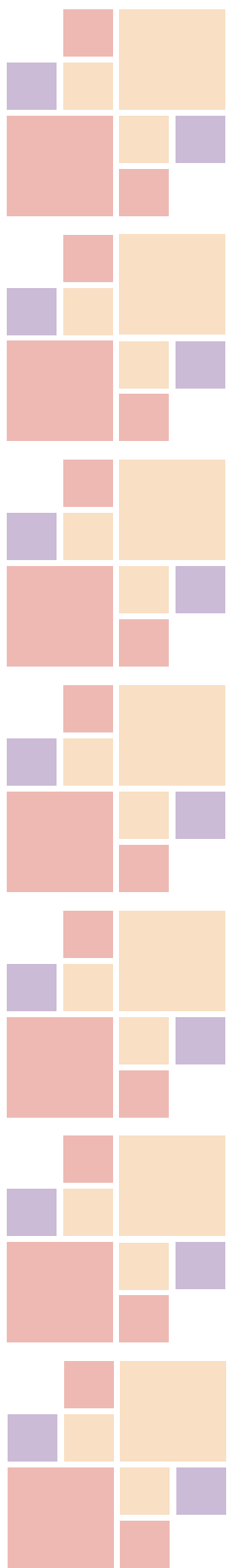


**MATH PUZZLES, PATTERNS  
& EXPLORATIONS**



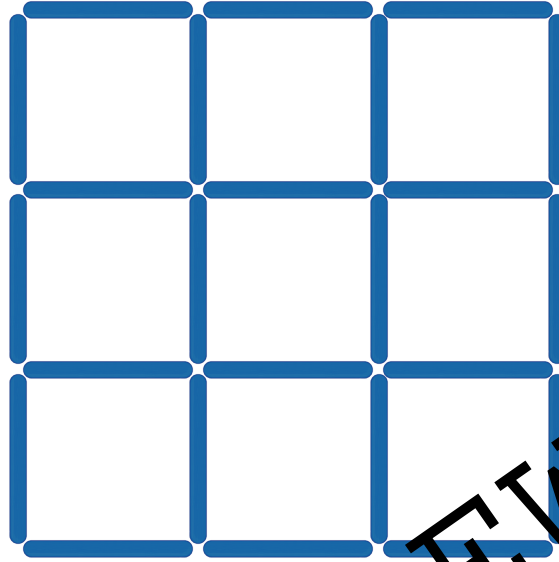
# TABLE OF CONTENTS

CRAFT STICK PUZZLES .....	4
NUMBER PUZZLES .....	14
NUMERICAL PATTERNS .....	24
TANGRAM EXPLORATIONS .....	34
ANSWER KEY .....	45
USER LICENSE .....	61

# CRAFT STICK PUZZLE

A

Remove 4 craft sticks to leave only 5 congruent squares.  
Record your solution.



1K5  
MATH

PREVIEW

# CRAFT STICK PUZZLE

B

Move 2 craft sticks to form 4 congruent triangles.  
Record your solution.

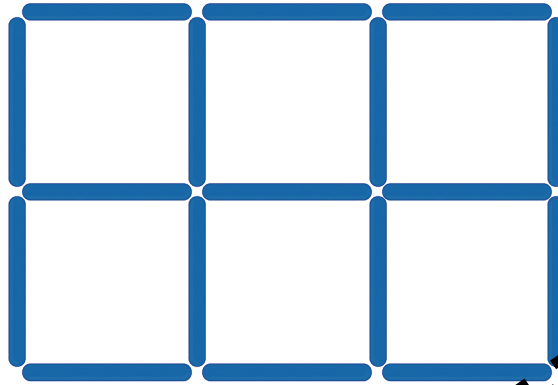


1K5  
MATH

# CRAFT STICK PUZZLE

C

Move 3 craft sticks to form 5 congruent squares.  
Record your solution.



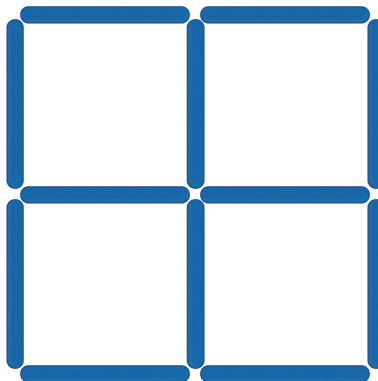
1K5  
MATH

PREVIEW

# CRAFT STICK PUZZLE

D

Move 4 craft sticks to form 10 squares.  
The squares:  
- do not have to be congruent  
- do not have to be flat on the surface.  
Record your solution.

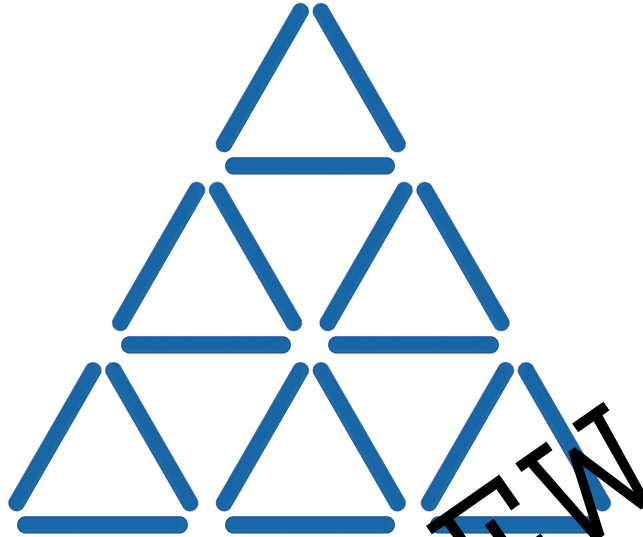


1K5  
MATH

# CRAFT STICK PUZZLE

E

Remove 3 craft sticks to leave 7 triangles. The triangles do not have to be congruent. Record your solution.

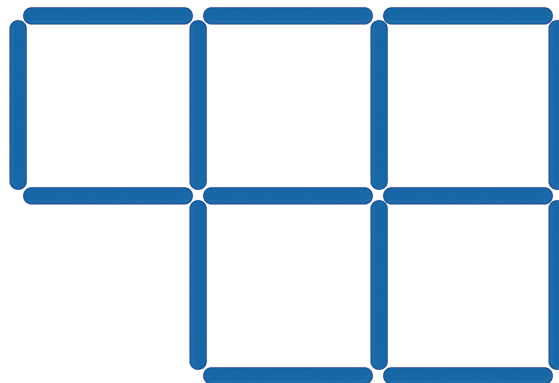


1K5  
MATH

# CRAFT STICK PUZZLE

F

Remove 3 craft sticks to leave 3 congruent squares. Record your solution.

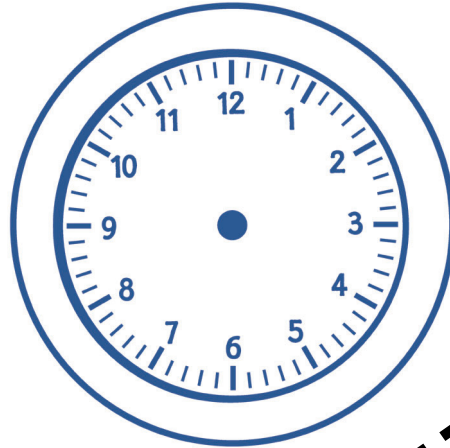


1K5  
MATH

# NUMBER PUZZLE

A

How can you divide a clock face into three parts so that the hour numbers in each part have the same sum?



K5  
MATH

PREVIEW

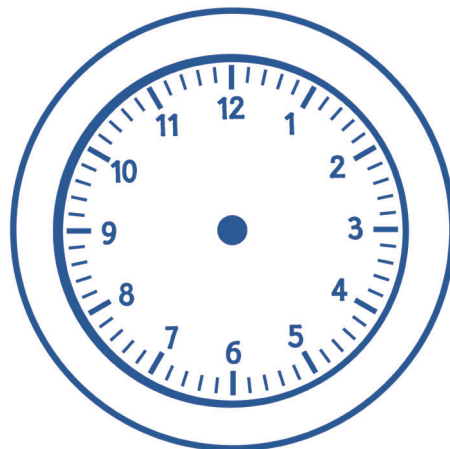
# NUMBER PUZZLE

B

How many times does the sum of the digits in the time equal 15 between midnight and noon?

**Example:**

11:49 a.m.  $\rightarrow 1 + 1 + 4 + 9 = 15$

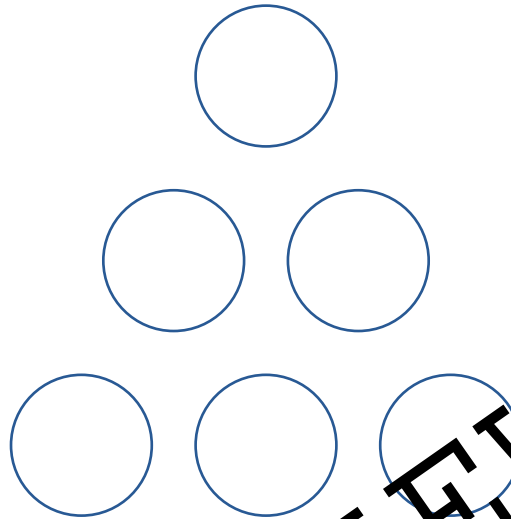


K5  
MATH

# NUMBER PUZZLE

C

Place the numbers 1-6 in the circles so that the sums of the numbers on each side of the figure are equal.  
Find four possible solutions.



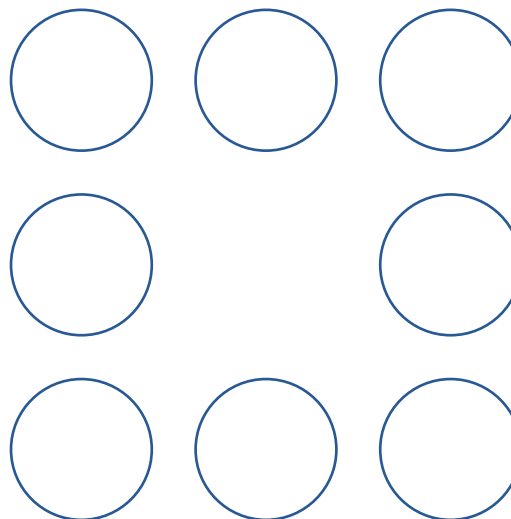
1K5  
MATH

PREVIEW

# NUMBER PUZZLE

D

Place the numbers 1-8 in the circles so that the sums of the numbers on each side of the figure are equal. Find six possible solutions.



1K5  
MATH

# NUMBER PUZZLE

E

Write an extra digit before or after a given number in some of the cells so that the sum of the numbers in each row and column equals 100.

7	8	9
1	9	6
7	7	5

1K5  
MATH

PREVIEW

# NUMBER PUZZLE

F

Write an extra digit before or after a given number in some of the cells so that the sum of the numbers in each row and column equals 100.

4	9	4
1	4	2
8	6	3

1K5  
MATH



# NUMERICAL PATTERNS

A

Complete each sequence. Name a rule for each pattern.

a. 3, 10, 31, 94, 283, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

b. 1022, 510, 254, 126, 62, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

c. 2, 6, 12, 36, 72, 226, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**K5**  
MATH

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# NUMERICAL PATTERNS

B

Complete each sequence. Name a rule for each pattern.

a. 10, 50, 20, 100, 70, 350, 320, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

b. 201, 199, 195, 193, 189, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

c. 1, 3, 6, 9, 18, 22, 44, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**K5**  
MATH

# NUMERICAL PATTERNS

C

Complete each sequence. Name a rule for each pattern.

a. 5, 7, 10, 14, 19, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

b. 123, 130, 129, 136, 135, 142, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

c. 5, 8, 17, 20, 41, 44, 89, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**K5**  
MATH

PREVIEW

# NUMERICAL PATTERNS

D

Complete each sequence. Name a rule for each pattern.

a. 280, 140, 152, 76, 88, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

b. 5, 7, 11, 17, 19, 23, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

c. 8, 12, 24, 23, 27, 54, 53, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

**K5**  
MATH

# NUMERICAL PATTERNS

E

Complete each sequence. Name a rule for each pattern.

a. 9:30, 9:48, \_\_\_\_\_, 10:24, \_\_\_\_\_, 11:00, \_\_\_\_\_, 11:36, \_\_\_\_\_

b. 12:00, 11:48, 11:36, 11:24, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, 10:24

c. 6:14, 6:54, 6:47, \_\_\_\_\_, 7:20, \_\_\_\_\_, 7:53, \_\_\_\_\_, \_\_\_\_\_

**K5**  
MATH

# NUMERICAL PATTERNS

F

Complete each sequence. Name a rule for each pattern.

a. 12:30, 11:58, \_\_\_\_\_, 11:41, 11:56, \_\_\_\_\_, 11:39, \_\_\_\_\_

b. 10:15, 11:20, 12:05, 1:10, \_\_\_\_\_, \_\_\_\_\_, 3:45, \_\_\_\_\_, \_\_\_\_\_

c. 5:23, 4:58, 4:50, \_\_\_\_\_, 4:17, \_\_\_\_\_, 3:44, \_\_\_\_\_, 3:11

**K5**  
MATH

# NUMERICAL PATTERNS

G

Complete each sequence. Name a rule for each pattern.

a. 27¢, 54¢, 36¢, 72¢, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \$1.62, \$3.24

b. \$1.56, \$1.34, \$1.65, \$1.43, \_\_\_\_\_, \_\_\_\_\_, \$1.83, \_\_\_\_\_, \_\_\_\_\_

c. 34¢, 46¢, \$1.45, \$1.57, \$2.56, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

1K5  
MATH

# NUMERICAL PATTERNS

H

Complete each sequence. Name a rule for each pattern.

a. 3¢, 9¢, 4¢, 12¢, \_\_\_\_\_, 21¢, \_\_\_\_\_, \_\_\_\_\_, 43¢, \_\_\_\_\_

b. \$10.48, \$5.24, \$5.36, \$2.68, \_\_\_\_\_, \_\_\_\_\_, \$1.52, \_\_\_\_\_, \_\_\_\_\_

c. 44¢, 53¢, 58¢, 52¢, \_\_\_\_\_, \_\_\_\_\_, 60¢, \_\_\_\_\_, \_\_\_\_\_, 68¢

1K5  
MATH

# TANGRAM EXPLORATION

A

Use a tangram set to find answers to the following questions.

1. How many of the small triangles fit on the parallelogram?
2. How many of the small triangles fit on the square?
3. How many of the small triangles fit on the large triangle?
4. How many medium triangles fit on the large triangle?
5. Show two different ways the large triangle can be covered using the other pieces (tans).

Record your solutions by tracing the tans.

**1K5**  
MATH

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# TANGRAM EXPLORATION

B

1. Construct one of the animals below using all seven pieces in a tangram set. Trace the outline of the figure.
2. Create a second animal using all seven tangram pieces. Each tan must touch at least one vertex of another tan. Trace the outline of the figure.
3. Measure the perimeter of your two animals. Which animal has a shorter perimeter? How much shorter?

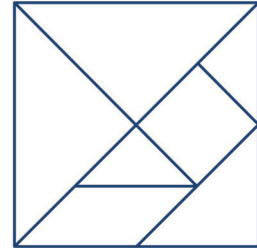
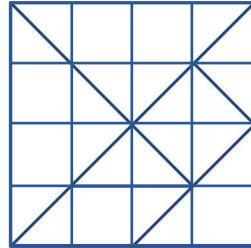
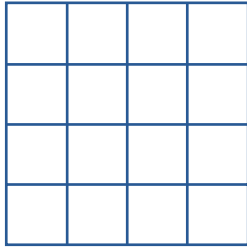


**1K5**  
MATH

# TANGRAM EXPLORATION

C

1. Make your own tangram set by drawing a 4 x 4 inch square with 4 equal rows and columns. Draw the diagonals as shown below.



2. Cut out and color the seven tans. Use all seven tans to create a figure of your choice. Glue your figure onto a sheet of paper.
3. Name the seven shapes used to create your figure. List the properties of each shape.

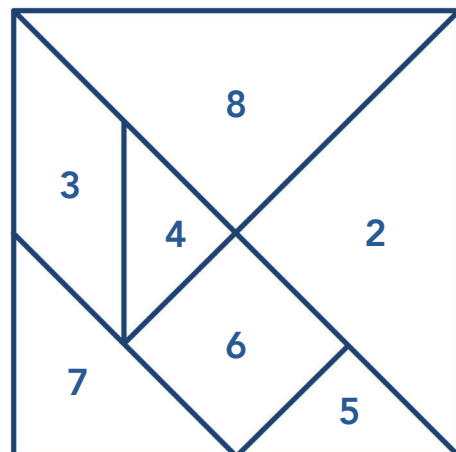
**1K5**  
MATH

# TANGRAM EXPLORATION

D

Use the point values for each piece shown on the tangram to construct the polygons listed in the table. Show how you constructed each polygon. Write an equation to show the value of each polygon.

SHAPE	NUMBER OF PIECES	VALUE
Hexagon	3	12
Parallelogram	3	15
Rectangle	3	16
Rectangle	5	25
Trapezoid	5	25



**1K5**  
MATH

# TANGRAM EXPLORATION

E

Describe the properties of a square. Is it possible to construct a square using:

- two tans?
- three tans?
- four tans?
- five tans?
- six tans?
- all seven tans?

Record your solutions.

1K5  
MATH

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# TANGRAM EXPLORATION

F

Describe the properties of a trapezoid. Is it possible to construct a trapezoid using:

- two tans?
- three tans?
- four tans?
- five tans?
- six tans?
- all seven tans?

Record your solutions.

1K5  
MATH

**Pages 6-12, 16-22, 27-32, 36-43, and 44-60 are not included in  
this Preview.**