

MODEL SCHOOL

3

Communicating Architecture

Lesson Plans:

3.1 Mini-Me

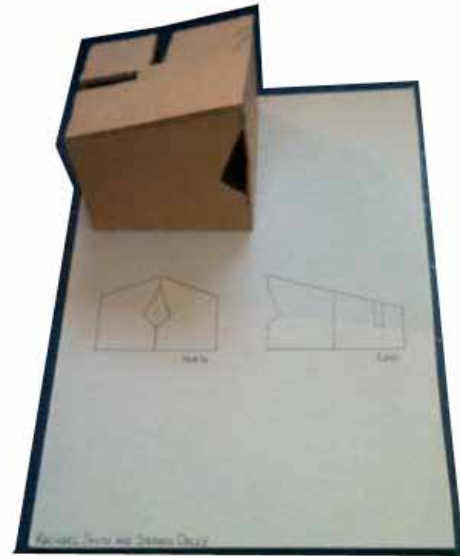
3.2 Architectural drawing

3.3 Architectural model making: Lilliput classroom



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Stage 3 Outline.

In the beginning of any architectural design the building is only an idea which needs to be developed and communicated to the people involved. This involves everything from telling the client how their building will look before it is built, or applying for planning permission, or working out how much it would cost to build, to giving the builder drawings so that he can construct it.

DRAWINGS + MODELS

This stage of the project looks at the methods architects and designers use to communicate their designs through drawings and models:

A PLAN is a horizontal cut through a building -

A birds eye view looking down at the spaces as if the roof has been taken off.

A SECTION is a vertical cut through a building -

A cut-way dolls house view. The plan and section of a building can look very different, just like cutting through a red pepper vertically and horizontally.

Models are also made to allow us to imagine what it could be like to be inside. Drawing to scale is very important so that spaces are made appropriate to the activity it contains.

There are three lessons making up this stage, each looks at different aspects of communication.

- | | |
|-------------------|--|
| Lesson 3.1 | Mini-Me
This explores the need to understand how we relate in size to the rooms we inhabit and the ones we design at a smaller scale on paper. |
| Lesson 3.2 | Architectural Drawing
Your class will learn how to draw plans and sections of your classroom just like a real architect. |
| Lesson 3.3 | Architectural Model making: Lilliput Classroom
In this lesson your class will develop spatial awareness and how to represent real things to a fixed scale. |



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An additional exercise can be carried out with regard to planning permission. This is the process any building must go through in order to be built and stops any development that is deemed unsuitable for the area proposed. Role play exercises could be devised with a debate between architects / planners for a certain building. Alternatively, pupils could be asked to photograph one building they like and one building they do not. They can then debate why this is the case.

If you wish to widen your knowledge for this stage or use more material and images visit:

www.ads.org.uk or www.sust.org

Use this space for your own notes



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Lesson Plan 3.1

Mini-Me

Location

Classroom

Suggested Duration

1.5 hours (approx)

Task type

Group

Materials /Equipment

Large sheets of newspaper or wrapping paper or paint, tape measures, plasticine

Learning intentions

To be able to create a scale model

Record Of Learning Activity

Drawings.

INTRODUCTION

Explain how architects and artists use the human being in design both to think about the shape and size of spaces and as a measure of proportion, and why it is important to draw things at the correct size on paper. Finish with the image of Leonardo de Vinci's Vitruvian man or Le Corbusiers, *le Modulor* man.

Listening

MAIN ACTIVITIES

Your pupils should work in pairs or small groups for this task. Use a roll of lining paper or sellotape sheets of large format paper together to form bedsheets that are big enough for one pupil to lie on. Whilst one lies on the paper in a chosen position such as Vitruvian man or Modulor man the others trace the outline like a crime scene. Once drawn the group take measurements of heights and widths. You can experiment to see if the pupil is square by checking if the measurement for outstretched arms fingertip to fingertip matches their height. Pin the outline people on the wall to compare.

Making

Measuring+ recording

The second part of the task is to make a Mini-Me plasticine model 10 times smaller than real life, that is at a scale of 1:10. Using the paper figure the class need to calculate the new measurements for the scale person and record, the more measurements they use from the full size paper drawing the more accurate the scale person will be, e.g. arm lengths, leg lengths, size of the head etc. Once the new measurements or dimensions are complete the class can proceed to draw the pupil at 1:10 scale on paper. This is an intermediary step from which the plasticine model can then be correctly sized. Figures can be coloured for individuality.

CLOSING THE LESSON

Gather the work together to discuss and compare. Place all the plasticine models on one table to form a 1:10 Mini-class. Ask your pupils to check the accuracy of their models by measuring against the original full size paper version, or the original pupil. They should fit 10 times beside the original.

Discussing



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Lesson Plan 3.2

Architectural Drawing

Location

Classroom

Suggested Duration

1.5 - 2 hours (approx)

Task type

Individual

Materials /Equipment

Paper- A3 Size, tape measures and workbooks.

Learning intentions

To know the differences between a plan, section and elevation and be able to draw to scale

Record Of Learning Activity

Drawings.

INTRODUCTION

This is an introduction to drawing architectural plans and sections. Use the information sheets to explain the difference between a plan, section and elevation. Each shows different ways of seeing a design for a building on paper in 2D, looking down into a building for a plan, and vertically across a building for a section. Explain that elevations show how the outside of a building will look. For further understanding of architectural plans teachers can use the plans in the information sheets and ask pupils to draw the route they would take from the front door to watch television or go to bed.

Listening

MAIN ACTIVITIES

There are two variations to this task:

Illustrating

a. Use the models made in Stage 2, Lesson 2.3 to draw plans and sections.

Pupils should position themselves so they can see directly on top of their models. They should draw what they see and attempt to draw their picture at the same size as the model.

After this, pupils should imagine what their model would look like if you cut it in half and looked into it from its front. They should draw this, again keeping it in proportion with their previous plan drawing and model.

Allow up to 1 hour

or

Measuring + recording

b. Measure your classroom and draw a plan and section of it. This reintroduces scale again to the task.

Taking the measuring tape, pupils should record the length, width and height of the classroom and note these in their project books. These measurements can be used to draw the classroom in plan and section. Teachers could use normal rulers and explain that at scale 1:10 every one metre in real life is the same as ten centimetres on the ruler. Dividing the measurements by 10 will give scaled dimensions also. When the pupils have a basic square or rectangle representing the shape of the classroom, they can add furniture from the template or people from their earlier drawings / models. Estimating the position and size of windows and door can bring the drawing to life. See record sheet 3.2 for template and further guidance.

Allow up to 2 hours.

CLOSING THE LESSON

Gather the work together and ask the class if their drawings correctly represent either their models or the classroom in 2D. The drawings can be made more architectural by adding thickness to the walls and locations of doors, windows and furniture.

Reviewing



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Lesson Plan 3.3

Architectural Models

Location	Classroom
Suggested Duration	2 hours (approx)
Task type	Individual
Materials /Equipment	Cardboard / Shoeboxes, scissors, tape / glue and workbooks.
Learning intentions	To be able to measure in 3 dimensions and create a scale model
Record Of Learning Activity	Models

INTRODUCTION

Listening

This is an introduction to architectural model making. Use the information sheets to show pupils images of childrens' models and architects' models. Explain why they are used and how they are made. Architectural models are usually made after a plan and section has been drawn so explain that the next stage for them (after Lesson 3.2) is to build a model.

MAIN ACTIVITIES

Discussion

A discussion and list of objects / furniture that can be seen in the classroom should be made and listed on the board. Pupils should then be split into small groups or work individually to start measuring and recording these things.

Measuring + recording

Pupils should follow a similar process to measuring the classroom when measuring and recording individual objects within it. All the items listed on the board should be recorded in pupils workbooks and emphasis should be placed on the 3D element.

Making

Objects / furniture should then be modelled at scale 1:10. Again, scale rulers can be used for this or pupils encouraged to divide original dimensions by 10 to obtain scaled dimensions. A large box or model (representing the room) will need to be built to contain all the smaller elements in it such as tables and chairs. These can be made of cardboard, straws, lolly sticks or balsa wood. A doll's house view of the classroom is desirable so pupils can see into the box during any demonstrations. If it is proving difficult working exactly to scale then pupils can make their furniture sizes in direct relation to their 'mini-me' model, this should still give an accurate representation of scale and proportion.

CLOSING THE LESSON

Showing

Ask pupils to arrange the model desks so they are the same as in the real class and find the correct seat for their Mini-me. They could suggest alternative seating arrangements or make Mini-paintings for the wall of the model. Use the model to reinforce the concept of the section.

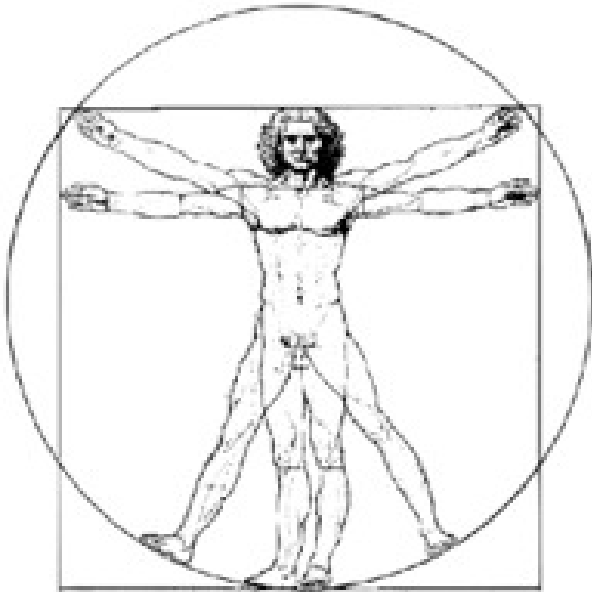


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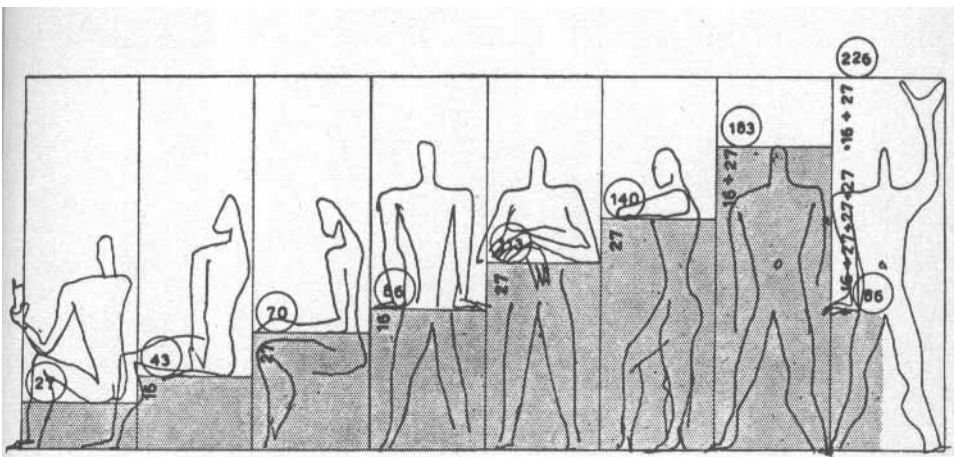
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INFORMATION SHEET



**Da Vinci:
Vitruvian Man**



**Le Corbusier:
Modulor**



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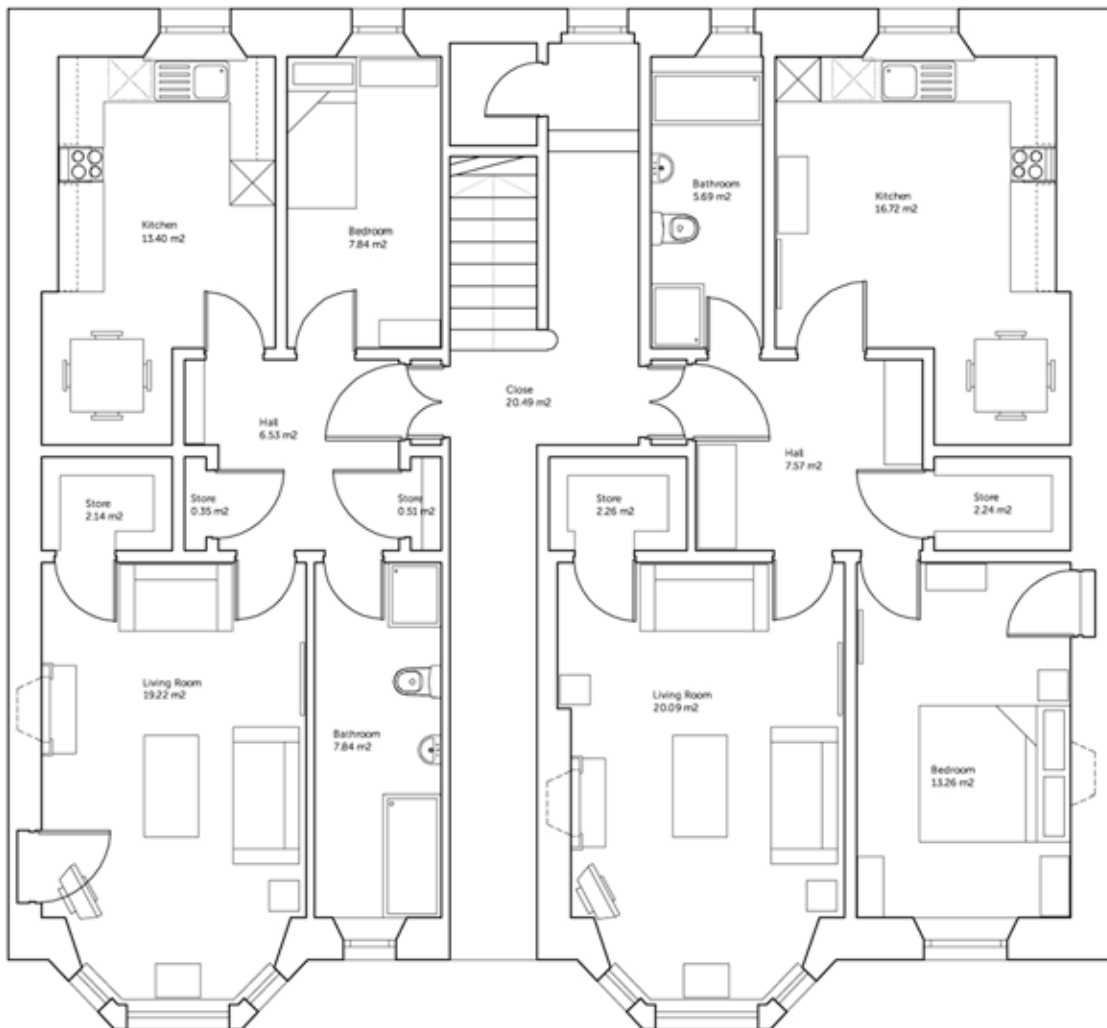
INFORMATION SHEET



Examples of plasticine Mini-me models



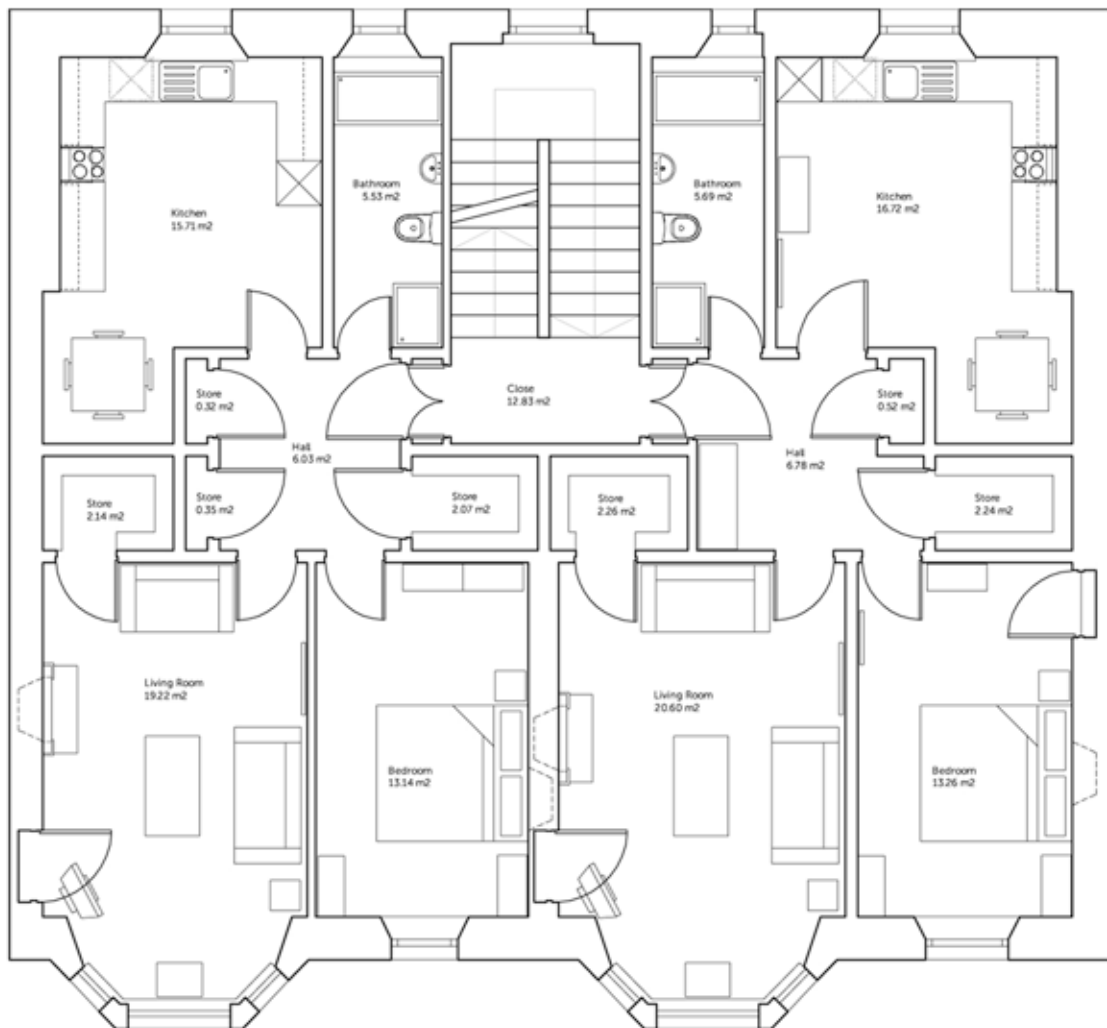
INFORMATION SHEET



PLAN DRAWING - Glasgow Tenement Flats



INFORMATION SHEET



PLAN DRAWING - Glasgow Tenement Flats



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INFORMATION SHEET



SECTION DRAWING - Glasgow Tenement Flat



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INFORMATION SHEET



ELEVATION DRAWING - Glasgow Tenement.

INFORMATION SHEET



Double bed



Study desk



TV



Table + chairs



Couch



Boiler



Toilet



Armchair



Radiator



Shower / bath



Washing machine



Kitchen sink



Bathroom sink



Hob / cooker



Fireplace



Window



Window



Door

Plan Drawings of Furniture



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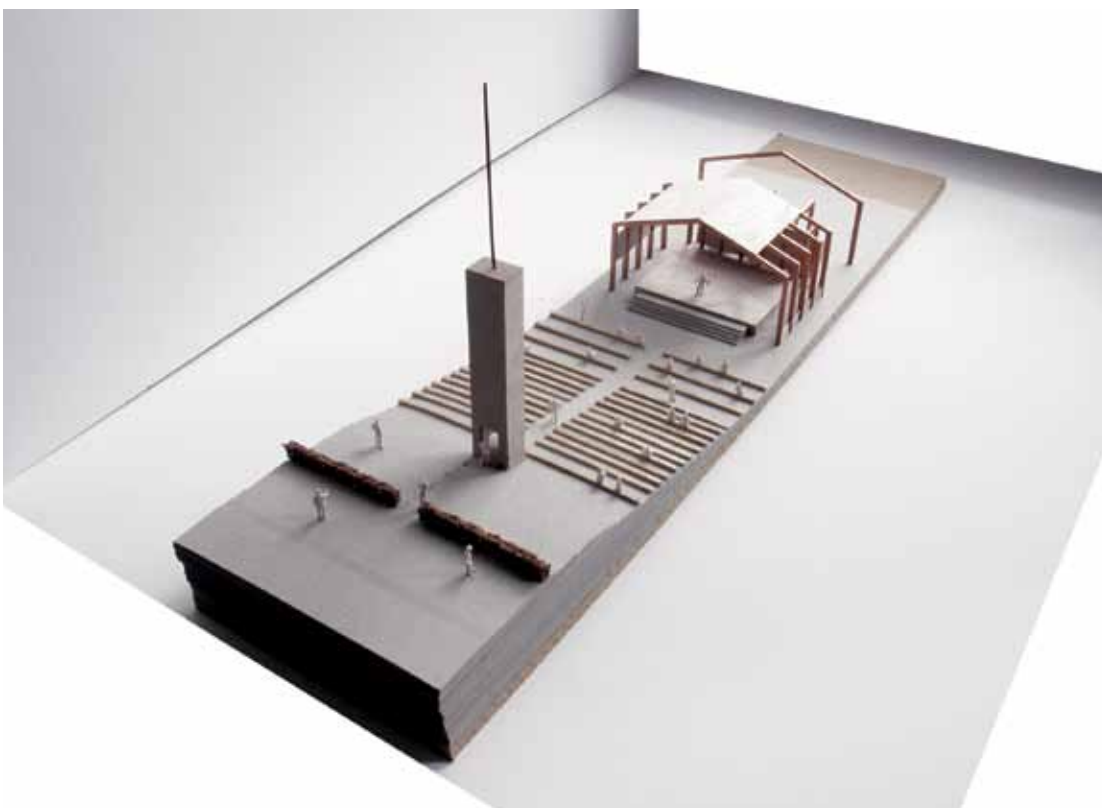
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INFORMATION SHEET



Architectural Models





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INFORMATION SHEET



Model made from scrap - cardboard.



Model made from balsa - wood (House for a Jelly Baby).

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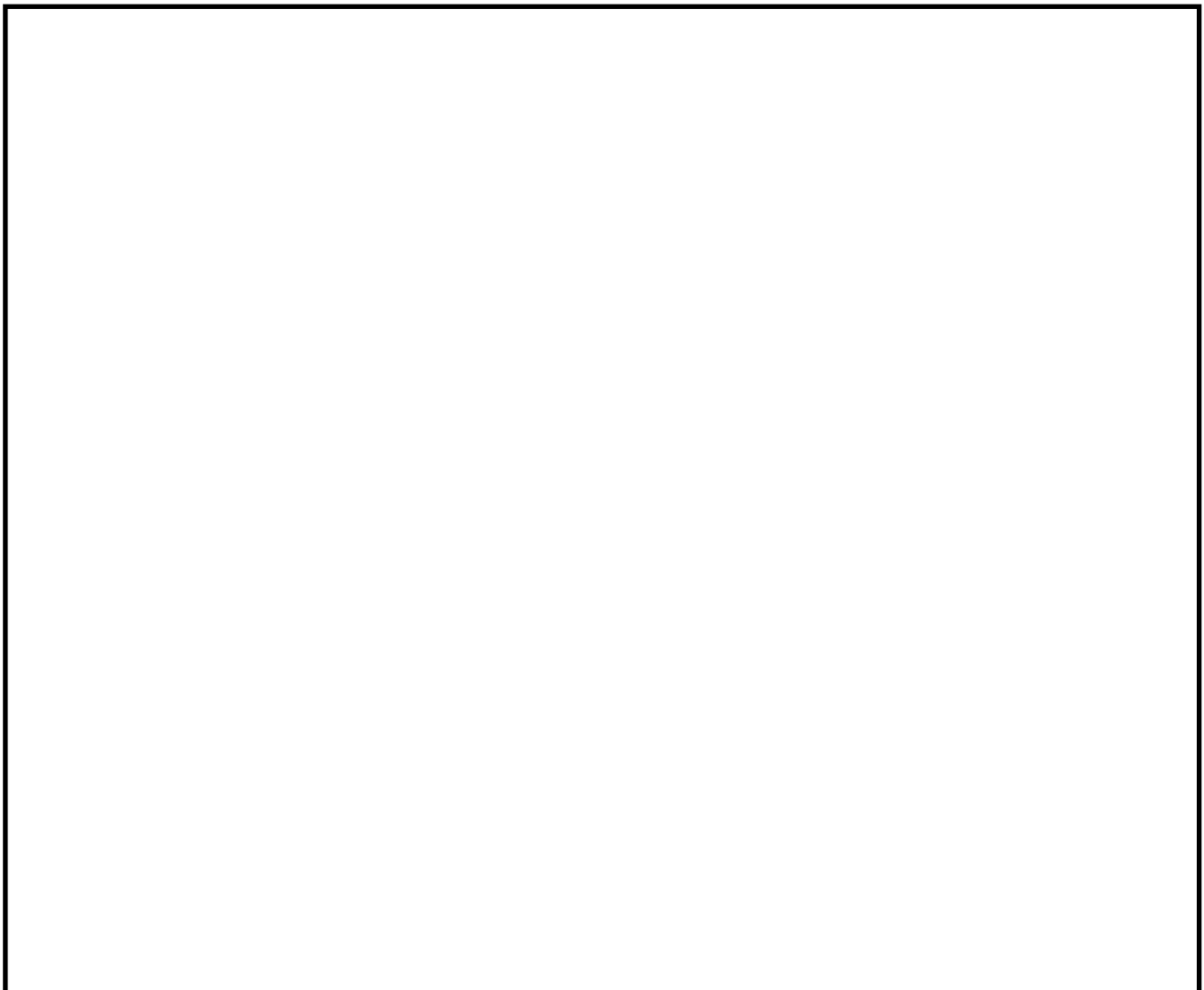
Record Sheet - Exercise 3.2

Architectural Models: Lilliput Classroom

- 1 Write down the names of the people in your group

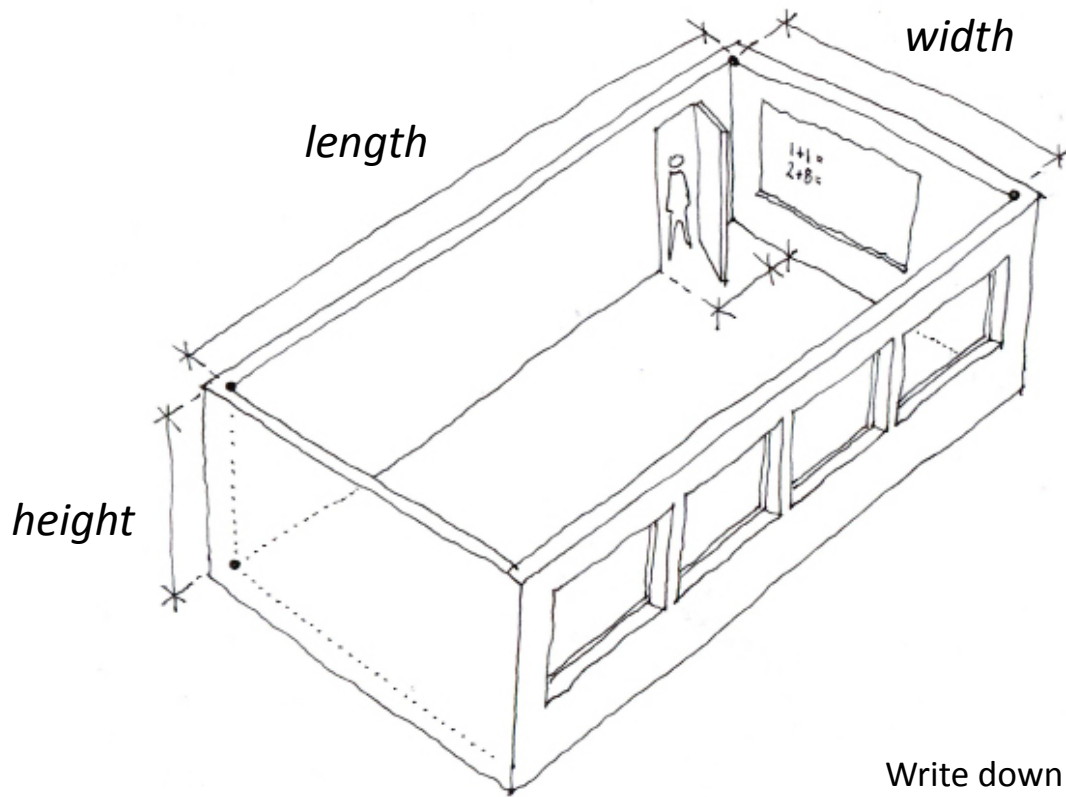
- 1 What is the object you are measuring?

- 2 Draw a **plan** of your object. Then write down the measurements of the width and depth of your object and note on the heights too.



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Record Sheet - Exercise 3.2



Write down your measurements against the lengths you have measured.

