

Your Library Today



Mr. Breitsprecher's Edition

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The Key To Understanding Maps

Maps can show us different things – cities, highways, roads, and tourist attractions. They can tell us things like weather patterns and voting trends too. Maps use small pictures or icons to represent things.

To see what these symbols mean, we must look for a map key or legend. This tells the meaning of each of the symbols used in the map. These keys usually show a small picture of each symbol along with a written description of each of these symbols.

Drawn To Scale

Maps represent much larger areas of land. Maps have to be of a size that we can use them as we need them. Maps are drawn small enough to be useful, scaled down to fit on paper or a screen.

When scaling down a map, every part of the map is scaled by the same amount. Everything shown on the map is the same proportion.

If a city is twice as large as a neighboring town, it is scaled down on a map, yet still appears twice as large as the smaller neighbor.

Because the Earth is round, and maps are flat, it is impossible to create a map with a perfect scale. Some parts of the map will be too large, while others will be too small. The larger area that a map represents, the greater the distortions in scale are.

It is important understand scale when looking at maps. There are three ways maps use scale: the fractional method, the verbal method, and the graphic method.

Large Scale Map Versus Small Scale Map

A map which shows a small territory is referred to as a large scale map. This is because the area of land being shown by the map has been “scaled down” less. It is drawn with a larger scale.

A large scale map only shows a small area, but it shows it in great detail. When we need to find our way around town, we need a large scale map that shows us each road clearly. When we want to find our way around a park, a large scale map can show use everything.

A map showing a large area, such as an entire country is considered a small scale map. In order to show the entire country the map must be scaled down until it is much smaller.

A small scale map shows more territory, but less detailed. A globe has a very small scale. It shows us everything on Earth.



The Fractional Method

The fractional method for showing the scale of a map uses a fraction to describe the ratio between the map and the real world. Think of it as using numbers to write down the verbal ratio.

Instead of saying “One inch equals fifty thousand miles” we can just write $1/50,000$. Ratios are often written with a colon instead of a fraction bar. In this example we would see 1:50,000.

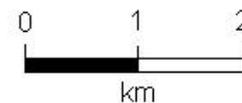
The Verbal Method

The verbal method of showing scale uses words to describe the ratio between the maps scale and the real world. An example might be “One Inch equals one hundred and twenty miles”.

Calculating scale on a map using the verbal method is easy. To see the distance on the map, we use the verbal direction, the stated ratio, to calculate the actual distance.

1:25,000

One inch to one mile



The Graphic Method

A Graphic Scale depicts scale using a line, similar to a ruler. The line is divided up with marks, just like a rule is divided in units. One side of the scale represents the distance on the map.

The other side represents the true distances of objects in real life. We can measure the distance between two objects on a map, and then refer to the graphic scale to calculate the actual distance between those same items.

It is easy to measure distances. This method even allows us to resize the map and keep our scale. If we change the size of the map, we also change the size of the graphic scale.