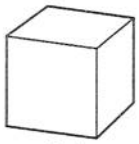
Name _____

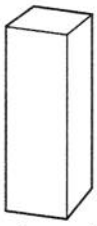
It's Just Solid Fun

E 8-1
ALGEBRA

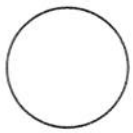

Cone

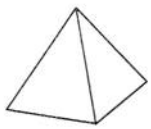

Cube

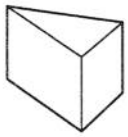

Cylinder


Rectangular prism


Rectangular pyramid


Sphere


Square pyramid


Triangular prism

Write an equation for each exercise. Use *f* for the number of faces, *e* for the number of edges, and *v* for the number of vertices.

1. In a cube, how does the number of faces compare to the number of edges? _____

2. What is the relationship of the number of edges and the number of vertices in a cube? _____

3. Compare the number of faces in a cube to the number of vertices in a cube. _____

4. In a triangular prism, what is the relationship between the number of faces and the number of edges? _____

5. What equation could you write to compare the number of faces to the number of vertices in a rectangular pyramid? _____

6. In a triangular prism, how does the number of faces compare to the number of vertices? _____

7. What is the relationship between the number of faces in a rectangular pyramid and the number of edges? _____

Name _____

Playground Numbers

E 8-2
DECISION MAKING

The Wellington School needs to raise money for a new playground climber. The 4th grade needs to raise at least $150 for their share. They have estimated how much they can earn from a number of activities. For Exercises 1–4, tell which of the listed activities you would vote to do. Explain why you chose those activities. Then write the total amount of money that would be earned if the estimates are accurate.

1. Bake sale: $85
Car wash: $93
Put on a play: $75
Sell juice at the basketball game: $59

_____

_____

2. Craft sale: $98
Book sale: $65
Student artwork sale: $70
Make and sell a school directory: $80

_____

_____

3. Pancake breakfast: $80
Make and sell a school calendar: $73
Sell lemonade at Sports Day: $65
Walk-a-thon: $59

_____

_____

4. What other things besides money are important to consider when deciding on activities? List at least two.

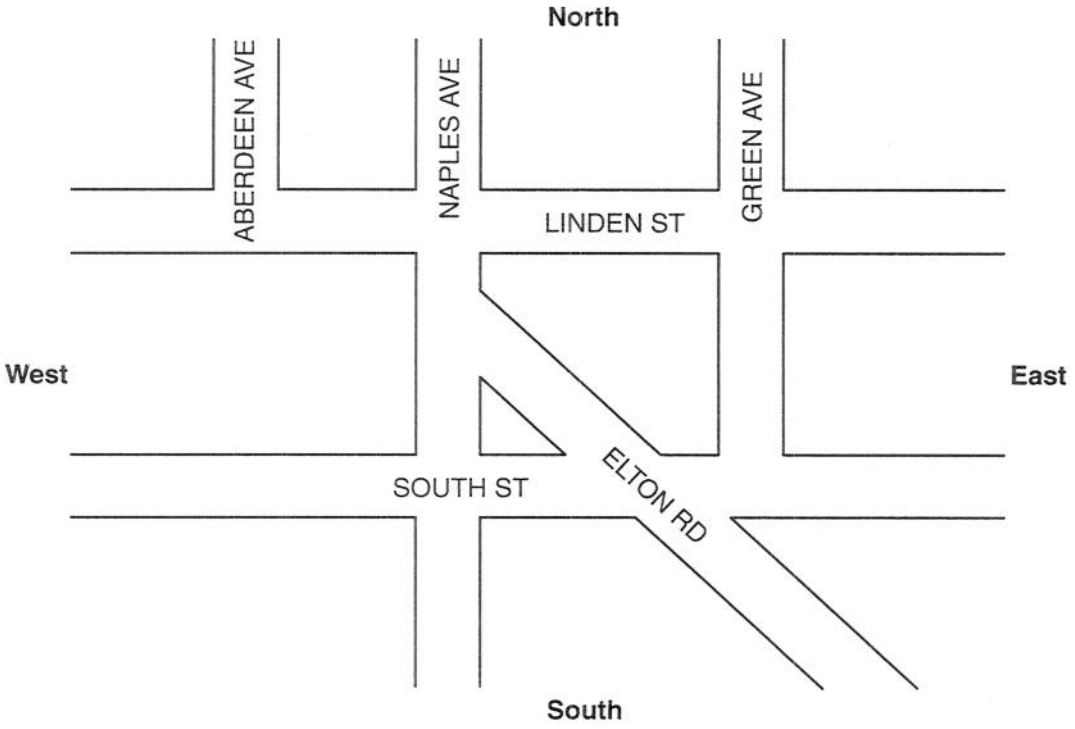
_____

_____

Name _____

Street Smarts

E 8-3
REASONING



1. Name 2 streets that run north and south, intersect South Street, and are parallel to each other.

_____

2. Name 2 streets that are parallel and run east and west.

_____

3. Name a street that intersects Linden Street at a right angle and intersects no other street.

_____

4. Name a street that intersects South Street, but NOT at a right angle.

_____

5. Three parallel streets intersect an east-west street at right angles. Name the east-west street.

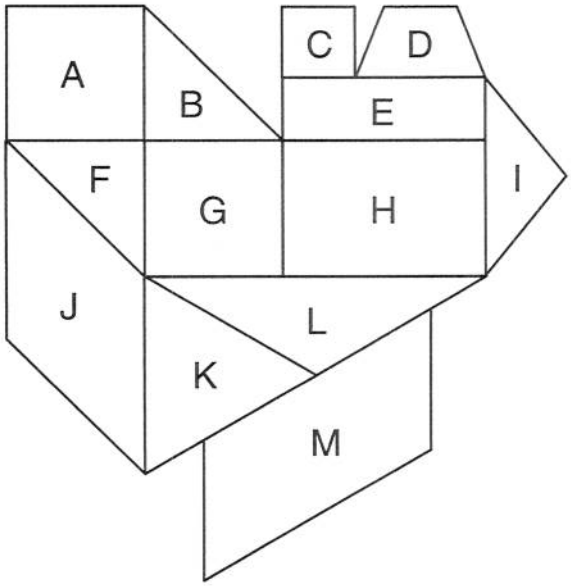
_____

Name _____

Doodles

E 8-4
VISUAL THINKING

Darius made this doodle while talking on the phone. Name each shape Darius drew. Be as specific as possible.



A. _____

B. _____

C. _____

D. _____

E. _____

F. _____

G. _____

H. _____

I. _____

J. _____

K. _____

L. _____

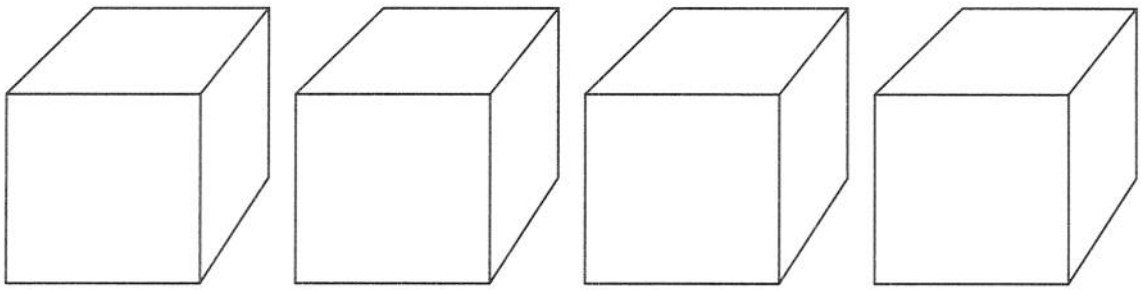
M. _____

Name _____

Don't Look Now!

E 8-5
REASONING

Geometric figures are hidden in the boxes below. You can't look! The information in each exercise will allow you to figure out what each box contains. For each exercise, write which figure is in each box. You may write in the boxes to help you solve each exercise.



Box A **Box B** **Box C** **Box D**

1. Hidden figures: right triangle, rectangle, isosceles triangle, parallelogram
The quadrilaterals are next to each other.
The figures in Boxes A and C have right angles.

The isosceles triangle is in Box B.

Box A: _____ Box B: _____

Box C: _____ Box D: _____

2. Hidden figures: sphere, cone, cylinder, cube
Box A contains a solid that rolls.
The cube is in Box B.
The solid in Box D has 2 faces.
The solid in Box A has no faces.

Box A: _____ Box B: _____

Box C: _____ Box D: _____

3. Hidden figures: square, rhombus, circle, rectangle
The figures in Boxes C and D have all sides equal.
The figure in Box B is not a polygon.
The figures in Boxes A and C have right angles.

Box A: _____ Box B: _____

Box C: _____ Box D: _____

Name _____

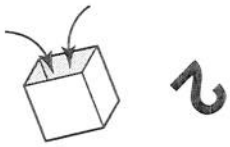
Symbol Acrobatics

E 8-6
REASONING

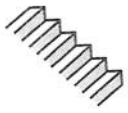
You can write words or phrases by using symbols. For example, if you drew a picture of a bee, it could stand for the word "be." In the exercises below, each symbol stands for a word or a syllable. Before you can solve the exercise, you must first flip, slide, or turn each symbol. Write the word or phrase for each exercise.

1.   _____

2.   _____

3.  _____

4.  the  _____

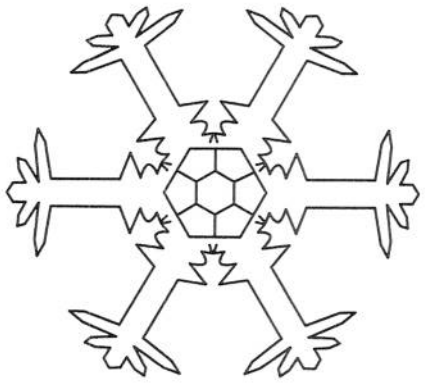
5.  the  _____

Name_____

Let It Snow!

E 8-7
VISUAL THINKING

Snow crystals usually form as 6-sided stars, but are different in detailed appearance.



1. Draw all lines of symmetry on the snow crystal to the right.

2. Draw your own snow crystal design. Make sure it has symmetry.

3. Draw your own snow crystal design, but this time make sure it has NO symmetry.

4. Decide which design you like best. Explain why you chose that design. Give specific reasons.

_____

_____

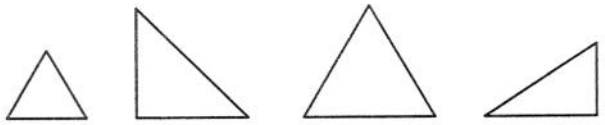
_____

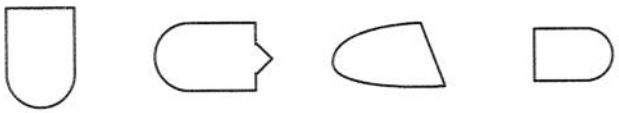
_____

Name _____

Similarity

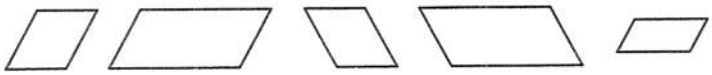
Circle the similar figures in each set.

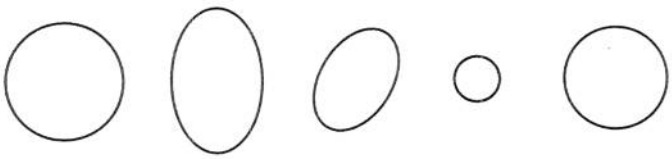
1. 

2. 

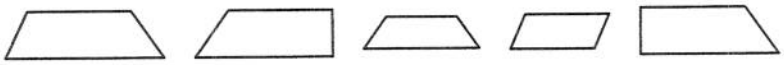
3. 

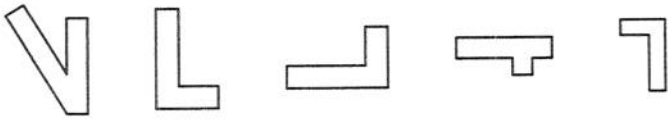
4. 

5. 

6. 

7. 

8. 

9. 

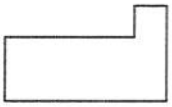
10. 

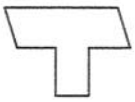
Name _____

Poly Shapes

E 8-9
VISUAL THINKING

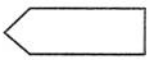
Each figure is made of at least 2 polygons. Draw a line or lines to show the figures. Name each figure. Be specific.

1. 

2. 

3. 

4. 

5. 

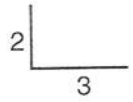
6. 

Name _____

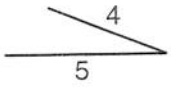
All the Way Around

E 8-10
VISUAL THINKING

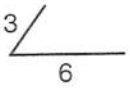
For each exercise, complete the figure by drawing a polygon with the perimeter shown. Write the length of each side of your polygon.

1. 

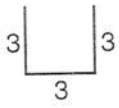
P = 10

2. 

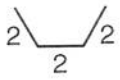
P = 11

3. 

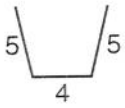
P = 18

4. 

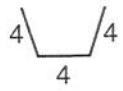
P = 14

5. 

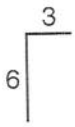
P = 12

6. 

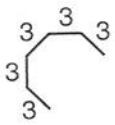
P = 21

7. 

P = 20

8. 

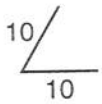
P = 22

9. 

P = 24

10. 

P = 30

11. 

P = 30

Name _____

Fair Enough

E 8-11
DECISION MAKING

Carl is scheduling students to work at the school fair. Each student will work a 2 hr shift. The students who have signed up to work are Anna, Byron, Carlos, Donald, Esha, Frank, Glynis, Hannah, and Juan.

In each exercise fill out a schedule for student workers that meets the requirements stated.

1. Anna and Juan cannot work on Wednesday. Donald can work only on Thursday. Carlos can work only the last shift.

	Wednesday	Thursday	Friday
10 A.M.–noon			
noon–2 P.M.			
2 P.M.–4 P.M.			

2. Esha cannot work on Friday. Hannah can work only in the morning. Frank and Glynis are only available on Wednesday and Thursday.

	Wednesday	Thursday	Friday
10 A.M.–noon			
noon–2 P.M.			
2 P.M.–4 P.M.			

3. Carlos can work either Wednesday or Friday. Byron is available only from 10:00 A.M. to noon on Thursday. Juan cannot work the last shift.

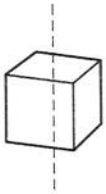
	Wednesday	Thursday	Friday
10 A.M.–noon			
noon–2 P.M.			
2 P.M.–4 P.M.			

Name _____

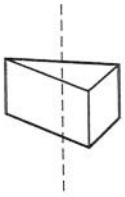
Footprints

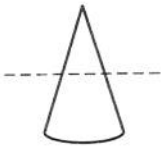
E 8-12
VISUAL THINKING

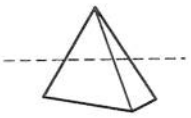
Write the name of the plane figure you will see at each cut.

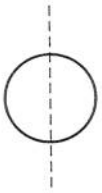
1.  _____

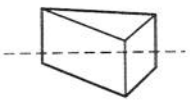
2.  _____

3.  _____

4.  _____

5.  _____

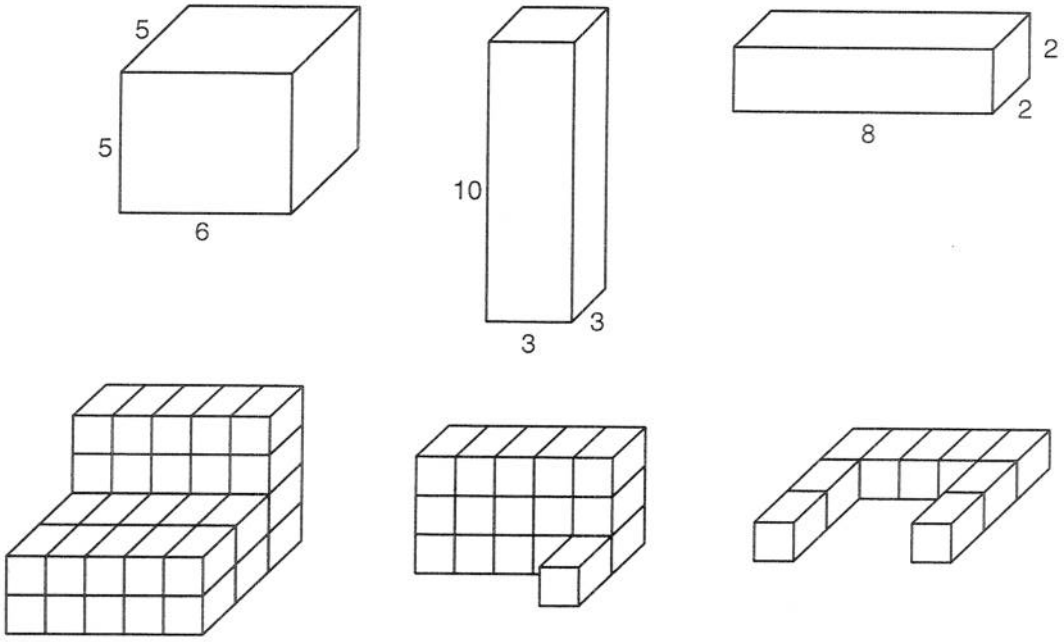
6.  _____

7.  _____

Name _____

Building Blocks

E 8-13
VISUAL THINKING



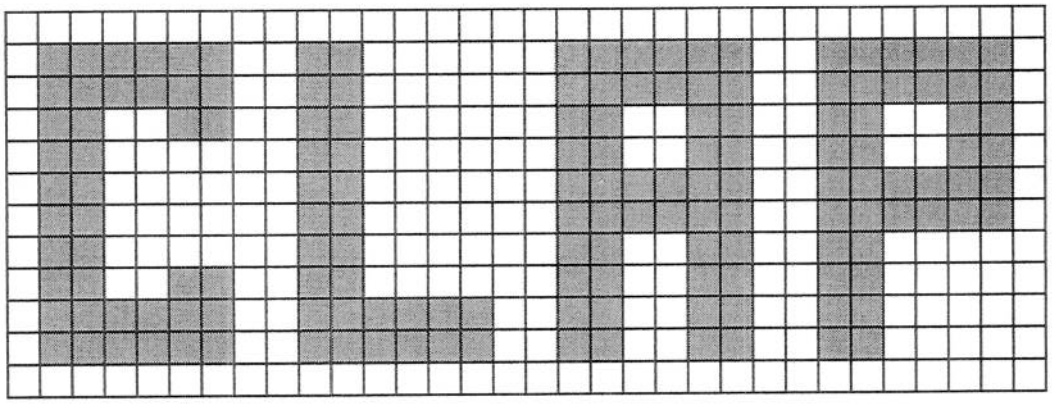
1. Put these building blocks together to create your own structure.

2. What is the total volume of your building?

_____

Name _____

Applause



1. Complete the table below by writing the perimeters and areas of the block letters. (Hint: You can break the areas into smaller parts.)

Letter	Perimeter	Area
C		
L		
A		
P		

2. Draw your initials in block letters on the grid below and find the perimeter and area of each letter.