

Your Client (Home Buyer)

A famous athlete, his wife, and their two children ages 5 and 11

Needs: Spaces to cook, eat, wash, relax, and sleep

The family likes some green space where they can garden, play, or just enjoy the outdoors.

Your client often has teammates over to visit, so he will need a large space to entertain guests.

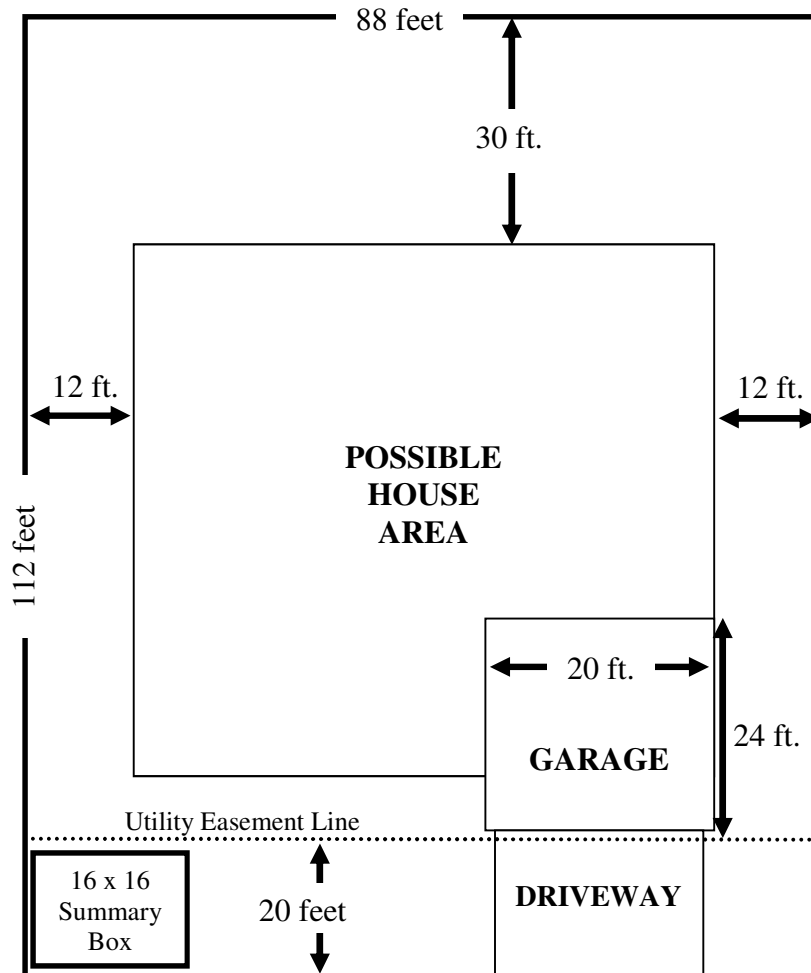
Your client’s wife is a financial planner and she needs a quiet study area when working from home.

Your client will also need a space to train and work out.

Requirements for Final Project Design

- A single story house with:
 - 3 bedrooms (one master), 2 full bathrooms, and 1 half bath
 - 1 kitchen (with pantry), 1 dining room, and 1 living/family room
- Adequate closet space for the family. There should be a closet in all bedrooms as well as a coat closet near the front door and a linen closet near a bedroom.
- You must include a hot water heater (in the garage), washer, and dryer.
- The total construction cost for the house, land, garage and outside features must be under \$375,000. The cost of the land is \$20,000.
- The quality of construction to be used by the builder will cost \$125 per square foot.
- All houses, not including the garage, must be between 2000 and 2500 square feet.
- All dimensions below are required.
- The cost per square foot of the garage is half that of the rest of the house.

**BUILDING
SITE
PLAN**



ARCHITECTURE JOBS

Each team member should be the lead in one of the following three categories.

	Lead	Back-Up
Architect – Assumes the main role for drawing all house items on the graph paper. This person needs to be neat and precise. They must also listen to the inspector and contractor to make sure they follow the rules.		
Building Inspector – Assumes the main role for making sure all rules on these pages are followed at all times. This person must be able to remind his or her teammates of the rules and enforce the rules.		
Contractor – Assumes the main role of making sure room sizes are within range, completes the main inside cost page, and ensures that the team is staying under budget. This person must work with his or her teammates on designing rooms and features that meet cost guidelines.		

Each team member should be the lead in one of the following three categories.

*The lead architect should **not** also be the lead landscape designer.*

Landscape Designer – Assumes the main role for drawing and coloring all outside items on the graph paper such as pools, trees, walkways, fences, and playgrounds.		
Real Estate Agent – Designs the home listing to sell your house. This role includes both math related items and the ability to write an informative, descriptive paragraph about your house.		
Graphics Designer – Designs the logo representing your company. This person must be good at art, have a creative mind, and be able to come up with a professional looking final product.		

FINAL PROJECT RULES & REGULATIONS

*You may use a calculator at all times during the final project.
Use a ruler or a meter stick for all straight lines on this project.*

Bubble Diagram Layout/Rough Copy

See Designing Your Rooms page for suggestions/requirements

Approval by teacher then pick up \$20,000 poster board

Determine parts of poster board where you may not draw the house

See building site plan on basic requirements page

Remember that you will be drawing wall thickness later and that will add half a block

Don't draw these lines of your paper, but remember not to go over these imaginary lines

Draw Summary Box, driveway and garage

Your summary box is 16 by 16 and will be drawn close to the bottom left or right corner.

Your driveway, at least 14 feet wide, should be on the left or right side of the house.

Your garage must be the standard size listed on the basic requirements page

You are an **architect** completing this assignment. Neatness is extremely important.

Eventually you will draw a pathway/walkway from some point on the driveway leading to the front door.

At the end you might want to come back and add a bird's eye view of a car in the driveway

Draw all other rooms [End of Day 1: A few rooms have been drawn]

Do not try to draw the outside of the house and then try to draw the rooms inside.

Start with rooms close to the garage and connect each new room to an existing room.

How big do we make each room?

- Example dimensions: Look at the dimensions you determined for your real home
- Minimum and maximum room sizes are listed on calculation pages

Draw lightly so that when you erase it won't leave much of a mark

A room's longest dimension should not be more than twice the other dimension (this does not apply to closets)

Write names lightly in the corner to keep track of rooms.

Make at least one room interesting – not the same old rectangle most rooms will be.

Front door faces towards the front (street) and back door faces towards the back.

All bedrooms are near bathrooms.

Very little hall space – Hall space is a **waste of money** that could be spent on rooms.

Any halls you do have should be 3 or 4 feet wide after wall thickness.

Make an initial estimate at least to determine that your house is under budget and within the correct size range.

Building codes are met.

The final house should be between 2000 and 2500 square feet (without the garage).

BUILDING CODES

1. No bathrooms may open to the kitchen.	5. Exterior doors must be at least 3 feet wide.
2. There must be at least two entrances to the house.	6. Closets must be at least 2 feet front to rear.
3. The toilet must have 8 inches of free space on each side and 24 inches of free space in front of it.	7. Bedrooms must have at least one window 3 feet by 4 feet or larger as a fire escape.
4. The following rooms must have a window: living room, dining room, all bedrooms, master bathroom.	8. Interior doors, except for closets, and openings should be at least 2 feet 6 inches wide.
9. Interior walls 2 feet or less do not need electrical outlets. Interior walls between 2 and 12 feet need one electrical outlet. Interior walls between 12 and 24 feet need two electrical outlets, and so on. Code requires only one outlet in the bathroom.	

[End of Day 2]

Draw doors and eliminate walls (if necessary)

Use templates to draw all doors – **see teacher for directions**

Building codes specify the size of exterior and interior doors

Front door opens **into** the house and back door also opens **into** the house

Most doors open **into** the room in which you are going, except for closets

No doors to get into the kitchen, living room, dining room (just openings)

Doors required for bathrooms and bedrooms

See the Door and Window Example Schedule for labeling the dimensions of each door

[End of Day 3]

Draw wall thickness and windows – check examples

Exterior walls are 6 inches thick and interior walls can either be 4 or 6 inches thick.

Windows must meet building codes and their area must be 8-15% of the area of the house.

See the Door and Window Example Schedule for labeling the dimensions of each door

[End of Day 4]

Draw sinks, toilets, hot water heater, washer, dryer, kitchen appliances, etc.

Use templates to draw all items.

Toilets must meet building code.

All items have specific sizes – if you are not sure of the size ask your teacher or see previous years' examples

Hot water heater = 24" circle

Plenty of counter space in the kitchen in addition to the range, refrigerator, dishwasher, sink.

Fireplaces, if you want one, should be included in a common area (such as the living room).

[End of Day 5]

Draw outlets, lights, switches, etc.

- Use templates to draw all items
- Lights are circles on the templates (use “8” circle)
- Outlet circle size is shown on the template
- Electrical outlets must meet building code
- Follow all electrical contractor rules (Architecture 7A) for outlets, lights, and switches
- Fluorescent lights go in the garage and kitchen and they are 4 feet long
- Lights are over the sink and the stove
- Some appliances require special outlets (refrigerator, washer, dryer)
- The vast majority of rooms **will only require one overhead light/fan.**

[End of Day 6]

Draw names on all rooms

- All room names should face toward the street (small rooms may be written vertically)
- All room names must be written neatly and in capital letters
- All letters should be no more than one square high
- One person should write all room names so that they look similar

List the dimensions of each room

- List the width (across) first, then the length (up and down)
- Example: 16 x 20 or 16⁰ x 20⁰
- For rooms that are not perfect rectangles, use the dimensions for the majority of the room

Draw features outside the house



See Designing Your Landscape/Questionnaire/Outside Features page for choices

[End of Day 7]

Complete summary box (see example) – All caps and neat

The example below is of the summary box. This box should be drawn NEATLY (ruler) and all wording should be in capital letters. *The living area is the area of the house without the garage.* Have your north symbol point the direction you choose. Think about the sun rising in the east and which rooms will get sunlight at different times during the day.

FINAL PRICE = Total Inside Cost + Total Outside Cost

101 DRAGON DRIVE	
MODERN DESIGN ARCHITECTS INCORPORATED SARAH NICHOLS, MAEGHAN MCFARLAND, EMMA SMITH	
BEDROOMS:	4
BATHROOMS:	3.5
LIVING AREA:	2,100 SQUARE FEET
GARAGE AREA:	480 SQUARE FEET
TOTAL AREA:	2,580 SQUARE FEET
FINAL PRICE:	\$329,000
SCALE: 0.25 INCHES = 1 FOOT	
	
	

[End of Day 8]

Completing recording sheets

All recording sheets should be completed in a neat and professional manner.

Inside area and cost calculations

Outside calculations

Landscape design recording page

Mortgage calculations

Energy/flooring/paint heating calculations

Final check of requirements page

Review this page to make sure all rules have been followed

Complete Home Listings Page & Design Company Logo

Complete home listing page on the computer or email your teacher the description

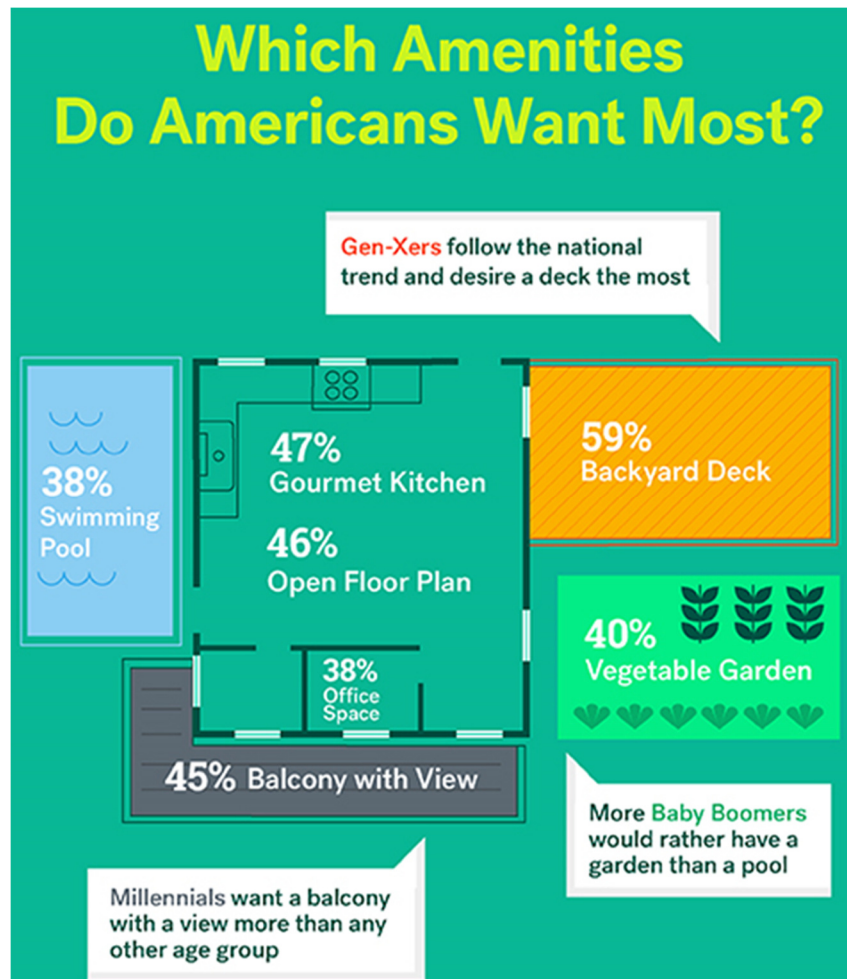
The company logo should follow guidelines on the logo page.

The logo must be hand drawn on a piece of computer paper.

The page should also include the entire company's name.

Complete Company logo recording page

[End of Day 9]



Bad Home Layouts - How You Can Avoid Building a Home with a Bad Layout Design

Home Layout Design & Flow Affects Resale Value

Common Bad Layout Designs - Here are a few of the common complaints we hear from buyers.

- **Hallway Facing the Entrance**

Entrances are important because an entrance forms a first impression. Buyers make up their minds within 6 seconds of entering a home. It might not be a conscious decision, but buyers either feel good or feel bad walking in the door. Long, narrow, dark hallways are a huge turnoff, especially if the hallway constitutes the entire view from the entryway.

- **Dining Room in the Center**

In this type of layout, upon entering the home, you walk through the living room into the dining room. To get to the kitchen, family room or bedrooms, one must walk through the dining room because all rooms are connected through multiple entrances to the dining room. It does not provide a straight path or easy access.

- **Adjoining Bedrooms**

In some areas, appraisers won't consider the value of adjoining bedrooms, and will consider two bedrooms as one. Real estate ads might call this set-up a two- to three-bedroom home if two of the three bedrooms adjoin. Buyers expect a separate entrance to each bedroom.

- **Bedrooms Located Off the Living Room / Dining Room**

It is undesirable to locate a bedroom door directly leading from a room where family members or guests gather. Apart from the noise factor, it reduces privacy as well. Nobody wants to look at a bed while dining. Most people want to dine, entertain family in the family room or greet visitors in the living room without a view of the bedroom.

- **Poorly Located Guest Bathroom**

The only thing worse than staring down a long hallway upon entering a home is capturing a full view of a toilet at the end of it. Closing the door to the bathroom is unattractive and uninviting, so that's not a practical solution. A main-floor or guest bathroom, which is accessible only by walking through a utility / laundry room or bedroom, is unappealing as well.

- **No Views From One Room to Another**

Even if your home is small, as long as one can see several other rooms from a central spot, it will make the home appear larger. Multiple doorways or arches to main meeting areas help to accomplish this purpose. Open spaces create a feeling of spaciousness. It's not necessary to open the kitchen to the living / family areas but it is popular.

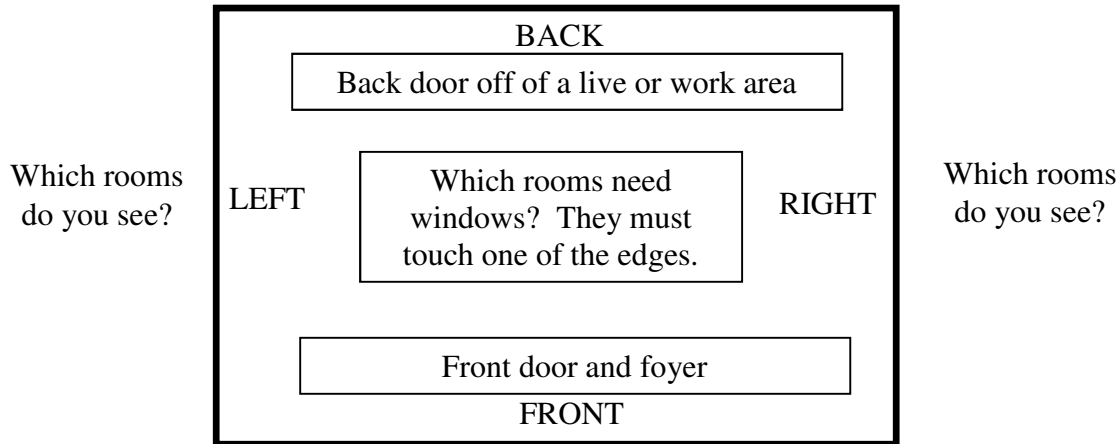
- **Satellite Living Rooms**

This type of layout generally places the living room off to one side of the entrance, and it connects to no other room but the entrance. People don't want to feel disconnected from the rest of the home, especially if they use the living room for the purpose it was intended. In new home construction, the trend is moving away from building homes with living rooms and replacing those areas with great rooms or expanded family rooms.

DESIGNING YOUR ROOMS

Think about what rooms you will see when you look at your house from each side.

Which rooms do you see?



Which rooms do you see?

Which rooms do you see?

Which rooms do you see?

MUST HAVES and REQUIREMENTS

Room	Must have a window?	Where located in house
Master Bedroom	Yes	Back
Bedroom #2 and #3	Yes	Back, front, or side
Master Bathroom	Yes	Back, front, or side
Other Bathrooms	No	Anywhere
Kitchen	No	Anywhere*
Dining Room	Yes	Usually front
Living Room (Great Room)	Yes	Back

* Kitchen is often in the middle with a Nook or Breakfast Area nearby which contains a window

The kitchen, dining room, and living room need to be located close to each other. They often make a triangle. One needs to be able to go from the living room to the dining room without going through the kitchen.

Also needed: Laundry room, hot water heater (in garage), closet space (coat closet near front door), linen closet (near a bedroom), pantry (near kitchen), closets in bedrooms

Sleep, Live, Work

Think of your home as divided up into 3 separate areas: live, work, and sleep

Live: living, dining, family

Work: kitchen, pantry, workshop, study, half bath

Sleep: bedrooms, bath, storage, halls, utility

OFFICIAL RULES FOR ELECTRICAL OUTLETS

(Based on common building codes)

Most Rooms *(expect ones listed below)*

Interior walls 2 feet or less do not need electrical outlets.

Interior walls between 2 and 12 feet need one electrical outlet.

Interior walls between 12 and 24 feet need two electrical outlets, and so on.

Bathrooms

At least one electrical outlet shall be installed in bathrooms and it should be located within 36 inches of the sink. The outlet should be placed on a wall that is adjacent to the sink.

Laundry areas

At least one electrical outlet shall be installed to serve laundry appliances.

Garages

At least one electrical outlet shall be installed in each attached garage.

Hallways

Hallways of 10 feet or more in length shall have at least one electrical outlet. The hall length shall be considered the length measured along the center of the hall without passing through a doorway.

Closets

No outlets are needed in closets.

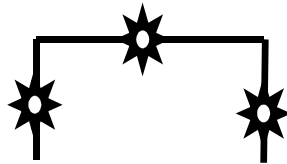
Outside

At least one electrical outlet shall be installed outdoors at the front and back of each house.

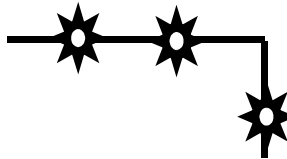
DESIGNING YOUR KITCHEN

The design of your kitchen is based on the three most important items in the kitchen: refrigerator, sink, and stove. These three form the “work triangle” and set the foundation for designing your kitchen. Here are the three most common examples of how to set your kitchen up.

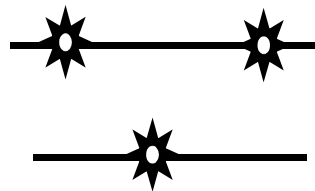
A U-shaped kitchen with the sink in the middle and the refrigerator and stove on opposite sides.



An L-shaped kitchen has two of the three on the same wall and one on a second wall.



A parallel kitchen has two counters opposite each other.



Kitchen Design Details

Sink: You need 2 feet of work area on both sides of the sink.

Stove: You need 1.5 feet of work area on either side of the stove and 3.5 feet of open space in front of the stove.

Refrigerator: You need 1.25 feet of counter space on an open side.

Dishwasher: You need 3.5 feet of open space in front of the dishwasher.

A pantry is for storage off of the kitchen.

Be sure to include plenty of counter space in the kitchen.

DESIGNING YOUR LANDSCAPE

The area around your home is an important part of your living environment. An attractive and functional landscape should be an extension of your home and can add to the enjoyment of your time. Landscaping can also increase property value, invite wildlife into your yard, and conserve energy. Today, more people want their home landscape to meet functional and social needs.

Step 1: Landscape Style Options (You will choose one.)

1. *Geometric-Structural*: Geometric structure is primary and plants play a minor role. Straight lines for walks, driveways, and planting beds are typically used.
2. *Geometric-Natural*: Structure dominates, but plants and other natural elements play an important – perhaps nearly equal – role. Straight lines and more formal curves often define landscape features.
3. *Natural-Structural*: Plants, rocks, water, and earth forms dominate, but there is a clear sense of geometric arrangement. Naturally flowing, curved lines are used to soften the transition from one area to another.
4. *Natural*: Natural elements and materials dominate, and there is no obvious human-determined form or structure. Elements in the landscape flow naturally into each other with few or no clearly defined lines.

Step 2: Site Analysis & Prioritize Needs/Wants

Examine the location of the house and garage and think about the view from each room
Complete the Landscape Questionnaire on the next page

Step 3: Determine a budget - Approximate how much you will be able to spend on your landscape

Step 4: Identify home landscape use areas

- **Public Area**: This is most often the front yard and is the area the public sees from the street. The main purpose is to frame the house and create a visually appealing and inviting landscape. An attractive entryway or walkway to the house is a primary feature.
- **Private or Family Area**: The private area is often the back yard and sometimes the side yards. There should be easy access from the house to the outdoor space and features such as outdoor furniture and lighting should be considered.

Step 5: Sketch a landscape bubble diagram

Step 6: Draw your final plan

All items drawn using templates, when available, or very neatly
Pools are not allowed within 10 feet of the house and require a fence on both sides of your house.
There should be something in the yard that demonstrates **symmetry**.
There should be at least one **circular** object (other than trees) in your yard.
There should be something outside that demonstrates a **reflection, rotation, and translation**.
A walkway/pathway should connect your driveway to the front door.
Gates must be at least 3 feet wide.
Sidewalks should be 4 to 5 feet wide. Pathways may be 2 to 3 feet wide.
Write the name on all outside features that are not obvious

Answering these questions will help determine how outdoor spaces are used. Identify facts, wants, and needs increases the likelihood that the resulting landscape is a success.

LANDSCAPE STYLE OPTIONS

___ Geometric-Structural ___ Geometric-Natural ___ Natural-Structural ___ Natural

YARD USE

Who will use the yard? ___ Adults ___ Children ___ Elderly ___ Pets

When is the yard used? ___ Spring ___ Summer ___ Fall ___ Winter

OUTDOOR STRUCTURES

What outdoor structures/features would you like to add?

- | | | |
|--------------------------------|-----------------------|-----------------------------|
| ___ Patio, deck, or porch | ___ Gazebo | |
| ___ 2 to 4 people | ___ 2 to 4 people | |
| ___ 4 to 8 people | ___ 4 to 8 people | |
| ___ 8 to 12 people | ___ 8 to 12 people | |
| ___ 12+ people | ___ 12+ people | |
| ___ Shade cover for patio/deck | ___ Fountain | ___ Sculpture |
| ___ Children's play area | ___ Waterfall/stream | ___ Fire pit |
| ___ Cooking/grilling area | ___ Greenhouse | ___ Boulders |
| ___ Garden | ___ Putting green | ___ Dry creek |
| ___ Dog pen/run | ___ Rain barrel | ___ Mounds/berms |
| ___ Storage shed | ___ Irrigation system | ___ Pond |
| ___ Clothesline | ___ Swimming pool | ___ Bench |
| ___ Fence(s) | ___ Spa/hot tub | ___ Fenced vegetable garden |

STORAGE

What items need storage space? ___ Garden equipment ___ Garbage cans ___ Bicycles
 ___ Outdoor toys ___ Sports equipment ___ Lawn furniture

STYLE

What is your preferred design style? ___ Formal ___ Semiformal ___ Informal

SHAPE

What is your preferred shape? ___ Rectangles ___ 45° angles ___ Circles
 ___ Curving/free form ___ Combination

COLOR

List your favorite colors:

For rooms that are not rectangles, place an X in the column. For width and length, measure the majority of the room. Calculate the exact area of the room (it will not be the listed width times the listed length). For the percentage of house area, round to the nearest tenth of a percent.

Room name	X	Width ↔	Length ↕	Min-Max Area (ft. ²)	Our Area (ft. ²)	% of Total House Area (w/o garage)	Cost (\$)
Kitchen & Pantry				130-280			
Dining Room				140-280			
Living/Family Room				230-460			
Master Bedroom				180-360			
Bedroom #2				110-220			
Bedroom #3				110-220			
Master Bathroom				80-160			
Full Bathroom #2				50-100			
Half Bathroom				20-50			
Office, Study, or Library				80-200			
Game or Media Room				140-320			
Foyer/Entryway				20-100			
Laundry				30-60			
Total closet space not included above				-----			
All rooms not listed/included above				-----			
Total hall space				0-150			
HOUSE (w/o garage or land)				2000-2500		100%	
Garage		20 ft.	24 ft.		480		\$24,000
Land		88 ft.	112 ft.		9,856		\$20,000
TOTAL INSIDE COST (House + Garage + Land)							

The following is a list of features that may be included outside of the normal house and garage. The cost of each feature is listed next to each one.

Linear foot: Same as a regular foot. Linear means you are **not** talking about square feet.

Every 10 linear feet: Means the item is sold in increments of 10.

ITEM	Cost	Typical Dimensions	Our Dimensions Or Area	Cost
LANDSCAPING				
Trees/Bushes	\$3000 (all the trees/bushes you want)		√	\$3,000
Garden or Dry Creek Bed	\$10 per square foot			
Pond	\$25 per square foot			
Stone/Brick Path/Walkways	\$1000 per every 10 linear feet Sold in 10 linear feet sets	3 feet wide		
Fencing	\$25 per linear foot (Not needed on property line)			
Hedge	\$15 per foot			
FUN AND GAMES				
Swimming Pool	\$12,000 + \$30 per square foot	Max: 18 ft. by 36 ft.		
Tetherball Court	\$500	10 ft. diameter		
Trampoline	\$500, \$750, \$1000, \$1500	8, 10, 12, or 14 ft. diameter		
Hot Tub	\$160 per square foot + cost of deck (required) around hot tub	Min: 20 sq. ft. Max: 50 sq. ft.		
Horseshoe Court	\$500	6 ft. by 50 ft.		
Mini-Basketball Court	\$10 per square foot	Min: 14 by 18 ft. Max: 25 by 40 ft.		
Mini-Volleyball Court	\$6000	15 ft. by 30 ft.		
Sandbox	\$10 per square foot	12 ft. by 12 ft.		
Firepit	\$750	4 ft. diameter		
DETACHED BUILDINGS				
Utility Shed	\$10,000	10 ft. by 12 ft.		
Trash Can Shed	\$2500	3 ft. by 5 ft.		
<i>more ideas on the back.....</i>				

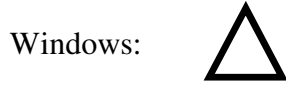
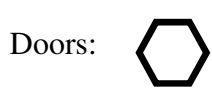
ITEM	Cost/Dimensions	Typical Dimensions	Our Dimensions Or Area	Cost
ATTACHED TO THE HOUSE				
Wheelchair Ramp	\$300 per linear foot	4 feet wide		
Patio/Deck	\$40 per square foot			
Porch (enclosed with screens)	\$70 per square foot	8 ft. by 14 ft.		
Porch (open)	\$25 per square foot	24 ft. by 16 ft.		
Greenhouse	\$200 per square foot	6 ft. by 10 ft.		
Sunroom	\$250 per square foot	6 ft. by 10 ft.		
LANDSCAPE ACCESSORIES				
Garden Arbor	\$20 per square foot			
Hammock (Trees 15 feet apart)	\$150	10 feet long + 2.5 feet on each side attaching to each tree		
Outdoor Fountain	\$1500 \$4000 \$1500 \$4000	6 ft. by 8 ft. 10 ft. by 13 ft. 7 ft. diameter circle 11 ft. diameter circle		
Benches	\$600 for 3 linear feet \$100 for each additional foot	2 feet wide		
Picnic Table with Chairs	\$1000 for 5 feet \$100 for each additional foot	3 feet wide		
Low-Voltage Lighting	\$2500 for first 4 lights \$750 for additional 4 lights			
Gazebo	\$4000 +\$1000	Circle or Octagon 8 foot diameter +2 foot diameter		
ADDITIONAL ITEM				
TOTAL OUTSIDE COST				

Porch: A porch is a raised platform with a roof that that serves as a covered entrance to a house.

Patio: A patio is defined as an area, often paved, adjoining a house and used for lounging. Usually roofless.

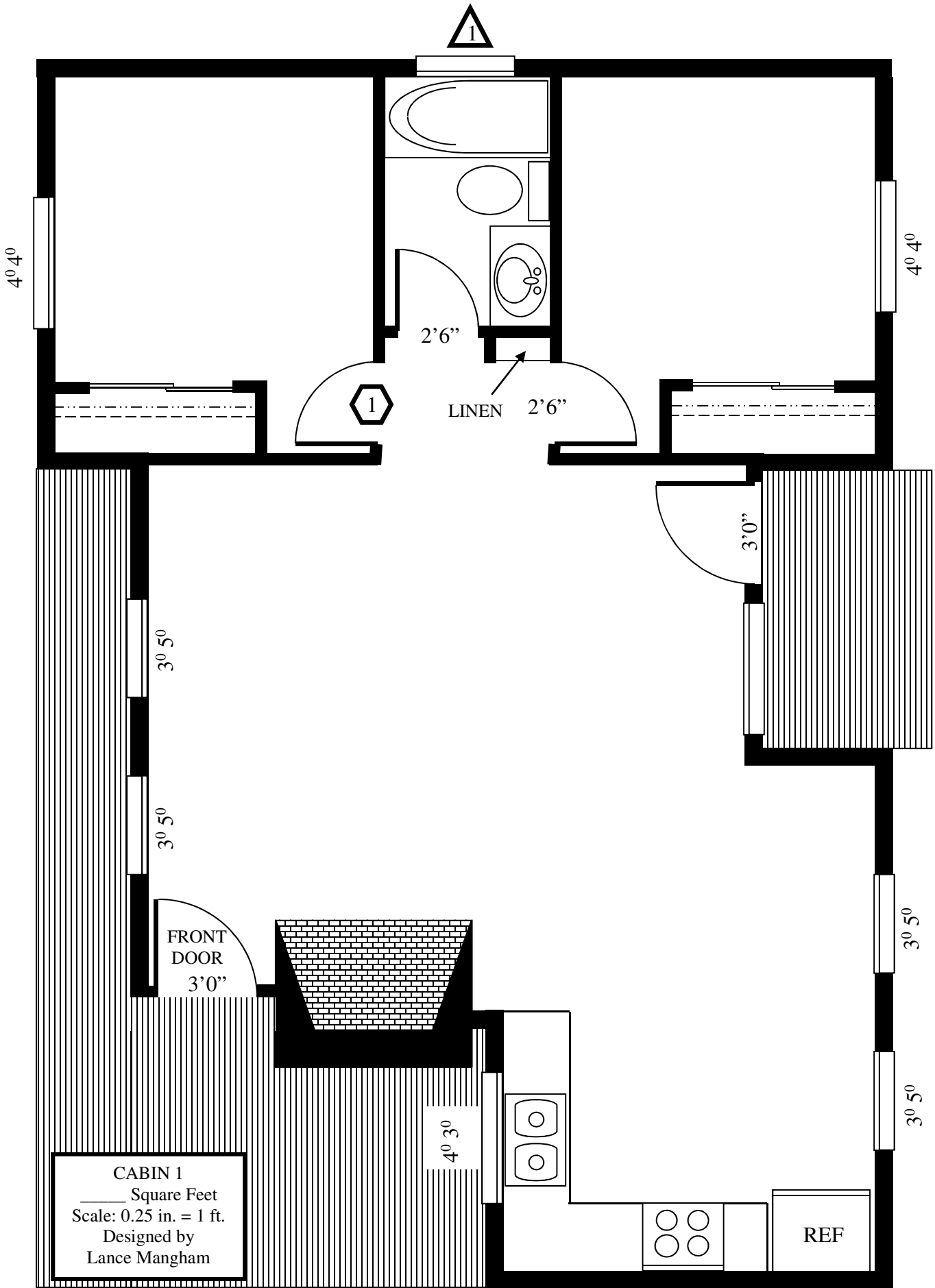
Deck: A deck is defined as an open, uncovered porch extending from a building. Usually wooden. Usually elevated.

On your drawing place the following symbols in the door space and outside of the windows. The number you place in the symbol will relate to the number in the schedule below. From this schedule, people can determine the characteristics of your doors and windows.



Example of a Door and Window Schedule

DOOR SCHEDULE			
Number	Description/Size	Quantity	Remarks
1	16'0" x 8'0"	1	Garage Door
2	3'0" x 8'0"	2	Exterior Doors
3	2'6" x 6'8"	10	Interior Doors
4	2'8" x 6'8"	4	Closet Doors
5	3'2" x 6'8"	1	Master Bedroom Closet Door
WINDOW SCHEDULE			
1	4'0" x 6'0"	5	Kitchen, Dining Room, Living Room
2	4'0" x 3'0"	3	2 Bedrooms, Foyer
3	3'0" x 1'0"	2	Bathroom
4	5'0" x 3'0"	4	Living Room, Study
5	6'0" x 4'0"	1	Math Bathroom
6	6'0" x 8'0"	1	Breakfast Nook
7	4'0" x 4'0"	1	Dining Room



CABIN 1
 _____ Square Feet
 Scale: 0.25 in. = 1 ft.
 Designed by
 Lance Mangham

DOOR SCHEDULE (Include the garage door.)			
Number	Description/Size	Quantity	Remarks
1			
2			
3			
4			
5			
6			
7			
WINDOW SCHEDULE (You should have at least 5 different sizes of windows.)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

Landscape Design Recording Page

1. What are the 3 main features of your landscape design?

-
-
-

2. How is symmetry demonstrated in your landscape design?

3. Specifically state where a rotation, translation, and reflection can be found in your design.

4. What is your biggest circular object in your landscape (other than trees)?

5. Based on #4, determine the real-life radius, diameter, circumference, and area of this object.

Radius	Diameter $d = 2r$
Circumference $C = \pi d$	Area $A = \pi r^2$

BUYING A HOME - MORTGAGE CALCULATIONS

For all calculations on these pages, **round to the nearest dollar.**

Final Price for Our Home Total Inside Cost + Total Outside Cost	
Down Payment 20% of the price of the house	
Mortgage (Principal) 80% of the price of the house	

Most families pay off their mortgage over a period of 15 or 30 years. Use the table below to calculate the monthly payment necessary for your mortgage above.

Mortgage Payment Calculation

Principal	Loan term	Multiply price by...	Monthly Mortgage Payment
	15 yr.	0.0074	
	30 yr.	0.0048	

Lenders typically require homeowners to purchase **homeowner's insurance**, which covers both the home and its contents in the event of a flood, fire, or other damage.

Insurance Calculation

Final Price	Insurance Rate	Monthly Insurance
	0.0005	

PROPERTY TAXES – You must pay annual **property taxes**. Property taxes can either be paid monthly as an addition to your mortgage or they can be paid yearly separate from your mortgage payment. For this project you will pay them as part of your monthly mortgage payment.

Property Tax Calculation

Tax	Final Price	Yearly Tax Rate	Yearly Taxes = Price • Tax Rate	Monthly Tax
City of Southlake		0.0046		
Tarrant County, College & Hospital		0.006296		
Carroll ISD		0.01415		
Total		0.025046		

PITI – The total monthly mortgage payment is often referred to as the **PITI**, which stands for principal, interest, taxes, and insurance.

PITI Payment Calculation (30 year loan)

Monthly Mortgage	Monthly Insurance	Monthly Property Tax	Mortgage Payment (PITI)

PITI Payment Calculation (15 year loan)

Monthly Mortgage	Monthly Insurance	Monthly Property Tax	Mortgage Payment (PITI)

INCOME NEEDED – Banks use formulas to determine if a person qualifies for a loan based on their income. Banks generally use the guideline of 30%. This means that the total cost of the monthly mortgage payment (**PITI**) should not exceed 30% of the family’s monthly income.

Total Yearly Income Estimate

	PITI Payment	Bank Rule of Thumb	Monthly Income = $\frac{\text{PITI}}{0.30}$	Yearly Income Needed To Buy This House
15 year loan		Payment = 30% of income (Maximum)		
30 year loan		Payment = 30% of income (Maximum)		

Energy Efficiency Study

Area of our house (not including garage)	Area of all windows	Window Percentage $\frac{\text{Area of windows}}{\text{Area of house}} \cdot 100$ <i>(round to the nearest tenth)</i>	The area of the windows must be between 8% and 15% of the area of the house as this provides a balance between natural lighting and excessive energy consumption.

Flooring Calculation

9 square feet = 1 square yard

Total square footage (not including garage):			
	Square Feet	Unit Rate	Cost
Tile <i>(all bathrooms)</i>		\$4.00 per ft. ²	
Vinyl <i>(kitchen)</i>		\$3.00 per ft. ²	
Carpet <i>(Rest of house, except garage)</i>		\$27.00 per yd. ²	
Installation (\$5.00 per square foot):			
Total flooring cost (flooring + install):			

Paint Estimate Calculation

Area covered by a gallon of paint = 300 ft.²

Cost of Paint = \$35 per gallon

Area of all walls (find the perimeter of each room using your inside cost page, then multiply by 10 [10 ft. walls])	
Gallons of paint needed (round up to next whole gallon)	
Total Cost	

Heating System Calculation

Area of house (not including garage)	Average height of ceiling	Volume of house
	10 ft.	

Volume of a house will determine the type of heating/air conditioning system that will be installed.

A **logo** is used to help develop a name for a business. Some of the most famous logos that everyone will recognize are on this page. A logo is designed for immediate recognition. The logo shapes, colors, fonts, and images usually are different from others in a similar market. Some logos contain the full company's name as part of the logo and some don't.

Today there are many corporations, products, services, agencies and other entities (like states and countries) using a sign or a symbol or a combination of sign and emblem as a logo.

Qualities of an effective logo

1. Makes a good first impression.
2. Represents who you are and your ideas and attitudes.
3. Possesses something unique or interesting to help you stand out from the crowd - a mark of distinction.

Italic type (slanted) denotes action or speed and projects a modern image.

Capital letters suggest formality and steadiness.

Lowercase letters suggest an informal manner or casual image.

Outlined letters project an informal image.

Thin letters denote professionalism.

Thick or bold letters project strength or dependability.

Script denotes gentleness or caring.



Color is important to brand recognition, but it should not be the main component of the logo design because it could conflict with its functionality. In the United States red, white, and blue are often used in logos for companies that want to project patriotic feelings.



Your architecture firm needs a logo that people will remember. Examples of architectural companies' logos are also included below. They often have the company name or initials. **Your logo must contain something geometric or architecture related.** It should be in color (unless you specifically want it black and white) and should be neatly drawn (no computers) on paper that will slide into the cover of your binder.



Hidden Meanings in Popular Logos

Sometimes a company or brand logo is more than it first appears. For example, take a look at the hidden meanings or messages embedded in these popular logos below. You won't look at these designs the same way again.



Scott Olson, Getty Images)

FedEx

Can you spot something in this logo? The FedEx logo, designed in 1994 by Linden Leader & Landor Associates, at first appears simple and straightforward. However, if you look at the white space between the "E" and "x" you can see a right-facing arrow. This "hidden" arrow was intended to be a subliminal symbol for speed and precision.



Getty Images

Amazon.com

That yellow arrow is more than just a decorative swoosh. The Amazon logo was created to represent the message that it sells everything from A to Z (the arrow connects the two letters) and also represents the smile that customers would experience by shopping on the Amazon.com Web site (the arrow becomes a smile).



AP

Baskin-Robbins

In 2005, as part of its 60th anniversary celebration, Baskin-Robbins launched a new brand identity. The new logo was intended to "capture the fun and energy of Baskin-Robbins." In the old logo, the number "31" appeared within a simple arc, suggestive of a scoop of ice cream, and next to the name. In the new logo, you can see that the "31" still exists. It is now formed by the pink portion of the ice cream store's two initials: "B" and "R."



AP

Northwest Airlines

Back in 2003, lamenting the loss of the old Northwest Airlines logo (shown here), pilot Patrick Smith published his critique of the new logo in his "Ask the Pilot" column at Salon.com, saying the airline's previous circular corporate logo was, "quite simply, a work of genius. It was an N; it was a W; it was a compass pointing toward the northwest."



AP

Sun Microsystems

Sun's logo -- which features four interleaved copies of the word "sun" -- was designed by professor Vaughan Pratt of Stanford University. It is an ambigram, which is defined as a typographical design or artform that may be read as one or more words not only in its form as presented, but also from another viewpoint, direction or orientation.



AP

Goodwill

Do you see the right half of a smiley face? Or do you see a lower case "g"? In either case, you'd be correct.

Company Logo Recording Page

1. Describe your final logo.
2. How does your logo relate to your company name?
3. What geometric or architectural element is included in your logo so that one knows you are an architectural company?
4. Why/how did you decide on the colors that you used for your final logo?
5. For letters, how did you decide on their style or font (size, thin, thick, upper case, lower case, italic, etc.)?
6. What makes your logo unique and memorable?
7. Below include any other important comments about your logo that have not been stated above.