

LESSON 5

Multiply by 10, 10¢ = 1 Dime

When multiplying by 10, encourage the student to look for patterns. Notice that whenever you multiply 10 times any number, the answer is that number plus a zero. That is because 10 is made up of a “1” digit which means one ten and a “0” digit that means zero units. So 4×10 is the same as 4×1 ten = 4 tens *and* 4×0 units = 0 units, or 40. The “ty” in forty stands for 10.

To make sure the student has this concept, I like to ask, “What is banana times 10?” The answer is “banana tens,” written “banana 0” and pronounced “banana-ty.” These are easy facts to learn and remember, but don’t take them for granted. Make sure they are mastered using any of the techniques shown below.

On the worksheets, there have been rectangles where the student wrote in the fact at the end of the line in the space with an underline. These can be put to another use by adding the multiplication problem that corresponds to the multiple of 10. Here are a few examples.

										10
--	--	--	--	--	--	--	--	--	--	----

Ten counted one time equals ten or $10 \times 1 = 10$.

										20
--	--	--	--	--	--	--	--	--	--	----

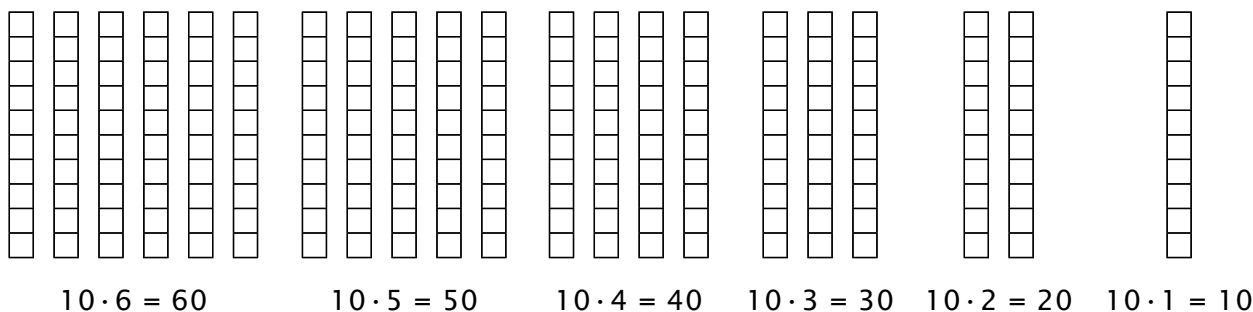
Ten counted two times equals twenty or $10 \times 2 = 20$.

										30
--	--	--	--	--	--	--	--	--	--	----

Ten counted three times equals thirty or $10 \times 3 = 30$.

										40
--	--	--	--	--	--	--	--	--	--	----

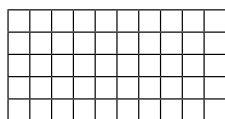
Ten counted four times equals forty or $10 \times 4 = 40$.



Another way to show this is on a number chart. Circling all of the 10 facts, or multiples of 10, reveals the pattern that corresponds to the blocks above.

0	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									

Each ten fact can be built in the shape of a rectangle. Whenever illustrating with the blocks, also write the problem and say it as you build.



10 counted 5 times is the same as 50, or 10 times 5 equals 50, or 10 over and 5 up is 50.

We may also think of a multiplication problem as a size comparison. One of the numbers that we say when we skip count by 10 is 30. Writing this as a multiplication problem gives us $10 \times 3 = 30$. Turning the equation around gives us $30 = 10 \times 3$. We can verbalize $30 = 10 \times 3$ as “Thirty is ten times as large as three.” Use the blocks to illustrate this if you wish.

Counting by 10 is the first step. After this is accomplished, say the factors slowly, and ask the student to say the product. For example, you say “ten counted one time,” or “ten times one,” and the student says “ten.” Continue by saying “ten times two,” and having the student say “twenty.” (I often have the student say “two-ty” as well as twenty to show that there is meaning in our words.) Proceed through all the facts sequentially just as when the student learned to count by 10.

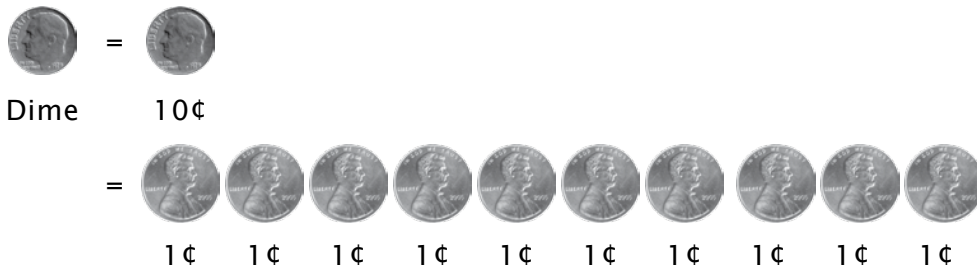
Here are the 10 facts with the corresponding products.

0	10	20	30	40	50	60	70	80	90	100
(10)(0)	(10)(1)	(10)(2)	(10)(3)	(10)(4)	(10)(5)	(10)(6)	(10)(7)	(10)(8)	(10)(9)	(10)(10)
	↑			↑					↑	
	10 counted 1 time		10 counted 4 times					10 counted 9 times		

0×0	0×1	0×2	0×3	0×4	0×5	0×6	0×7	0×8	0×9	0×10
1×0	1×1	1×2	1×3	1×4	1×5	1×6	1×7	1×8	1×9	1×10
2×0	2×1	2×2	2×3	2×4	2×5	2×6	2×7	2×8	2×9	2×10
3×0	3×1	3×2	3×3	3×4	3×5	3×6	3×7	3×8	3×9	3×10
4×0	4×1	4×2	4×3	4×4	4×5	4×6	4×7	4×8	4×9	4×10
5×0	5×1	5×2	5×3	5×4	5×5	5×6	5×7	5×8	5×9	5×10
6×0	6×1	6×2	6×3	6×4	6×5	6×6	6×7	6×8	6×9	6×10
7×0	7×1	7×2	7×3	7×4	7×5	7×6	7×7	7×8	7×9	7×10
8×0	8×1	8×2	8×3	8×4	8×5	8×6	8×7	8×8	8×9	8×10
9×0	9×1	9×2	9×3	9×4	9×5	9×6	9×7	9×8	9×9	9×10
10×0	10×1	10×2	10×3	10×4	10×5	10×6	10×7	10×8	10×9	10×10
									↑	←

$10\text{¢} = 1 \text{ Dime}$

A good place to apply math is with money. We've learned that 10¢ is the same as one dime, so we can ask how many pennies are the same as six dimes or how many cents are in six dimes. The answer is $6 \times 10\text{¢}$ or 60¢ .



Example 1

How many cents in six dimes?



We will be reviewing and using multiplication facts throughout the student workbook. Go to MathUSee.com for more resources that may be used to review multiplication facts.

LESSON PRACTICE

Find the answer by multiplying.

1. $10 \times 0 = \underline{\hspace{2cm}}$

2. $5 \times 10 = \underline{\hspace{2cm}}$

3. $10 \times 2 = \underline{\hspace{2cm}}$

4. $6 \times 10 = \underline{\hspace{2cm}}$

5. $(10)(10) = \underline{\hspace{2cm}}$

6. $(10)(3) = \underline{\hspace{2cm}}$

7. $10 \cdot 9 = \underline{\hspace{2cm}}$

8. $10 \cdot 7 = \underline{\hspace{2cm}}$

9.
$$\begin{array}{r} 10 \\ \times 2 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 10 \\ \times 5 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 10 \\ \times 1 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 10 \\ \times 3 \\ \hline \end{array}$$

13. $10 \times 7 = \underline{\hspace{2cm}}$

14. $4 \times 10 = \underline{\hspace{2cm}}$

$7 \times 10 = \underline{\hspace{2cm}}$

$10 \times 4 = \underline{\hspace{2cm}}$

15. $10 \times 6 = \underline{\hspace{2cm}}$

16. $10 \times 3 = \underline{\hspace{2cm}}$

$6 \times 10 = \underline{\hspace{2cm}}$

$3 \times 10 = \underline{\hspace{2cm}}$

Color all the boxes that have a number you would say when skip counting by 10. Notice the pattern.

17.

0	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

18. How many pennies or cents are the same as four dimes? _____



19. Ten counted nine times equals _____ .

20. Ten cars went by the house every hour. How many cars went by in six hours? _____

LESSON PRACTICE

Find the answer by multiplying.

1. $10 \times 8 = \underline{\hspace{2cm}}$

2. $1 \times 10 = \underline{\hspace{2cm}}$

3. $10 \times 9 = \underline{\hspace{2cm}}$

4. $0 \times 10 = \underline{\hspace{2cm}}$

5. $(10)(5) = \underline{\hspace{2cm}}$

6. $(10)(4) = \underline{\hspace{2cm}}$

7. $10 \cdot 6 = \underline{\hspace{2cm}}$

8. $10 \cdot 10 = \underline{\hspace{2cm}}$

9.
$$\begin{array}{r} 10 \\ \times 8 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 10 \\ \times 7 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 10 \\ \times 2 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 10 \\ \times 1 \\ \hline \end{array}$$

13. $10 \times 5 = \underline{\hspace{2cm}}$

14. $8 \times 10 = \underline{\hspace{2cm}}$

$5 \times 10 = \underline{\hspace{2cm}}$

$10 \times 8 = \underline{\hspace{2cm}}$

15. $10 \times 0 = \underline{\hspace{2cm}}$

16. $10 \times 9 = \underline{\hspace{2cm}}$

$0 \times 10 = \underline{\hspace{2cm}}$

$9 \times 10 = \underline{\hspace{2cm}}$

Skip count and write the missing numbers. Then fill in the missing factors.

17.

$$\begin{array}{cccccc} 0 & 10 & & 30 & & \\ \hline (10)(0) & (10)(\) & (10)(2) & (10)(\) & (10)(4) & (10)(\) \end{array}$$

$$\begin{array}{ccccc} & & & 90 & \\ \hline (10)(6) & (10)(\) & (10)(8) & (10)(\) & (10)(10) \end{array}$$

18. How many pennies or cents are the same as seven dimes?



19. Ten counted six times equals _____.

20. Jason did five math problems on Monday. He did ten times as many problems on Tuesday. How many problems did he do on Tuesday? _____

LESSON PRACTICE

Find the answer by multiplying.

1. $3 \times 10 = \underline{\hspace{2cm}}$

2. $8 \times 10 = \underline{\hspace{2cm}}$

3. $10 \times 1 = \underline{\hspace{2cm}}$

4. $2 \times 10 = \underline{\hspace{2cm}}$

5. $(10)(9) = \underline{\hspace{2cm}}$

6. $(7)(10) = \underline{\hspace{2cm}}$

7. $10 \cdot 5 = \underline{\hspace{2cm}}$

8. $6 \cdot 10 = \underline{\hspace{2cm}}$

9.
$$\begin{array}{r} 10 \\ \times 0 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 10 \\ \times 4 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 10 \\ \times 10 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 10 \\ \times 3 \\ \hline \end{array}$$

13. $10 \times 1 = \underline{\hspace{2cm}}$

14. $10 \times 4 = \underline{\hspace{2cm}}$

$1 \times 10 = \underline{\hspace{2cm}}$

$4 \times 10 = \underline{\hspace{2cm}}$

15. $10 \times 2 = \underline{\hspace{2cm}}$

16. $7 \times 10 = \underline{\hspace{2cm}}$

$2 \times 10 = \underline{\hspace{2cm}}$

$10 \times 7 = \underline{\hspace{2cm}}$

Color all the boxes that have a number you would say when skip counting by 10. What kind of pattern do you see?

17.

0	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

18. How many pennies or cents are the same as five dimes? _____



19. Ten counted three times equals _____.

20. The professor paid two 10-dollar bills for his new book. How much did the book cost? _____.

SYSTEMATIC REVIEW

Find the answer by multiplying.

1. $10 \cdot 5 = \underline{\hspace{2cm}}$

2. $7 \times 10 = \underline{\hspace{2cm}}$

3. $10 \cdot 2 = \underline{\hspace{2cm}}$

4. $(10)(10) = \underline{\hspace{2cm}}$

5.
$$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 10 \\ \times 5 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 6 \\ \times 2 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 7 \\ \times 2 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 1 \\ \times 3 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 9 \\ \times 2 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 10 \\ \times 8 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 10 \\ \times 4 \\ \hline \end{array}$$

13. $9 \times 2 = \underline{\hspace{2cm}}$

14. $4 \times 2 = \underline{\hspace{2cm}}$

$2 \times 9 = \underline{\hspace{2cm}}$

$2 \times 4 = \underline{\hspace{2cm}}$

15. $10 \times 3 = \underline{\quad}$

16. $5 \times 2 = \underline{\quad}$

$3 \times 10 = \underline{\quad}$

$2 \times 5 = \underline{\quad}$

**QUICK REVIEW**

These two-digit addition and subtraction problems can be done without regrouping. Just add or subtract the units and the tens. The first one is done for you.

Add or subtract.

$$\begin{array}{r} 17. \quad 21 \\ + 32 \\ \hline 53 \end{array}$$

$$\begin{array}{r} 18. \quad 43 \\ + 43 \\ \hline \end{array}$$

$$\begin{array}{r} 19. \quad 28 \\ - 16 \\ \hline \end{array}$$

$$\begin{array}{r} 20. \quad 89 \\ - 51 \\ \hline \end{array}$$

21. Jessica slept 7 hours a day for the last 10 days. How much sleep did she get in 10 days? $\underline{\quad}$

22. Jessica's little sister Julie still takes naps, so she got 20 more hours of sleep than Jessica during the last 10 days. How much sleep did Julie get during that time? You will need to use your answer from #21. $\underline{\quad}$

SYSTEMATIC REVIEW

Find the answer by multiplying.

1. $10 \cdot 8 = \underline{\hspace{2cm}}$

2. $6 \times 10 = \underline{\hspace{2cm}}$

3. $10 \cdot 9 = \underline{\hspace{2cm}}$

4. $(10)(0) = \underline{\hspace{2cm}}$

5.
$$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 6 \\ \times 2 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 8 \\ \times 1 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 10 \\ \times 5 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 2 \\ \times 2 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$$

11. $9 \times 1 = \underline{\hspace{2cm}}$

12. $3 \times 10 = \underline{\hspace{2cm}}$

$1 \times 9 = \underline{\hspace{2cm}}$

$10 \times 3 = \underline{\hspace{2cm}}$

Rewrite using place-value notation.

13. $389 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$

14. $72 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$

Add or subtract.

$$\begin{array}{r} 15. \quad 46 \\ + 22 \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 51 \\ + 12 \\ \hline \end{array}$$

$$\begin{array}{r} 17. \quad 37 \\ - 23 \\ \hline \end{array}$$

$$\begin{array}{r} 18. \quad 94 \\ - 43 \\ \hline \end{array}$$

19. How many cents are the same as eight dimes? _____
20. There are four people in our family. How many fingers do we have in all? _____
21. Grandma made six cherry pies and four apple pies. Aunt Mona cut each pie into 10 pieces. How many pieces of pie were there when she was done? _____
22. Noah bought nine quarts of milk. How many pints of milk does he have? _____

SYSTEMATIC REVIEW

Find the answer by multiplying.

1. $4 \cdot 1 = \underline{\hspace{2cm}}$

2. $2 \times 10 = \underline{\hspace{2cm}}$

3. $10 \cdot 3 = \underline{\hspace{2cm}}$

4. $(10)(9) = \underline{\hspace{2cm}}$

5.
$$\begin{array}{r} 6 \\ \times 2 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 2 \\ \times 8 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 10 \\ \times 7 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 10 \\ \times 1 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 3 \\ \times 2 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 4 \\ \times 2 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 1 \\ \times 6 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 9 \\ \times 0 \\ \hline \end{array}$$

Rewrite using place-value notation.

13. $164 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$

14. $58 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$

Add or subtract.

$$\begin{array}{r} 15. \quad 52 \\ - 20 \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 64 \\ + 13 \\ \hline \end{array}$$

$$\begin{array}{r} 17. \quad 35 \\ + 34 \\ \hline \end{array}$$

$$\begin{array}{r} 18. \quad 14 \\ - 12 \\ \hline \end{array}$$

19. What is five counted 10 times? _____

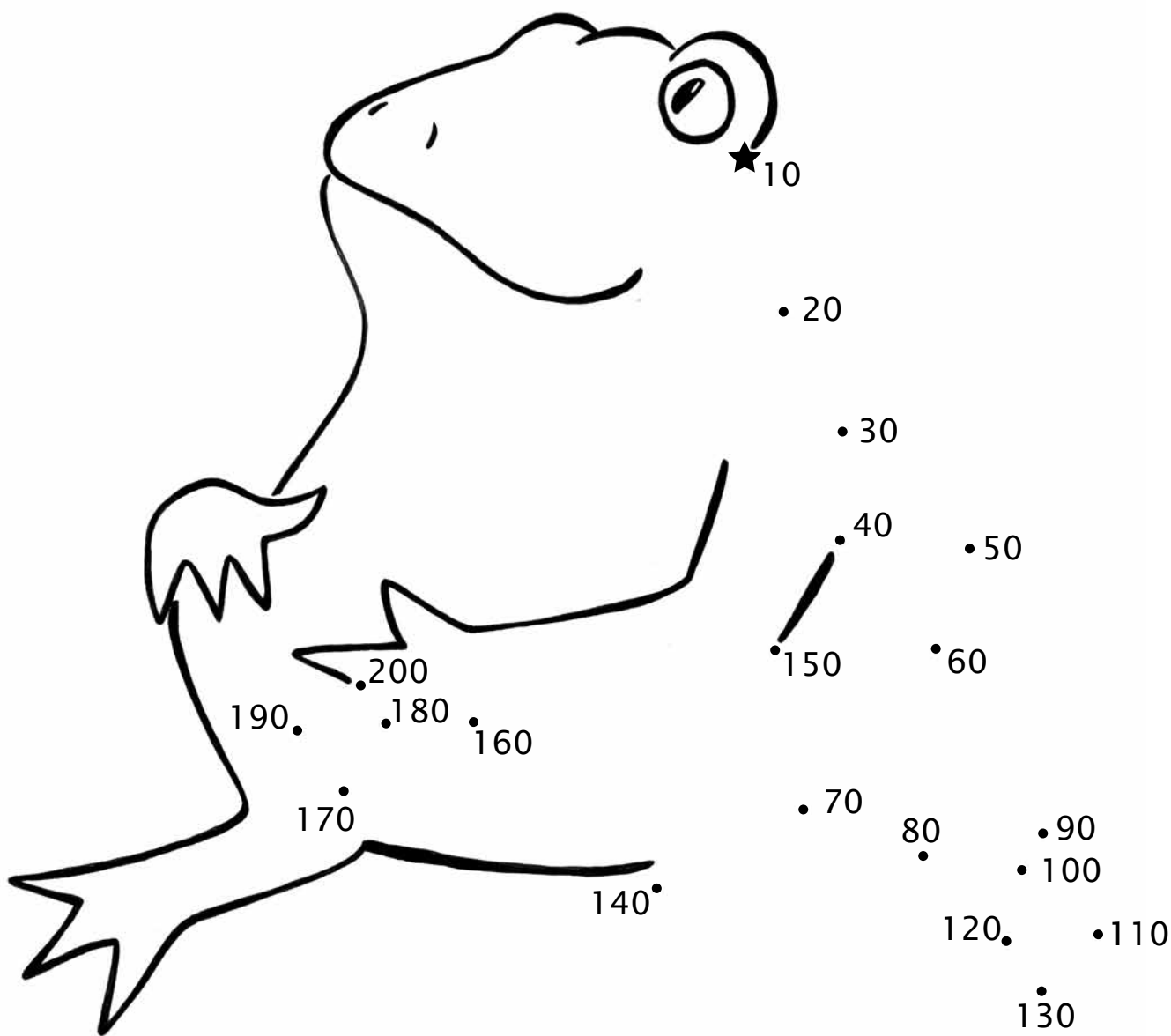
20. How many cents does Shane have if he has nine dimes? _____

21. Max has 5 dollars. Wayne has 10 times as much money as Max. How many dollars does Wayne have? How much money do Max and Wayne have altogether? _____

22. Karyn filled eight quart jars with jam. How many pints of jam did she make? _____

APPLICATION & ENRICHMENT

Skip count by ten. Start at the star and connect the dots all the way to 200.
Use the picture to practice skip counting by ten.



Freddy Frog ate 10 flies every Friday.

How many flies did Freddy eat in five Fridays? _____

Here is a pictograph for you to draw. Draw the correct number of dimes after each person's name. Line the dimes up so you can easily see who has more or fewer dimes. Here is the information you need.

Aiden - 3 dimes

Willow - 6 dimes

Connor - 3 dimes

Dani - 8 dimes

Petra - 4 dimes

Aiden	
Willow	
Connor	
Dani	
Petra	

1. Who has the most dimes? _____
2. Which two people have the same number of dimes? _____
3. Multiply by 10 to find how much money Willow has. _____
4. How many more dimes does Petra need to have the same number as Dani? _____
5. Multiply by 10 to find how much money Conner has. _____
6. Challenge: Can you use skip counting to find how many cents are in all the dimes shown on the pictograph? _____

LESSON TEST

Find the answer by multiplying.

1. $2 \times 10 = \underline{\hspace{2cm}}$

2. $10 \times 9 = \underline{\hspace{2cm}}$

3. $3 \times 10 = \underline{\hspace{2cm}}$

4. $10 \times 7 = \underline{\hspace{2cm}}$

5. $(6)(10) = \underline{\hspace{2cm}}$

6. $(10)(1) = \underline{\hspace{2cm}}$

7. $4 \cdot 10 = \underline{\hspace{2cm}}$

8. $10 \cdot 5 = \underline{\hspace{2cm}}$

9.
$$\begin{array}{r} 10 \\ \times 8 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 5 \\ \times 2 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 1 \\ \times 3 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 8 \\ \times 2 \\ \hline \end{array}$$

Add or subtract.

13.
$$\begin{array}{r} 34 \\ - 21 \\ \hline \end{array}$$

14.
$$\begin{array}{r} 55 \\ + 42 \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad 18 \\ - 1 \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 60 \\ + 17 \\ \hline \end{array}$$

17. Rewrite using place-value notation:

$$194 = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$$

18. Jeremy has seven dimes. How many cents does he have?

19. Christa bought 10 quarts of milk. How many pints of milk did she buy?

Her son and his friends drank 10 pints of milk. How many pints were left over?

20. Jason jogged 3 miles a day for 10 days. How many miles did he jog altogether?

Systematic Review 4E

1. $0 \times 2 = 0$
2. $5 \times 2 = 10$
3. $2 \times 2 = 4$
4. $2 \times 4 = 8$
5. $2 \times 3 = 6$
6. $9 \times 1 = 9$
7. $2 \times 6 = 12$
8. $10 \times 2 = 20$
9. $7 \times 2 = 14$
 $2 \times 7 = 14$
10. $8 \times 2 = 16$
 $2 \times 8 = 16$
11. $5 \times 1 = 5$
 $1 \times 5 = 5$
12. $2 \times 6 = 12$
 $6 \times 2 = 12$
13. 10, 20, 30, 40, 50,
60, 70, 80, 90, 100
14. $16 - 8 = 8$
15. $5 + 3 = 8$
16. $18 - 9 = 9$
17. $7 + 5 = 12$
18. $300 + 50 + 1$
19. $200 + 40 + 9$
20. $7 + 7 = 14$
21. $2 \times 8 = 16$ mittens
22. $5 \times 2 = 10$
 $10 - 3 = 7$ eggs

Systematic Review 4F

1. $3 \times 2 = 6$
2. $2 \times 10 = 20$
3. $8 \times 2 = 16$
4. $1 \times 7 = 7$
5. $2 \times 3 = 6$
6. $2 \times 6 = 12$
7. $4 \times 2 = 8$
8. $0 \times 9 = 0$
9. $5 \times 2 = 10$
 $2 \times 5 = 10$
10. $7 \times 2 = 14$

11. $9 \times 2 = 18$
 $2 \times 9 = 18$
12. $4 \times 1 = 4$
 $1 \times 4 = 4$
13. 5, 10, 15, 20, 25, 30, 35, 40, 45, 50
14. $16 - 9 = 7$
15. $7 + 7 = 14$
16. $9 - 4 = 5$
17. $5 + 6 = 11$
18. $100 + 30 + 1$
19. $400 + 70 + 5$
20. $2 \times 10 = 20$ peanuts
21. $3 \times 2 = 6$ pints
22. $2 \times 2 = 4$ hats
 $3 \times 2 = 6$ hats
 $4 + 6 = 10$ hats

Lesson Practice 5A

1. $10 \times 0 = 0$
2. $5 \times 10 = 50$
3. $10 \times 2 = 20$
4. $6 \times 10 = 60$
5. $10 \times 10 = 100$
6. $10 \times 3 = 30$
7. $10 \times 9 = 90$
8. $10 \times 7 = 70$
9. $10 \times 2 = 20$
10. $10 \times 5 = 50$
11. $10 \times 1 = 10$
12. $10 \times 3 = 30$
13. $10 \times 7 = 70$
 $7 \times 10 = 70$
14. $4 \times 10 = 40$
 $10 \times 4 = 40$
15. $10 \times 6 = 60$
 $6 \times 10 = 60$
16. $10 \times 3 = 30$
 $3 \times 10 = 30$