Zoom levels and scale

Conversion tool

Show table of contents ⌄

A zoom level or scale is a number that defines how large or small the contents of a map appear in a map view.

- Scale is a ratio between measurements on a map view and measurements in the real-world. When a map is displayed at a scale of 1:100 (or simply $\boxed{100.0}$), 1cm on the display represents 1m (100cm) in the real world. A scale of $\boxed{100,000.0}$ means that 1cm on the map display represents 1km (100,000cm) in the real world, and so on.
- Zoom level is a number between 0 (global view) and 23 (very detailed view) and is used as a shorthand for predetermined scale values, but comes with some limitations.

Most web mapping APIs support zoom levels as a convenience. Zoom levels are only typically used for building applications that display data in Web Mercator projection. Scales are used to display data in any projection.

A brief history of zoom levels ⌄

Conversion tool

Documentation / Mapping APIs and location services

Zoom level [13 ⌄] is equivalent to a scale of 1 : 72223.819286   ▲▼

NOTE: Mapbox zoom levels are one value less than ArcGIS API zoom levels.

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This table covers each distinct zoom level and the map scale it translates to. Usage suggestions depend on the dimensions of the map view in question but are reasonable guides for a map in a typical web page.

Zoom level	Scale	Usage suggestion
0	591657527.591555	Global
1	295828763.795777	
2	147914381.897889	Subcontinent
3	73957190.948944	
4	36978595.474472	
5	18489297.737236	Large country
6	9244648.868618	
7	4622324.434309	Small country/US state
8	2311162.217155	
9	1155581.108577	Large metropolitan area

Zoom level	Scale	Usage suggestion
10	577790.554289	
11	288895.277144	City
12	144447.638572	Town
13	72223.819286	Village
14	36111.909643	
15	18055.954822	Small road
16	9027.977411	Street
17	4513.988705	Street block
18	2256.994353	Address
19	1128.497176	Street intersection
20	564.248588	
21	282.124294	
22	141.062147	
23	70.5310735	

To learn more, visit the Zoom levels OpenStreetMap page. .

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Home

Features

Documentation

Resources

Pricing

FAQ

Location Services

Basemap layers

Geocode and search

Route and directions

Demographic data

Data hosting

Status

ArcGIS APIs

ArcGIS API for JavaScript

ArcGIS Runtime API for Android

ArcGIS Runtime API for iOS

ArcGIS Runtime API for .NET

ArcGIS Runtime API for Java

ArcGIS Runtime API for Qt

ArcGIS API for

Python

Open Source APIs

Esri Leaflet

ArcGIS REST JS

3rd Party API Clients

Mapbox GL JS

OpenLayers

Extending ArcGIS

ArcGIS Pro SDK

ArcGIS Enterprise SDK

ArcGIS Earth Automation API

ArcPy

ArcObjects SDK for .Net

ArcObjects SDK for Java

App Builders

ArcGIS Experience Builder

ArcGIS Web AppBuilder

ArcGIS AppStudio

ArcGIS Survey123