

# Definition of Scale

Scale refers to the proportional relationship between the size of a representation and the actual size of the object or area it represents. It is a fundamental concept in cartography, engineering, and design, allowing for accurate measurements and proportions.

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## Maps and Cartography

Graphic representation or scale model is a means for conveying geographic information.

A universal medium for communication and appreciated by most people, regardless of culture.

Human representations of the world



The fool's cap world map, a Ptolemaic projection on the Mercator projection, is a classic example of a map that is not a true representation of the world. The date and place of publication are unknown. Maps are human representations of the world, as seen through the eyes of a fool in this example.

[http://academic.emporia.edu/aberjame/map/h\\_](http://academic.emporia.edu/aberjame/map/h_)

# Importance of Scale

The scale used in architectural and engineering drawings is crucial as it allows for accurate measurement and proper visualization of the size and proportions of a project. It ensures that the design can be effectively communicated, facilitating construction and collaboration among various stakeholders.



# Types of Scale: Plain, Comparative, Diagonal



## Plain Scale

A simple, uniform scale where measurement units are equally spaced. Used for basic measurements and drawing to scale.



## Comparative Scale

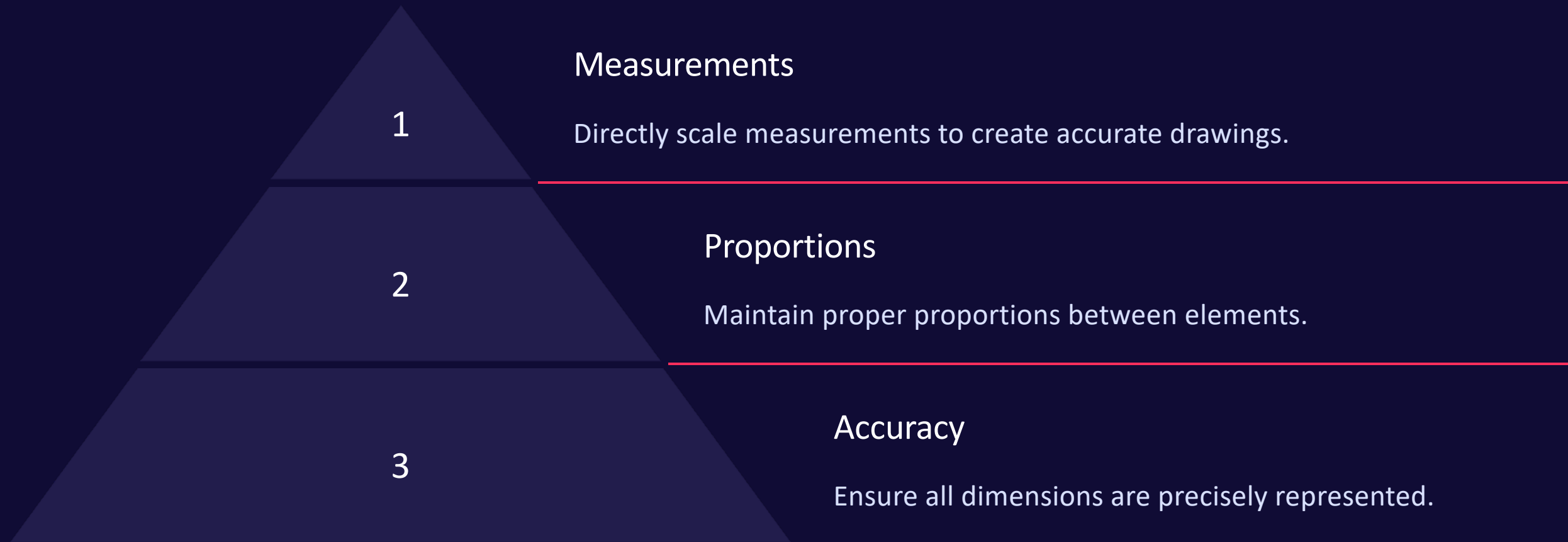
Compares the size of objects by using a reference scale. Allows for visual comparison of elements in a drawing.



## Diagonal Scale

A scale with diagonal lines that enables more precise measurements. Useful for detailed engineering drawings and technical plans.

# Exercise 1: Plain Scale



The plain scale is a fundamental drafting technique that allows you to create scaled drawings directly from measurements. By maintaining accurate proportions, you can faithfully represent the real-world size and relationships between different elements of a design. This ensures your drawings are precise and true to the original specifications.

## Exercise 2: Comparative Scale

1

### Defining Comparative Scale

Comparative scale allows you to visually compare the size of two or more objects on a drawing or map. It uses a graphical representation to show the relationship between actual and depicted measurements.

2

### Constructing Comparative Scales

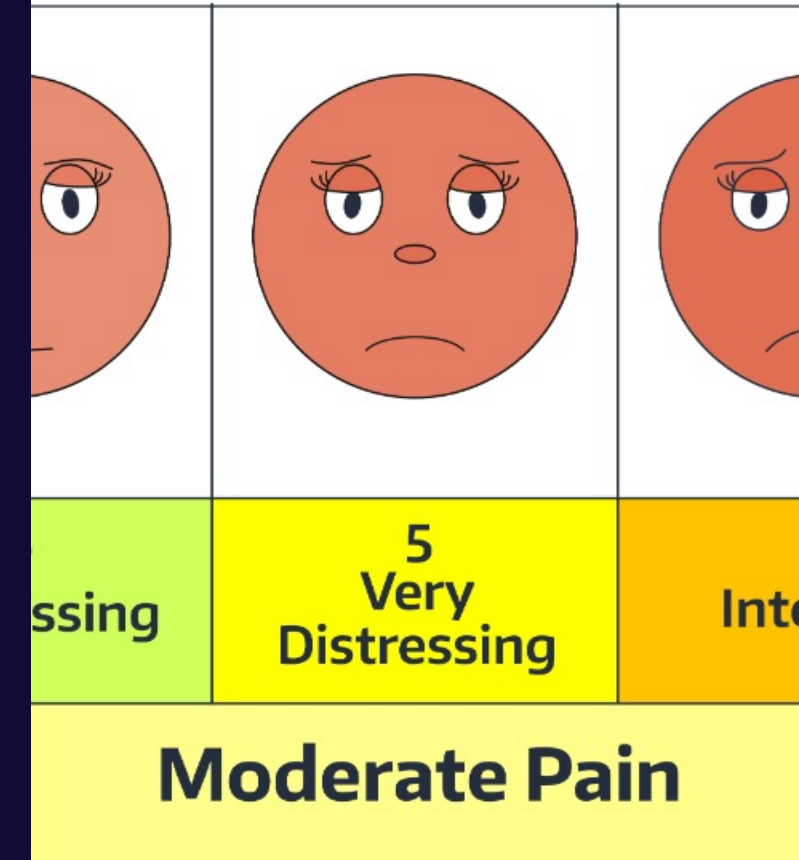
To create a comparative scale, divide the drawing's measurement into equal segments that correspond to the real-world distances. These segments are labeled with the actual distances they represent.

3

### Practical Applications

Comparative scales are essential for interpreting maps, architectural plans, and engineering diagrams. They enable users to accurately determine the physical size and relationships of elements depicted in the drawing.

## (Pain Assessment



Interferes significantly with daily activities. Requires lifestyle changes but patient remains independent. Patient unable to perform pain.

# Scale

Construct a diagonal scale of  
and long enough to mea

Length of scale

Length of scale and divi  
part will show 100 meter  
first part into 10 equal div  
show 10 meters.

At the other hand end, erect a perpe  
into divisions of any lengt  
rectangle and complete th

## Exercise 3: Diagonal Scale

1

### Step 1: Determine Scale Ratio

Identify the appropriate scale ratio based on the project requirements and available space. Common ratios include 1:10, 1:20, or 1:50.

2

### Step 2: Construct Diagonal Lines

Draw diagonal lines between the numbered or labeled markings on the scale. These diagonal lines represent the true distance between points.

3

### Step 3: Measure Distances

Use the diagonal scale to accurately measure distances and lengths on the drawing, taking into account the selected scale ratio.

# Practical Application of Comparative Scale

Comparative scale is a powerful tool for representing the relative size and proportions of objects. It allows you to accurately compare the dimensions of different elements within a design or technical drawing.

By using comparative scale, you can convey the true size relationships between components, ensuring accurate measurements and facilitating effective communication with stakeholders or construction teams.

## Comparative Scale

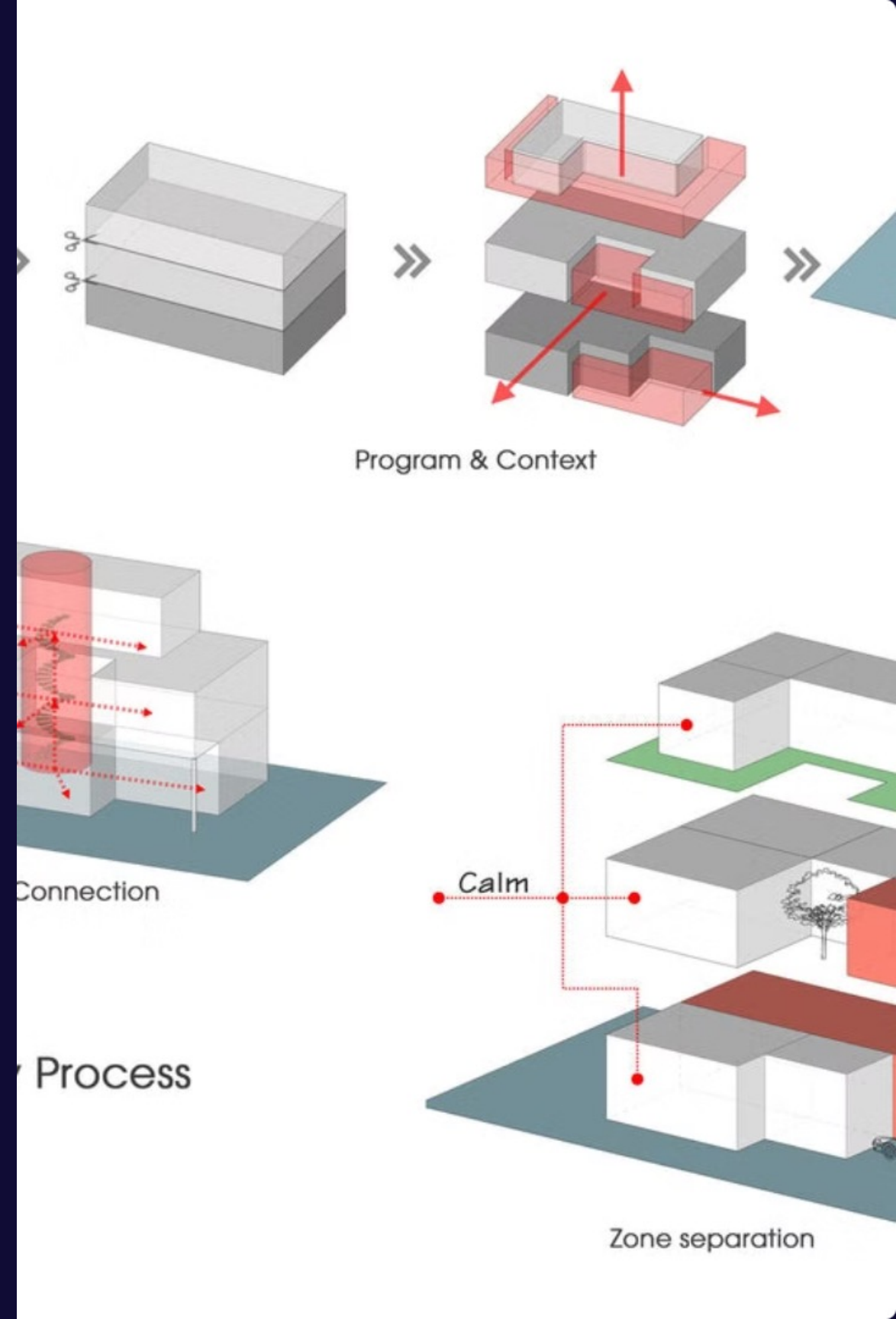
Having same representative fraction but to read different units are called comparative scales.

These scales may be plain scales or diagonal scales constructed separately or one after another.

# Practical Application of Diagonal Scale

Diagonal scales are particularly useful in architectural and engineering drawings, allowing for precise measurements of angles, slopes, and dimensional ratios. They enable accurate scaling of complex plans, elevations, and sections.

By overlaying a diagonal scale on a technical drawing, designers can quickly determine the true dimensions of various building elements, from stairwells and doorways to foundations and roofing structures.





# Conclusion and Key Takeaways

In conclusion, understanding the different types of scales - plain, comparative, and diagonal - is essential for effective technical drawing and design. These scales provide the necessary tools to accurately represent measurements, make comparisons, and convey complex spatial relationships. By mastering the practical application of these scale types, designers can elevate their work and communicate ideas more effectively.

