# LETTER HOME

Multiplication Patterns

Dear Family Member:

In this unit, we return to the study of multiplication and division and we focus on multiplication facts. We also solve word problems involving multiplication and division to help students understand when to use each operation.

In third grade, students become fluent with the basic multiplication facts by developing strategies for learning them. The availability of calculators does not eliminate the need to know the multiplication and division facts. Students should be able to quickly estimate answers and perform calculations. For this, a knowledge of the facts is essential.

Students will first focus on identifying patterns and finding strategies to solve the multiplication facts for 0, 1, 2, 3, 5, and 10. These facts are called the "Handy Facts" because these facts can be used to reason solutions to many other facts.
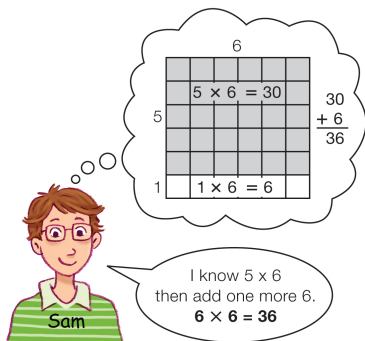
Next, students will arrange square-inch tiles into rectangles to look for patterns and investigate how multiplication is related to the dimensions of the rectangles. Using this rectangle model, students will identify patterns and strategies for the multiplication facts for the nines and for the square numbers.

You can help your child with multiplication using the following ideas:

Play Floor Tiler. This game will help your child learn the multiplication facts by using spinners to generate factors and a product. Players then draw a rectangle on a grid game board that represents that product. The winner is the first player to fill his or her grid paper game board. Directions are in the *Student Activity Book.*

Identify Patterns and Strategies. Ask your child to tell you some of the patterns and strategies they have discovered for the multiplication facts for the square numbers and the nines.

Playing a game to practice multiplication facts

Play Four in a Row. In this game, players choose factors to generate products that are on a game board. The winner covers four products in a row. Directions are in the *Student Activity Book.*

Math Facts and Mental Math

This unit continues the review of the subtraction facts and development of the multiplication facts. Help your child using the activities below.

Subtraction Facts. Students review all the subtraction facts to maintain and increase proficiency and to learn to apply subtraction strategies to larger numbers.

Groups	Subtraction Facts	Strategies Used	
1	$12 - 9, 12 - 10, 13 - 9, 13 - 10, 13 - 4,$ $15 - 9, 15 - 10, 15 - 6, 19 - 10,$	Using Tens Thinking Addition	Assessed in Unit 7
2	$14 - 10, 14 - 9, 14 - 5, 17 - 10, 17 - 9,$ $11 - 9, 16 - 9, 16 - 7, 16 - 10$		
3	$10 - 4, 9 - 4, 11 - 4, 10 - 8, 11 - 8,$ $9 - 5, 10 - 6, 11 - 6, 11 - 5,$	Making Tens Thinking Addition	
4	$10 - 7, 9 - 7, 11 - 7, 10 - 2, 9 - 2, 9 - 3,$ $10 - 3, 11 - 3, 9 - 6$		
5	$7 - 3, 7 - 5, 7 - 2, 11 - 2, 8 - 6, 5 - 3,$ $8 - 2, 4 - 2, 5 - 2,$	Counting Thinking Addition	Assessed in Unit 8
6	$6 - 4, 6 - 2, 13 - 5, 8 - 5, 8 - 3, 13 - 8,$ $12 - 8, 12 - 4, 12 - 3$		
7	$14 - 7, 14 - 6, 14 - 8, 12 - 6, 12 - 7,$ $12 - 5, 10 - 5, 13 - 7, 13 - 6,$	Using Doubles Thinking Addition	
8	$15 - 7, 16 - 8, 17 - 8, 18 - 9, 18 - 10,$ $8 - 4, 7 - 4, 6 - 3, 15 - 8$		

Figure 1: *Subtraction Facts Groups as reviewed in Units 7 and 8*

You can help your child review these facts using the flash cards the teacher sends home or by making a set of flash cards from index cards or scrap paper. Study the facts in small groups each night. As your child goes through the flash cards, put the cards into three stacks: Facts I Know Quickly, Facts I Can Figure Out, and Facts I Need to Learn.

For the Facts I Need to Learn, work on strategies for figuring them out.

For the Facts I Can Figure Out, use the flash cards to practice the facts for fluency.

For the Facts I Know Quickly, help your child use strategies to solve problems like these using mental math: 140 – 70 (practices 14 – 7), 1500 – 700 (Practices 15 – 7), 70 – 30 (practices 7 – 3)

See the Letter Home in Units 2–5 for more specific examples and strategies.

Multiplication Facts. This unit begins the systematic review and assessment of the multiplication facts. Students work on developing fluency with the multiplication facts for the 5s and 10s.

You can help your child review these facts using the flash cards that are sent home or by making a set of flash cards from index cards or scrap paper. Study facts in small groups each night. As your child goes through the flash cards, put the cards in three stacks: Facts I Know Quickly, Facts I Can Figure Out, and Facts I Need to Learn.

For Facts I Need to Learn, work on strategies for figuring them out. Good strategies include:

Skip counting: To solve 5 × 6, skip count: 5, 10, 15, 20, 25, 30

Reasoning from known facts: To solve 5 × 6, I know 5 × 3 = 15 and 15 + 15 = 30, so 5 × 6 = 30. To solve 5 × 8, I know 10 × 8 = 80, so 5 × 8 is half of 80, or 40.

For Facts I Can Figure Out, use the flash cards to practice the facts for fluency.

For Facts I Know Quickly, help your child use mental math strategies to multiply 10s and 100s: $50 \times 30 = 150$, $100 \times 60 = 6000$, $40 \times 40 = 1600$

Grade 3 Math Facts Overview

The goal of the math facts development in *Math Trailblazers* is for students to learn the basic facts efficiently, gain fluency with their use, and retain that fluency over time. A large body of research supports an approach in which students develop strategies for figuring out the facts rather than relying on rote memorization. This not only leads to more effective learning and better retention but also to the development of mental math skills. In fact, too much drill before conceptual understanding may interfere with a child's ability to understand concepts at a later date. Therefore, the teaching of the basic facts in *Math Trailblazers* is characterized by the following elements:

Use of Strategies. Students first approach the basic facts as problems to be solved rather than as facts to be memorized. In all grades, students are encouraged to use strategies to find facts, so they become confident that they can find answers to facts problems that they do not immediately recall. In this way, students learn that math is more than memorizing facts and rules which "you either get or you don't."

Distributed Facts Practice. Students study small groups of facts that can be found using similar strategies. In third grade, they review the multiplication facts to develop mental math strategies and gain fluency. See Figure 2. In Units 3–7, students focus on developing mental math strategies for each multiplication facts group. In Units 8–13, students use flash cards to gain fluency with these strategies.

Unit	Multiplication Facts Group	Focus
3	5s and 10s	Development of mental strategies and number sense
4	2s and 3s	
5	Square Numbers	
6	9s	
7	Last Six Facts	
8	5s and 10s	Use strategies fluently
9	2s and 3s	
10	Square Numbers	
11	9s	
12	Last Six Facts	
13	Last Six Facts	

Figure 2: *Development of Multiplication Facts in Grade 3*

Practice in Context. Students continue to practice the facts as they use them to solve problems, investigate math concepts, and play math games.

Appropriate Assessment. Students are regularly assessed to see if they can find answers to facts problems quickly and accurately and retain this skill over time. They take a short quiz on each group of facts. Students record their progress on *Multiplication Facts I Know* charts and determine which facts they need to study.

A Multiyear Approach. In Grades 1 and 2, the curriculum emphasizes the use of strategies that enable students to develop proficient strategies for the addition and subtraction facts by the end of second grade. In Grade 3, students review the subtraction facts and develop proficiency with the multiplication facts. In Grade 4, the addition and subtraction facts are checked, the multiplication facts are reviewed, and students develop fluency with the division facts. In Grade 5, students review the multiplication and division facts.

Facts Will Not Act as Gatekeepers. Use of strategies and calculators allows students to continue to work on interesting problems and experiments while learning the facts. Lacking quick recall of the facts does not prevent students from learning more complex mathematics.

Thank you for taking time to talk with your child about what he or she is doing in math.

Sincerely,

Unit 8: Home Practice

Part 1 Using Strategies to Subtract

Do these problems in your head. Write only the answers.

A. $16 - 8 =$ _____   **B.** $17 - 8 =$ _____   **C.** $170 - 80 =$ _____

D. $18 - 9 =$ _____   **E.** $18 - 10 =$ _____   **F.** $150 - 70 =$ _____

G. $14 - 7 =$ _____   **H.** $14 - 8 =$ _____   **I.** $120 - 70 =$ _____

J. $14 - 6 =$ _____   **K.** $12 - 5 =$ _____   **L.** $120 - 50 =$ _____

M. $\begin{array}{r} 100 \\ -\ 50 \\ \hline \end{array}$ **N.** $\begin{array}{r} 80 \\ -\ 40 \\ \hline \end{array}$ **O.** $\begin{array}{r} 150 \\ -\ 80 \\ \hline \end{array}$

P. Show or tell how you solved Question O.

Part 2 Triangle Flash Cards: 5s and 10s

Study for the quiz on the multiplication facts for the 5s and 10s. Take home your Triangle Flash Cards: 5s and 10s and the list of facts you need to study.

Ask a family member to choose one flash card at a time. He or she should cover the largest number. Solve a multiplication fact with the two uncovered numbers. Your teacher will tell you when the quiz on the 5s and 10s will be.

Part 3 Play Digits Game: Subtraction

Show your solution to the questions below by putting a digit (1, 2, 3, 4, 5, 6, 7, 8, 9, or 0) in each box. Use each digit once or not at all. Subtract to find the difference.

$$\begin{array}{r} \square\,\square\,\square\,\square \\ -\ \square\,\square\,\square\,\square \\ \hline \end{array}$$

A. Find the largest difference.

B. Find the smallest difference.

C. Find the largest difference if a digit can be used more than once.

D. Find the smallest difference if a digit can be used more than once.

Name _____ Date _____

Part 4 Break Apart Products

1. A. How many squares are in the rectangle?
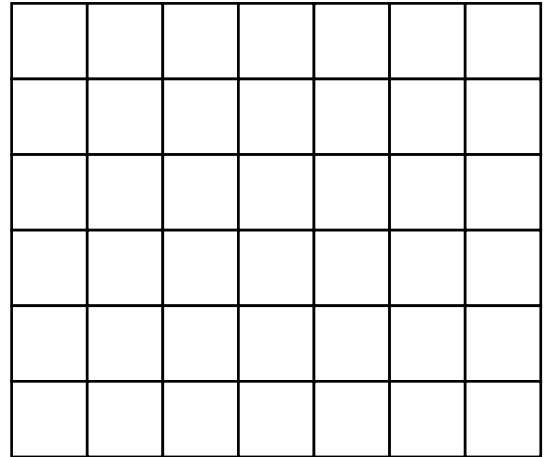
B. Write a number sentence on the rectangle for the total number of squares.

C. Color the first 3 rows of the rectangle red. Write a number sentence on the red rectangle for the total number of red squares.

D. Color the remaining rows of the rectangle blue. Write a number sentence on the blue rectangle for the total number of blue squares.

E. Complete the following number sentences to match the rectangles.

$6 \times 7 = 3 \times$ _____ + _____ $\times 7$

$6 \times 7 =$ _____ + _____

$6 \times 7 =$ _____

2. A. Divide the rectangle into two smaller rectangles. Choose a way that will make it easier for you to find the product of 6×8.
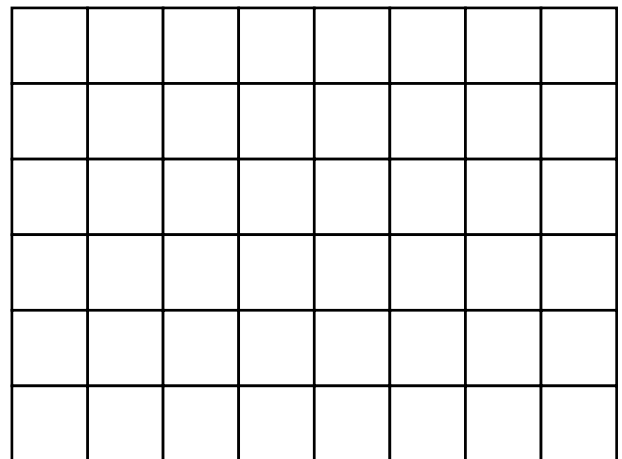
B. Write number sentences to match each of the small rectangles.

C. Use these number sentences to help you find the product of 6×8.

Part 5 Solving Problems with Addition and
            Subtraction

1. **A.** 600 + _____ = 1300   **B.** 400 + 800 = _____

   C. 500 + 900 = _____   **D.** 1000 − _____ = 450

   E. 1000 − _____ = 343

2. Tina's high school graduating class has 321 students. Rita's junior high
   graduating class has 132 students. Sara, who is graduating from
   kindergarten, is in a class of 42 students.

   A. How many more students are in Tina's class than in Rita's?

   B. If all three classes attend the same ceremony, how many students
   would be graduating?

3. Ted read a book for 43 minutes on Saturday and 29 minutes on Sunday.
   A. Did Ted read for more than one hour? Explain how you know.

   B. How long did Ted read?

Part 6 A Trip to Lizardland

Answer each question. Show or tell how you decided.

1. The math club went to Lizardland. Thirty-five students were accompanied by seven adults.

   A. The group is standing in line for the Leaping Lizard roller coaster. There are 8 cars on the roller coaster and each car can hold 4 people. Can the entire group ride the roller coaster at one time?

   B. If 8 people can ride the Lizard-Go-Round at the same time, how many rides will it take for all the students to ride one time?

   C. The group is standing in line for the Bump-a-Lizard bumper cars. Each car holds 2 people. How many bumper cars will the club need for everyone in the group?

2. The Curly-Whirly-Lizard ride fits 3 people per car. There are 15 cars on the ride.

   A. Can the entire group ride at the same time? Explain.

   B. If one adult rode in a car of students, how many cars would not have an adult?

Triangle Flash Cards: 5s

- Work with a partner. Each partner cuts out the flash cards.
- To quiz you on a multiplication fact, your partner covers the shaded number. Multiply the two uncovered numbers.
- Divide the used cards into three piles: Facts I Know Quickly, Facts I Can Figure Out, and Facts I Need to Learn. Place the first pile in an envelope labeled "Facts I Know," and update your *Multiplication Facts I Know* chart.
- Practice the last two piles again. Place these cards in an envelope labeled "Facts to Practice."
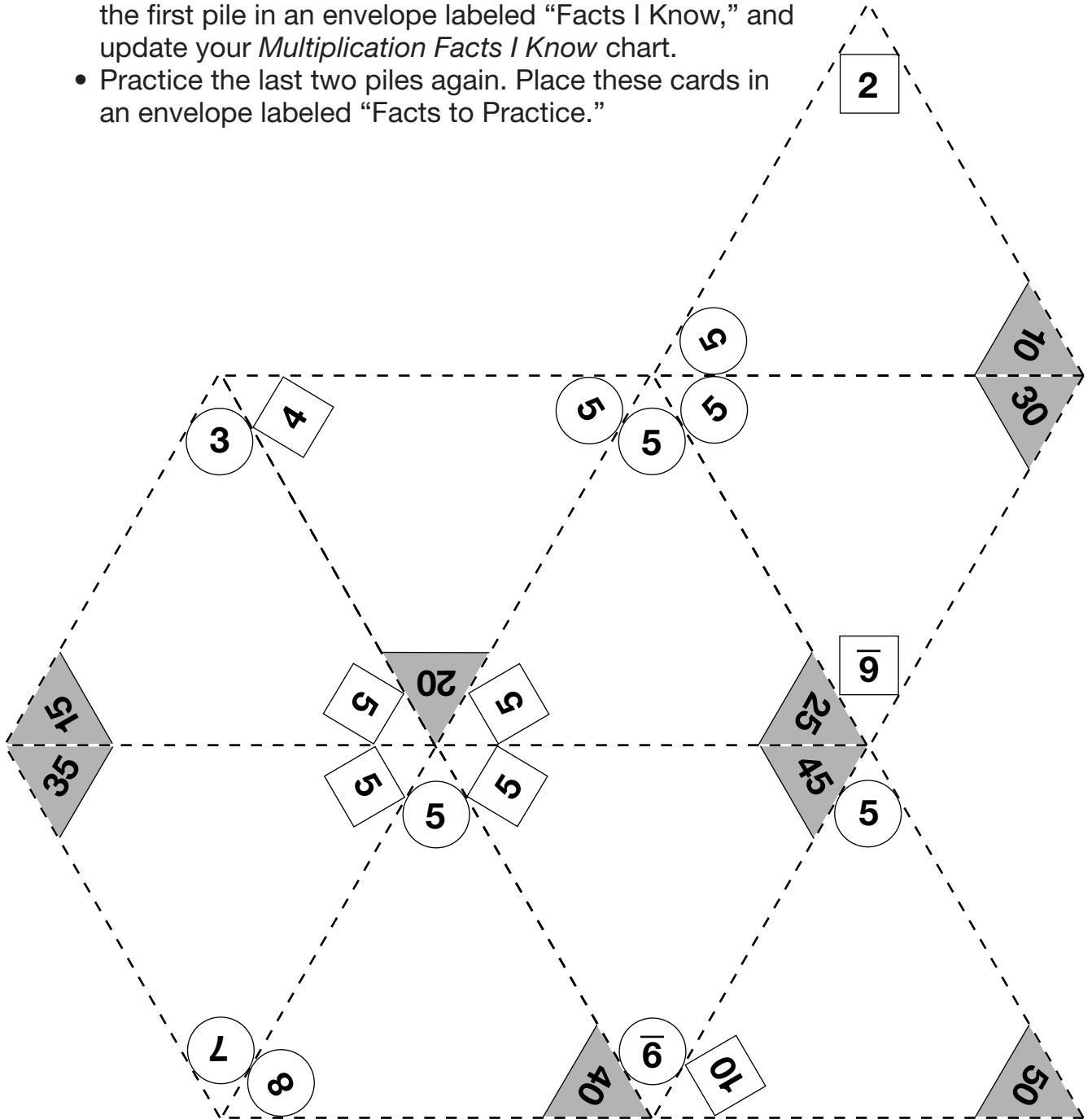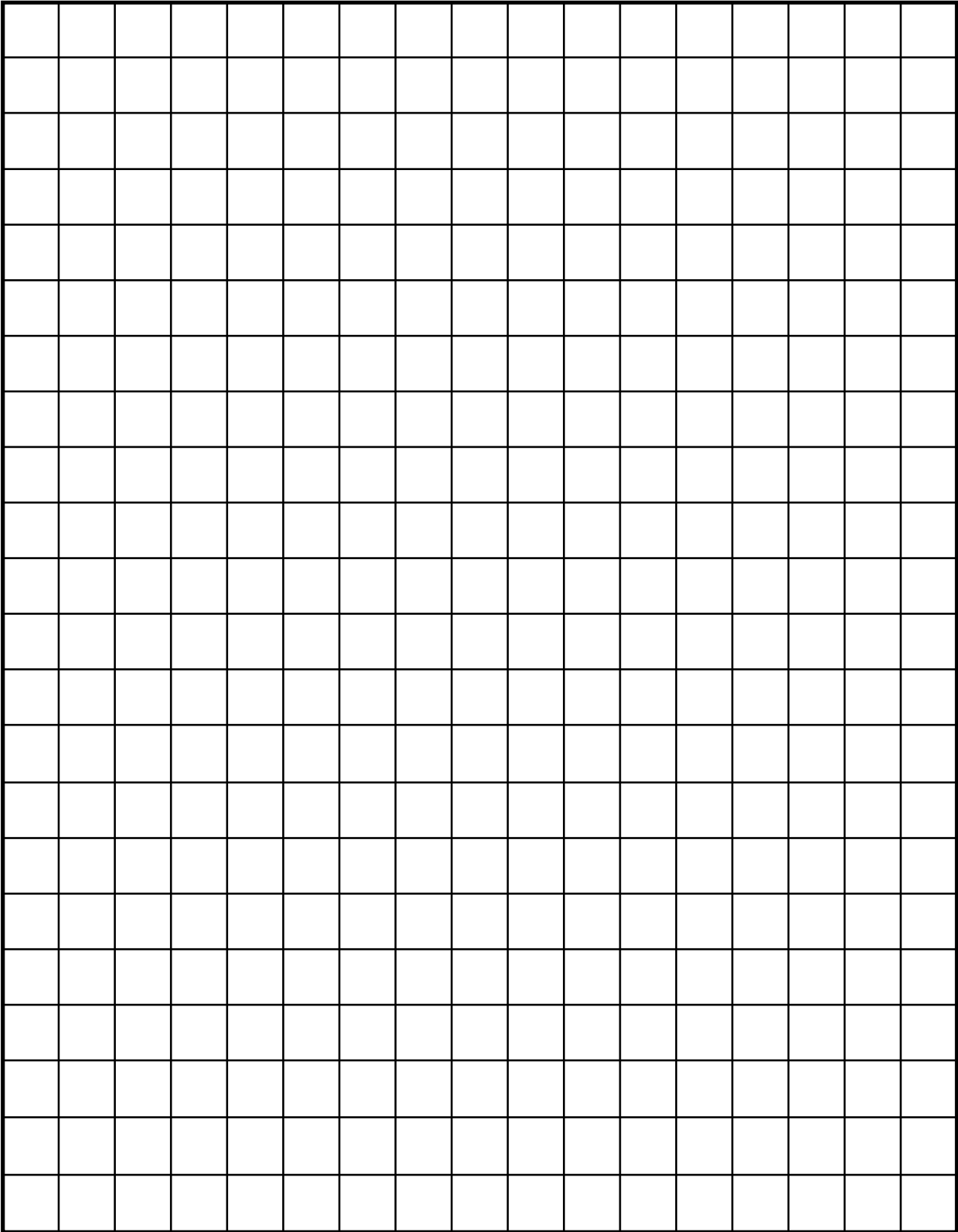
Triangle Flash Cards: 10s

- Work with a partner. Each partner cuts out the flash cards.
- To quiz you on a multiplication fact, your partner covers the shaded number. Multiply the two uncovered numbers.
- Divide the used cards into three piles: Facts I Know Quickly, Facts I Can Figure Out, and Facts I Need to Learn. Place the first pile in an envelope labeled "Facts I Know," and update your *Multiplication Facts I Know* chart.
- Practice the last two piles again. Place these cards in an envelope labeled "Facts to Practice."

Name _____   Date _____
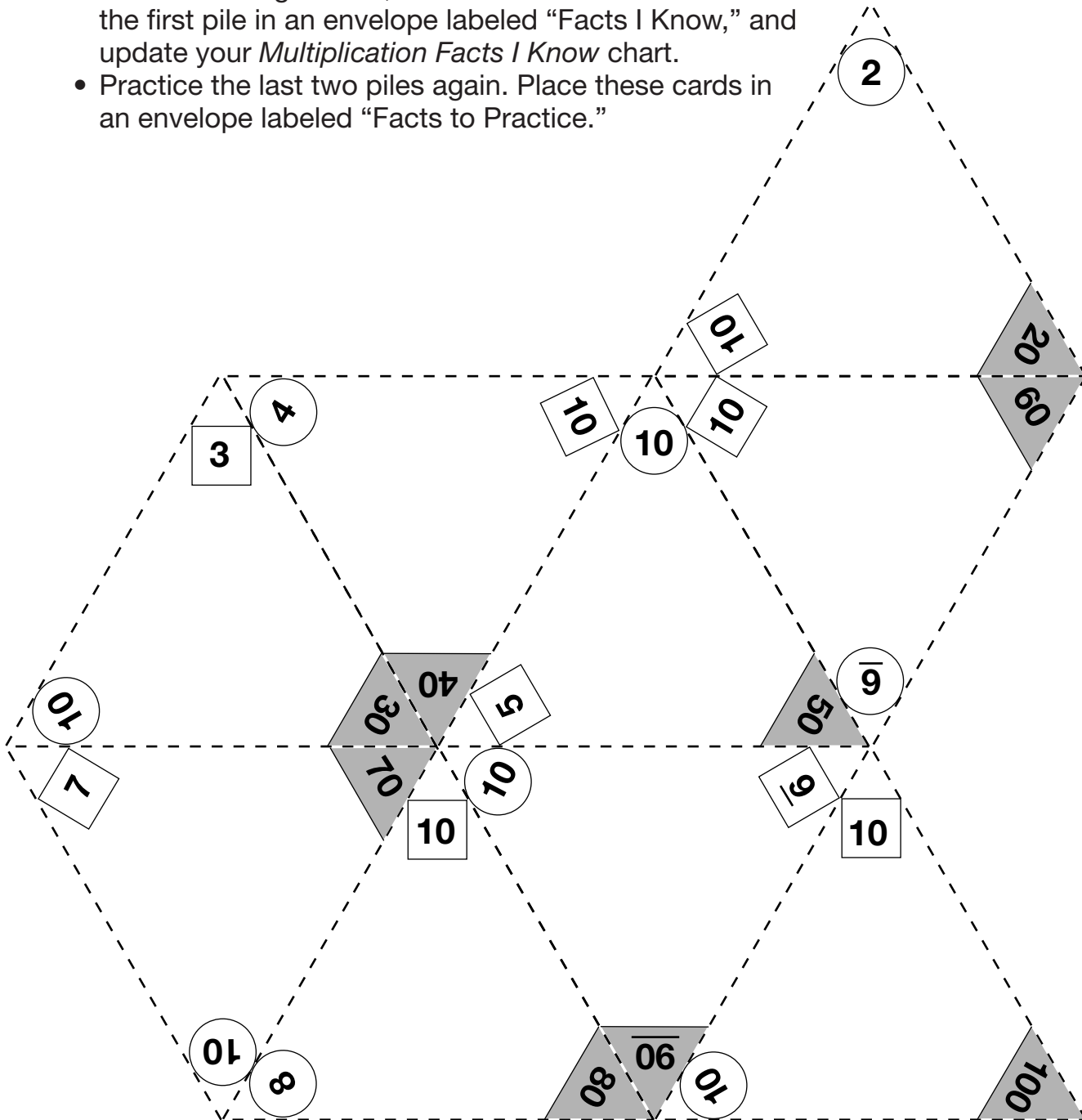
Subtraction Facts I Know

Circle the subtraction facts you know and can answer quickly. Underline the facts you can figure out using a strategy. Do nothing to the facts you still need to learn.

	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**
2	4 − 2 = 2	5 − 2 = 3	6 − 2 = 4	7 − 2 = 5	8 − 2 = 6	9 − 2 = 7	10 − 2 = 8	11 − 2 = 9
3	5 − 3 = 2	6 − 3 = 3	7 − 3 = 4	8 − 3 = 5	9 − 3 = 6	10 − 3 = 7	11 − 3 = 8	12 − 3 = 9
4	6 − 4 = 2	7 − 4 = 3	8 − 4 = 4	9 − 4 = 5	10 − 4 = 6	11 − 4 = 7	12 − 4 = 8	13 − 4 = 9
5	7 − 5 = 2	8 − 5 = 3	9 − 5 = 4	10 − 5 = 5	11 − 5 = 6	12 − 5 = 7	13 − 5 = 8	14 − 5 = 9
6	8 − 6 = 2	9 − 6 = 3	10 − 6 = 4	11 − 6 = 5	12 − 6 = 6	13 − 6 = 7	14 − 6 = 8	15 − 6 = 9
7	9 − 7 = 2	10 − 7 = 3	11 − 7 = 4	12 − 7 = 5	13 − 7 = 6	14 − 7 = 7	15 − 7 = 8	16 − 7 = 9
8	10 − 8 = 2	11 − 8 = 3	12 − 8 = 4	13 − 8 = 5	14 − 8 = 6	15 − 8 = 7	16 − 8 = 8	17 − 8 = 9
9	11 − 9 = 2	12 − 9 = 3	13 − 9 = 4	14 − 9 = 5	15 − 9 = 6	16 − 9 = 7	17 − 9 = 8	18 − 9 = 9
10	12 − 10 = 2	13 − 10 = 3	14 − 10 = 4	15 − 10 = 5	16 − 10 = 6	17 − 10 = 7	18 − 10 = 8	19 − 10 = 9

Name _____ Date _____

Name _____ Date _____

Floor Tiler Grid Paper

Master

Multiplication Table

×	0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10
2	0	2	4	6	8	10	12	14	16	18	20
3	0	3	6	9	12	15	18	21	24	27	30
4	0	4	8	12	16	20	24	28	32	36	40
5	0	5	10	15	20	25	30	35	40	45	50
6	0	6	12	18	24	30	36	42	48	54	60
7	0	7	14	21	28	35	42	49	56	63	70
8	0	8	16	24	32	40	48	56	64	72	80
9	0	9	18	27	36	45	54	63	72	81	90
10	0	10	20	30	40	50	60	70	80	90	100

Small Multiplication Tables

×	0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10
2	0	2	4	6	8	10	12	14	16	18	20
3	0	3	6	9	12	15	18	21	24	27	30
4	0	4	8	12	16	20	24	28	32	36	40
5	0	5	10	15	20	25	30	35	40	45	50
6	0	6	12	18	24	30	36	42	48	54	60
7	0	7	14	21	28	35	42	49	56	63	70
8	0	8	16	24	32	40	48	56	64	72	80
9	0	9	18	27	36	45	54	63	72	81	90
10	0	10	20	30	40	50	60	70	80	90	100

×	0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10
2	0	2	4	6	8	10	12	14	16	18	20
3	0	3	6	9	12	15	18	21	24	27	30
4	0	4	8	12	16	20	24	28	32	36	40
5	0	5	10	15	20	25	30	35	40	45	50
6	0	6	12	18	24	30	36	42	48	54	60
7	0	7	14	21	28	35	42	49	56	63	70
8	0	8	16	24	32	40	48	56	64	72	80
9	0	9	18	27	36	45	54	63	72	81	90
10	0	10	20	30	40	50	60	70	80	90	100

×	0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10
2	0	2	4	6	8	10	12	14	16	18	20
3	0	3	6	9	12	15	18	21	24	27	30
4	0	4	8	12	16	20	24	28	32	36	40
5	0	5	10	15	20	25	30	35	40	45	50
6	0	6	12	18	24	30	36	42	48	54	60
7	0	7	14	21	28	35	42	49	56	63	70
8	0	8	16	24	32	40	48	56	64	72	80
9	0	9	18	27	36	45	54	63	72	81	90
10	0	10	20	30	40	50	60	70	80	90	100

×	0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10
2	0	2	4	6	8	10	12	14	16	18	20
3	0	3	6	9	12	15	18	21	24	27	30
4	0	4	8	12	16	20	24	28	32	36	40
5	0	5	10	15	20	25	30	35	40	45	50
6	0	6	12	18	24	30	36	42	48	54	60
7	0	7	14	21	28	35	42	49	56	63	70
8	0	8	16	24	32	40	48	56	64	72	80
9	0	9	18	27	36	45	54	63	72	81	90
10	0	10	20	30	40	50	60	70	80	90	100

Completing the Table
Homework Section
Check-In: Questions 25–27
Feedback Box

|	Expec-tation	Check In	Comments
Represent multiplication problems with drawings and number sentences.	**E1**		
Use strategies to solve multiplication problems.	**E2**		
Identify and use patterns to solve the multiplication facts for the 2s, 3s, 5s, 10s, 9s, and square numbers.	**E5**		

Name _____   Date _____

Division in Lizardland Check-In: Question 7 Feedback Box

	Expect-ation	Check In	Comments
Represent division problems with number sentences and drawings.	E1		
Use appropriate and efficient strategies to solve division problems.	E2		

	Yes . . .	Yes, but . . .	No, but . . .	No. . .
MPE1. Know the problem. I read the problem carefully. I know the questions to answer and what information is important.				
MPE2. Find a strategy. I choose good tools and an efficient strategy for solving the problem.				
MPE5. Show my work. I show or tell how I arrived at my answer so someone else can understand my thinking.				
MPE6. Use labels. I use labels to show what numbers mean.				

Large Triangle Flash Card
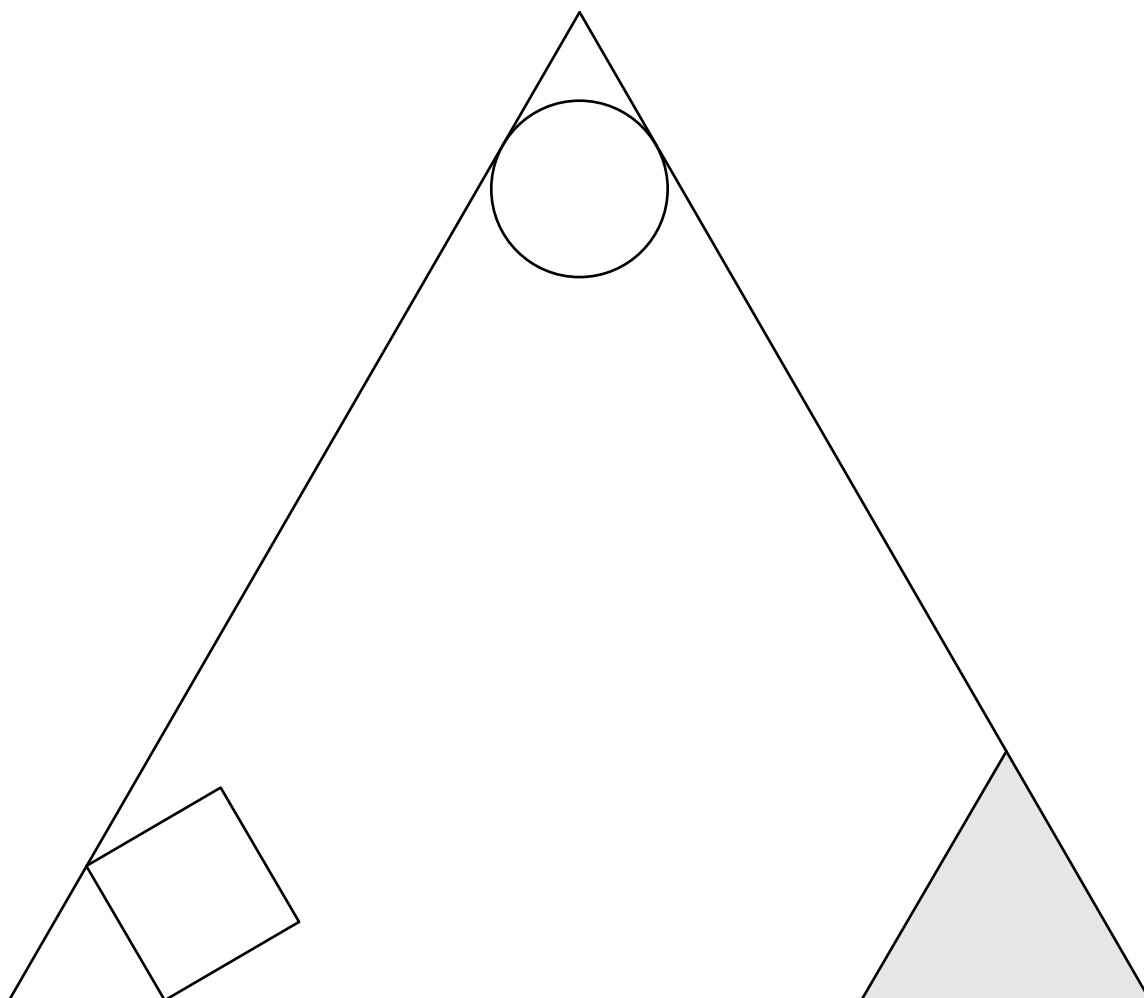
Armando and Cathy's Work

$3\frac{1}{2}$ of my pieces of paper go on the board. 12 on each piece. $3 \times 12 =$ $36 + \frac{1}{2}$ (of 12) $= 42$

I took the bag and put it on the board and moved it across and the answer is 42.

Adam and Ann's Work

we took our stencils and went aroce the black borc with the stencil and we came up with $47\frac{1}{2}$.

Mary and Manuel's Work

"We mesured the blackboard with yardsticks We figured out that
3 X 39 + 25 = 142 and then we figured out 142 ÷ 5 = 27 R2."

We figured ^{We} out that 3×39+25=142 and then we figured ou
We mesured the blackboard with yardsticks
142÷5=27 R2.

Janet and Jerry's Work

First, I measured one side vertically, which is 73¼ in. Then, I multiplied it by 2, which is 146½ in. I measured another side horizontally, which was 99½ in. Then I multiplied by 2, which was 208½ in. Finally, I added 208½ in and 146½ in, and got 355 in. Lastly I divided 355 in by 3 in, and got 115 stencils, I used my calculator.

First, I measured one side vertically, which is $73\frac{1}{4}$ inches. Then, I multiplied it by 2, which is $146\frac{1}{2}$ inches. Next, I measured another side horizontally, which was $99\frac{1}{2}$ inches. I multiplied it by 2, which was $208\frac{1}{2}$ inches. I added $208\frac{1}{2}$ inches and $146\frac{1}{2}$ inches and got 355 inches. Lastly, I divided 355 inches by 3 inches, and got 115 stencils. I used my calculator.
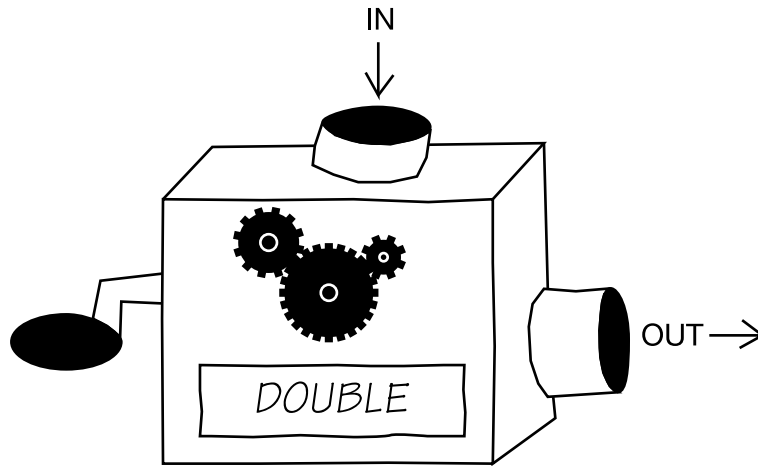
Stencilrama Lab
Check-In: Question 12
Feedback Box

	Yes . . .	Yes, but . . .	No, but . . .	No . . .
MPE2. Find a strategy. I choose good tools and an efficient strategy for solving the problem.				
MPE3. Check for reasonableness. I look back at my solution to see if my answer makes sense. If it does not, I try again.				
MPE5. Show my work. I show or tell how I arrived at my answer so someone else can understand my thinking.				
MPE6. Use labels. I use labels to show what numbers mean.				

Doubling Function Machine

IN

DOUBLE

OUT →

Rule: Double the Number

Input	Output	Number Sentence
4		
7		
	10	
	2	
	20	

Midyear Test

Part 1

Solve the following problems. You may use base-ten pieces, number lines, and the *Addition Strategies Menu* and *Subtraction Strategies Menu* in the Reference section of the *Student Guide*. Estimate to be sure your answer is reasonable.

1. In an average year it rains 51 days in El Paso, Texas, and 139 days in Columbus, Ohio. How many more days does it rain in Columbus than in El Paso? Show or tell how you found your answer.

2. A computer costs $1166 and a printer costs $849. What is the total cost of the computer and printer? Show or tell how you found your answer.

3.   2436
      +6579
      ————

4.   4321
      −1789
      ————

5.   502
      −198
      ————

6. Show the estimation strategy you used to check if your answer to Question 3 is reasonable.
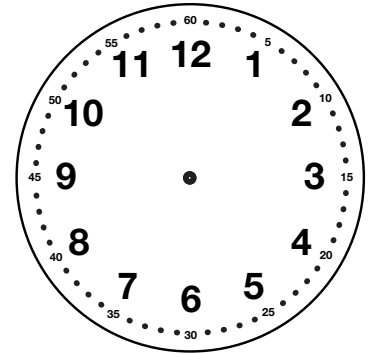
7. Use addition to check your answer for Question 4.

8. Show or tell how to solve Question 5 using mental math.

Part 2

Solve the following problems. You may use a ruler, number line, base-ten pieces, counters, or an individual clock.

9. **A.** Draw the time 1:35 on the clock.

   B. Write what time it will be 40 minutes later.

   _____

10. 6 × 4 = ? Write a story and draw a picture about 6 × 4. Write a complete number sentence on your picture.

11. The largest hammerhead shark ever caught weighed 1280 pounds. The largest swordfish ever caught weighed 1182 pounds. The largest greenland shark ever caught weighed 1936 pounds. Put these numbers in order from smallest to largest.
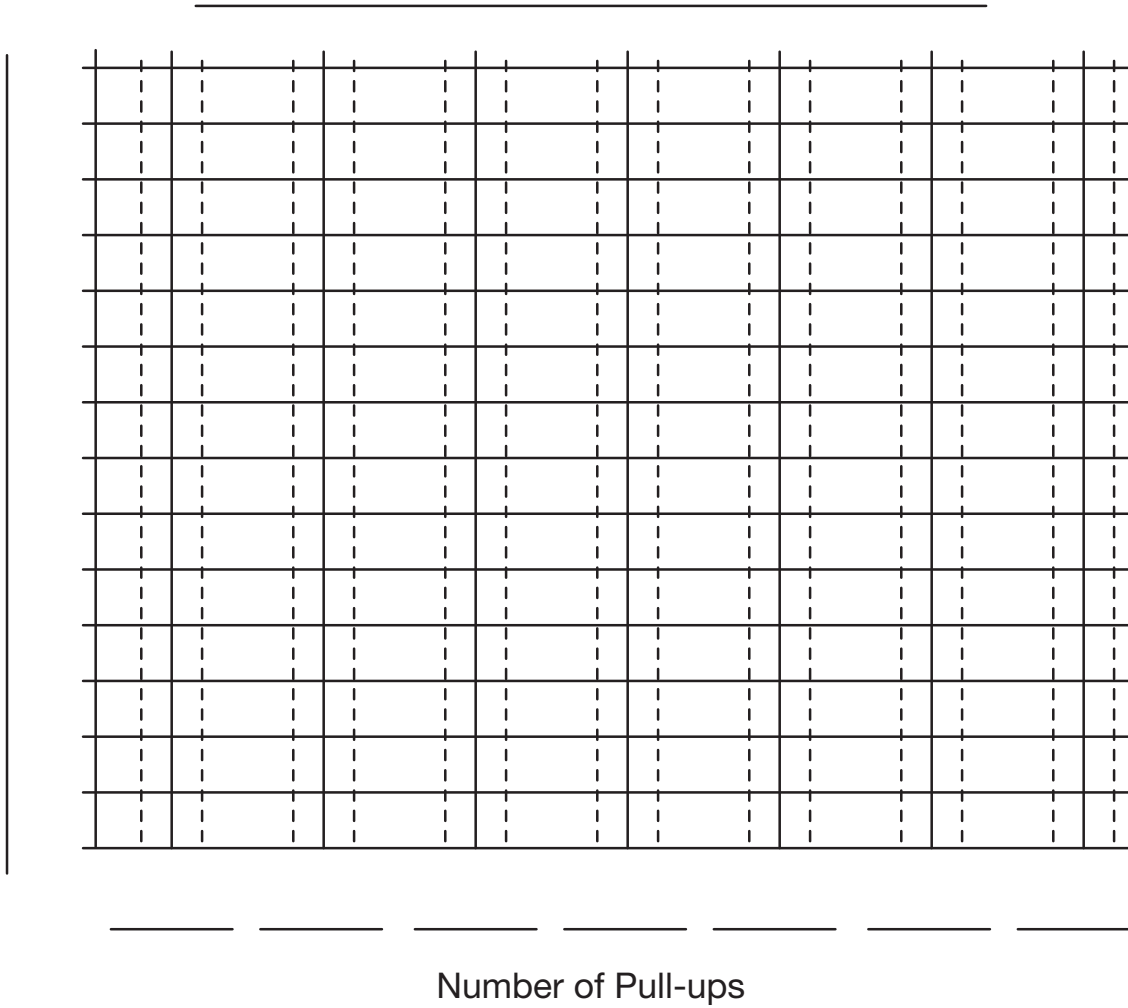
   _____ _____ _____
   smallest   largest

12. A. All the students in Kim's gym class tried to do pull-ups. Here is the data table that shows how many they did. Make a bar graph of the data on the graph below.
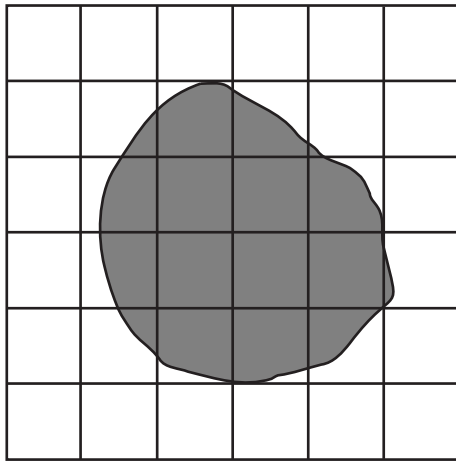
Pull-ups in Gym

Number of Pull-ups	Number of Students
0	10
1	3
2	3
3	4
4	2
5	0
6	1

_____

Number of Pull-ups

_____

Use your data table or graph.

B. How many students completed 3 pull-ups? _____

C. How many pull-ups were completed by 4 students? _____

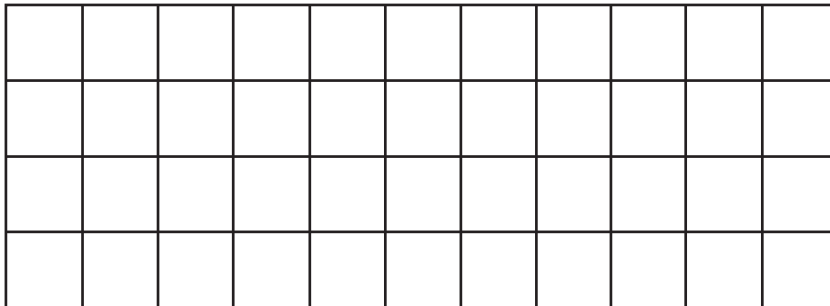**D.** What was the most common number of pull-ups that students were able to do?

13. A. Find the area inside the following shape.
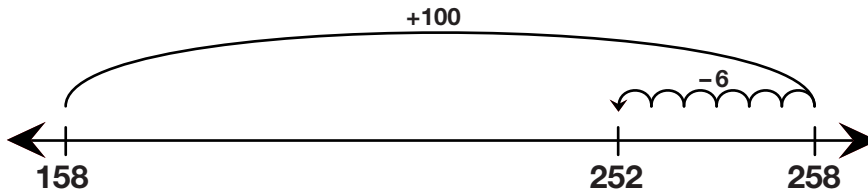
Area: _____

1 sq cm

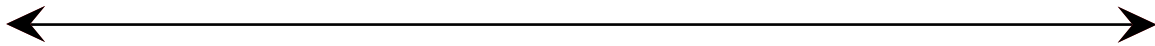**B.** Draw a different shape with the same area.

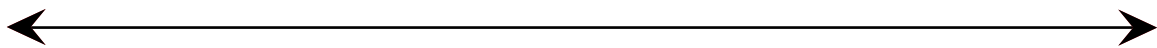Area: _____

14. A. Solve 158 + 94.

B. Jason solved the same problem. Do you agree with his answer? Tell why or why not.

C. Use Jason's method to solve 56 + 97.

15. A. A +5 constant hopper starts at 0 and makes 4 hops. Show the hops on the number line. On what number will it land?

B. Write a number sentence for Question 15A.

———————————————————————————————————

16. A. Rosa is selling candy for her soccer team. Fill in the missing information in the table and then use it to answer the questions.

Cost of Candy Boxes

Number of Boxes	Cost in Dollars
1	$2.50
2	$5.00
3	
	$10.00
5	
6	
7	
	$20.00
	$22.50
10	$25.00

B. How much do four boxes of candy cost?

C. How much do seven boxes of candy cost?

D. Show or tell how you found your answer for Question C.

E. Find how much 20 boxes of candy cost. Show or tell how you solved the problem.

17. Maya and Eric used base-ten pieces to show the Chocos they packaged at the TIMS Candy Company.
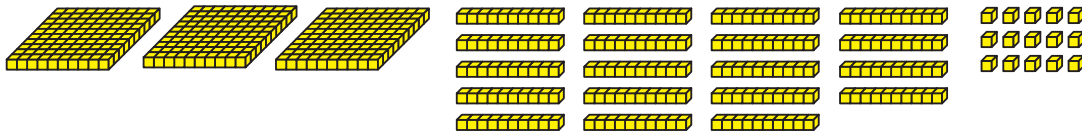
A. How many Chocos did they package? Write a number sentence to match the pieces.

B. Did Maya and Eric use the Fewest Pieces Rule? If not, use base-ten shorthand to show the fewest pieces.

C. Write a number sentence to match the fewest pieces.

Name _____   Date _____

MidYear Test Feedback Box	Yes . . .	Yes, but . . .	No, but . . .	No. . .
MPE1. Know the problem. I read the problem carefully. I know the questions to answer and what information is important. [Q# 1, 2]				
MPE2. Find a strategy. I choose good tools and an efficient strategy for solving the problem. [Q# 1, 2]				
MPE3. Check for reasonable- ness. I look back at my solution to see if my answer makes sense. If it does not, I try again. [Q# 1, 2]				
MPE4. Check my calculations. If I make mistakes, I correct them. [Q# 7]				
MPE5. Show my work. I show or tell how I arrived at my answer so someone else can understand my thinking. [Q# 1, 2, 6–8]				
MPE6. Use labels. I use labels to show what numbers mean. [Q# 1, 2, 10, 12]				