

Room Design

Leader



Practice estimating metric measuring, scale drawing, constructing a model, and calculating area and costs.



You will need:

- Metric ruler
- One sheet of 2 centimeter graph paper (see Materials Page)
- Tape
- Crayons (optional)



Do this:

The student should:

- Select one rectangular room in his/her home.
- Estimate the length, width and height of that room. Record estimates.
- Measure the room in meters. Record actual measurement.
- Let each centimeter (cm) on the graph paper represent one meter in the room. From the center of the paper, count out the length and width of the room. Then count the height up the walls to the ceiling.
- Measure the doors and windows, and add them to the graph paper.
- Cut out the model of the room, removing all the extra paper (Shown as dark area in figure #3 on the Student's Page).
- The walls and floor can be colored to suit the student's taste
- The walls of the room should be folded up and taped together.



1. How much carpeting would be needed to cover the floor of the room?



(Remember: length of room x width of room = the area of the floor)

2. How much would it cost to carpet this room if the carpeting cost \$7.99 a square meter? _____
3. How many gallons of paint would you need to cover the walls twice, if one gallon of paint covers 200 square meters? _____
4. How much would it cost to paint this room if one gallon cost \$8.99?



Adapted from:

Spaces: Solving Problems of Access to Careers in Science and Engineering, by EQUALS: Regents, University of CA, 1982.

Student _____



Do this:

The process of designing, building and even decorating should begin with studying the space you will be using. You estimate first, then measure the space.

- Select one rectangular room in your home.
- Measure the room in meters:
 Actual length of room _____ meters
 Actual width of room _____ meters
 Actual height of room _____ meters
- Tape four sheets of 2 centimeters (cm) paper together to make one 17 x 22cm sheet of paper. (fig. 2)
- Let each cm on the graph paper represent one meter in the room. From the center of the paper count out in each direction the length and the width of the room. Then count the height up the walls to the ceiling. (fig. 3)
- Add doors and windows. Cut out your model of the room, removing all the extra paper. (Shown in fig. 4 as darkened areas.)
- If you wish, you may select colors for the walls and a color for the wall-to-wall carpet. Using crayons, color your room.
- Fold up the walls of the room and tape them together. (fig.5)
- Use the model constructed in "Room Design" or the measurements of a room at home to do this:
 1. An interior decorator's job includes making a cost analysis of a project. Figure out how much it will cost to paint and carpet your room.
 2. To cover the floor with wall to wall carpet, exactly how much carpet would you need:



Remember: length x width = area of a surface

Therefore length of room (in meters) x width of room (in meters) = area of floor (in square meters)

_____ square meters of carpet would

be needed.

3. Find the areas of each of the four walls, then add them. The total area is _____ square meters.

4. If one gallon of paint covers 200 square meters of wall area, how many gallons of paint would you need to cover the walls with two coats?
 _____ gallons of paint.

5. How much would this interior decorating job cost if:

The carpet costs \$10.99 per square meter?

_____ The paint costs \$7.50 per gallon?

_____ Total cost of this project:

Fig. 1

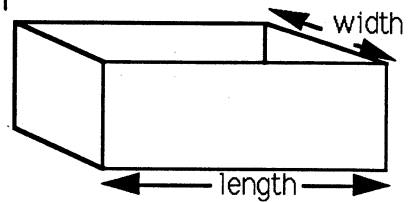


Fig. 2

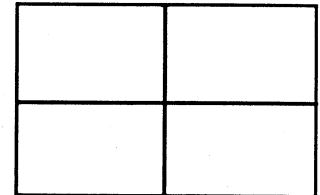


Fig. 3

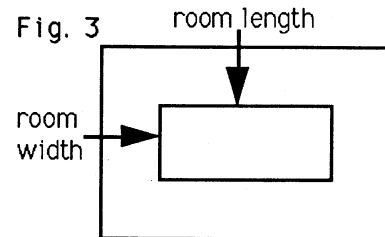


Fig. 4

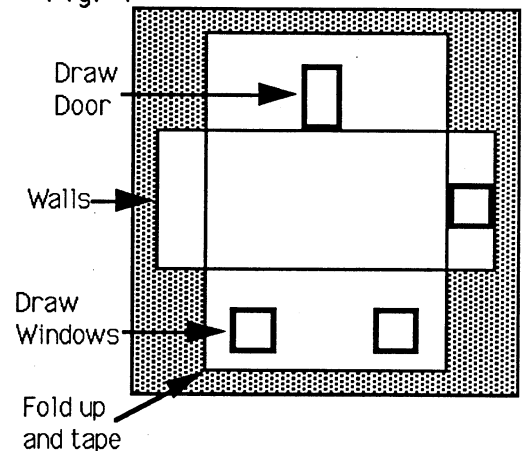
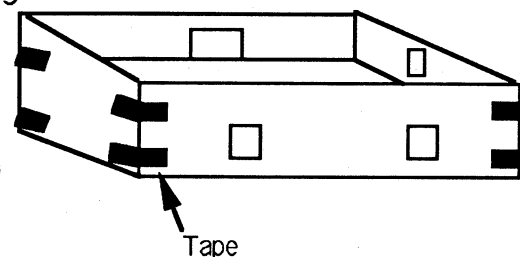


Fig. 5



WHAT I FOUND

