



What exactly goes into building a house? What determines the price and structure? Believe it or not, a lot of math is involved in the construction and cost of a house! Using your prior knowledge of area and perimeter, you should be able to get a rough estimate of the price of a home that you create.

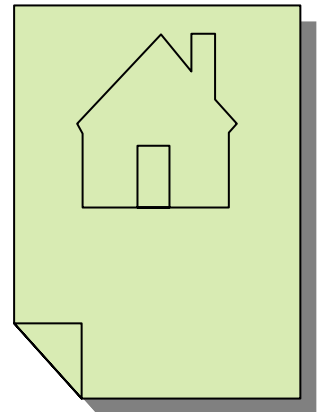
You are given a plot of land that is between $\frac{1}{2}$ an acre and 1 acre of land (you may need to do some calculations to figure out how much space this is). Your group's task is to construct a floor plan of a house that could be built and make construction and monetary calculations based on your design. Each drawing should have specific (and realistic) measurements of all the rooms and features listed. You may work in groups of 2 or 3...
NOTE: A bigger group should complete more work!

Your house project should include the following components:

1. A drawing of your floor plan.

Your two story floor plan should include:

- ✓ 3 bedrooms, with 1 master bedroom (that is bigger than the other 2)
- ✓ A living room
- ✓ A dining room
- ✓ A kitchen
- ✓ 2 closets on the 2nd floor
- ✓ At least 3 bathrooms (you may put them wherever you want)
- ✓ A garage (the size is up to you)
- ✓ Outside landscaping or construction that must include one feature, such as a pool, deck, or patio.
- ✓ A fence that surrounds part of or all of your house



You should have 3 drawings by the time you're done:

- A. One floor plan for the first floor
- B. One floor plan for the second floor
- C. One landscape design for the outdoors

Remember to list all measurements of the rooms. Use a ruler and be neat! Adding extras to the inside or outside of your house (such as driveways, trees, a garden, etc.) will be counted in your originality score. Just remember that all measurements should be accurate!

2. Distinct calculations based on the aspects of your house:

- a. Find the area and perimeter of each room in your house.
- b. Find the area and perimeter/circumference of your outdoor feature.
- c. Find the perimeter and area of the fenced-in region outside.



List these calculations on a separate sheet of paper and show all of your work.

3. Answer the following Questions:

- A. You want to put in flooring in your kitchen. What are your options? How much will it cost? What do you need to install it?
- B. After choosing a particular type of flooring from question B, how much will it cost for the size of your kitchen?
- C. What would be more cost effective: adding an island or hard-wood flooring to your kitchen? Why?
- D. You wish to add a rug to your living room. List the shape and size (area) of the rug you choose. How much floor space is left after you lay down the rug?
- E. You want to add carpet to every room on the 2nd floor of your house. How much will this cost? Find a specific type of carpet based on your preferences and show your work.
- F. You wish to add a circular table into your dining room. Its diameter is $\frac{1}{4}$ the width of the room. Find the new area of floor space that is left once the table is placed.
- G. You've decided to make your fence twice as long. List the new measurements of the fence. How does this affect the area created by the fence?
- H. You have \$200,000 for upgrades for your home. What will you spend it on? Where will you put it? Research anything appropriate that you would like to add to your home and list it along with the price, size, and anything else important about the item. Make sure it will fit!
- I. About how much do you think the house you created is worth? What factors go into your assessment? Be as in-depth as possible!

All questions should be answered on a separate sheet of paper. Many of these questions will require some outside research and abstract thinking. Be unique when you can! Be realistic, but use your imagination!



Make sure to answer or complete everything above. Feel free to use the following resources to assist you during your project.

Sample floor plans:

- www.eplans.com
- <http://www.eplans.com/image-gallery.hwx/Q/Plan.HWEPL14215/ImageId.419970>
- <http://www.eplans.com/image-gallery.hwx/Q/Plan.HWEPL14215/ImageId.419974>
- http://www.smartdraw.com/examples/preview/index.aspx?example=3_Bedroom%2c_2_Bath%2c_Garage%2c_2400_SqFt
- http://www.smartdraw.com/examples/preview/index.aspx?example=2_Bedroom%2c_2_Bath%2c_750_SqFt
- http://www.smartdraw.com/examples/preview/index.aspx?example=1_Bedroom%2c_1_Bath%2c_Duplex

Outside stuff

- http://www.smartdraw.com/examples/preview/index.aspx?example=Residential_-_02
- http://www.smartdraw.com/examples/preview/index.aspx?example=Deck_Design

Resources

- <http://www.handymanwire.com/>
- <http://landscaping.about.com/>
- <http://www.homedepot.com>
- <http://www.menards.com>

