



Calculate!

I'm thinking of a number.

I multiplied my number by 102, then subtracted 228.

I then divided by 6.

Finally I added 51.

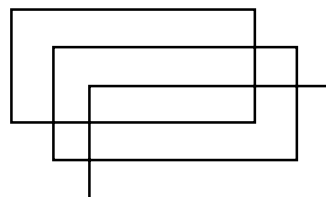
My result was 200.

What number was I thinking of? (1.02e, 1.05)



Looking Out For Math

Three congruent rectangles were used to make this design. How many rectangles can you find?

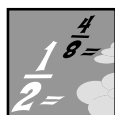


Thinking Mathematically

If you toss two fair coins and a fair number cube what is the probability that the outcome will be two heads and a six?

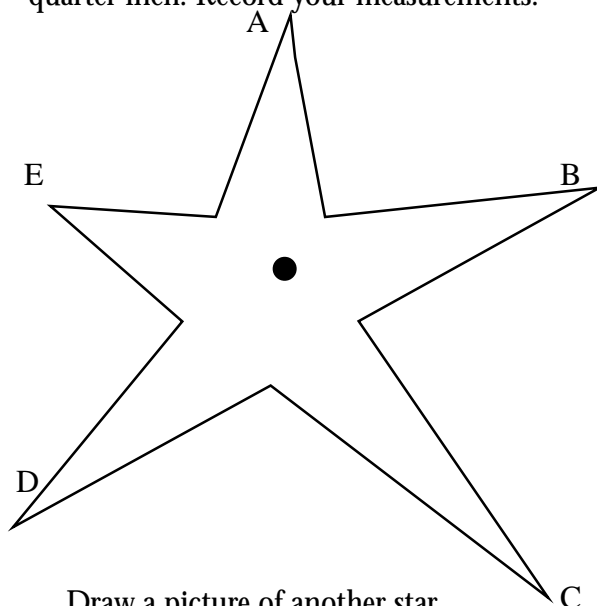
$$P(H, H, 6) = ?$$

(4.04)



Fraction Action

Measure the length of each star's rays from the center point. Measure to the nearest quarter inch. Record your measurements.



Draw a picture of another star with rays of these lengths:

1.5 cm

2.5 cm

1.7 cm

2.8 cm

2 cm

(review)



Exploring Data

Make a chart showing all the possible ways the event in Thinking mathematically could occur.

| 1st coin | 2nd coin | face on number cube |
|----------|----------|---------------------|
| | | |
| | | |
| | | |
| | | |
| | | |

(4.01)

Terrific Tar Heels

Number of Players: 2 players

Materials Fraction cards with these fractions:

$$\frac{1}{2}, \frac{1}{12}, \frac{2}{12}, \frac{3}{12}, \frac{4}{12}, \frac{5}{12}, \frac{6}{12}$$

Each player will also need a crayon.

Game Rules:

1. Put the fraction cards in a pile face down.
2. Each player picks up a card from the top of the pile.
3. Turn your cards over; the player who has the larger fraction starts the game.
4. Put both cards at the bottom of the pile.
5. The first player draws a card from the top of the pile and colors that fraction part of their "T".
6. Players alternate turns - drawing a card, coloring that fractional part on their "T" and replace the card at the bottom of the deck.
7. If a player cannot color the fractional part shown on the card, they lose a turn.
8. Continue playing until one person has colored the entire "T".



(1.04a)

$$\frac{6}{12}$$

$$\frac{4}{12}$$

$$\frac{6}{12}$$

$$\frac{4}{12}$$

$$\frac{5}{12}$$

$$\frac{1}{12}$$

$$\frac{5}{12}$$

$$\frac{1}{12}$$

$$\frac{2}{12}$$

$$\frac{2}{12}$$

$$\frac{1}{2}$$

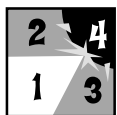
$$\frac{2}{12}$$

$$\frac{1}{12}$$

$$\frac{3}{12}$$

$$\frac{1}{2}$$

$$\frac{3}{12}$$



Keeping Skills Sharp

1. $1468 + A = 5397$
2. $6001 - 5878 = J$
3. $18 + D = 40$
4. $11 \times K = 22$
5. $8 \times 20 = N$
6. How many lines of symmetry does a square have?
7. 5 quarters + 9 dimes = ? nickels
8. How many 10's are in 1,000?
9. The soccer coach orders two liters of soda for every five players on her team. How many liters does she order for 20 players?
10. Nicole is planning a party for 10 people. She plans to serve each person a 75¢ hot dog, a 55¢ drink, and a 35¢ cupcake. Will \$20.00 cover her expenses? How do you know?



Solve this!

The Fugitive Feline opened at movie theaters on Monday. The first day there were 35 people who saw the movie. They told their friends and on the second day 16 more people came than on the first day, so that 86 people had seen the movie after the second day. On the third day 67 people came, 16 more than on the second day. If each day 16 more people saw the movie than the day before, on what day would 700 people have seen the movie?



(1.05)

To the Teacher ..

Grade 4

WEEK
21

Calculate!

Answer: 11

This type of problem can be solved by going backwards from the answer. Starting with 200, do the opposite operation as you go backwards in the steps. Subtract 51, multiply by 6, add 228, and divide by 102.

Problem of the Week

A chart can be a helpful strategy. This problem also presents a good opportunity to teach the memory function of the calculator.

Solution: 700 people will have seen the movie after the 8th day.

| Day | Number That Day | Total Number |
|-----|-----------------|--------------|
| 1 | 35 | 35 |
| 2 | 51 | 86 |
| 6 | 67 | 153 |
| 4 | 83 | 236 |
| 5 | 99 | 335 |
| 6 | 115 | 450 |
| 7 | 131 | 581 |
| 8 | 147 | 728 |

Fraction Action

- A = 1 1/4 inches
B = 1 3/4 inches
C = 2 1/4 inches
D = 2 inches
E = 1 1/4 inches

Students need many opportunities to measure fractional parts of an inch or centimeter.

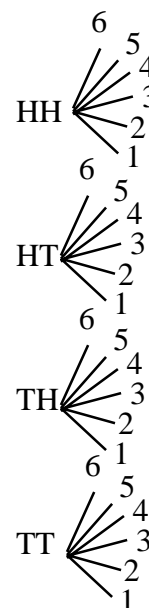
Game of the Week

Take a rest from number facts and do some visual problem solving. Notice that this game relates to equivalencies and is a good background activity for work with pattern blocks as fraction models.

Thinking Mathematically

$$P(H, H, 6) = \frac{1}{24}$$

Exploring Data



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.

- The largest 3-digit number
- $40 + 12 - 6 - 6 \div 4$
- Round to nearest hundred: 2,510
- $80 - 13$
- 49×1
- The value of 3 dimes, 2 quarters, and 3 nickels
- Number of ounces in a pound
- Number of legs on 6 horses

Keeping Skills Sharp

- 3929
- 123
- 22
- 2
- 160
- 4
- 43
- 100
- 8
- yes, \$16.50



Calculate!

How many years would it take you to spend \$1,000,000 if you spend \$25 a day?

(1.05)



Thinking Mathematically

What do you feel is the most useful number in our number system?

List reasons to justify your answer.

What number systems were used by the Cherokee and other North Carolina Indian tribes.



Exploring Data

Sara's math scores are 82, 95, 87, 91, 81, 83, 96, 78, and 86.

What effect will a score of 94 this week have on the median? on the range?

How do you know?

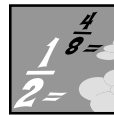
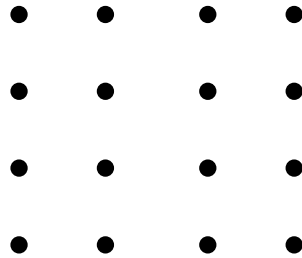


(4.02)

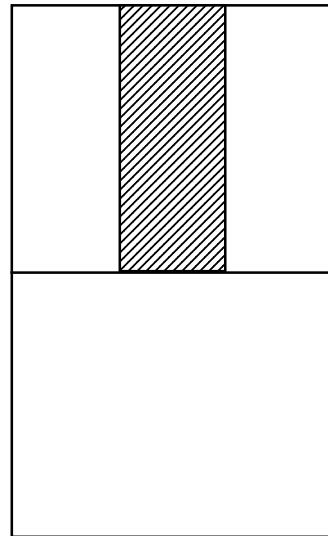


Looking Out For Math

Connect all the dots to make an irregular polygon with the maximum possible number of sides. Is there more than one solution for this problem?



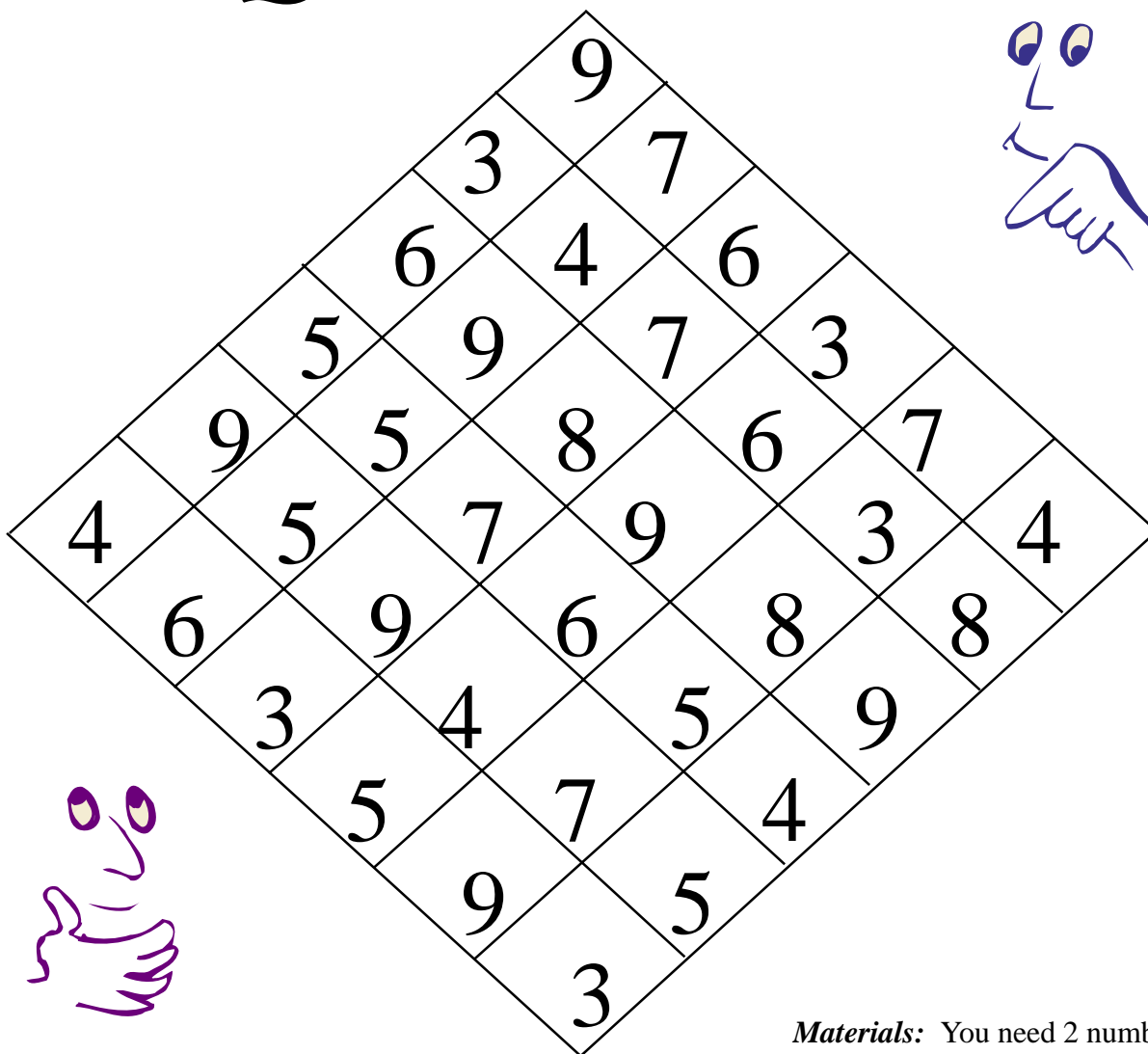
Fraction Action



What fractional part of this rectangle is shaded?

(1.03)

Four Quotients



| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| 1 | $8\overline{)48}$ | $8\overline{)24}$ | $6\overline{)36}$ | $6\overline{)54}$ | $6\overline{)24}$ | $9\overline{)45}$ |
| 2 | $4\overline{)32}$ | $6\overline{)42}$ | $9\overline{)63}$ | $6\overline{)30}$ | $7\overline{)56}$ | $7\overline{)28}$ |
| 3 | $3\overline{)24}$ | $7\overline{)35}$ | $9\overline{)81}$ | $4\overline{)24}$ | $8\overline{)64}$ | $8\overline{)32}$ |
| 4 | $9\overline{)36}$ | $8\overline{)72}$ | $5\overline{)30}$ | $7\overline{)49}$ | $5\overline{)35}$ | $7\overline{)42}$ |
| 5 | $9\overline{)54}$ | $8\overline{)56}$ | $5\overline{)40}$ | $4\overline{)28}$ | $9\overline{)72}$ | $4\overline{)36}$ |
| 6 | $9\overline{)27}$ | $8\overline{)40}$ | $6\overline{)48}$ | $7\overline{)63}$ | $3\overline{)27}$ | $5\overline{)45}$ |

Materials: You need 2 number cubes and 10 markers (like cm cubes) for each player, a different color for each player

Directions: Players take turns. The first player rolls the cubes and locates the space(s) on the grid named by them. A roll of a 3 and a 5 could be space (3, 5) or (5, 3). The player chooses either division problem and places a marker on the answer on the quotient (in one space only).

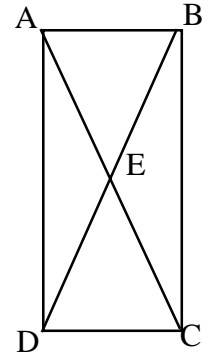
The object of the game is to get four markers in a row in any direction. The first player to get four in a row is the winner.

(1.02)



Keeping Skills Sharp

1. $7220 + 867 = M$
2. $\$1100 - G = \500
3. $25 \div 5 =$
4. $5 \times H \times 8 = 80$
5. $27 \div L = 9$
6. Name two lines which are parallel. Two which are intersecting.
7. You need half of a pound of shredded cheese to make macaroni and cheese. Will an eight ounce package be enough?
8. Is 3600 the same as 36 tens?
9. Rachel paid for a puzzle with a ten dollar bill. She received \$3.29 in change. How much did the puzzle cost?
10. Leo gave each of his eight friends three bouncing balls. Four of the balls were blue. How many were not blue?



Solve this!

It takes one tree to make a stack of newspapers three feet high. About how many days' worth of your local newspapers is this?

If each fourth grader in a public elementary school in North Carolina recycled one stack, about how many trees could be saved?

What information do you need to solve this problem?



(1.05)

To the Teacher ..

Grade 4

WEEK
22

Calculate!

It would be 110 years. Since it does not come out exactly 109 or 110 years, this is a good time to talk to students about interpreting the results of solving a problem.

Exploring Data

Sara's range will not change but her median will move from 86 to 86.5.

Fraction Action

$\frac{1}{6}$ of the rectangle is shaded. The bottom half can be divided into three equal parts to make a total of 6 equal parts. One out of six is shaded.

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 six thousand five in numerals
2. $12 + 2 \div 2 + 4$
3. How many hundreds? 3,298
4. $26 + 33$
5. 13×0
6. 25 minutes before 9:15
7. Number of weeks in 5 months
8. Number of seconds in 6 minutes

Keeping Skills Sharp

1. 8087
2. \$600
3. 5
4. 2
5. 3
6. answers will vary
7. yes
8. no
9. \$6.71
10. 20



Calculate!

Which three consecutive even numbers have a sum of 204?

(1.05)



Thinking Mathematically

Look at these sums. Make sure that each number sentence is true.

$$1 + 2 = 3$$

$$4 + 5 + 6 = 7 + 8$$

$$9 + 10 + 11 + \underline{\quad} = \underline{\quad} + \underline{\quad} + \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad}$$

Think about why this works. Talk with your class about it.

(5.02)



Exploring Data

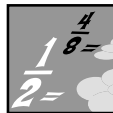
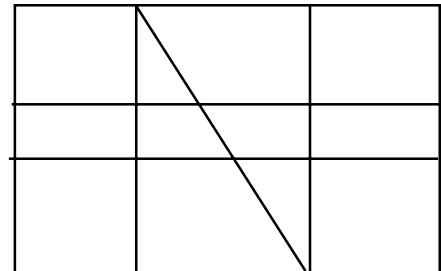
Plan a *Skittles* investigation. About how many candies are in a bag? Are the colors evenly distributed? In your group make bar graphs and line plots to display your data. To combine group information use pictographs as well as bar graphs with different scales.

(4.01)



Looking Out For Math

How many triangles and how many rectangles are in this figure?



Fraction Action

Wilbur Weatherman predicted 1.25 inches of rainfall on Tuesday. The actual rainfall was 1 and three-quarters inches.

How far off was Wilbur's prediction?

Show how you know.



(1.04a)

START

$$6\overline{)42}$$

$$9\overline{)72}$$

$$64 \div 8$$

**OUT OF
GAS
LOSE A
TURN**

$$4\overline{)28}$$

$$24 \div 8$$

Race to the Resort



$$5\overline{)35}$$

$$3\overline{)36}$$

$$64 \div 8$$

**NO
WIND!
BACK 3
SPACES**

$$36 \div 9$$

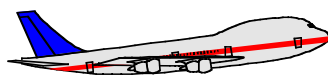
$$7\overline{)49}$$

$$48 \div 6$$

$$54 \div 9$$

**BONUS:
MOVE
AHEAD
ONE!!**

$$49 \div 7$$



$$6\overline{)30}$$

$$9\overline{)81}$$

YOU WIN!

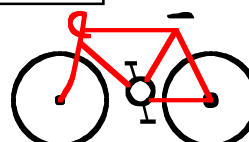
**LOW ON
FUEL
LOSE
A TURN**

$$20 \div 5$$

$$6\overline{)18}$$

Directions: Players take turns rolling a number cube. Move that many spaces if you can answer all of the facts along the way. If you land on the same square as your opponent, you can send that player back to start!

$$10\overline{)100}$$



$$16 \div 4$$

$$4\overline{)32}$$

$$56 \div 8$$

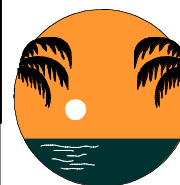
$$4\overline{)36}$$

$$5\overline{)25}$$

**FLAT
TIRE:
LOSE A
TURN**

**SORRY,
BACK
TO
STORMY
SEAS**

$$24 \div 4$$



$$6\overline{)42}$$

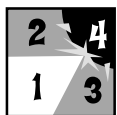
$$48 \div 8$$

$$3\overline{)15}$$

$$8\overline{)72}$$

**SHIP
AGROUND
BACK
3
SPACES**

(1.02)



Keeping Skills Sharp

1. $85 + 302 + E = 392$
2. $3006 - 85 = G$
3. $M \div 6 = 6$
4. $4 \times 5 = J \times 4$
5. $2 \times 3 \times V = 24$
6. It is 12:30 now. What time was it 20 minutes ago?
7. What is the perimeter of a regular pentagon with side 6 cm?
8. Write in standard form: 2 thousands, 4 tens, 3 ones, 8 hundreds
9. Pam has \$2.50 in quarters and \$0.95 in nickels. How many coins does she have?
10. William collected 856 cans one week and 1,026 cans the next week. How many more cans must be collected to reach his goal of 3,045 cans.



Solve this!

Adam, Beth, Carter, and Donna attend four different schools - Evans, Forest, Gotham, and Hammond. Match each person with the school attended.

Clues:

1. Donna is the cousin of the girl who attends Hammond.
2. Adam's school played baseball against Gotham last week.
3. The girl who attends Forest used to live next door to a boy named Gerald.



(1.05)

To the Teacher ..

Calculate!

67, 68, 69

Thinking Mathematically

$$1 + 2 = 3$$

$$4 + 5 + 6 = 7 + 8$$

$$9 + 10 + 11 + 12 = 13 + 14 + 15$$

$$16 + 17 + 18 + 19 + 20 = 21 + 22 + 23 + 24$$

Here is one way to look at the pattern:

$$4 + 5 + 6 = 7 + 8$$

Divide the last number on the left side of the equation by 2 (the number of addends on the right side) and parcel out the quotient to the other addends [6 ÷ 2 = 3; 4 + 3 = 7,

$$5 + 3 = 8]$$

$$9 + 10 + 11 + 12 = 13 + 14 + 15$$

$$12 \div 3 = 4; 9 + 4 = 13, 10 + 4 = 14,$$

$$11 + 4 = 15$$

Looking Out For Math

4 triangles, 37 rectangles

Fraction Action

He was off by $\frac{2}{4}$ or $\frac{1}{2}$ inch.

Students could draw a fraction number line or other diagrams or explanations to prove their answer.

Exploring Data

Divide the class into groups and use 2 or 3 large bags of *Skittles*. Give each group some to tally by color.

Problem of the Week

A logic box is a good strategy

Explanation:

Clue 1: Beth attends Hammond since Donna is her cousin.

Clue 2: Adam doesn't go to Gotham.

Clue 3: Donna must go to Forest; so Adam must go to Evans since all others have been ruled out and Carter is left with Gotham

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. 1 less than 3000
2. $15 + 3 \div 2 + 1 =$
3. Nearest dollar: \$17.45
4. $42 - 12 =$
5. 8×8
6. The value of 6 quarters, 2 dimes, and 8 pennies
7. Which is shorter? 7 centimeters or 7 inches.
8. Number of wheels on 8 cars

Keeping Skills Sharp

1. 5
2. 2921
3. 36
4. 5
5. 4
6. 12:10
7. 30 cm
8. 2843
9. 29
10. 1163



Calculate!

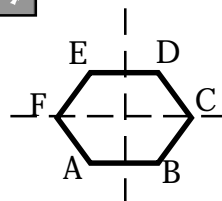
Player 1 enters a number and specifies a digit for the opponent to “wipe out.” Player 2 may add or subtract to change the digit to zero but leave all other digits unchanged.

Ex., player 1 enters 542 and says to wipe out the 4. Player 2 succeeds by subtracting 40.

(1.01b)



Looking Out For Math



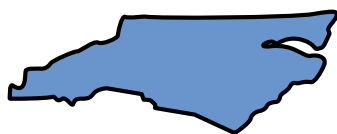
If A has coordinates (3, 2), and F has coordinates (2, 4), and D has coordinates (5, 6), what are the coordinates of the other vertices of this symmetric hexagon ?

(3.01)



Thinking Mathematically

If you divided the state of North Carolina into four equal clusters of counties, would the land area be the same? the population?



(1.02b, 2.01)



Fraction Action

What fraction of the number of letters in the book title:

Mathematicians Are People, Too,
are vowels?

(Ask your teacher or librarian about this book. You'll learn some interesting stories about real mathematicians.)



Exploring Data

Survey your parents to determine technological advances that we have today that your parents did not have at your age. Compile the information as a class. Create a method for displaying the results. Write a story about your parents' life as a child.

(4.01)



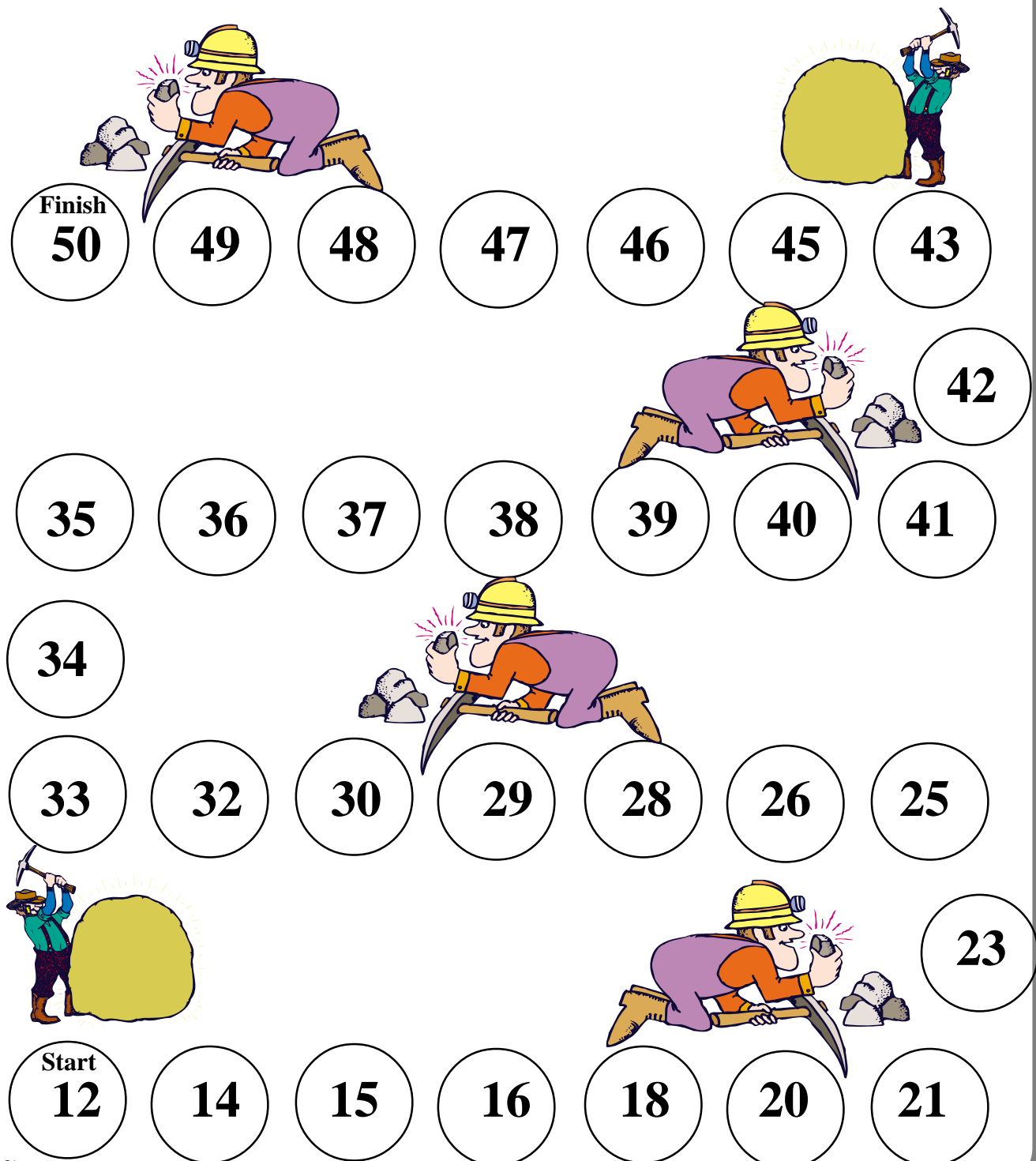
(1.03)

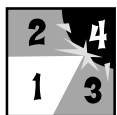
Mount Mitchell Rock

Number of Players: 2

Materials: You will need a number cube and a different colored marker for each player.

Directions: Follow the path to the top of the mountain. Place your marker on start. Take turns rolling the cube. Divide the number on the rock under your marker by the number on the cube. The remainder tells the number of spaces you may move. The first player to reach the top of the mountain is the winner.





Keeping Skills Sharp

1. What is the sum of 365 and 892?
2. $3002 - S = 2746$
3. $23 \times H = 115$
4. $K \div 8 = 8$
5. $28 \div 2 = L$
6. Name two quadrilaterals.
7. ____ in. = 1 yard
8. 6×9 is how many tens?
9. Susan bought a hot dog for \$1.25 and french fries for \$0.85. She hands the clerk \$3. How much change should she receive?
10. Each tour at the zoo lasts 45 minutes. If you go on 2 tours, how many hours and minutes will it take?



Solve this!

Some fourth grade students are standing in a circle. They are evenly spaced and numbered in order. The 3rd student is directly opposite the 7th. How many students are in the circle?



(1.03)

To the Teacher ..

Grade 4

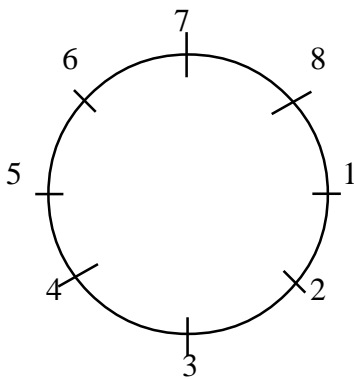
WEEK
24

Calculate!

Good review of place value. Students focusing on the value of the digits.

Problem of the Week

There are 8 students in the circle.



Looking Out for Math

B (5,2); C (6,4); E (3,6).

Fraction Action

Half of the letters are vowels.

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. 40 less than 700
2. $6 + 7 + 40 - 3 \div 2$
3. Round to nearest ten cents: \$3.67
4. $80 + 16$
5. 11×5
6. 1 minute before 3:00
7. Number of feet in 6 yards
8. Double 35

Keeping Skills Sharp

1. 1257
2. 256
3. 5
4. 64
5. 14
6. square, rectangle, parallelogram, rhombus
7. 36
8. 50
9. \$0.90
10. 1 hour 30 minutes

Math News

Materials we need for math

We are collecting your good “junk” for our classroom, things that you might throw away we can use for sorting, counting building, patterning, graphing and so on. Here is a list with examples of items we can use:

- Containers and lids such as egg cartons, plastic tubs of different sizes and shapes, tops of spice jars, shampoo bottles, and gallon containers.
- Nature objects such as interesting sea shells, different pine or fir cones, nuts, dried beans, and different shapes of macaroni.

- Collectibles such as keys, buttons, nuts and bolts, clips, and old jewelry.
- Paper things like toilet paper or paper towel rolls, cups, wrapping paper or wallpaper samples, sandpaper, catalogs with pictures of toys or foods, and large puzzles.

Also, we will be cooking. Please let me know if you can send some ingredients. I have a list of items needed for our cooking projects.

An Activity-filled Mathematics Classroom

When you visit our school, you will see children actively engaged in learning

mathematics in a variety of ways. Some explorations are student-initiated and others are teacher directed. In all parts of the mathematics program, children learn by doing. The classroom is set up so that children can explore, investigate, estimate, make predictions, count, build, and talk about their ideas. Children are encouraged to tell how they arrive at their answers and to look for alternative ways to solve problems. They use mathematics in all of the centers so that mathematics is related to daily living, not a subject apart. New ideas are revisited in a variety of ways so that children have opportunities to develop understandings over time and in their own styles of learning.

Supporting your child at school

It is important for home and school to join hands in helping every child learn mathematics. Mathematics is a tool for solving problems, computing, and completing spatial tasks. This monthly newsletter is about what we are doing at school in mathematics and tips for things which pattern or families can do with your child at home.

Math is a very important tool. Here are ways you can help your child be successful in learning mathematics:

- Encourage your child to think of himself or herself as a mathematician.
- Be sure that your child comes to school ready to learn -- rested, nourished, and ready to be part of a larger group.
- Let your child know that you expect him or her to be successful and to participate in class.
- Talk with the teacher, visit the school, and read carefully the materials that come home with your child.