

$$\begin{array}{r} 1 \\ +\,7 \\ \hline \end{array}$$

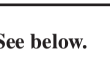
10

$$\begin{array}{r} 1 \\ +\,8 \\ \hline \end{array}$$

9

$$\begin{array}{r} 1 \\ +\,9 \\ \hline \end{array}$$

2ND GRADE ANSWER KEY

Lesson:	Problem Numbers: 1	2	3	4	5	6	7	8	9	10	11	12
1	67, 69, 71, 73	A. 2 liters B. 50 meters C. 2 kilograms	1 red section 2 blue sections	54	4	345, 455	72	True	4	Megan 9 Derek 14	False	See below.
2	6:30 12:30	A. 16 B. 10	A. 50 B. 500	A. 3, 3 B. 4, 4	A. hundreds B. tens C. ones	3	102, 112, 117, 121, 171	A. 16 B. 106	B	A. 2 B. 5	See below.	
3	A. 13 B. 94	0+5=5, 1+4=5, 2+3=5	25	A. >* B. <	213	2	A. 20 B. 100	374	36 inches	8:45, a quarter to 9	See below.	
4	1, 1 1/2, 1 3/4	366, 367, 369	1 Q, 1 N, 2 P	A. yes B. odd C. no D. even	479	A. 30 B. 708 C. 9	17	Lea	A. 34 B. 24 C. 14 D. 4	See below.		
5	630, 632, 634	4 + 6 =10	A. 24 B. 42	B, D	A. 764 B. 123	A. 60 B. 70	30 grapes	False	28	98	A. 93 B. 83	–, minus
6	A. 29 B. 33 C. 27 D. 35	Both: 4 sides, 4 angles square & rectangle	A. 93 B. 312	C	See below.	A. 4 B. 4	40	A. 200 B. 10	A. more B. less	C	A. 24 B. 15	
7	B	2 cups	A. 32 B. 385	~~42~~, ~~68~~, ~~12~~ ~~35~~, ~~17~~, ~~59~~	51¢	3	A. 458 B. 448	2	2/2 4/4	1 goal	10 + 3, 15 - 2, 13 - 0, 16 - 3, 4 + 9	39, 670, 162
8	85, 95	B	A. 6 B. 12	20°	A. 27 B. 78	3/3 2/2	A. 100 B. 200 C. 0	C	9, 17	A. 58 B. daisies C. 6 D. odd		
9	B	A. 60 B. 30	A. 75 B. 60 C. 80 D. 55	A. 1:20 B. 1:30	222, 232 323, 333	A. 109 B. 483	C	square, rectangle	4 tens	A. = B. > C. >	9, 12, 15, 18	no
10	A. 56 B. 214	38	1 inch	A. 10 B. 100	10:15	200	A. 293 B. 41	966	A. 30¢ B. $15.00	B	7	vertical, horizontal both diagonals
11	A. 65 B. 45	35¢ 10¢	A. 9 B. 10	624	57	310	yes. 1 isn't enough	624, 660	yes	A	late	11
12	3, 4, 12 3+3+3+3	48 mph	A. 3 hundreds, 2 tens, 4 ones B. 705	60, 62, 64 66, 68	A	20	A. 73 B. 6	744, 748	16	100	See below.	1 dime, 1 nickel
13	B	14	13	350	A. 110 B. 209	Answers will vary.	45, 54, 44, 55	A. 5 B. 6	11	B, D	462 < 642	A. 40 B. 24 C. 28 D. 46
14	A. 39 B. 26	A. inches B. 2 meters C. inches D. feet	21 + 21 = 42	A. 200 B. 400	See below.	3 books	3Q, 1D, 3P	130	3	15	6 + 5 = 11 11 - 6 = 5 11 - 5 = 6	A. 7 B. 7 C. 14
15	B	51	7	3	42	7	A. 201 B. 499	A. 10, 12 B. 12:30 C. 5	B	0	2 1/4, 2 3/4	=, >
16	A. Saturday B. Monday C. Wednesday	100	6 rows, 83 - 23 = 60	13	A. 30 B. 300	A	10 - 4 = 6	Monday, 7, see below	A. 617 B. 7	A. no B. yes		
17	A. 15 B. 35 C. 5	A. 7:30 B. half past 7 C. 7:30	A. 12 B. 16	201, 204, 211, 214	A. 444 B. 338	40	17	40, 60, 80	9	2	6, 4, 3	
18	8	C	12	B	shade 2 circles	A. 240 B. 320 C. 470	0	580	45¢	3:35 pm	+10, -20, +5	2, 5

Lesson 1, #12: Color 1 hundred block and 38 small squares.
Lesson 2, #11: 20 + 5 = 25, 25 + 5 = 30, 30 + 5 = 35
Lesson 3, #11: 2(200) + 9(90) + 7(7), 200 + 90 + 7
Lesson 4, #10: A. 5 B. 4 C. 20 D. 5 + 5 + 5 E. 4 + 4 + 4 + 4

Lesson 6, #5: 429, 574, 746, 270, 391, 650, 500, 849, 1,000
Lesson 12, #11 A. 365 B. 60 C. 31 D. 12 E. 30
Lesson 14, #5: long hand on the 9; short hand on the 3
Lesson 16, # 8: Monday 5, Tuesday 3, Wednesday 7, Thursday 1, Friday 4