Week by Week MATHEMATICS Essentials...

Grade 4 WEEK 1

Calculate!

You can only use these keys on a calculator:

6 ÷ - x + =

Make your display read 7. Keys can be used more than once. Write a description of what you have done.

(1.05)

Thinking Mathematically

Your school constructed a graph to show the favorite ice cream of fourth graders. If you were bringing ice cream to a grade level party, why would it be important for you to know the mode? Can you think of another situation where the mode would be useful to you?

(4.01)

Exploring Data

Which grocery store has the "best buys"? Collect grocery ads from different stores or visit them in person. Select several common items and compare prices. Chart your information. Survey your parents: *In what grocery store do you and your family shop most frequently? Why do you shop there?*

(4.01)

Looking Out For Math

With a partner or a team, sequence 100 pennies by date.

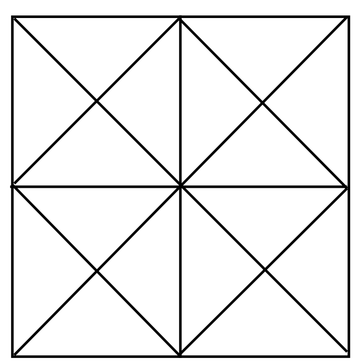
Each group should create a line plot to display their data.

What is the mode? What other statements can you make about the data?

(4.01)

Fraction Action

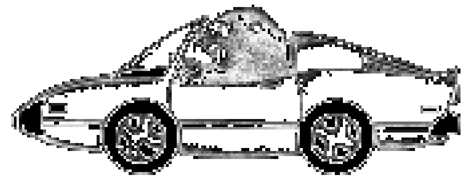
Explore different ways to color one-half of the area of this design?

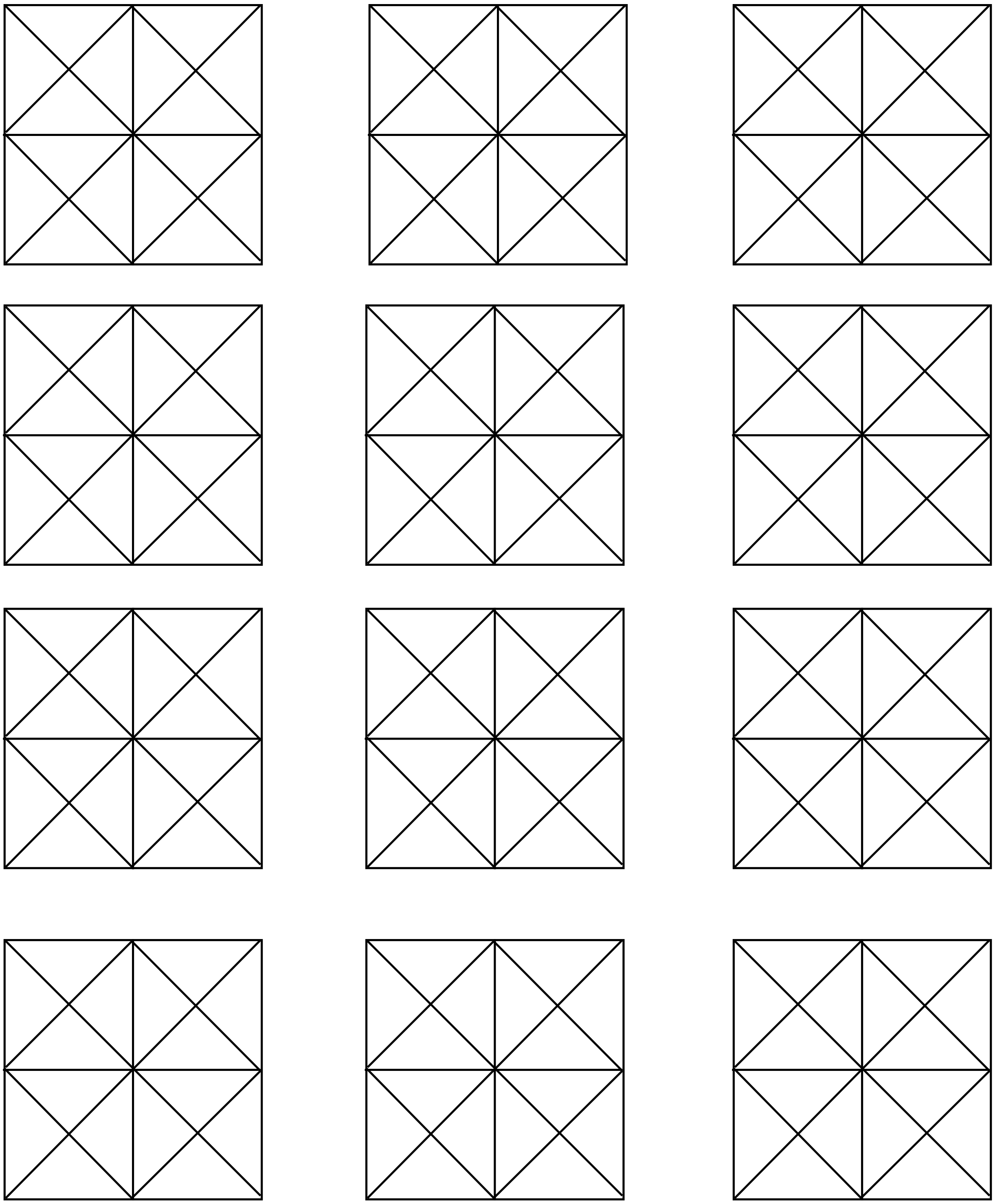


Record your solutions on the Fraction Action Recording Sheet.

(1.03)

Fraction Action Recording Sheet





Place 12 markers on the gameboard; take turns rolling 2 number cubes and using any operation to remove a marker. Winner is first to clear the board. (See integrated plans for alternate rules.)

WIPE OUT!

1	2	3	4	5	6
7	8	9	10	11	12

WIPE OUT!

1	2	3	4	5	6
7	8	9	10	11	12

(1.05)

Keeping Skills Sharp

1. 25 + 634 =

2. 158 - 83 =

3. 6 x 8 =

4. 15 x 4 =

5. 7 x 3 =

6. $4.03 - $0.67 =

7. 4 feet = _____ inches

8. Write six thousand thirty-seven in standard form.

9. Jenny bought 2 meters, 40 centimeters of rope. Jeff bought 250 centimeters of rope. Who bought more? How much more?

10. Mike boarded the train at 11:30 a.m. He arrived at 5:30 p.m. How long was his trip?

Solve this!

Every bike slot in a bicycle rack was filled.
Ellen’s bike was in the middle.
There were seven bikes to the left of Ellen’s.
How many bicycles were in the bicycle rack?

Show your work. Explain your thinking.

(1.05, 4.02)

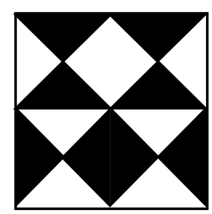
To the Teacher

Grade 4
WEEK 1

Calculate!
There are many possibilities.
Example: $6 \div 6 + 6 = 7$
$(6 \div 6 = 1; 1 + 6 = 7)$

Problem of the Week
Answer: 15 bikes. There are seven to each side of Ellen plus Ellen's bike.
$2 \times 7 + 1 = 15$.

Fraction Action
There will be many different solutions. The parts need not be connected; e.g. one half of this figure is shaded. Students record on Fraction Action Recording Sheet 1, master.
Extension: Students could use 2 colors of paper triangles to create quilt designs.



Mental Math

Directions to Students: Number your paper from 1 to 8. Write your answers as the questions are called out. Each question will be repeated only once.

1. 10 more than 80
2. 5 + 3 + 12 - 2
3. Is 781 nearer 700 or 800?
4. 15 + 40
5. 5 x 3
6. Value of 3 dimes and 2 nickels
7. Which is longer 1 foot or 1 yard?
8. Number of sides on a hexagon

Keeping Skills Sharp

1. 659
2. 75
3. 48
4. 60
5. 21
6. $3.36
7. 48
8. 6,037
9. Jeff, 10 cm
10. 6 hours

Calculate!

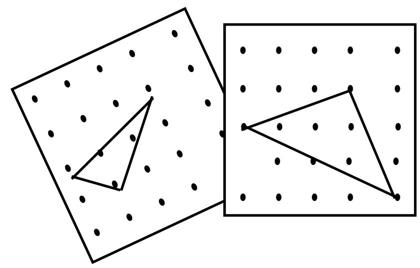
What numbers could be placed in the box to make the computation correct? Is there a way to shortcut trial and error?

341 - $\boxed{}$ = a number between 115 and 120.

(5.02)

Looking Out For Math

Using a geoboard, how many different size right triangles can you make? Record your solutions on a geoboard recording paper sheet.



(3.02)

Thinking Mathematically

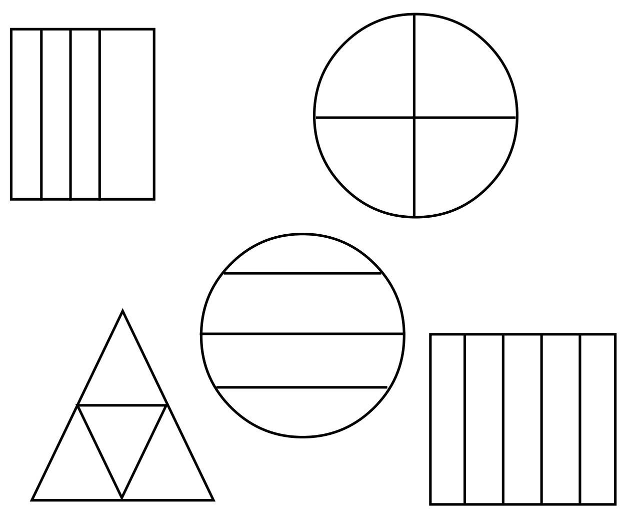
Adam has a "function machine" that follows a rule to change numbers that he puts in. Here is a chart of what happened the last time he used it. Complete the table. What rule did Adam tell the function machine to use?

IN	OUT
1	5
2	7
3	9
4	
•••	
10	

(5.02)

Fraction Action

Cross out any shapes that are <u>not</u> divided into fourths.



Choose one shape you crossed out. Circle it and tell why you crossed it out.

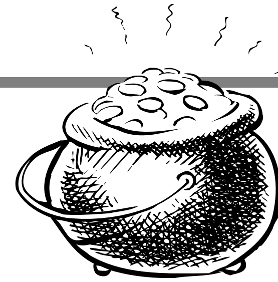
(1.03)

Exploring Data

Get a friend to measure your height in centimeters. Share your data with the class. With your partner, brainstorm different ways to display the class data. Make a poster showing a way that you think displays the data appropriately.

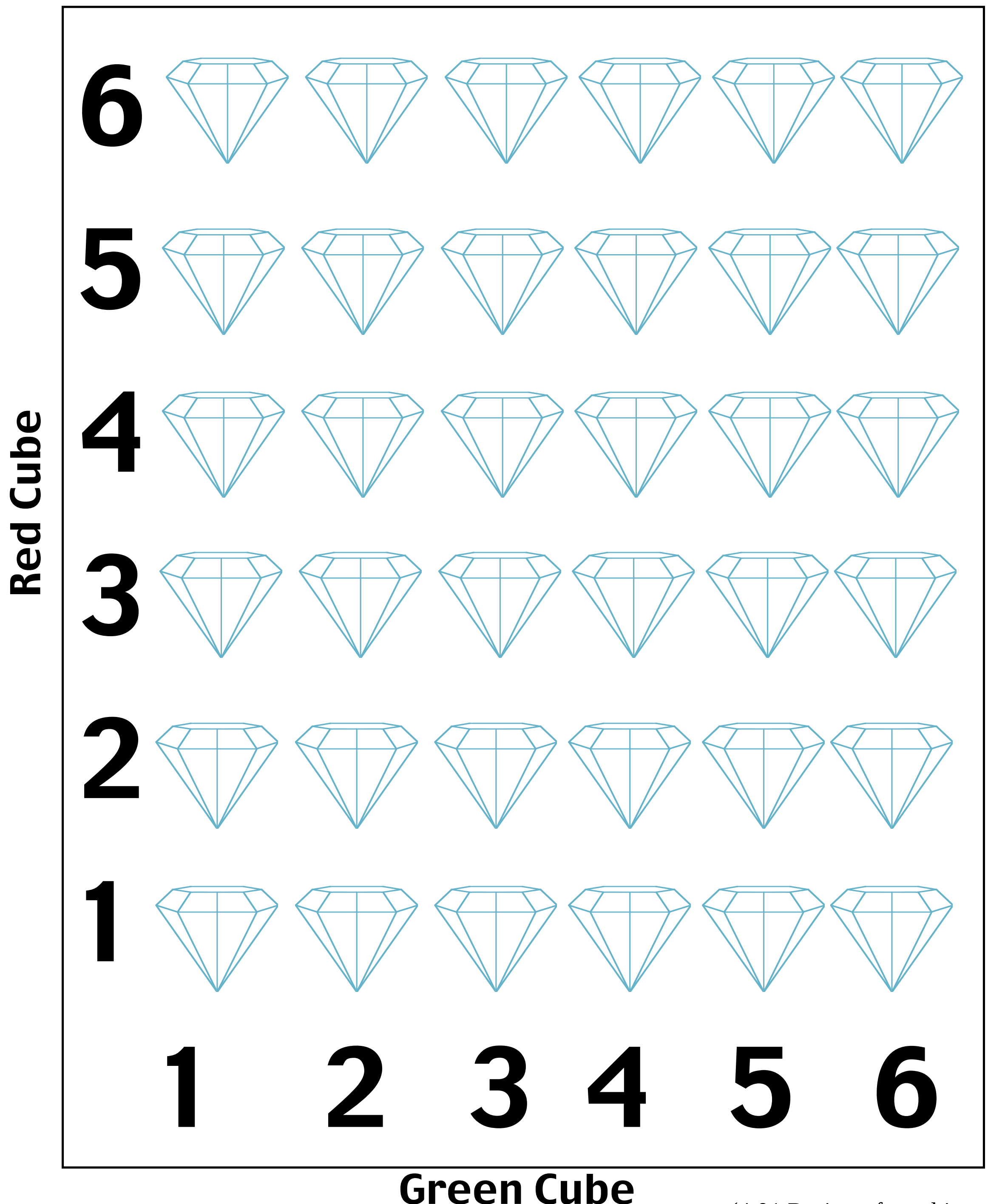
(4.01)

Blackbeard's Treasure Box



Directions: You and your partner need a red number cube and a green number cube, 10 markers each (players have different colors), and a gameboard. Players take turns rolling the cubes. If, for example, a green two and a red three are tossed, the player would cover the gem at (2, 3). If a player tosses and the gem at that place is taken, the player loses that turn. The first to get four in a row wins.

Variation: Players may win by seeing who can cover four adjacent gems to form a box.



(4.01 Review of graphing skills)

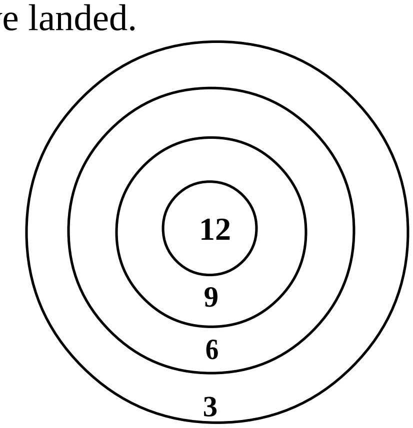
Keeping Skills Sharp

1. 834 + 359 =
2. 170 - 93 =
3. 4 x 16 =
4. 9 x 7 =
5. 12 x 3 =
6. Number of sides on four quadrilaterals.
7. 1 meter = ___ centimeters
8. Nearest thousand: 7,432
9. Jane owes a friend $2.38. She has $8.25. Will she have enough money for a $4.00 matinee after she pays her friend? Exactly how much money does she have left after the matinee?
10. Ben has $2.00 with which to buy marbles. Aggies cost $0.16 each, and migs cost $0.18 each. If Ben buys 9 Aggies, how many migs can he buy?

Solve this!

David was playing darts and scored exactly 21points with three darts. Show where his darts might have landed.

If he got all three darts on the board, what other scores could he have made?
Show how he might get each score.



(5.02)

To the Teacher

Calculate!
Possible solutions are; 225, 224, 223, 222. Students need to share their strategies on how to shortcut this process rather than using trial and error. One strategy is to subtract 115 and 120 from 341. The possible answers are the numbers between these 2 differences.

Thinking Mathematically
Rule: 2 times the number plus 3. Students tend to look for the patterns in the "out" column. Encourage them to look at the pattern of change from the number that goes in to the number that comes out, by asking for predictions for larger numbers (25, 50, 100).

IN	OUT
1	5
2	7
3	9
4	11
5	13
6	15
7	17
8	19
9	21
10	23

Exploring Data
Be sure to talk to students about appropriate ways to display data (charts, tables, graphs) and labeling the data. This data collection would be a good one to model a stem and leaf graph.

Fraction Action
Discuss with students the necessity of equal parts. Students need to be exposed to a concept through examples and counter-examples

Problem of the Week
There are many solutions. Two possibilities are:
12 + 6 + 3
6 + 6 + 9

Mental Math

Directions to Students: Number your paper from 1 to 8. Write your answers as the questions are called out. Each question will be repeated only once.

1. 10 less than 40
2. 2 x 3 + 8 - 1
3. Nearest ten: 28
4. 67 - 4
5. 8 x 12
6. Value of 2 dimes and 4 nickels
7. Number of months in one year
8. Number of sides on 3 triangles

Keeping Skills Sharp

1. 1193
2. 77
3. 64
4. 63
5. 36
6. 16
7. 100
8. 7,000
9. Yes $1.87
10. 3

Calculate!

Find two numbers whose difference is 153.

(5.02)

Thinking Mathematically

With a group, choose 5 North Carolina cities and find their altitudes. Then write 5 word problems that can be solved using this information. Write 5 more word problems from this data or data from previous investigations.

Have another group solve your problems.

(1.05)

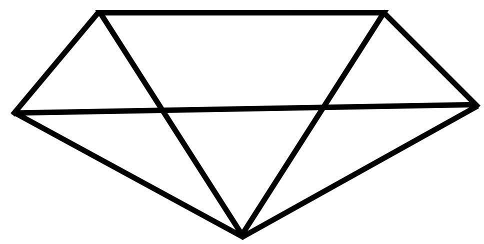
Exploring Data

Is there a favorite fast food of students in your class? In the fourth grade? Decide as a class how you will gather the data in your room and then in the entire fourth grade. Make two different bar graphs to display your findings. Write a report on the data to share with other students.

(4.01)

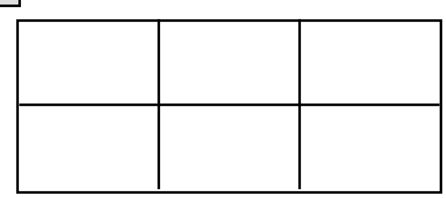
Looking Out For Math

1) How many triangles are in this pentagon?



2) Draw in the rest of the diagonals. Now how many triangles can you find?

Fraction Action



One-third is ________ pieces of the whole

Two-thirds is ________ pieces of the whole

Three-thirds is ________ pieces of the whole

One-sixth is ________pieces of the whole

Two-sixths is ________pieces of the whole

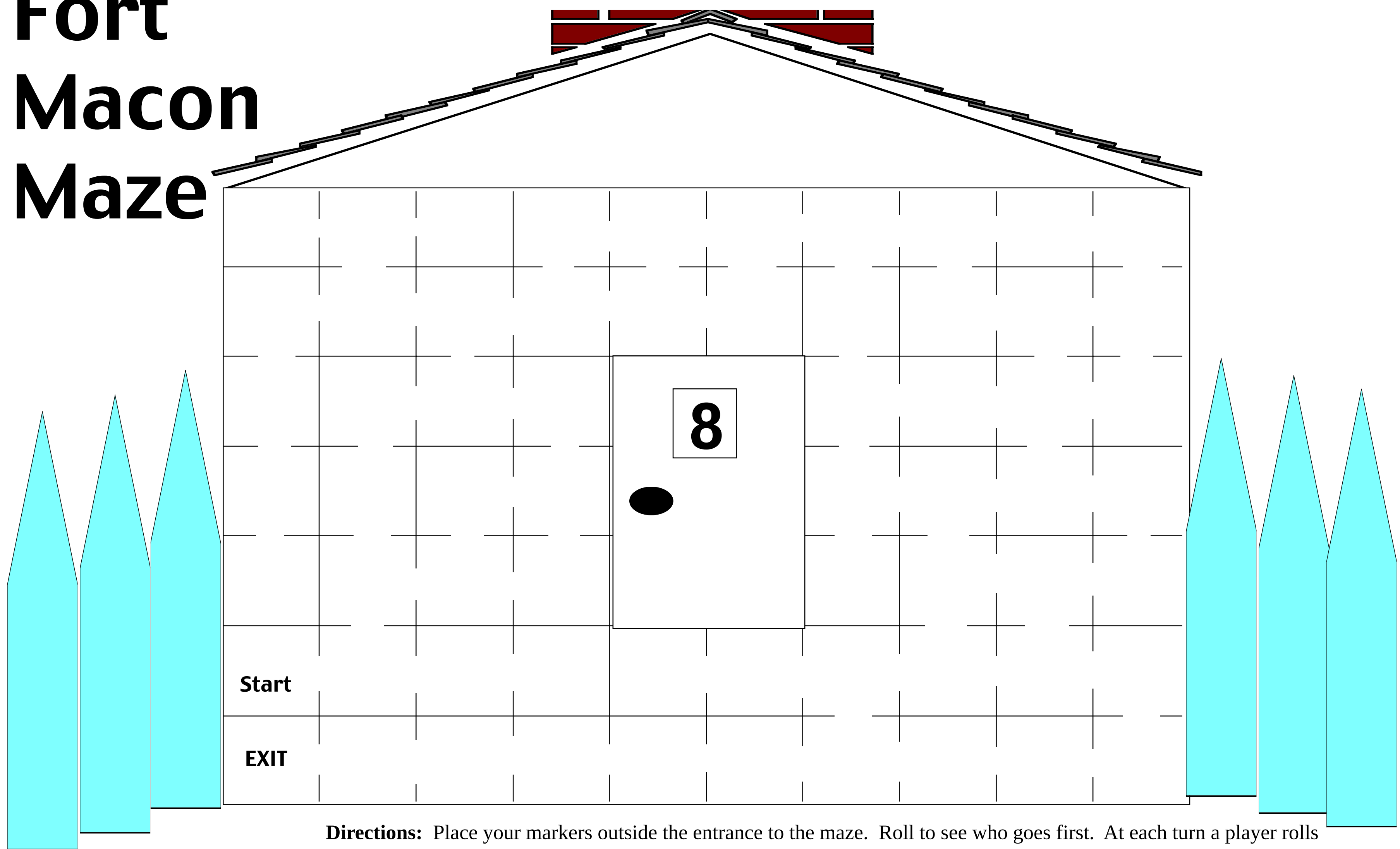
Three-sixths is ________ pieces of the whole

What do you notice about one-third and two-sixths?

Two-thirds is equivalent to how many sixths?

(1.03)

Fort Macon Maze



Directions: Place your markers outside the entrance to the maze. Roll to see who goes first. At each turn a player rolls number cubes, adds, and multiplies the sum by 8. If the correct product is given, the player moves through the maze the number of spaces on one of the dice. Winner reaches EXIT first.

Number of Players: 2-4

Materials: Gameboard, a pair of number cubes, a marker for each player

(5.02)

Keeping Skills Sharp

1. 1,220 + 810 =
2. 878 - 459 =
3. 18 x 4 =
4. 7 x 6 =
5. 6 x 9 =
6. If you spent $2.35, how much change would you get from a $5.00 bill?
7. Number of sides on 3 triangles, a rhombus, and 4 rectangles.
8. Write from least to greatest: 807, 708, 780, 870
9. A football team scored three touchdowns (6 points each) and two field goals (3 points each). What was their final score?
10. At the grocery store, eggs cost $0.49 for a half-dozen. A dozen eggs cost $0.91. Which is a better buy?

Solve this!

Using the digits 1 to 9, arrange the numbers in three groups so that the sum is the same in each group.

Is there more than one way to do this?

Show all the ways you find.

(5.02)

To the Teacher

Grade 4
WEEK 3

Calculate!
There are infinite possibilities, beginning with 154 - 1; 155 - 2; etc.

Thinking Mathematically
Students will use the altitude data and data from previous collections to create word problems. Lead the students to think about asking questions that are worth answering and about the need for clarity. Here is a good connection to language arts!

Exploring Data
The two bar graphs might be
a) one for each question or
b) a vertical bar graph and a horizontal bar graph.

Problem of the Week
One solution: 4,5,6 8,7 1,2,3,9.
Other solutions may be possible

Fraction Action
Answers: 2, 4, 6, 1, 2, 3
1/3 and 2/6 are the same number of pieces.
2/3 is equivalent to 4/6.

Be sure students understand that having the same number of pieces (i.e., being the same amount) means that the two fractions are equivalent.

Mental Math

Directions to Students: Number your paper from 1 to 8. Write your answers as the questions are called out. Each question will be repeated only once.

1. 10 more than 53
2. 6 + 5 + 4 - 3 + 2
3. Is 585 nearer 500 or 600?
4. 7 + 13
5. 9 x 0
6. If it is 3:20 now, what time will it be in 15minutes?
7. Number of feet in a two yards
8. Double 13

Keeping Skills Sharp

1. 2,030
2. 419
3. 72
4. 42
5. 54
6. $2.65
7. 29
8. 708, 780, 807, 870
9. 24
10. dozen at 91¢

Calculate!

If I could afford to give you one dollar for your first birthday, two dollars for your second birthday, four dollars for your third birthday, and continue doubling the dollars for each birthday until your tenth birthday, how much would I have given you?

(1.05)

Thinking Mathematically

Write a story that is illustrated by this equation.

$$7 \times 4 = 28$$

(1.02, 5.02)

Exploring Data

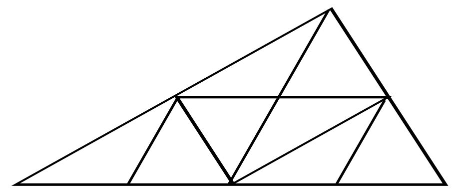
Survey your classmates to find their favorite among these apples. Display your data in an appropriate way. Be sure your display is clearly labeled. Tell why you chose this method.

FAVORITE APPLES
Red Delicious
Golden Delicious
Granny Smith

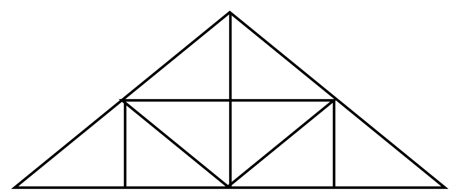
(4.01)

Looking Out For Math

How many triangles are in his diagram?



Fraction Action



One-eighth is ________ pieces of the whole

Two-eighths is ________pieces of the whole

Four-eighths is ________pieces of the whole

Six-eighths is ________ pieces of the whole

One-fourth is ________ pieces of the whole

Two-fourths is ________pieces of the whole

Three-fourths is ________ pieces of the whole

Four-fourths is ________pieces of the whole

Which fractions are equivalent?

(1.03)

Blackbeard Strikes!

Directions: The first player chooses any square on the board and gives the factors and the product. If the player is correct, he places a marker on that space. If the player is incorrect, he loses a turn. The second player takes a turn. The winner is the first player to cover 5 squares in a row, column, or diagonal. Players may not cover any square already covered.

5 x 9	3 x 8	4 x 5	3 x 8	5 x 8	2 x 4	3 x 7
6 x 4	5 x 4	5 x 8	4 x 4	5 x 3	4 x 7	5 x 7
2 x 9	5 x 5	6 x 3	4 x 6	2 x 2	6 x 7	2 x 7
6 x 8	2 x 3	3 x 4	5 x 2	3 x 5	5 x 6	4 x 8
5 x 4	4 x 9	6 x 6	4 x 3	6 x 7	3 x 5	5 x 9
3 x 8	3 x 9	6 x 5	6 x 9	6 x 8	2 x 5	6 x 4
4 x 2	6 x 7	4 x 7	2 x 6	3 x 6	4 x 8	3 x 6

(1.02)

Keeping Skills Sharp

1. 10,109 + 977 =
2. 1,287 - 748 =
3. 8 x 15 =
4. 7 x 7 =
5. 12 ÷ 6 =
6. $3\frac{1}{2}$ pounds = ___ ounces
7. At what time after 1:00 and before 2:00 do the hands of a clock form an obtuse angle?
8. 8,000 + 60 + 300 + 7
9. Cecil earns 50 cents for doing chores each day of the week. How much does he earn in 7 days?
10. Ten alligators went down to the river. Three of them laid 5 eggs each. A snake ate 8 of the eggs. How many eggs are left?

Solve this!

Sandra is more than 20 years old and less than 60 years old. You can count by 7's to reach Sandra's age.

Next year you will be able to count by 5's to reach Sandra's age.

How old is Sandra?

Show how you figured this out.

(1.05, 5.02)

To the Teacher

Grade 4
WEEK 4

Calculate!
Discuss with students how to organize this data so they will be able to look for patterns. For example:

# of Birthdays	Amount of Money
1	1
2	2
3	4
4	8
5	16
6	32
7	64
8	128
9	256
10	512

This is a good use of the constant function on the calculator. Enter 2 x = = =.

Exploring Data
Discuss with your student the importance of labeling the axes of a graph and including a title. Students could compare data with other 4th grade classes.

Fraction Action
Answers: 1, 2, 4, 6
2, 4, 6

Equivalent fractions:

1/4 = 2/8, 2/4 = 4/8, 3/4 = 6/8

Problem of the Week
Answer: 49
7 x 7 = 49 (this year)
5 x 10 = 50 (next year)
Have students share their strategies.

Mental Math

Directions to Students: Number your paper from 1 to 8. Write your answers as the questions are called out. Each question will be repeated only once.

1. 400 more than 300
2. 2 x 5 - 3 + 1 + 4
3. Nearest ten: 62
4. 24 - 9
5. 9 x 4
6. $1.50 less 2 quarters
7. 20 minutes after 6:10
8. Number of days in September and October

Keeping Skills Sharp

1. 11, 086
2. 539
3. 120
4. 49
5. 2
6. 56
7. answers will vary
8. 8,367
9. $3.50
10. 7