Week

Week MATHEMATICS





Calculate!

Membership in the bowling club costs \$5.00. It costs 25¢ for members to bowl and 75¢ for nonmembers to bowl. How many times would a person need to bowl to have an advantage in being a member?

(1.02b, 1.05)



Thinking Mathematically

For one triangle, you need 3 toothpicks. For two triangles, you need 5 toothpicks. How many do you need for three triangles? Four? Five? Set up your data in a chart. Can you find a pattern to predict for 10 triangles?

Triangles	Toothpicks		
1	3		
2	5		
3			

(5.01b)



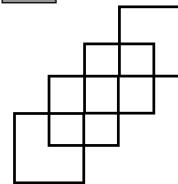
Exploring Data

Read Dad's Diet by Barbara Comber. Have students describe the mathematics found in the book. Divide the class into 4 to 6 groups. Have each group decide upon an investigation they would like to pursue, gather the data, and create an appropriate display.

(4.01)



Looking Out For Math



How many rectanglescan you find here? Remember squares are also rectangles!



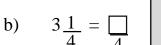
Fraction Action

Draw a diagram to prove that $2\frac{1}{2} = \frac{5}{2}$.

Change each mixed number to a fraction. Use the models to help.

a)
$$1\frac{2}{3} = \boxed{3}$$







c)
$$2\underline{3}_{\overline{5}} = \underline{\square}_{\overline{5}}$$

(1.03)

End-of-the-Year REVIEW: Musical Mathematics and Social Studies (played similar to musical chairs)

End-of-the-year reviews are a part of every classroom. Here is one idea for an integrated review. Hopefully, you will add to these "factual" questions some "thought" questions which are very important but which do not fit the format of this review. You may also want to use the questions in other games. There are six pages of questions.

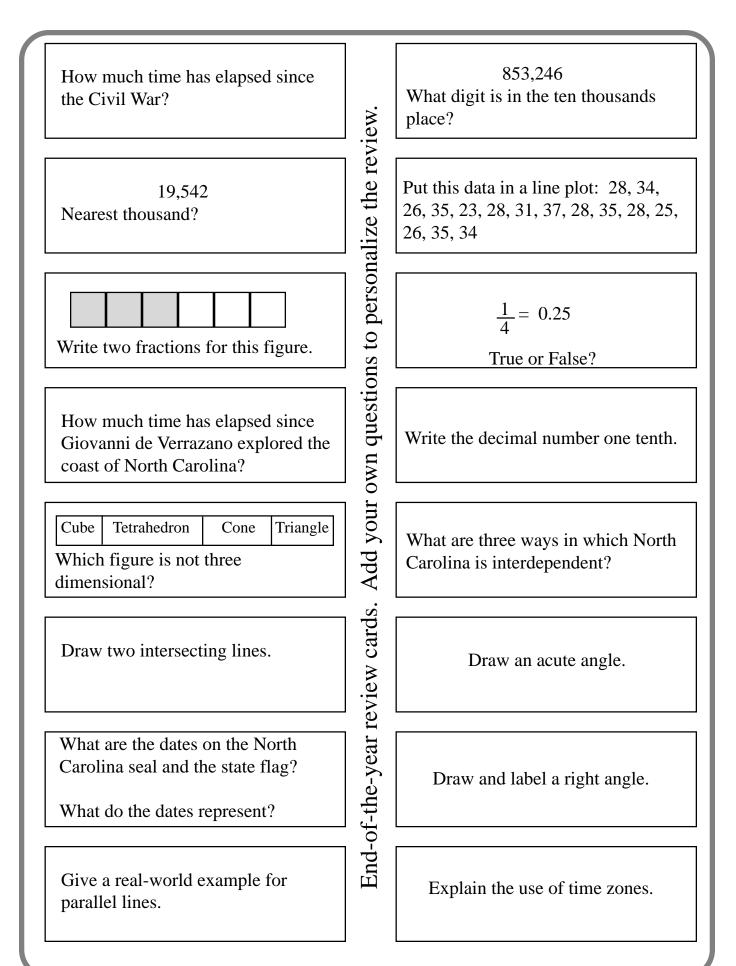
Cut each review question out and glue it on a 3 x 5 card. *Number the questions to make three sets of 1-30. Place one card on each child's desk. Each student should have a numbered grid answer sheet or notebook paper numbered 1-30. (Note: you may decide to make duplicate copies of the questions so that you could have a five day review with fewer questions each day.)

Students will move around the room from desk to desk, answering one question at each stop. Music will cue students when to move. When you are ready to begin, start the music. The children move from desk to desk When the music stops, the children should write the answer to the question on the desk where they've stopped in the appropriate grid box. (Be certain that calculators are available for math problem solving questions.)

When the music starts again, the students start moving to other desks. As before, when the music stops, the students answer the question on the desk where they've stopped. This procedure continues until all the boxes on the grid have been filled in.

When everyone has returned to his or her own desk, go over all the questions, marking correct answers. Award points for all correct answers and have students use their calculators to determine the team's score for that round. At the end of three rounds, find the winning review team.

Note: You have enough cards to make three sets of 30 with six extras.



What are three different types of maps?

How many geographic regions does North Carolina have?

Name them.

Draw an obtuse angle.

How many major rivers have their source in the mountain region?

Continue the pattern...
4, 16, 5, 25, 6, 36, 7, ____, ____, ____

What is the east-west distance across North Carolina? Where does North Carolina rank in size among the fifty states?

Name something taller than two meters in height.

Name something about six inches wide.

Which is the most southern county in North Carolina?

Which is the most western county?

598,076

What digit is in the thousand's place?

What North Carolina county has the largest population?

Which has the smallest?

If Tuesday is on the fifth, what is the date of the third Tuesday?

What are the three branches of state government?

How many calories are in one dozen eggs if each egg has 75 calories?

Name three of North Carolina's five largest cities.

What is the appropriate measurement for the width of our classroom?

Fourth grades students collected 608 cans. There were 429 juice cans. How many cans were not juice cans?

If 36 of North Carolina's 100 counties have a plan for roadside beautification, how would you write that number as a decimal? as a fraction?

Which direction would you travel to get from your school to the state capital?

Who is North Carolina's governor?

How many have served North Carolina since it became a state?

How high is North Carolina's highest mountain?

In which county is it located?

How many major North Carolina rivers flow directly into the Atlantic Ocean?

There are 82 pages in a booklet. If we produce 7 copies, how many pages will be printed?

In what way is a globe better than a flat map?

How many degrees are there around the earth at the equator?

If there are three yards of string left on the ball, how many 6" lengths can you cut?

A hexagon is a figure with how many sides? How many sides does a pentagon have?

How many states share a border with North Carolina? Name them.

$$9004 + 56 + 825 =$$

If you round 357 to the nearest 10, what would it be?

Draw an example of perpendicular lines.

Name three kinds of landforms found in North Carolina.

How much time has elapsed since North Carolina became the twelfth state in the United States?

What holds more - a liter or a quart?

How many years does our Constitution allow a governor to serve?

Which holds less - a pint or a cup? How many cups are in a gallon?

How many senators does North Carolina have in the state legislature?

Tell something that is measured in liters.

How many senators does North Carolina have in the United States Senate?

If it is 2:45 p.m., how many hours is it until 8:00 p.m.

A room is 8 feet by 12 feet. What is the perimeter?

How many representatives serve in North Carolina's General Assembly?

If lunch costs \$1.15, how much does lunch cost for a whole year of school?

If each vowel is worth 25ϕ and each consonant is worth 1ϕ , how much is "mathematics" worth?

How many representatives does North Carolina have in the United States House of Representatives?

What was the time three hours and forty minutes ago?



How many electoral votes does North Carolina have?

If it is 2:00 p.m., how many hours is it until 11:30 p.m.

Write a related division fact for $8 \times 5 = 40$.

Which is greater - 8×4 or $120 \div 3$?

What are five agricultural crops in North Carolina?

What are three important manufactured products in North Carolina?

Estimate the length of this line in cm.

What are five important natural resources found in North Carolina?

$$33 + (65 - 5) = ?$$

What are five services provided by state government?

What are three major North Carolina exports?

Write a related multiplication fact for $27 \div 3 = 9$.

What is an important recreational activity in each of North Carolina's regions?

 $25 \div 2$

What is the remainder?

Name two county public officials who are elected by the voters.

Mountain	Height		
Mt. Sterling	5,835		
Mt. Hardison	6,134		
How much taller is Mt. Hardison?			

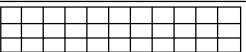
What is the median temperature of these thermometer readings?

 72^{0} 68^{0} 65^{0} 74^{0} 79^{0} 59^{0} 76^{0}

How many hundreds are there in 2,645?

How many verticies does a cube have?

What are three important mineral resources in North Carolina?



What is the area of this figure? What is its perimeter?

How is a compass rose used?

Is there enough information to solve this problem? If not, what is missing?

There are 10 leaves on each branch of a tree. How many leaves in all if the tree is 5 feet tall?

How many tens are there in 456?

What are three ways in which North Carolina is changing economically?

Which is heavier, 5 pounds of sugar or 75 ounces of chocolate?

Explain the use of a map legend.

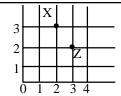
$$\begin{array}{ccc} & + \mathbb{C} = 15 \\ & \times 4 = \mathbb{C} \end{array}$$

What is the value of the \mathbb{Z}^* ? What is the value of the \mathbb{C} ?

How many faces does a triangular-based prism have?

Use the ruler to draw a quadrilateral with a perimeter of 12 centimeters.

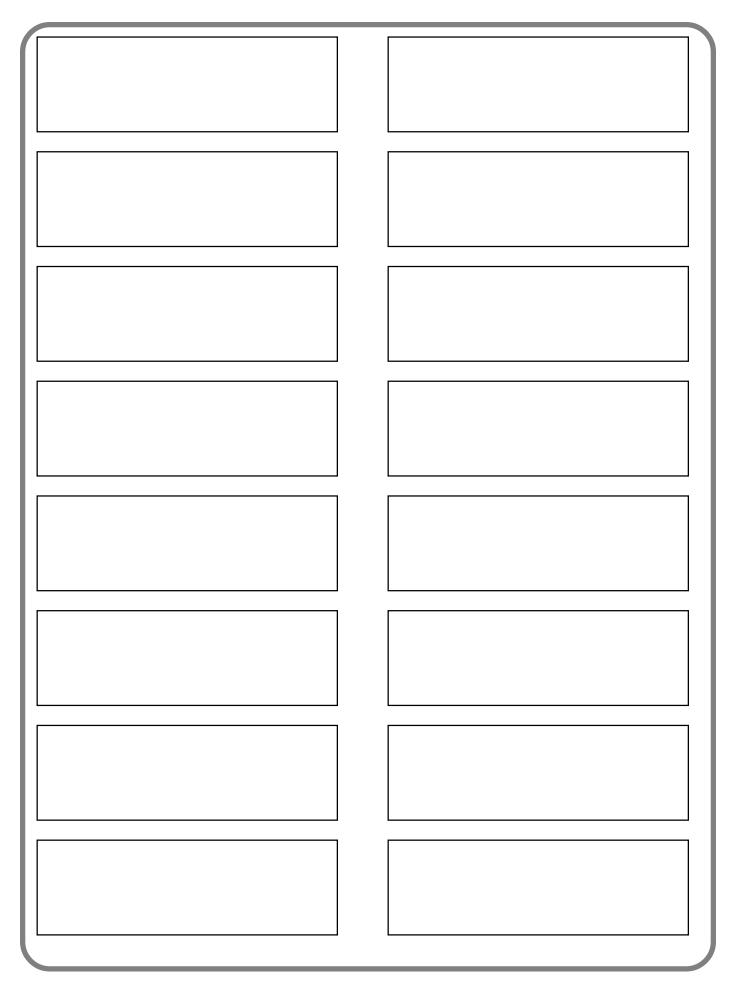
How can you recognize the eastern edge of the Piedmont?



Which letter is at (2,3) in the grid?

I added 15 to a number, divided it by 3 and the result was 8. What number did I begin with?

Draw a picture of North Carolina's flag.





Keeping Skills Sharp

1.
$$387,456 + A + 895 = 388,385$$

- 2. Find the difference between 8.695 and 29.
- $149 \times 20 = S$ 3.
- $37 \div M = 7$ remainder 2

- $156 \div 3 = F$ 5.
- What is a polygon with eight sides called? 6.
- 1 lb. = ____ oz. 7.
- Write >, <, or =. 53, 914 \square 53,941 8.
- 9. Sodas cost \$0.99 for one liter. How much change will you get from \$5.00 if you buy 3 liters?
- 10. Nathan has \$8.00 to spend on hot dogs and sodas. Hot dogs cost \$0.75 each. If Nathan buys 7 hot dogs, how much can he spend on sodas?



Solve this!

Four students decide to throw a party to celebrate the end of the school year. They plan to share the expenses equally. Sharon buys a cake for \$12, Ricky buys \$6 worth of ice cream; Ellen spends \$5 on green and gold balloons, and Justin gets \$7 worth of soft drinks. In addition, he pays \$6 to rent a giant popcorn popper. To be fair, who owes money to whom?



(1.02b, 1.03)



Calculate!

After 10 games being a member is an advantage: $0.75 \times 10 \text{ games} = 7.50$ \$0.25 x 10 games + \$5 member

fee = \$7.50

The eleventh game would give nonmembers a \$8.25 total and members a \$7.75 total.

Problem of the Week

The total expense was \$36, so each person should pay \$9. Ricky gives Sharon \$3, and Ellen gives Justin \$4, then each person will have paid their fair share.

Thinking Mathematically

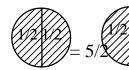
Triangles	Toothpicks
1	3
2	5
3	7
4	9
5	11

Have students construct and record their solutions. Ten triangles would require 21 toothpicks. Ask students to find patterns. Rule; Two more toothpicks than previous or number of triangles doubled plus one.

Fraction Action

Possible diagram





a) 5/3

b) 13/4

c) 13/5

Game of the Week

Musical Math and Social Studies Review Get ready for the end-of-grade tests with this fun review of math skills and social studies.

Directions to Students: Number your paper from 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.

- 60 more than 350 1.
- 2. $7 \times 8 \times 1 - 6 \div 2$
- 3. Nearest ten: 681
- 4. 59 + 27
- 5. 4 x 12
- \$2.00 less 3 quarters 6.
- 7. Which is shorter? 1 yard or 24 inches
- 8. Triple 20

Keeping Skills Sharp

- 1. 34
- 2. 8666
- 3. 2980
- 4. 5
- 5. 52
- 6. octagon
- 7. 16 ounces
- 8. <
- 9. \$2.03
- 10. \$2.75

Week

Week MATHEMATICS

Essentials..



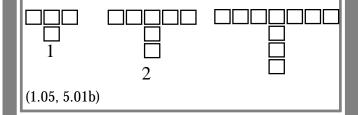
Calculate!

When you add three consecutive numbers, the sum is between 1030 and 1040. What could the numbers be?



Thinking Mathematically

Using blocks to build "T's, how many would be needed for the tenth "T"? Each picture is called a term and the first term has 4 blocks; the third term has 10 blocks. How many blocks are needed to build all 10 terms?





Exploring Data

Ask your classmates to clasp their hands together. Record which thumb is on top and whether they are right or left handed.

Do all right handed people clasp their hand with the left thumb on top?

Arrange your data into a display to present to the class.

(4.01)



Looking Out For Math

If these three cubes were painted and then taken apart, how many small cubes would be painted on all faces? on no faces? one face? two faces? three faces?

Start with figure one. Is there a pattern?







Figure 1

Figure 2

Figure 3

(5.01b)



Fraction Action

Tony's dad made three pizzas for his birthday party. He invited seven friends. If he and each of his friends ate the same number of pieces, and all the pizza was eaten, how much of a pizza did each boy eat. Show how you solved this problem and explain your solution.



(1.03)

North Carolina "I Have, Who Has"

This activity focuses on listening and mental math skills.

Directions: Cut out and paste each section on a card. Distribute cards to students (all cards must be used). One student reads information on his/her card. Other students mentally do math problems and student who has the answer reads his/her card. Play continues until all cards have been used and last question reverts to first card used.

I have 50 (members in the North Carolina Senate).
Who has 12 + 12?

I have 43. Who has 6 + 6?

I have 24.

Who has 82 more than 100?

districts in North Carolina).

Who has 3 more than 960?

I have 182 (square miles in North Carolina's smallest county -Chowan).

Who has $30 \div 6$?

I have 963 (square miles in North Carolina's largest county - Sampson County).

I have 12 (number of congressional

Who has 5 x 5?

I have 5 (the number of years spent building the Biltmore House).

Who has 12 - 5?

I have 25.

Who has 1000 + 500 + 80 + 7?

I have 7 (the number of continents).

Who has 6 + 7?

I have 1587 (the year Virginia Dare was born).

Who has 14 - 6?

I have 13 (North Carolina is one of the original 13 colonies).

Who has 6000 + 600 + 80 + 4?

I have 8.

Who has 1000 less than 1892?

I have 6684 (the height of Mt. Mitchell - tallest peak in Appalachian Mountains - in feet). Who has 4 x 10 + 3?

I have 1792 the year Raleigh became the capital of North Carolina.

Who has $3 \times 3 + 5$?

I have 14. Who has 7×4 ? I have 28 (the weight of the largest I have 4 (the Governor of North gold nugget found in North Carolina). Carolina is elected for 4 years). Who has 1000 + 900 + 3? Who has 37 more than 500? I have 1903 (the year the Wright I have 537 (the distance from Brothers flew the first airplane). Manteo to Murphy in miles). Who has 10 x 10? Who has 9 + 6? I have 100 (North Carolina has 100 I have 15. counties). Who has 100 more than 1689? Who has $12 \div 4$? I have 1789 (the year North Carolina I have 3 (North Carolina is divided became a state) into three geographic regions). Who has 210 - 2? Who has 100 more than 228? I have 328 (the length of North I have 208 (the height of the Cape Hatteras lighthouse in feet). Carolina's coastline in miles). Who has the value of 3 quarters? Who has 920 + 920? I have 75¢. I have 1840 (the year the present State Capitol building was completed). Who has 1000 less than 54,821? Who has $45 \div 5$? I have 53,821 (area of North I have 9. Carolina in square miles) Who has 25 + 25? Who has $20 \div 5$?

existing set and fill out more questions on these for you. Each card should contain the answer to	lave, Who Has" deck, delete the last card from the e cards. The first and last cards have been prepared to the previous card and a new clue. Do not use the already: 3, 4, 5, 7, 8, 9, 12, 13, 14, 15, 23, 24, 25, 28, 1587, 1705, 1789, 1840, 1903, 6684, 53,821.
I have 23.	
Who has 7 x 6 + 1?	
	Who has 25 + 25?



Keeping Skills Sharp

1. 89,456 + 1,348 = C

2. 60,000 - J = 59,548

- 3. $345 \times G = 1380$
- 4. What is the product of 5, 1, 6, 3?
- 5. The quotient of 54 divided by 9
- 6. Train tracks are an example of what type of lines?
- 7. Write >, <, or = $3 \text{ m} \square 300 \text{ cm}$
- 8. Order these numbers from greatest to least: 129,533; 129,633; 129,534
- 9. You give a clerk \$20.00 for a \$19.28 purchase. What are the fewest number of coins the clerk can give you for change?
- 10. Three girls ran on a relay team. Their times were 55 seconds; 1 minute, 5 seconds; and 59 seconds. How long did it take them to run the entire race?



Solve this!

List all the possible combinations of \$5.00 using 10 or fewer bills or coins.



(1.05)



To the Teacher

Calculate!

There is more than one solution. One possibility is 344, 345, 346

Thinking Mathematically

Encourage students to organize data through a chart to find patterns.

Can you find out the 10th one without constructing the shape?

Term	Blocks
1	4
2	7
3	10
10	31

Exploring Data

Students might use bar graphs or other methods to display their data. Can they predict what would happen in another fourth grade?

Looking Out for Math

	0 faces	1 face	2 faces	3 faces
figure 1	0	0	0	8
figure 2	1	6	12	8
figure 3	8	24	24	8

Fraction Action

There are 8 boys so each will eat 3/8 of a pizza.

Game of the Week

"I Have, Who Has"

Continue your end-of-the-year review with this oral activity. You could have students enlarge the "deck" by writing other statements and questions.

Directions to Students: Number your paper from 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.

- 2 less than 5000 1.
- 2. 4 x 8 x 1 x 0 x 7
- 3. Nearest hundred: 3,219
- 4. 81 - 14
- 5. $72 \div 9$
- 6. 35 minutes before 4:00
- 7. Number of yards in 21 feet
- 8. Which is longer -- 1/4 or 1/16?

Keeping Skills Sharp

- 90804 1.
- 2. 452
- 4
- 90
- parallel
- 129,633, 129,534, 129,533 8.
- 9. 2 pennies, 2 dimes, 2 quarters
- 2 minutes 59 seconds

Week

Week MATHEMATICS

Essentials...



Calculate!

Three numbers are added. Two of them are three-digit numberss and one is a two-digit number. The sum is 512. What could the numbers be?

(1.05)



Thinking Mathematically

Write a story to illustrate this equation:

 $32 \div 4 = 8$

(5.02)



Exploring Data

Draw a spinner like this:



Use a paper clip and pencil to spin the spinner. If you spin the spinner twice, and add the two numbers, what sums are possible? What sum would be most likely? Do this for 16 pairs of spins. Make a chart of your results.

Are some sums more likely than others? Why do you think that happens?

(4.04)



Looking Out For Math

All of these are goofs:





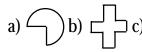
None of these are goofs:







Which of these are goofs: Explain why.







(5.02, 5.03)



Fraction Action

> < or = ?

a) 0.6

0.60

b)

0.5

0.49

0.31 c)

d) 0.76 0.3

0.67

e)

0.09

0.9

0.4

f)

0.42

g)

0.80

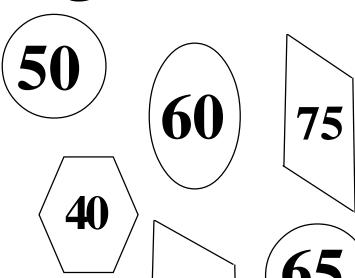
0.8

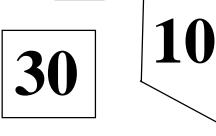
(1.01c)

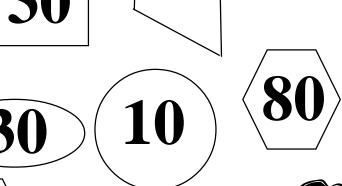
Pieces of Eight!

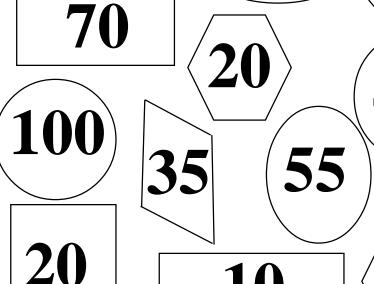
- 1. Each player needs 8 markers.

 The object of the game is to be the first player to capture 8 numbers on the game board.
- 2. To begin each round, choose a target number from the game board.
- 3. Each player rolls 4 number cubes. Players may add, subtract, multiply or divide.
- 4. The player who comes closest to the target number for that round, without going over, captures that space.
- 5. In case of ties, both players may put markers on the target number.











(1.02, 1.04, 5.03)



Keeping Skills Sharp

1.
$$897 + 8,954 + S = 9877$$

2.
$$18,052 - 399 = P$$

3.
$$83 \times F = 415$$

4.
$$325 \times Y = 6500$$

5.
$$146 \div 2 = H$$

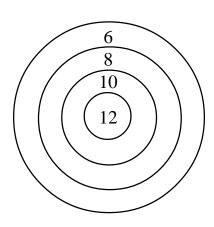
- 7. It is 2:15. What time was it 45 minutes ago?
- 36,456 How many ten thousands? 8.
- Robbie has 3 bikes. He needs new tires for all of them. 9. Each tire cost \$4.00. How much will he spend on tires?
- 10. Of the students in the 4th grade at Greensboro Day School, 46 play soccer, 23 play lacrosse and 32 are in the band. How many more students play a sport than are in the band?



Solve this!



If you shoot 5 arrows at this target, how many ways can you get a score between 45 and 55?





To the Teacher

Calculate!

There are many possibilities. Make a class list as students discover them.

Exploring Data

After the children have spun 16 sums, lead them to figure out the experimental probability of each outcome, e.g., if they get four sums of 3, the experimental probability would be 4/16 (4 out of 16 sums). The expected numbers, or theoretical probability, can be shown in a "frequency distribution chart" like this.

The expected probability of a sum of 3 is 2 out of 16 or 2/16. The chart lists 3 twice because the 3 section on the spinner is equal to two of each of the other numbers t Spin

2nd Spin

	1	2	3	3
1	2	3	4	4
2	3	4	5	5
3	4	5	6	6
3	4	5	6	6

Looking Out For Math

a and b are goofs

Fraction Action

- a)
- b) >
- c) >
- d) >
- e) <
- f) >
- = g)

Directions to Students: Number your paper from 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. Write nine hundred thousand in words
- 2. $(3 \times 9 + 3) \div 5 + 2$
- 3. Round to nearest thousand: 9,125
- 4. 93 + 13
- 5. $36 \div 4$
- \$5.00 less \$1.50 6.
- 7. Number of centimeters in 6 meters
- 8. Double 63

Keeping Skills Sharp

- 1.
- 2. 17653

26

- 3. 5
- 4. 20
- 73 5.
- 6. 4.000
- 7. 1:30
- 8. 30,000
- 9. \$24.00
- 10. 37

Week

Week MATHEMATICS Essentials...



Calculate!

Figure out how many hours there will be in your summer vacation. About how many of those hours will you be sleeping?

(1.05)



Thinking Mathematically

Write a letter to the fourth grader who will have your desk next year to tell this student about an interesting math activity you did this year.





Exploring Data

What are you and your classmates planning for the summer? Decide upon the question you should ask to gather the information and make a display to best show summer plans.



(4.01, 4.03)



Looking Out For Math

Mathematics doesn't happen just in the classroom. It's everywhere! Make a list of ways that you may use math this summer. Ask your parents and friends for ideas. How long a list can your class make?



Fraction Action

- A. What fractional part of the dates in June and July will be odd numbers?
- B. What fractional part of the days in June and July will be Saturdays?
- C. What fractional part of a summer day do you think you will be playing outdoors?



(1.03)

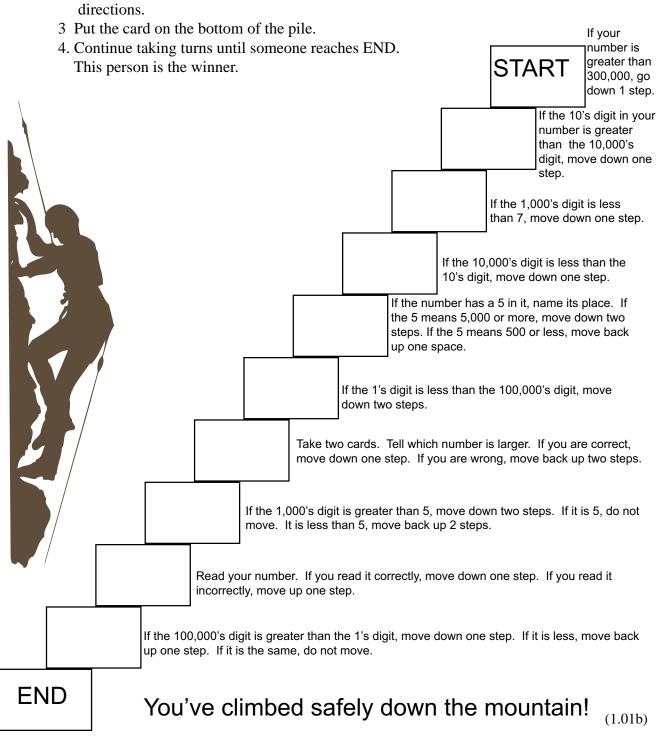
APPALACHIAN STEPS

Number of Players: 2

Materials: You need Digit Cards (week 32) and game markers for each player.

Directions:

- 1. Put the digit cards face down in a pile. Place the markers on start.
- 2. When it is your turn, pick a card from the top of the pile and read the directions beside the step you are on. Move up or down as directed. Do not move if you cannot follow the directions.





Keeping Skills Sharp

- 4,578 + 352 + D = 4,9551.
- 6,345 1,843 = M

- 3. $25 \times A = 125$
- 4. $356 \times 30 =$

 $36 \div 2 = V$ 5.

- 6. 1 day = hours
- 7. Was figure A rotated or reflected to create figure B.



- 8. Write in standard from: 60,000 + 100,000 + 800 + 2
- 9. John took \$2.00 to Burger City. How much change will he get if he gets a \$0.99 hamburger and a cookie for \$0.39?
- 10. The art class is painting a mural that is 8 feet by 10 feet. How many art students will be needed if they agree to each paint four square feet?



Solve this!

Dana was busy making cakes for the Summer Festival. Late at night she heard a noise in her kitchen. When she peeked around the door, there was a huge monster eating her cakes! Dana didn't know what to do so she kept watch. The first hour it ate half of all the cakes in her kitchen; the second hour it ate half of the cakes left; the third hour it ate half of the cakes left. Finally there were 3 cakes left and the monster wiped his mouth, smiled and went to sleep! How many cakes has the monster eaten?



(1.05)

To the Teacher

Calculate!

Students will need to find out how many days there will be in the summer vacation. Ask them what they need to know (ending date of school, beginning date of next year, number of hours in a day, number of days in summer months).

Thinking Mathematically

These letters may help you plan for next year's fourth graders!

Problem of the Week

Solution: 24 cakes

This is an excellent problem for discussing the working backwards strategy: There were 3 cakes left after the third hour, so after the second hour there must have been 3 + 3 = 6 cakes left; after the first hour there must have been 6 + 6 = 12 cakes so before the first hour there must have been 12 + 12 = 24 cakes

Looking Out for Math

Encourage students to be creative as they think of ways they will use math in the summer. Compile a class list, make a bulletin board, print your findings to another class.

Fraction Action

- There are 61 days in June and July. 15 a) days in June are odd, 16 days in July are odd. So 31/61 of the dates will be odd.
- This will depend on the year's calendar. b)
- c) Student's answers will vary!

Directions to Students: Number your paper from Mental Math

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- 1. 80 less than 1000
- 2. $9 \times 6 + 6 - 20 \div 2$
- 3. Nearest hundred: 9.875
- 4. 72 - 15
- 5. 12×3
- 6. 25 minutes after 6:45
- 7. Which is longer -- 120 centimeters or 1 meter?
- Triple 33 8.

Keeping Skills Sharp 25

- 1.
- 2. 4,502
- 3. 5
- 4. 10,680
- 5. 18
- 6. 24
- 7. reflected
- 160,802 8.
- 9. \$0.62
- 10. 20

Correlation of Week-by-Weeks with Grade Four Objectives

	Number and Operations	Measurement	Geometry	DataAnalysis & Probability	Algebra
1st Quarter	1.01, 1.05		3.01	4.01, 4.02, 4.03	5.02
2nd Quarter	1.02, 1.05	2.01, 2.02	3.02, 3.03		5.02, 5.03
3rd Quarter	1.01, 1.02, 1.03, 1.04, 1.05				5.01, 5.02, 5.03
4th Quarter	1.05			4.04	5.02

