Applied Math

CREATE A geometry TOWN

Map labels (as seen on the town map):

- ARRAY FARM
- OVAL POOL
- OPERATIONS MANSION
- SUBTRACTION MCDONALDS
- PROTRACTOR HARDWARE
- RIVER
- MEDIAN JUNCTION
- LINE GROVE
- PENTAGON VILLAGE
- RATIO HOSPITAL
- ALGEBRA FIRE STATION
- POLYGON PETS
- DIVIDENDS BANK
- QUADRILATERAL TOYS
- TRIANGLE PIZZA
- INTERSECTING HIGHWAY
- GRID PLACE
- QUOTIENT
- RHOMBUS
- GAS STATION
- FACTOR MOUNTAINS
- VARIABLE BOOKSTORE
- SQUARE ROOT RESTURANT
- PERPENDICULAR STREET
- RAY AVENUE
- GEOMETRY POST OFFICE
- OCTOGON GROCERY
- MATH GARDENS
- RIGHT ANGLE ICE CREAM
- PARALLEL PARKWAY
- CONGRUENT MALL
- DATA LOOP
- LAKE HEXAGON
- NUMBERS HILL
- RANGE BEACH GEAR
- LINE SEGMENT LANE
- REMAINDER SCHOOL
- PERCENT LIBRARY
- POINT VALLEY
- EQUILATERAL POLICE
- ARC CHURCH
- FRACTION MOVIE THEATRE
- PARALLEL ROAD
- PARTITION MALL
- ACUTE ROAD
- ACUTE ANGLE WAY
- DECIMAL BEACH
- 150 SCALES SURF BOAR RENT
- SCALENE COFFEE
- MULTIPLICATION HOTEL
- COORDINATE ROW
- PARALLELOGRAM RAILWAY STATION

COMPASS

N / S / E / W

LEGEND

- TREES OR SHRUBS
- MOUNTAINS
- WATER
- PATH
- ROAD
- PLAYGROUND
- RAILROAD TRACKS
- BENCH

SCALE

$\frac{1}{4}$ inch = 5 miles

RECOGNIZING GEOMETRIC FIGURES, PARTITIONING SHAPES, AND MEASUREMENT, ALL WHILE WORKING ON MAP SKILLS.

The Owl TEACHER

created by the owl teacher

MAP DESIGNING PROJECT

PURPOSE

To demonstrate understanding of geometric terms. You'll be designing and drawing a town map that will incorporate many geometric terms.

MAP REQUIREMENTS

You must have at least one of all of the following on your map:

BUILDINGS

- ❑ a rectangle that is partitioned into equal areas of 4.
- ❑ a rectangle that is partitioned into equal areas of 8
- ❑ pentagon
- ❑ hexagon
- ❑ octagon
- ❑ right triangle
- ❑ equilateral triangle
- ❑ isosceles triangle
- ❑ scalene triangle
- ❑ trapezoid
- ❑ rhombus
- ❑ parallelogram
- ❑ rectangle
- ❑ square
- ❑ an array
- ❑ irregular polygon
- ❑ a congruent figure
- ❑ a line of symmetry

ROADS

- ❑ a street that forms a line segment
- ❑ a street that forms a ray
- ❑ a street that forms a line
- ❑ a pair of parallel lines
- ❑ a pair of perpendicular lines
- ❑ a pair of intersecting lines
- ❑ a street that forms an obtuse angle
- ❑ a street that forms an acute angle

1.) Think about how you want to create 15 ¾ inches in space.
2.) Sketch a rough draft first. You may templates/stencils, rulers, and protro Make sure your map is creative and
3.) Redraw your map on your official p tools. Also use your sketch to guide
4.) Label your buildings and spaces. Us Only use markers for outlining and work is legible and colored neatly.
5.) Complete any assigned sheets your

MAP DESIGNING PROJECT

PREPARING THE MAP DIRECTIONS

- ❑ Take a 12 x 18 sheet of white construction paper and write your name on the back.
- ❑ Cut out the Map Sections. Align the edges and glue them together. You may have to trim the edge of one of the sections.
- ❑ On the information boxes page, carefully cut out the banner and write the name of your town. Make sure that the name includes a mathematical term. For example, "Geometry Town"
- ❑ Next, cut out the long strip that has the terms compass and legend in it. Do not cut out the individual boxes. Cut it out as one long strip. Then cut out the box with the term scale in it.
- ❑ On your large piece of construction paper, near the bottom, centered, glue the large strip with the terms "compass," legend," and "scale." Align the dotted edges up to complete the strip.
- ❑ Near the top, centered, of your large piece of construction paper glue your banner with your town's name.
- ❑ In the middle of your large piece of construction paper, centered, glue your map sections.
- ❑ Using a ruler, in the compass box draw a horizontal line that is 1 inch (2.5 cm) in length. On the right place an 'E' and on the left place a 'W.' Next, draw a vertical line that is 1 inch (2.5 cm) in length that is perpendicular to line WE and label it line NS with the 'N' being at the top and the 'S' being at the bottom.
- ❑ In the scale box, draw a line that is 1.25 inches in length (or 3 cm) and mark every quarter inch (or every half cm if doing it in centimeters). Then create a scale that says the entire thing equals 5 miles (or 5 km).
- ❑ Complete the legend box as you complete your map. This would be symbols that represent water, trees, mountains, hills, railroad tracks, road, paths, playgrounds, etc.

IDEAS FOR PLACES ON YOUR MAP

- ❑ playgrounds
- ❑ park
- ❑ pet store
- ❑ toy store
- ❑ railroad
- ❑ bus station
- ❑ book store
- ❑ river
- ❑ farm
- ❑ swimming pool
- ❑ restaurant
- ❑ police station

- ❑ lakes
- ❑ swamp
- ❑ hills
- ❑ mountains
- ❑ hospital
- ❑ grocery store
- ❑ church
- ❑ movie theatre
- ❑ daycare
- ❑ city hall
- ❑ hotel
- ❑ pizza shop

- ❑ ice cream shop
- ❑ coffee shop
- ❑ gas station
- ❑ bridge or path
- ❑ school
- ❑ post office
- ❑ library
- ❑ mall
- ❑ retail shop
- ❑ bank
- ❑ fire station
- ❑ hardware store

WHERE IS IT?

CREATE YOUR INDEX

Look at your map and using the grid you created, identify the grid location for each of the required items below.

BUILDINGS

_____	a rectangle that is partitioned into equal areas of 4.
_____	a rectangle that is partitioned into equal areas of 8
_____	pentagon
_____	hexagon
_____	octagon
_____	right triangle
_____	equilateral triang
_____	isosceles triangle
_____	scalene triangle
_____	trapezoid
_____	rhombus
_____	parallelogram
_____	rectangle
_____	square
_____	an array
_____	irregular polygon
_____	a congruent figur
_____	a line of symmetr

CREATE A GRID

DIRECTIONS

❑ Using a ruler, start to the far left edge of your map and lightly draw a vertical line from the bottom of your map to the top.
❑ Then, moving an inch (2.5 cm) to the right from that line, lightly draw another vertical line that is parallel to the last one from the bottom of your map to the top.
❑ Continue doing this until you have reached the end of your map. You should have approximately 16 lines.
❑ <u>Between</u> each of these lines, starting with the column to the far left, begin labeling with the letters of the alphabet. For instance, the first column is 'A', the second column is 'B,' and so on until each column has a letter.
❑ Next, using your ruler place it along the top edge of your map and lightly draw a horizontal line from the left edge of your map to the right edge of your map.
❑ Move down an inch (2.5 cm) from the line you just drew and lightly draw another horizontal line that is parallel to the last one across your map from left to right.
❑ Continue doing this until you have reached the bottom of your map. When finished you should have approximately 8 lines.
❑ Between each of those lines, starting with the row at the top, begin labeling it with numbers. For instance, the first row is '1', the second row is '2,' and so on until each row has a number.
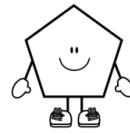
CREATE A GRID LOCATION

DIRECTIONS

❑ Pick an item on your map.
❑ Find the letter of that location by sliding straight down in that column. Write that letter down. Some items may move into more than one block. That may require you to write down more than one letter.
❑ Next, returning back to the item on the map, slide to the left to find the number. Just like with letters, some items may take up more than one row. You may have to write more than one number.

Where the letter and the number meet is called the **grid location**. When creating an index, you will name the place, such as Decimal Beach and then next to it you'll write the grid location (with the letter first) such as O6 and O7.

ALL AROUND TOWN!

YOU DID SUCH AN AMAZING JOB WITH ALL THAT MATH! NOW FIND THE PERIMET[ER OF THE]
FOLLOWING SHAPES ON YOUR MAP AND WRITE IT IN THE COLUMN ON THE RIGHT[...]
UNITS.

RECTANGLE PARTITIONED INTO 4 EQUAL PARTS	
RECTANGLE PARTITIONED INTO 8 EQUAL PARTS	
PENTAGON	
HEXAGON	
OCTAGON	
RIGHT TRIANGLE	
EQUILATERAL TRIANGLE	
ISOSCELES TRIANGLE	
SCALENE TRIANGLE	
TRAPEZOID	
RHOMBUS	
PARALLELOGRAM	
RECTANGLE	
SQUARE	
IRREGULAR POLYGON	

SHOW WHAT YOU KNOW!

WHAT DOES THIS MAP CREATION HAVE TO DO WITH REAL LIFE?

_____

_____

_____

_____

_____

_____

_____

_____

_____

GEOMETRIC MAP PROJECT
RUBRIC

	5	3	1
REQUIRED MAP BUILDINGS	All required map buildings were included.	Most of the required map buildings were included.	Only a few of the required map buildings were included.
REQUIRED MAP ROADS	All required map roads were included and measured properly.	Most of the required map roads were included and/or most of the roads measured properly.	Only a few of the required map roads were included and/or only a few of the roads measured properly.
REQUIRED MAP SKILLS (OTHER)	All of the required map skills were included.	Most of the required map skills were included.	A few of the required map skills were required.
CREATIVITY	The map was creatively designed and named properly.	Most of the map was creatively designed and/or named properly.	A small amount of the map was creatively designed and/or named properly
NEATNESS	The map was colored neatly and legible.	Most of the map was colored neatly and/or legible.	A small amount of the map was colored neatly and/or legible.
TOTAL POINTS			/ 25

COMMENTS: