Name _____ Date _____

Midterm Test

Part 1

Solve each problem without a calculator. Use the *Additions Strategies Menu*, *Subtraction Strategies Menu*, and the *Multidigit Multiplication Strategies Menu* in the *Student Guide* Reference section.

1. Solve the followings problems using two different methods.

First Method	Second Method
A. 6010 − 5971 =	
B. 3694 + 8539 =	
C. 626 × 7 =	
D. 74 × 47 =	

E. Show or tell how you can use estimation to make sure your answer to Question 1D is reasonable.

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***Teacher Guide* - Page 1**

Name _____ Date _____

2. Jacob and Frank needed to solve 65 × 34.

A. Jacob started the problem this way. Finish it using his method.

$$\begin{array}{r} 65 \\ \times\ 34 \\ \hline 1800 \\ 240 \end{array}$$

B. Show where Jacob got 1800 and 240.

C. Frank started to use a rectangle to solve the same problem. Complete his strategy by filling in the blanks.

	60	5
____	____ × 60 = ____	____ × ____ = ____
4	____ × ____ = ____	4 × ____ = ____

D. Compare Frank's and Jacob's methods. How are they alike? How are they different?

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***Teacher Guide* - Page 2**

Teacher Guide

Mid-Year Test (TG pp. 1–11)
Questions 1–15

I. Strategies may vary. Students must show the exact method. Two possible strategies are shown for each.

A.

$5971 + \mathbf{9} = 5980$
$5980 + \mathbf{20} = 6000$
$6000 + \mathbf{10} - 6010$
$9 + 20 + 10 = 39$

$6010 - \mathbf{10} = 6000$
$6000 - \mathbf{20} = 5980$
$5980 - \mathbf{9} - 5971$
$10 + 20 + 9 = 39$

B.

$$\begin{array}{r} {\scriptstyle 1\ 1} \\ 3694 \\ +\ 8593 \\ \hline 12{,}287 \end{array}$$

$$\begin{array}{r} 3000 + \ 600 + \ 90 + 4 \\ +\ 8000 + \ 500 + \ 90 + 3 \\ \hline 11{,}000 + 1{,}100 + 180 + 7 = 12{,}287 \end{array}$$

C.

$$\begin{array}{r} 626 \\ \times\ \ 7 \\ \hline 4200 \\ 140 \\ \ \ 42 \\ \hline 4382 \end{array}$$

$$\begin{array}{r} {\scriptstyle 1\ 4} \\ 626 \\ \times\ \ 7 \\ \hline 4382 \end{array}$$

D.

	70	4
40	40 × 70 = 2800	40 × 4 = 160
7	70 × 7 = 490	7 × 4 = 28

$$\begin{array}{r} 74 \\ \times\ 47 \\ \hline 518 \\ 2960 \\ \hline 3478 \end{array}$$

$2800 + 160 + 490 + 28 = 3478$

E. I rounded 74 to 70 and 47 to 50 and then multiplied 70 × 50 = 3500. Since 3500 is close to 3478, I know my answer is reasonable.

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2. A.

$$\begin{array}{r} 65 \\ \times\ 34 \\ \hline 1800 \\ 240 \\ 150 \\ 20 \\ \hline 2210 \end{array}$$

B. The 1800 came from multiplying $30 \times 60 = 1800$; the 240 is from multiplying $4 \times 60 = 240$.

C.

	60	5
30	$30 \times 60 = 1800$	$30 \times 5 = 150$
4	$4 \times 60 = 240$	$4 \times 5 = 20$

$1800 + 240 + 150 + 20 = 2210$

D. In both methods you break apart the numbers and multiply to find partial products. In the rectangle method you show the problem using the area model to help you see where each number comes from.

3. A. 1802

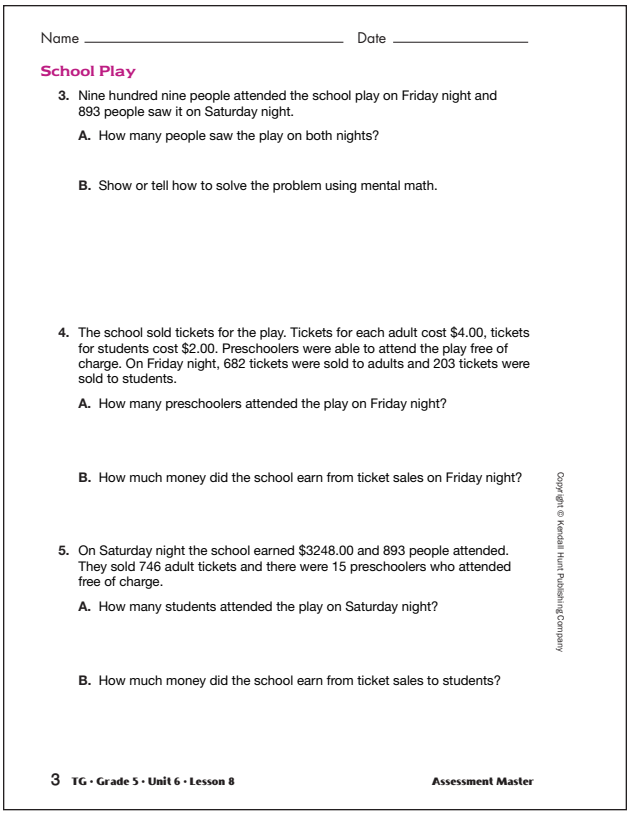
B. $893 + 7 = 900$
$900 + 909 = 1809$
$1809 - 7 = 1802$

4. A. 24 preschoolers

B. $3134.00

5. A. 132 students

B. $264.00



Name _____ Date _____

School Play

3. Nine hundred nine people attended the school play on Friday night and 893 people saw it on Saturday night.

A. How many people saw the play on both nights?

B. Show or tell how to solve the problem using mental math.

4. The school sold tickets for the play. Tickets for each adult cost $4.00, tickets for students cost $2.00. Preschoolers were able to attend the play free of charge. On Friday night, 682 tickets were sold to adults and 203 tickets were sold to students.

A. How many preschoolers attended the play on Friday night?

B. How much money did the school earn from ticket sales on Friday night?

5. On Saturday night the school earned $3248.00 and 893 people attended. They sold 746 adult tickets and there were 15 preschoolers who attended free of charge.

A. How many students attended the play on Saturday night?

B. How much money did the school earn from ticket sales to students?

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3 TG • Grade 5 • Unit 6 • Lesson 8 Assessment Master

***Teacher Guide* - Page 3**

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Name _____ Date _____

Part 2

You may use any of the tools you use in class. For example, you may use a ruler, calculator, fraction circle pieces, and pages in the *Student Guide* Reference section.

6. Mrs. Wells's classroom collected data on the number of buttons on their clothing. Show or tell how to find the median number of buttons in each group.

A. In one group Jerome had 4, Grace had 0, and Ana has 3 buttons.

B. In a group with six students, the number of buttons for each student was 7, 2, 5, 4, 2, and 0 buttons.

7. Here are the data for Mrs. Wells's whole class.

Number of Buttons

B Buttons	*N* Number of Students	
	Tallies	Total
0	𝍸 ||||	9
1	𝍸	5
2	|||	3
3	|||	3
4	|	1
5	||	2
6		0
7	|	1
8		0
9	|||	3

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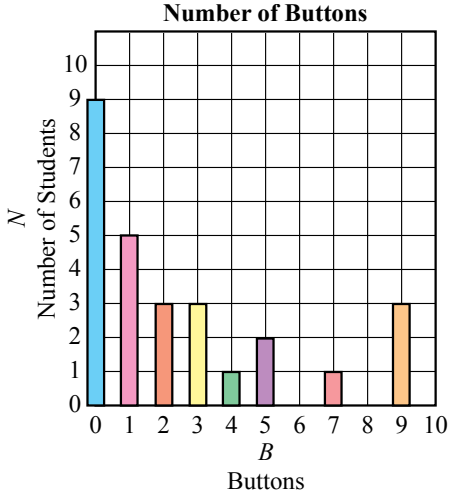
Assessment Master TG • Grade 5 • Unit 6 • Lesson 8 4

***Teacher Guide* - Page 4**

6. A. 0, 3, 4; 3 is the median number

B. 2, 2, 4, 5, 7; 3 is the median number because it is between 2 and 4

7. A.



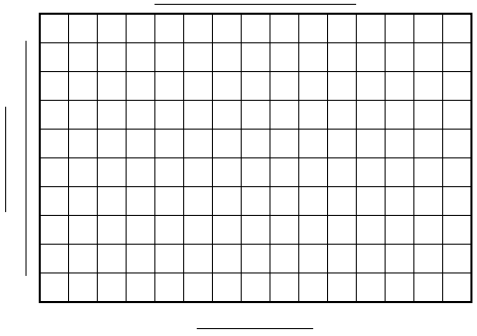
B. 27 students

C. zero buttons

D. Answers may vary. The total number of buttons each child is wearing may go up, heightening the bars moving to the right.

Name _____ Date _____

A. Make a graph of the data.



B. How many students were in Mrs. Wells's room when the data were gathered?

_____

C. What was the most common number (mode) of buttons on this day?

_____

D. Mrs. Wells's class collected the data again on the same day after they put on their coats for recess. Mrs. Wells noticed that most students had buttons on their coats. Predict how you think the new graph will look. Where will the tallest bars be? Will the bars be taller or shorter than the first graph? Explain your thinking.

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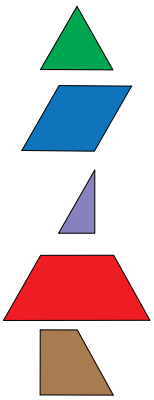
5 TG • Grade 5 • Unit 6 • Lesson 8 Assessment Master

***Teacher Guide* - Page 5**

Name _____ Date _____

The TIMS Candy Company is selling boxes of candy. The candy is boxed in triangular-shaped boxes. Each flavor of candy is in a different shape.



The Chocolate Mint candy is a large triangle.

The Blueberry Crème is a rhombus and is twice as big as the Chocolate Mint.

The Raspberry Crème is a right triangle and is half as big as the Chocolate Mint.

The Nut Cluster is the largest candy in the box. It is a trapezoid and is three times as large as the Chocolate Mint.

The Cherry Crème is a rhombus that is equal in size to the Chocolate Mint plus the Raspberry Crème.

The cost for each piece of candy is based on its size. The Chocolate Mint costs $1.00, so the Blueberry Crème is $2.00.

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Assessment Master TG • Grade 5 • Unit 6 • Lesson 8 6

***Teacher Guide* - Page 6**

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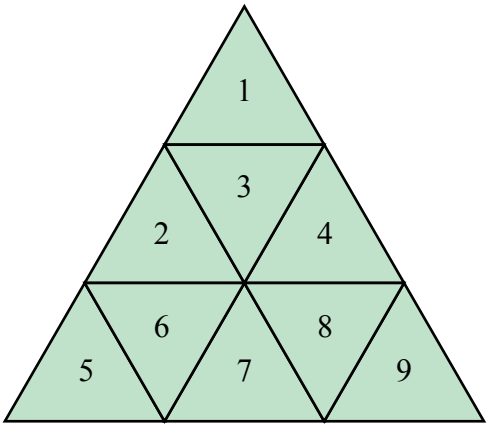
8. A. $9.00

B. It is $\frac{1}{3}$ of the box. If you divide each of the shapes into large triangles it will be divided into 9 equal parts. The Nut Cluster is equal to 3 large triangles of $\frac{3}{9}$ of the box. $\frac{3}{9} = \frac{1}{3}$.

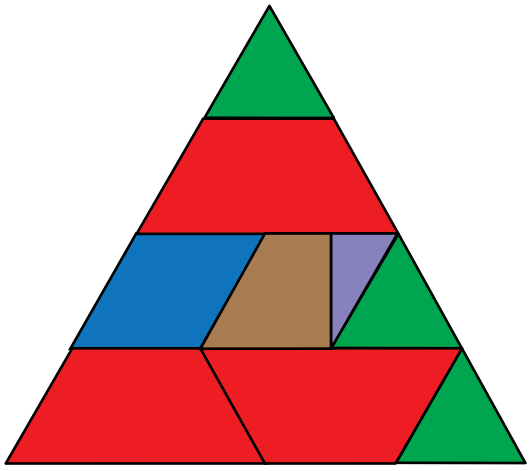


9. A. $\frac{\text{2 Nut Clusters}}{\text{5 Total Pieces of Candy}}$

B. $\frac{\text{3 Chocolate Mints}}{\text{2 Nut Clusters}}$

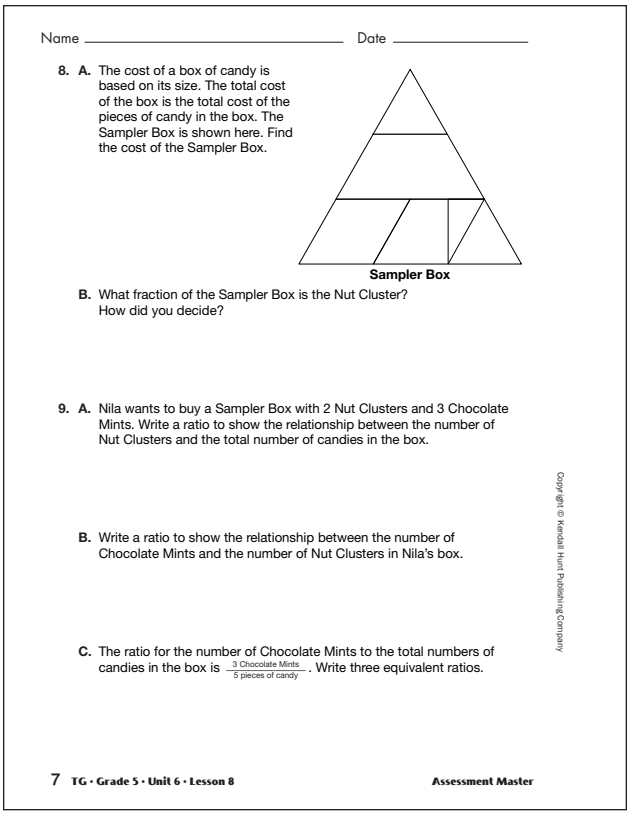
C. $\frac{\text{6 Chocolate Mints}}{\text{10 Pieces of Candy}}$; $\frac{\text{9 Chocolate Mints}}{\text{15 Pieces of Candy}}$; $\frac{\text{12 Chocolate Mints}}{\text{20 Pieces of Candy}}$

10. A. Answer may vary. One Possible response:



B. Row 1 = $1.00; Row 2 = $3.00; Row 3 = $5.00; Row 4 = $7.00

C. $1.00 + $3.00 + $2.00 + $1.50 + $ .50 + $1.00 + $3.00 + $3.00 + 1.00 = $16.00



Name _____ Date _____

8. A. The cost of a box of candy is based on its size. The total cost of the box is the total cost of the pieces of candy in the box. The Sampler Box is shown here. Find the cost of the Sampler Box.

Sampler Box

B. What fraction of the Sampler Box is the Nut Cluster? How did you decide?

9. A. Nila wants to buy a Sampler Box with 2 Nut Clusters and 3 Chocolate Mints. Write a ratio to show the relationship between the number of Nut Clusters and the total number of candies in the box.

B. Write a ratio to show the relationship between the number of Chocolate Mints and the number of Nut Clusters in Nila's box.

C. The ratio for the number of Chocolate Mints to the total numbers of candies in the box is $\frac{\text{3 Chocolate Mints}}{\text{5 pieces of candy}}$. Write three equivalent ratios.

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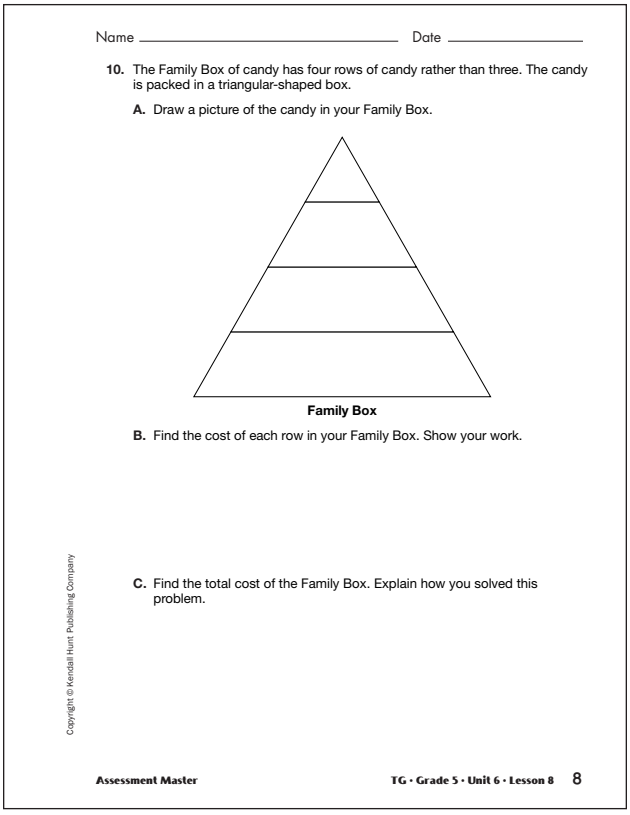
7 TG • Grade 5 • Unit 6 • Lesson 8 Assessment Master

***Teacher Guide* - Page 7**



Name _____ Date _____

10. The Family Box of candy has four rows of candy rather than three. The candy is packed in a triangular-shaped box.

A. Draw a picture of the candy in your Family Box.

Family Box

B. Find the cost of each row in your Family Box. Show your work.

C. Find the total cost of the Family Box. Explain how you solved this problem.

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Assessment Master TG • Grade 5 • Unit 6 • Lesson 8 8

***Teacher Guide* - Page 8**

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Name _____ Date _____

11. Complete the number sentences:

A. $\frac{2}{3} = \frac{?}{18}$ **B.** $\frac{7}{8} = \frac{?}{24}$ **C.** $\frac{2}{6} = \frac{7}{?}$

12. Solve each problem:

A. $\frac{7}{8} - \frac{1}{2} =$ **B.** $\frac{3}{4} + \frac{1}{12} =$

C. $1 - \frac{3}{5} =$ **D.** $1\frac{5}{6} - \frac{2}{3} =$

E. Show or tell how you solved Question 12D.

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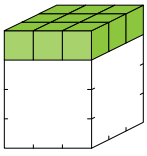
***Teacher Guide* - Page 9**

Name _____ Date _____

13. A. Lee Yah found a bunch of centimeter cubes. She stacked the cubes to make a rectangular prism. What is the volume of her shape?



B. Show or tell how you found your answer.

14. Lee Yah has 42 square centimeter cubes. She wants to build a rectangular prism using all the cubes. Sketch at least two different rectangular prisms Lee Yah could make. Label the length, width and height in each of your drawings.

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***Teacher Guide* - Page 10**

11. A. $\frac{12}{18}$

B. $\frac{21}{24}$

C. $\frac{7}{21}$

12. A. $\frac{3}{8}$ **B.** $\frac{10}{12}$ or $\frac{5}{6}$

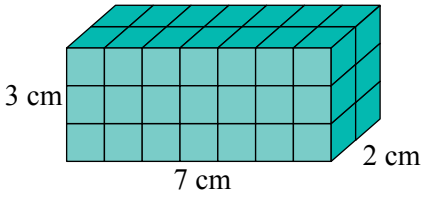
C. $\frac{2}{5}$ **D.** $1\frac{1}{6}$

E. I changed the $\frac{2}{3}$ to $\frac{4}{6}$ and then subtracted $1\frac{5}{6} - \frac{4}{6} = 1\frac{1}{6}$

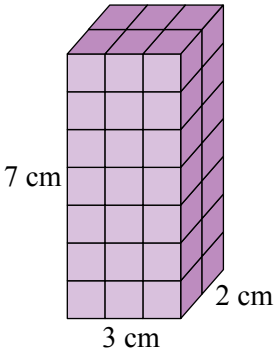
13. A. 36 cubic centimeters

B. 4 cm × 3 cm × 3 cm = 36 cubic centimeters

14.



3 cm × 7 cm × 2 cm
21 sq cm × 2 cm = 42 cu cm



3 cm × 2 cm × 7 cm
6 sq cm × 7 cm = 42 cu cm

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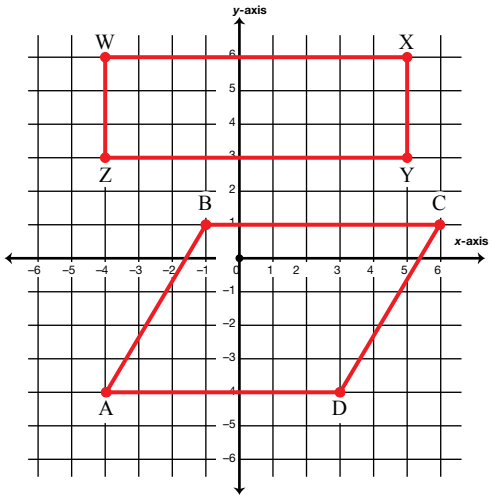
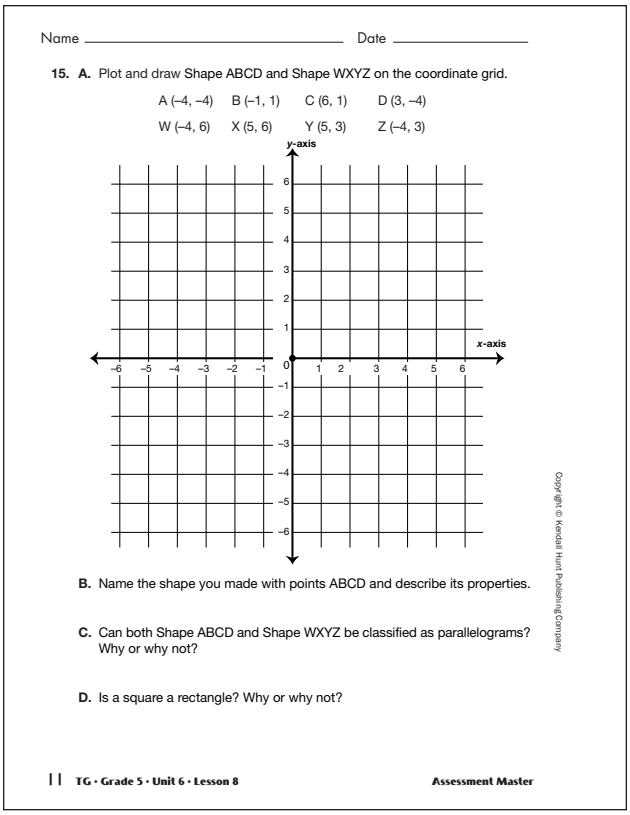
15. A.



B. The shape is a parallelogram. It has 4 sides, opposite sides are equal in length and are parallel.

C. Yes, both shapes are parallelograms because both shapes have two pairs of parallel sides.

D. Yes, a square is a rectangle. A rectangle has 4 right angles and a square has 4 right angles, so it is a rectangle.



Name _____ Date _____

15. A. Plot and draw Shape ABCD and Shape WXYZ on the coordinate grid.

A (–4, –4) B (–1, 1) C (6, 1) D (3, –4)

W (–4, 6) X (5, 6) Y (5, 3) Z (–4, 3)

y-axis

x-axis

B. Name the shape you made with points ABCD and describe its properties.

C. Can both Shape ABCD and Shape WXYZ be classified as parallelograms? Why or why not?

D. Is a square a rectangle? Why or why not?

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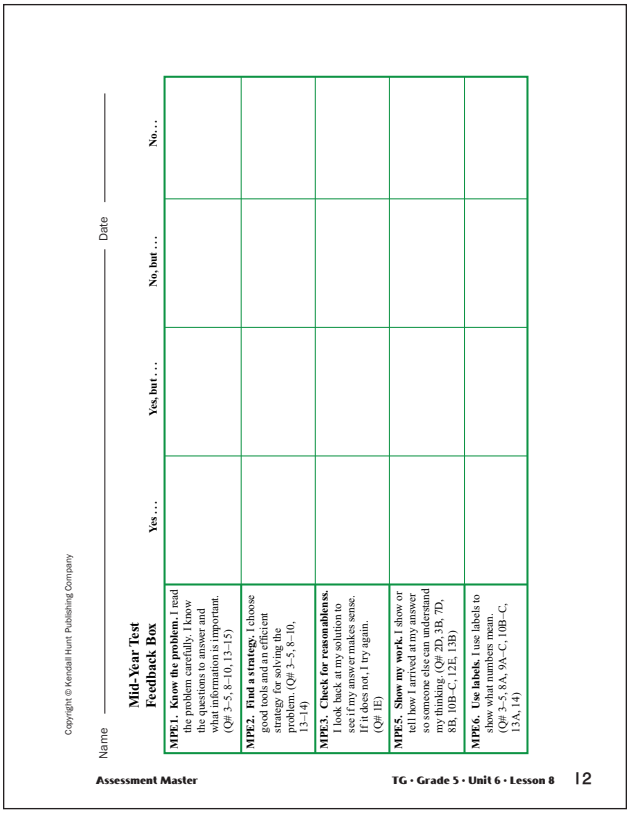
11 TG • Grade 5 • Unit 6 • Lesson 8 Assessment Master

***Teacher Guide* - Page 11**



Name _____ Date _____

Mid-Year 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# 3–5, 8–10, 13–15)				
MPE2. Find a strategy. I choose good tools and an efficient strategy for solving the problem. (Q# 3–5, 8–10, 13–14)				
MPE3. Check for reasonableness. I look back at my solution to see if my answer makes sense. If it does not, I try again. (Q# 1E)				
MPE5. Show my work. I show or tell how I arrived at my answer so someone else can understand my thinking. (Q# 2D, 3B, 7D, 8B, 10B–C, 12E, 13B)				
MPE6. Use labels. I use labels to show what numbers mean. (Q# 3–5, 8A, 9A–C, 10B–C, 13A, 14)				

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Assessment Master TG • Grade 5 • Unit 6 • Lesson 8 12

***Teacher Guide* - Page 12**

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