

# GEOMETRY

## “Creating Your Future Home”

### UNIT PROJECT

You have purchased a lot that measures \_\_\_\_\_ feet wide by \_\_\_\_\_ feet deep. On this lot, you wish to build a home complete with items like a driveway and other items on the landscape. The subdivision has no other requirements except that the home must be one-story.

***OBJECTIVE:*** Draw to scale plans for a home on a given lot to show mastery of using a scale factor (ratios), setting up and solving proportions, the importance of similar (scaled up or down) figures, and to become familiar with measurements of various things in and around the house.

***MATERIALS:*** Pencil, 8 ½” x 11” TO 11” x 17” white paper, ruler (cm works best), colored utensils, calculator

**\*Ask your parent(s) & other adults for assistance in deciding what size various things around the home should be and for other advice they may have. YOU though are the one who must DO the project. This should be a great learning experience about something you may do one day using the current Geometry concepts!**

### INSTRUCTIONS

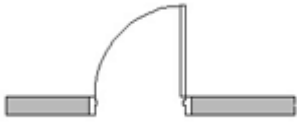
1. In the blanks at the top of this page, write in the lot size that you have been assigned.
2. On scratch paper, make a **rough sketch** of the features of the lot (home, driveway, miscellaneous (trees, bushes, flowers, shed, and other landscaping ideas)). When creating your house plans, solid lines represent walls. Use other common symbols plus any others that you can pick up. Remember that you are looking from the top down. (**SEE THE ADDITIONAL SHEET OF SYMBOLS!**)
3. Decide on a scale so that the entire lot (see the lot dimensions above) will fit. Your lot needs to take up nearly all of the paper. You will need to use trial and error. To do this, measure in centimeters the length of your paper. Decide on a scale (example: 1 cm = 7 feet). Create a proportion using the chosen scale and the length of your lot from above. Solve for the number of centimeters needed. If the number of centimeters needed is less than the length of the paper, your scale may work. Keep trying scales until your lot length and width both fit and take up the majority of your paper.
3. Draw the lot length and width to scale on your paper. Use the scale that you chose. **WRITE THE SCALE IN ONE CORNER OF YOUR FINISHED PLANS!** Without the scale, your project can not be scored. **PLACE YOUR LOT DIMENSIONS ON THE SIDES OF THE LOT TOO!**
4. Draw the outside walls of your home. Place measurements in feet (‘) and in inches (“): (such as 5’ or 5’3” {5.25 feet would convert to this by taking .25 x 12 (inches in a foot) and rounding}) on the walls. Don’t forget exterior windows and doors! \*Make sure all doors are at least 36” (3’ wide). **EACH EXTERIOR WALL BETWEEN THE WINDOWS AND DOORS should have dimensions.**
5. Draw the inside walls of your home. Put in doors (show how they swing-in or out), windows, closets, using the above symbols. \*Make sure all doors are at least 36” (3’ wide). **EACH INTERIOR WALL should have dimensions on it.**
6. Label all rooms (bedroom, bathroom, kitchen...)
7. Draw the landscape around the house.
8. Put any dimensions and labels on the landscape for those items that must be built (sheds, patios, pools, etc...)
9. Add other details to your plan such as furnishings (you may label these if space permits). Draw furnishings to scale; however, you do not have to put dimensions on each item.
10. Add color.
11. Place your name in a corner on the front side (first and last) and date it.

**THE DEADLINE FOR THIS PROJECT SHALL BE NO LATER THAN \_\_\_\_\_.**

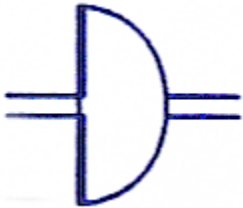
## **SCORING THE PROJECT**

| <b><u>ITEM</u></b> .....   | <b><u>Maximum # of Points</u></b> |
|--|-----------------------------------|
| The chosen scale allows the lot size to fit on the paper.....                          | 4 points                          |
| Walls are drawn correctly to the scale given (12 walls will be scored at random) ..... | 24 points                         |
| Floor plan dimensions are given in feet and inches .....                               | 3 points                          |
| Use of floor plan symbols.....   | 3 points                          |
| Rooms and other items are labeled.....   | 3 points                          |
| Landscape is present.....  | 3 points                          |
| Details (furnishings, etc...) .....  | 3 points                          |
| Color .....  | 3 points                          |
| Neatness.....  | 3 points                          |
| Name present on the front .....  | 1 point                           |
| <b>TOTAL</b> .....   | <b>50 points</b>                  |

# FLOOR PLAN SYMBOLS



Door Swing - Indicates direction the door opens, and location of door knob.



Swinging Doors



French or Twin Doors



Sliding Door - Symbol for sliding glass door in a solid wall indicating which panel slides.



Bifold Doors - Indicates bifold doors and direction of operation, like closet doors.



Window - One window or a pair of windows.



Bathroom Sink - Symbol for bathroom sink.



Bathtub - Symbol for bathtub showing location of faucet and drain.



Shower - Symbol for shower without tub.



Toilet - Symbol for toilet.



Washer/Dryer - Symbol for washer and dryer.



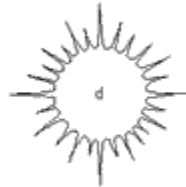
Refrigerator - Symbol for kitchen refrigerator.



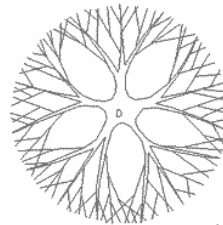
Kitchen Sink - Symbol for two-compartment kitchen sink.



Range - Symbol for kitchen range.



Shrub - Symbol representing various exterior shrubs.



Tree - Symbol representing various exterior trees.