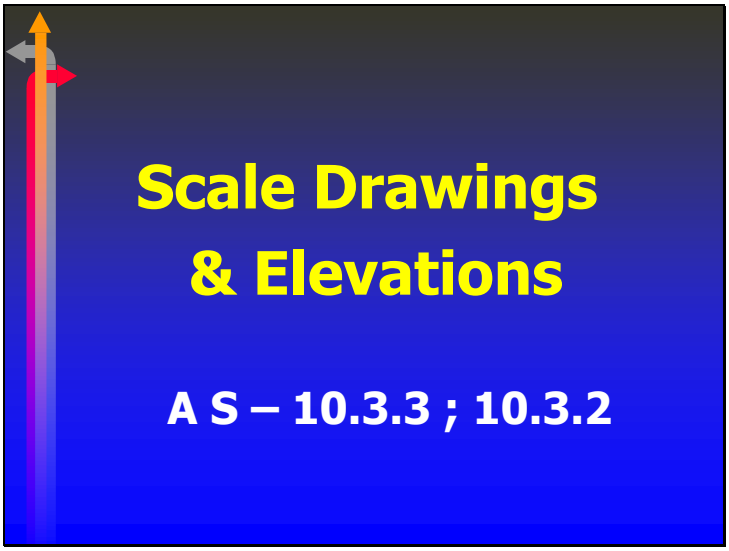
Slide 1



Slide 2

Scales

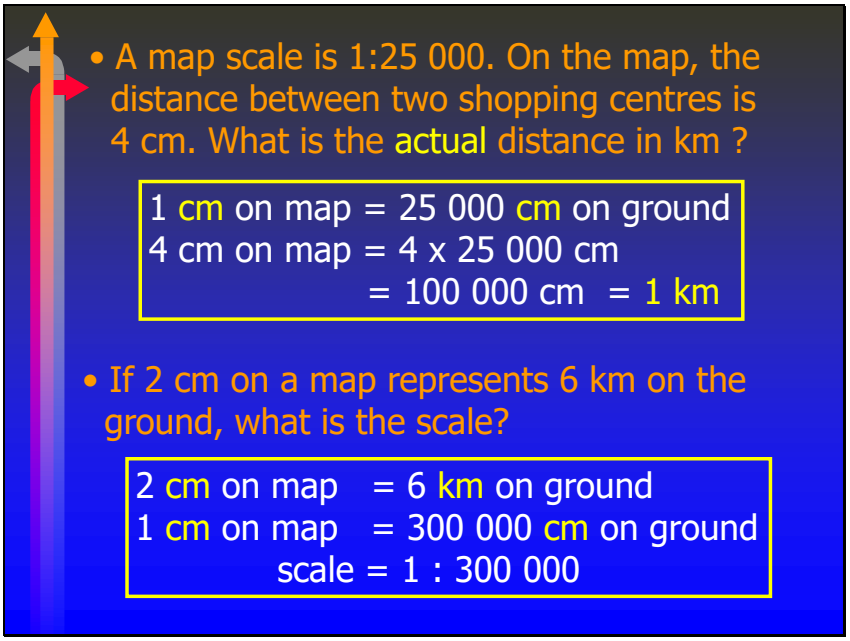
In plans and maps, ratio is used to make comparisons between actual dimensions and drawn dimensions. This ratio is called a scale.

A scale drawing or model is an enlarged or reduced drawing or model of an object.

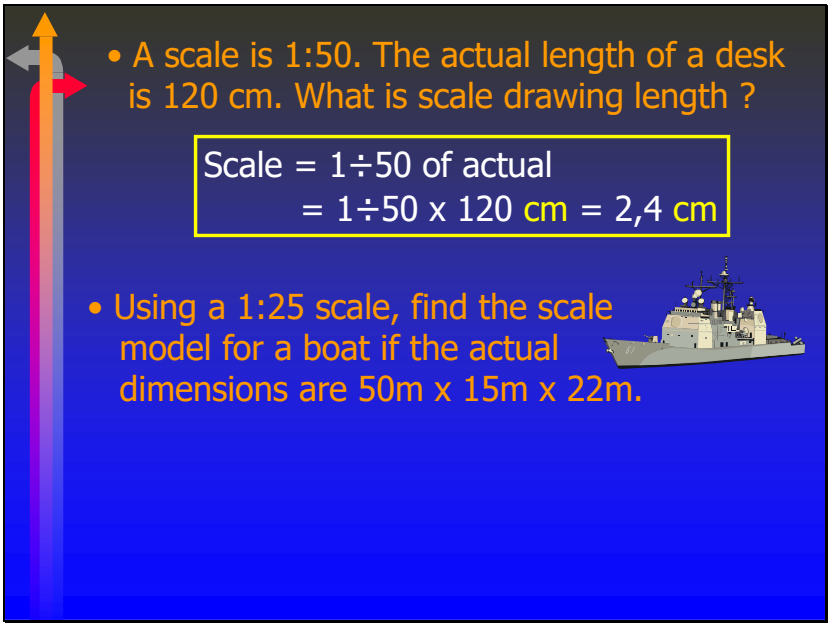
e.g. 1:100 means one unit on a drawing is 100 of the same units for the object on the ground.

note The first value always represents the drawn dimensions on the map or plan.

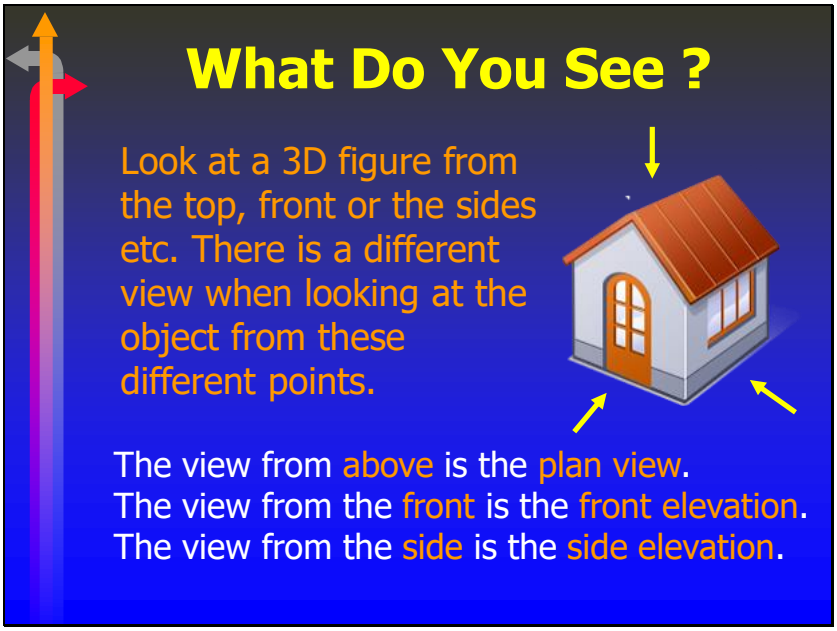
Slide 3


• A map scale is 1:25 000. On the map, the distance between two shopping centres is 4 cm. What is the actual distance in km ?
1 cm on map = 25 000 cm on ground
4 cm on map = 4 x 25 000 cm
= 100 000 cm = 1 km
• If 2 cm on a map represents 6 km on the ground, what is the scale?
2 cm on map = 6 km on ground
1 cm on map = 300 000 cm on ground
scale = 1 : 300 000

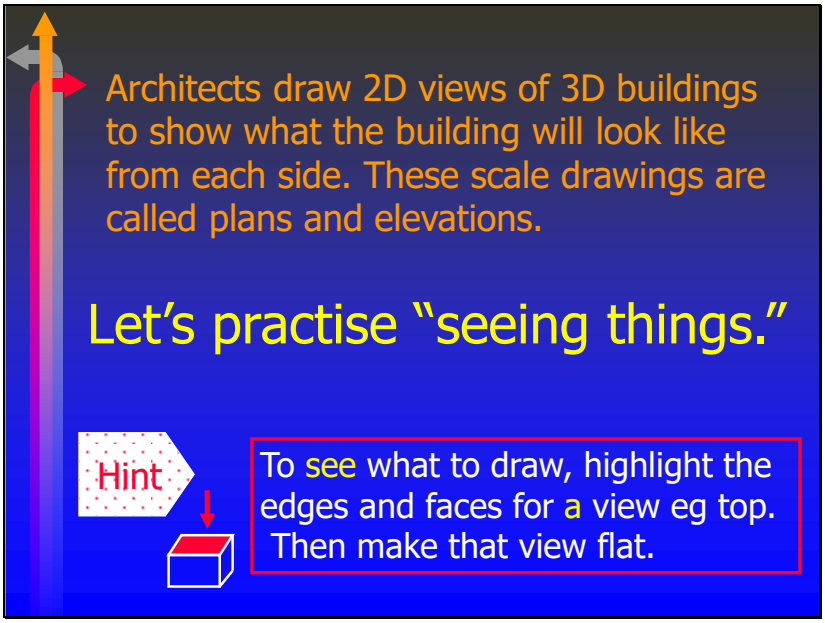
Slide 4


• A scale is 1:50. The actual length of a desk is 120 cm. What is scale drawing length ?
Scale = 1÷50 of actual
= 1÷50 x 120 cm = 2,4 cm
• Using a 1:25 scale, find the scale model for a boat if the actual dimensions are 50m x 15m x 22m.

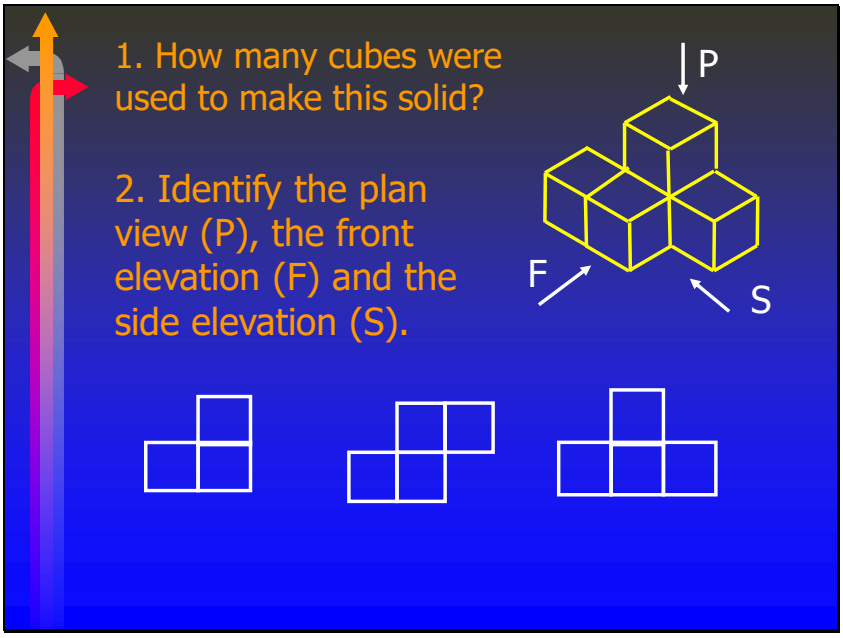
Slide 5


What Do You See ?
Look at a 3D figure from the top, front or the sides etc. There is a different view when looking at the object from these different points.
The view from above is the plan view.
The view from the front is the front elevation.
The view from the side is the side elevation.

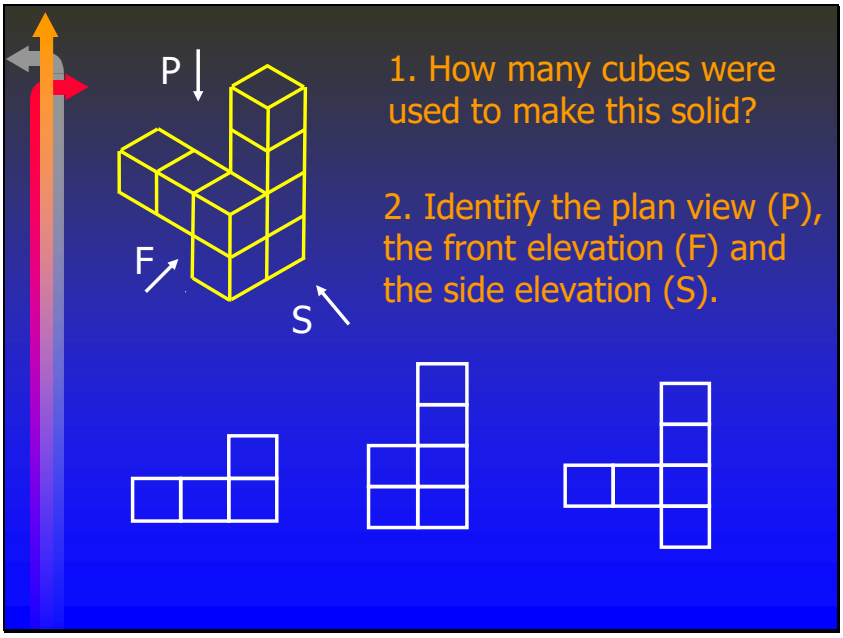
Slide 6


Architects draw 2D views of 3D buildings to show what the building will look like from each side. These scale drawings are called plans and elevations.
Let's practise "seeing things."
Hint
To see what to draw, highlight the edges and faces for a view eg top. Then make that view flat.

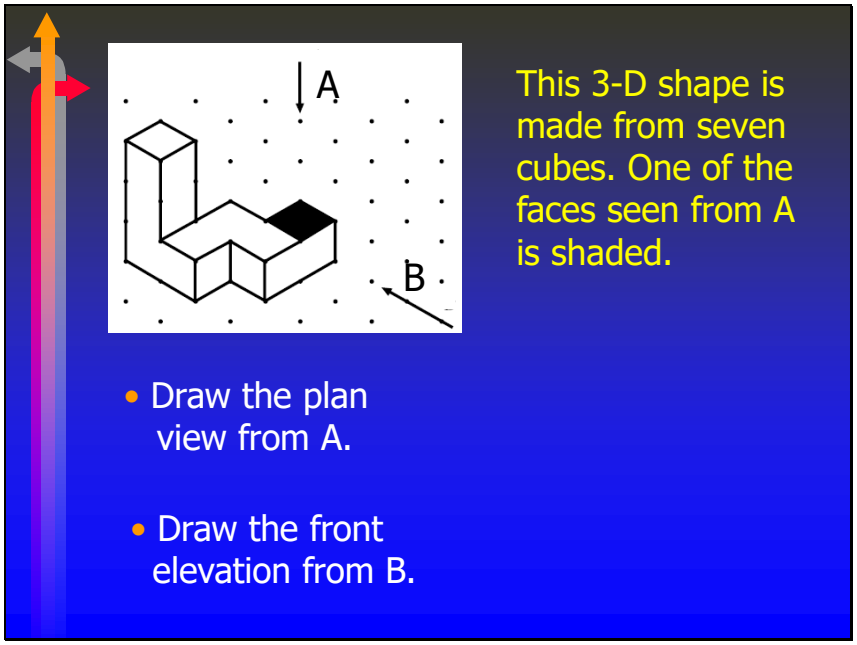
Slide 7


1. How many cubes were used to make this solid?
2. Identify the plan view (P), the front elevation (F) and the side elevation (S).
P
F
S

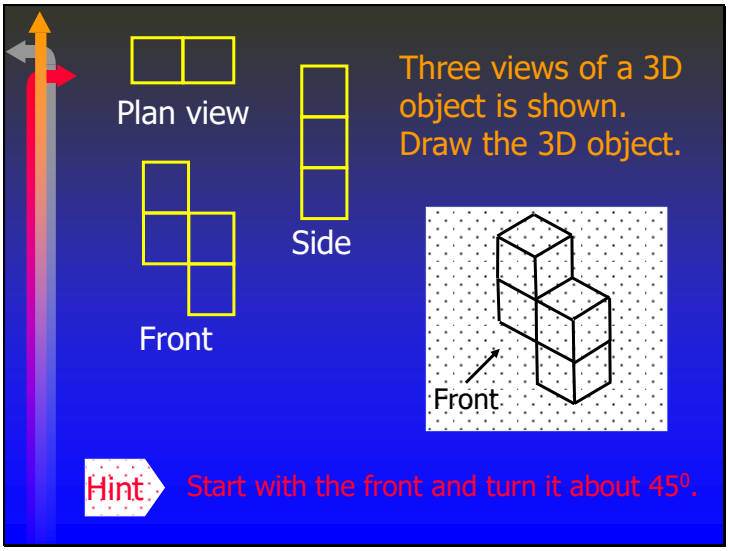
Slide 8


P
F
S
1. How many cubes were used to make this solid?
2. Identify the plan view (P), the front elevation (F) and the side elevation (S).

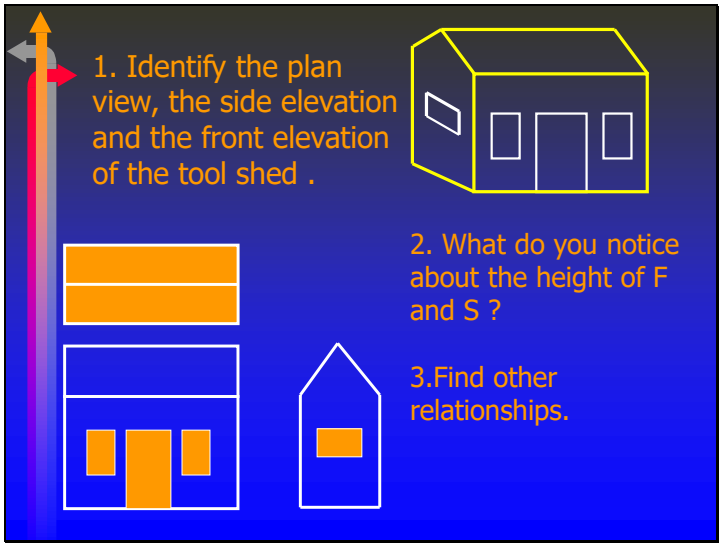
Slide 9


A
B
This 3-D shape is made from seven cubes. One of the faces seen from A is shaded.
• Draw the plan view from A.
• Draw the front elevation from B.

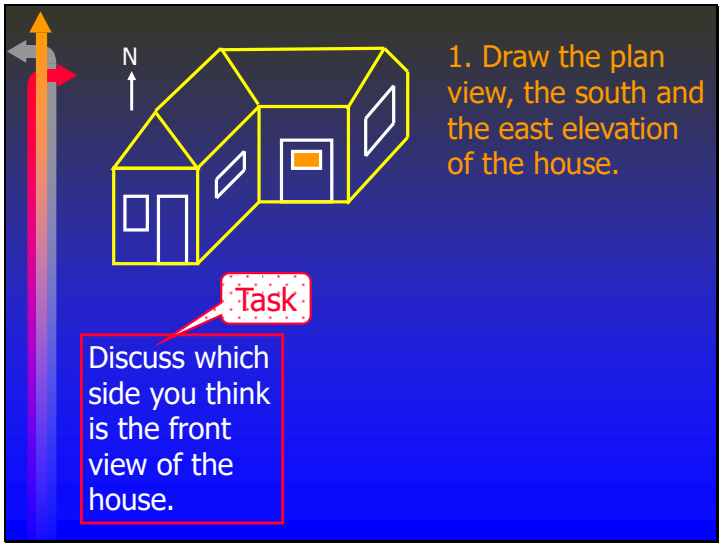
Slide 10


Plan view
Side
Front
Three views of a 3D object is shown. Draw the 3D object.
Front
Hint
Start with the front and turn it about 45⁰.

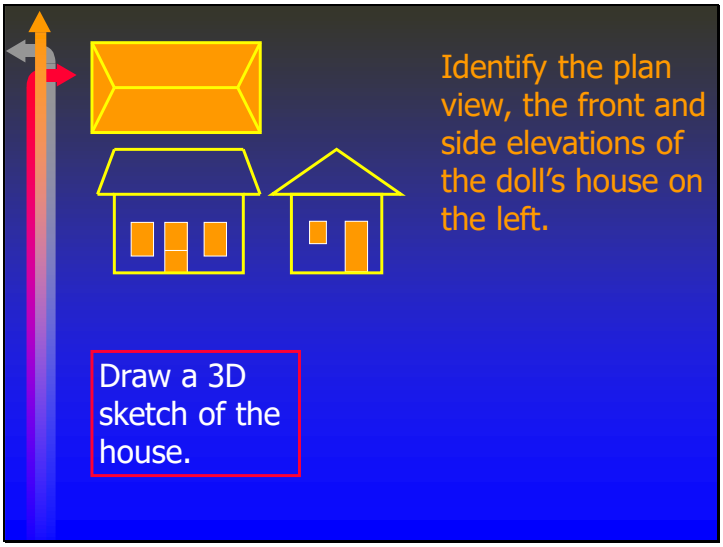
Slide 11


1. Identify the plan view, the side elevation and the front elevation of the tool shed .
2. What do you notice about the height of F and S ?
3.Find other relationships.

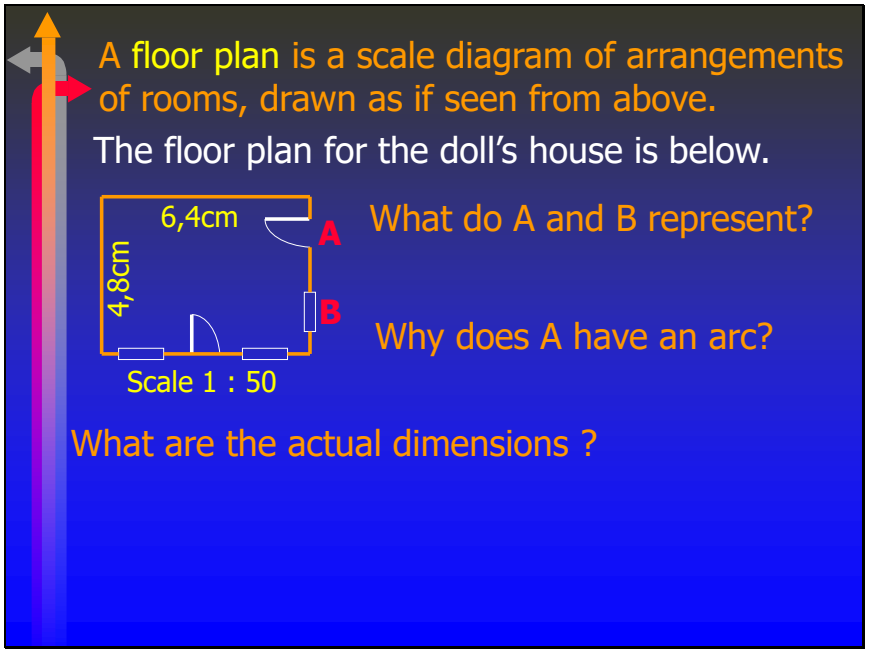
Slide 12


N
1. Draw the plan view, the south and the east elevation of the house.
Task
Discuss which side you think is the front view of the house.

Slide 13


Identify the plan view, the front and side elevations of the doll's house on the left.
Draw a 3D sketch of the house.

Slide 14


A floor plan is a scale diagram of arrangements of rooms, drawn as if seen from above.
The floor plan for the doll's house is below.
6,4cm
4,8cm
A
B
Scale 1 : 50
What do A and B represent?
Why does A have an arc?
What are the actual dimensions ?