

Grand Designs (Part 1)

A project in perimeter and area

Directions: You will become an architect for this project and design your dream house by creating a floor plan. A floor plan is a visual representation of what a house will look like when viewed from above. You will find the perimeter and area of each room of your house, so the builder knows how much material they will need to get for the build. Of course, there are some rules to your design.

Checklist:

1. You **MUST** include a minimum of seven rooms in your house. You need:
 - a. 1 bathroom_____
 - b. 1 kitchen_____
 - c. 1 Master bedroom_____
 - d. 1 bedroom_____
 - e. 1 living room_____
 - f. 2 other rooms (of your choice)_____Other rooms may include: office, conservatory, laundry room, dining room, game room, etc.

You may have other rooms, but you need to make sure your house has **AT LEAST** these seven rooms!

2. You must find the area and perimeter of **ALL** rooms in your home so the builder will know how much material s/he needs! You will need a **FINAL** perimeter and area of the entire house. You must add all perimeters and areas together to get a total for each.
 - a. Perimeter_____
 - b. Area_____
 - c. Total perimeter_____
 - d. Total area_____
3. If you can, draw the design on a piece of graph paper. You must use a ruler to draw your lines. If you make a mistake, you may use a new sheet of paper. I would suggest that 1cm=1metre.
 - a. Draw each room_____
 - b. Label each room by writing_____
 - c. Label the area and perimeter for each room_____
 - d. Add up the total perimeter and area of each room into a grand total_____

4. You can include your working on a separate sheet of paper. This paper is to be neat and organised (numbers should not be crunched up together.)
- For each room, include the name of the room, the formula, and the answer.

Example: Bathroom: (Perimeter)

$$p = 10 + 10 + 6 + 6$$

$$p = 32\text{cm}$$

Bathroom (Area)

$$a = 10 \times 6$$

$$a = 60\text{cm}^2$$

Here are some examples of what floor plans look like.



Grand Designs (Part 2)

Decorating and Furnishing your house.

Now that you have finished designing your house, you will need to choose materials for the floors in your home (you can't just leave them bare!).

Have a look at [Carpentryright](#), here you will find a range of carpet and floor choices and the cost per m². For example, if your room is 6m² and the carpet is £19.99 per m² it will cost you £119.94 to carpet that room ($6 \times 19.99 = 119.94$).

Here's what you will do.

1. You will use the area of each room to find out how much money it will cost you to put floors in your home. _____
2. You will need to decide which type of flooring would be good for each room. For example, you do not want carpet in your kitchen or bathrooms because they will get wet or food will be spilled on them. _____
3. You may choose from wood floors, carpeting, tile, or laminate flooring. You may also choose the colour and texture you want. _____

Directions:

1. Choose the type of flooring you want for a room.
2. Write the name of the room, then, take the price of the flooring (per metre square) and multiply it by the area of your room. Put the total amount (in pounds) in your table.
***Good News...You may use a calculator for this part! (not to find area and perimeter!)**
3. You will need to make sure you have a total price for each room. When you are finished, add all of your flooring totals together and get a final cost. _____

Grand Designs (Part 3)



By now you will have created a floor plan for your house and you will have picked out your floor coverings. Now it is time to think about interior decorating.

You will need to choose at least three rooms in your house to decorate. Below, you will find a list of things that you **must** include in your rooms. Depending on whether you choose to decorate a bathroom, kitchen, games room etc. there will be other things that you need to include.

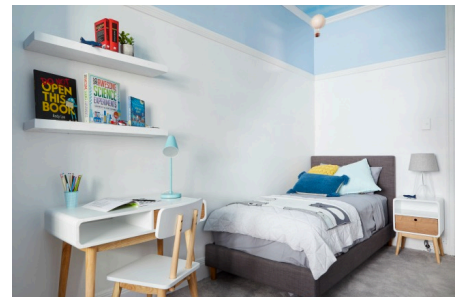
Each of your rooms will need to include:

- lighting
- curtains/blinds
- storage
- windows
- door/s



If you choose to decorate a bedroom, you will also need to include:

- bed
- pillow/s
- duvet
- sheets and pillow covers
- mattress



If you choose to decorate a bathroom, you will also need to include:

- shower/bath (or both)
- sink
- toilet
- toilet paper
- toilet paper holder
- heating



If you choose to decorate a kitchen, you will also need to include:

- oven
- stove
- fridge
- freezer
- sink
- plates
- cutlery
- cooking implements (spatula, whisk, knives etc.)
- chopping boards



You will need to make sure that you are recording the items you are purchasing in a table either on Google Docs or in your Maths Book.

Room	Item	Cost	From Store	Running Total
e.g. Bedroom	Nesttun Double Bed Frame	£115	Ikea	£115
e.g. Bedroom	Årstid Lamp	£15	Ikea	£130

Some helpful websites:

Ikea	Argos	Asda	Tesco
Home Bargains	Debenhams	Marks & Spencer	Dunelm
Currys PC World	Amazon	Next	DFS

