

# WORLDBUILDING

## Discord #resources Master List

*This document was last updated on 12 May 2024*

**To report any concerns or broken links**, PM @Elektrophorus#4981 on Discord

**To submit a link**, please post it in #resources on the Discord server

(Please remember that #resources is for submission; discussion is not permitted)

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**To join us on Discord**, follow this invite link:

<http://discord.gg/worldbuilding>

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### Tip to use this document on desktop client:

- Use the built-in outline feature in Google Docs to navigate the different sections of this list.
- Access the outline by going to View > Show document outline or using the keyboard shortcut Ctrl+Alt+A.
  - On Macs, Cmd+Ctrl+A then Cmd+Ctrl+H
- The outline will appear on the left side of your screen.

### On Google Docs app:

- Access the options menu in the upper right corner of the screen.
  - Select Document outline and it should appear on your screen.
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*Re: Why didn't you add my resource?* I am intentionally curating this list to exclude the following:

- Very specific or jargony texts
- Blogs and blog posts that are not comprehensive resources
- Most standalone videos (unless broad in scope or tutorial in nature)
- Resources that aren't strictly worldbuilding (e.g. roleplaying, writing, art)

# Mapmaking & Physical Worldbuilding

These resources are catered toward physical worldbuilding, including geology, climatology, and mapmaking. If you want to create a realistic setting from absolutely nothing, it's important to understand the factors that shape the environments in your world.

## Geology, Tectonics

These guides show some general tips and information to start a fresh world from the ground-up.

Resource	Description
<a href="#">Apple Pie from Scratch, Part VA: Tectonics: Constructing a Plate Tectonic History</a>	A pretty decent basic guide on the workings of plate tectonics and its effect on landforms, with an example of a workflow at the end.
<a href="#">therift289's Process</a>	This Imgur guide is a good way to express how plate tectonics and air circulation affect the climates and biomes of your world. Although it's not entirely accurate, this is a good starting point to understand the steps to consider if you are looking for some sort of realism.
<a href="#">Alratar's Process</a>	This Imgur guide is a more advanced view of the latter half of the previous one. To get truly accurate climates, we have to consider how landmasses affect pressure cells, which in turn affects moisture and temperature.
<a href="#">Geology Crash Course</a>	If you want to get more into the physical side of how land masses and niche geological features are formed, this guide is worth a read.
<a href="#">Tectonic Scenarios</a>	This crash course on plate tectonics shows how plates interact with each other. If you are truly working from the ground up, these rules will help you shape landmasses, mountains, and trenches.
<a href="#">Floodmap</a>	This tool will take an input of a hypothetical sea level (between 0 and 800 meters) and show you what Earth would look like if it were flooded to that level.
<a href="#">NASA Visible Earth: Bathymetry</a>	Maps of the topography of the undersea land surfaces of Earth.

## Climates & Biomes

After designing the landmasses and coastlines, we need to refine the local environments by climate. This also lends to discussing biomes, which vary widely between areas of the same climate.

Resource	Description
<a href="#">Climate Finder</a>	If you are into strict Koppen classification, this simplified numerical guide will help you calculate the expected climates by altitude, moisture, and temperature. You will need to define these parameters for each region before you start, but this should give you a good baseline for procedural climates.
<a href="#">Climate / Biome Chart</a>	Approximate biomes / climates by elevation, latitude.
<a href="#">Climate Classification Systems</a>	A quick guide on some ways to classify real-life climates, with example maps.
<a href="#">SpaceCalc Climate Calculator</a>	Provide a height map of your world, followed by some basic parameters, to receive a rough mapping of what climates to expect where.
<a href="#">Biomes Picture Guide: Terrestrial</a>	This guide is objectively the best guide ever written details the different terrestrial biomes of Earth and showcases pictures of iconic types of these biomes. After each section, there is commentary on important considerations for each region.
<a href="#">Effect of Climate on Human Physiology</a>	Informative post on how climate affects the physiology of humans.
<a href="#">World Biomes</a>	This website indexes different biomes with some basic information. Within those links, there are further

	links to some lists of iconic species you may find.
<a href="#">Fundamentals of Physical Geography</a>	An outline to basic physical geography topics, including the physical makeup of the world, its weathers, climates; soils, water, flora / fauna, and chemical cycles.
<a href="#">earth .:</a>	“See current wind, weather, ocean, and pollution conditions, as forecast by supercomputers, on an interactive animated map. Updated every three hours.”
<a href="#">Windy</a>	Forecast model of the world, similar to above, with filters for temperature, cloud cover, etc.

## Spatial Orientation

For lack of better categorization, here are some miscellaneous resources for the conceptual phase. Knowing the distance scale should help you better place settlements and features.

Resource	Description
<a href="#">Map Projections</a>	A comprehensive list of common map projections you may want to consider using. 2:1 is generally the most useful projection.
<a href="#">The True Size</a>	Pick a country and this tool will overlay it on top of other countries to help you compare sizes.
<a href="#">Google Maps Distance Calculator</a>	Simply put: pick points and this tool will tell you their linear distance.
<a href="#">Google Maps Radius</a>	This tool will allow you to draw circles of a given radius around points you click on Earth.
<a href="#">Realistic Travel Rates</a>	This small image lists some travel rates by foot, sea, horseback, and pigeon. It should help you visualize the distance scale of your world.
<a href="#">ORBIS</a>	How long would it take the Roman army to travel between two points in Europe? I don't know. Why don't you ask ORBIS? This tool accounts for season, cost, and mode of transport.
<a href="#">City Locations, Based on Defense and Commerce</a>	A small info picture that shows some typical locales for strongholds or commercial hubs that you may consider when placing settlements in your world.

## Mapmaking Inspiration

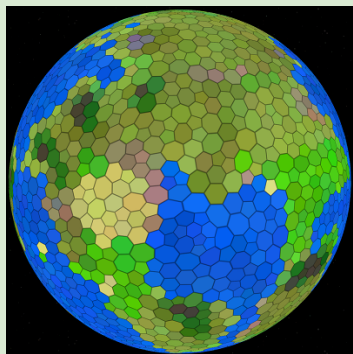
Sometimes we just need a little something to get the ideas flowing.

Resource	Description
<b>Historical Maps</b>	
<a href="#">Stamen Maps</a>	Free maps of the real world in different styles (e.g. watercolor, toner, topography, etc.).
<a href="#">Old Maps Online</a>	A staggeringly comprehensive repository of old maps from nearly any place on Earth. Pick a location and this tool will search its database and return any maps matching that region. Also useful if you need some artistic direction.
<a href="#">Ian Mladjov's Historical Maps</a>	This is a repository of maps detailing ancient historical events, sorted chronologically.
<a href="#">David Rumsey Historical Map Collection</a>	Online repository of historical maps, with some auxiliary tools to contextualize them in the modern day.
<a href="#">Transitmap</a>	“A celebration of transit maps and diagrams from around the world, whether they be real or imaginary, or from the past, future or present.”
<a href="#">Jean-Claude Golvin's Projects</a>	Artistic reconstructions of ancient architecture / city plans
<a href="#">Royal Collection Trust: Military Maps</a>	Collection of old military maps owned by George III, now shared by the Royal Collection.
<a href="#">Soviet Military Maps</a>	Repository of old Soviet maps, with some historical information mixed in

## [Ancient Earth Globe](#)

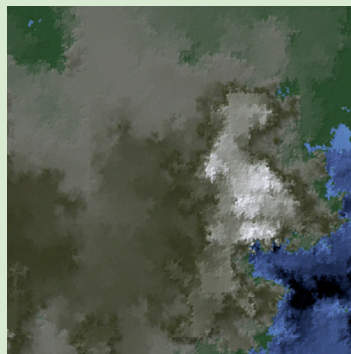
Visualize the Earth through different prehistoric eras on a globe, with the ability to jump to important prehistoric events.

## Map Generators



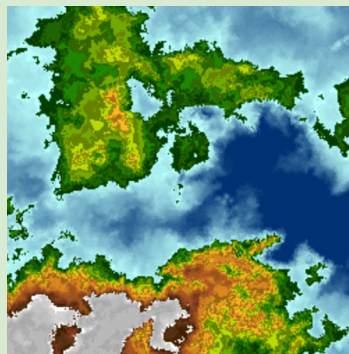
### [Experileous Planet Generator](#)

Seed-generated, hex-based with climate information and day/night simulation (Currently 404'd)



### [Terra Incognita](#)

Fractal-based satellite



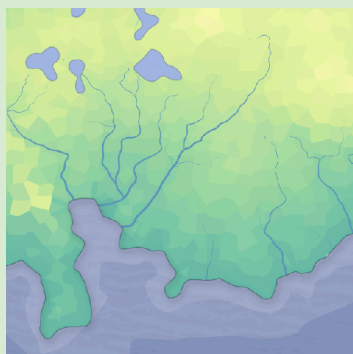
### [Planet Map Generator](#)

Seed-generated, variable projections. Change the image size for best results



### [Polygon Map Generator](#)

Seed-generated, with optional parameters. Will generate smaller land masses (i.e. volcanic islands)



### [Azgaar's Fantasy Map Generator](#)

(formerly known as Blocks)

Seed-generated; check upper-left corner. Also has modules for political and cultural maps, with name generator



### [Roll for Fantasy: Map Creator](#)

Tile-based map generator



### [Medieval City Map Generator](#)

Random, top-down city map, with name generator. Mouseover for locational information.



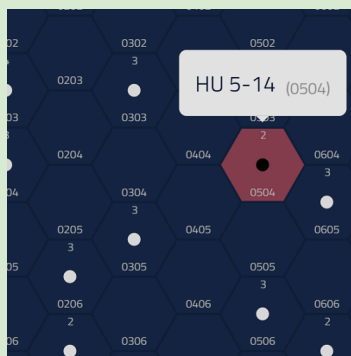
### [City Generator](#)

Fun little module to generate cities with mouse clicks



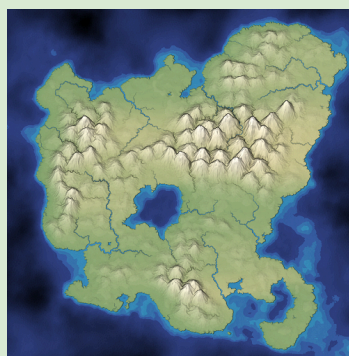
### [Uncharted Atlas](#)

Twitter robot, cannot force generate new map



### [Sectors Without Number](#)

Random, space sector map, with locational information and name generator



### [Mapgen4](#)

Draw elevation and supply rainfall / wind parameters to roughly simulate rivers and biomes



### [ProbableTrain City Generator](#)

Generates modern grid-style cities, with options to generate 3D structures and stylized maps

## Cartography: Tutorials



Resource	Description
<a href="#">/r/mapmaking Wiki</a>	This is the wiki for /r/mapmaking, which contains a wealth of information regarding creating your own maps. Also consider visiting the dedicated subreddit at <a href="http://reddit.com/r/mapmaking">http://reddit.com/r/mapmaking</a>  You may also want to check out <a href="#">Cartographer's Guild Quickstart Guide</a> (and also the site overall, as it is an old school forum for cartography in general.
<a href="#">Rendering Coastlines</a>	This guide goes through the process to render coastlines using any rastering software that has a difference / cloud feature.
<a href="#">Lungora's Mapmaking Guide</a>	Your favorite moderator's 10-step mapmaking guide.
[PDN] <a href="#">Pixel-Style Maps</a>	
[PS] <a href="#">Fantasy Map in Photoshop</a> (Youtube Playlist, 15 videos)	
[PS] <a href="#">Saderan Tutorial</a>	
[PS] <a href="#">Semi-Realistic Map Tutorial</a>	
[PS] <a href="#">Ascension Atlas Tutorial</a> (Direct Download Link)	For the GIMP version, use this link instead: <a href="#">Ascension Atlas Tutorial</a> (Direct Download)
<a href="#">Fantasy Mapmaking Tutorials</a> (Youtube Playlist, 5 videos)	
[GIMP] <a href="#">Artistic Maps</a> (Direct Download Link)	This guide goes through how to create custom brushes and paint a map in GIMP. Results will vary based on your own stylistic choices and how good your brushes look, so don't be discouraged if the end result at the end of the guide isn't what you want.
[GIMP] <a href="#">Fantasy World Map</a>	Doesn't have pictures, but goes through the general procedure to make a fantasy world map.
<a href="#">Map Symbols Legend</a>	Guide to common ways maps represent important features, with samples.
<a href="#">Topographic Map Symbols</a> (PDF)	Short PDF about standard map symbols used in US topographic cartography.
<a href="#">NATO Military Map Symbols</a>	The official list of symbols used to denote features on a military map. Also see <a href="#">historical symbols</a> (circa WW2) and <a href="#">Soviet map marking</a> for more
<a href="#">Positioning Names on Maps</a> (Direct Download Link)	A guide to positioning text on your map to maximize readability and aesthetics.
<a href="#">Advanced Map Shading</a>	For technical mappers: how to render shading for maps using elevation data and mapbox

## Cartography: Tools & Assets

Ready to render? Here's some stuff to get you started. FAQ: What program should I use to make maps? Look at the end of this document in the art resources section.

Resource	Description
<a href="#">IrishBandit's Resource List</a>	Your favorite Discord administrator's list of mapmaking resources.
<a href="#">Schwarzkreuz's Resource List</a>	Some more brush sets and sheets to work on your own brushes.
<b>Technical mapping</b>	
<a href="#">QGIS</a> (Download)	Gold standard in analyzing geospatial data
<a href="#">Wilbur</a> (Download)	Play with terrain data to generate real topographic maps.
<a href="#">Esri CityEngine</a> (Download; costs money; has 30 day trial)	City planning software with 3D modeling, compatible with ArcGIS

<a href="#">Google Maps Color Scheme</a>	Fonts and hex values that Google Maps uses.
<a href="#">Color Ramps (for Topology)</a>	Different color gradients to use for height mapping.
<a href="#">Map To Globe</a>	Projects your map onto a globe so you can see what it looks like. This tool is useful to show how your 2D projection distorts when put onto a sphere. It also has a sketching feature. (25 December 2019 -- Map To Globe now has a <a href="#">beta website</a> that has additional features. Let me know when this goes live.)
<a href="#">GProjector</a> (Download)	This free software can take any map that is made equirectangular and convert it to other projections.
<b>Stylized mapping</b>	
<a href="#">Inkarnate</a> (optional premium)	Online-based easy-to-use mapmaking application, with built in brushes and assets for those not comfortable with Photoshop, or looking to create a map with minimal effort.
<a href="#">Wonderdraft</a> (Download; costs money)	Solid, albeit pricey mapmaking application that is similar to Photoshop, but specialized for mapmaking. If you are familiar with Inkarnate, it is like a more flexible, offline version. More information at <a href="http://reddit.com/r/wonderdraft">http://reddit.com/r/wonderdraft</a>
<a href="#">MapChart</a>	Online tool to create maps of the real world, with customizable colors and other features. Maps available for download.
<a href="#">Metro Map Creator</a>	Online tool to easily create metro maps (e.g. bus or train lines).
<a href="#">NetworX</a> (Download)	Program to make transportation maps (e.g. bus and train routes)
<a href="#">HobByte</a> (Download; costs money)	Isometric "hand drawn"-style map drawing tool
<a href="#">RPG Map II</a> (Download)	Free minimalistic 2d mapmaking tool geared toward tabletop game area maps. Formerly known as ANAMap, which can still be accessed as an online application <a href="#">here</a> .
<a href="#">Dungeonfog</a>	2d mapmaking tool for top-down D&D oriented maps
<a href="#">City Painter</a>	Easy-to-use painting tool to render cities (mostly medieval looking).
<a href="#">Tiled (Map Editor)</a> (Download)	Free-to-use (donation funded) map editor that takes user-defined tiles to create maps in orthogonal, isometric, or hex orientation
<a href="#">Dungeon Painter Studio</a> (Steam) (costs money)	"Dungeon Painter Studio is a powerful encounter map design tool, with a lot of features."
<a href="#">Compass Rose Generator</a>	In-browser tool to create compass roses. Use hotkeys to cycle through preset styles and effects

# People, Places, Things

These resources focus on cultural aspects of worldbuilding, including languages and customs. Studying real life is the best way to make your world convincing--so make sure you get your healthy serving of literature! It's pretty much impossible to go through all the aspects of culture in this guide, but here are the resources submitted by users like you on some key points to consider.

## Beliefs & Customs

Resource	Description
<a href="#">On Naming People and Places</a> (PDF)	A quick and dirty guide to how people and places are named in real life, and how to apply these concepts to your own world.

<a href="#">List of Human Universals</a>	Compiled list of ideas / concepts universal to many (if not all) human societies, originally sourced from Donald Brown's book "Human Universals"
<a href="#">Religion Design Guide</a>	An article on how to design your own fantasy religion including important talking points and organizational issues.
<a href="#">Myths, Creatures, and Folklore</a>	Repository of links to pages detailing real-world beliefs. <b>See also:</b> <a href="#">Theoi</a> (Greek mythology), <a href="#">Germanic Mythology</a>
<a href="#">Glossary of Terms in Wuxia, Xianxia &amp; Xuanhuan Novels</a>	Glossary of important terms and concepts in Chinese fantasy novels.
[Video] <a href="#">World Mythology Crash Course</a>	Playlist of videos that provide a quick view of world mythology.
<a href="#">Faiths and Folklore (Brand's popular antiquity)</a>	"A dictionary of national beliefs, superstitions and popular customs, past and current, with their classical and foreign analogues, described and illustrated."
<a href="#">Sacred Texts Archive</a>	Repository for freely available texts regarding religion, mythology, and folklore from around the world.
[Audio] <a href="#">History of Philosophy Without Any Gaps</a>	Series that "looks at the ideas, lives and historical context of the major philosophers as well as the lesser-known figures of the tradition [of philosophy]."
<a href="#">List of Supernatural Powers and Abilities</a>	Wiki page from the Superpowers wiki that lists different superpowers from various sources.
<a href="#">Superseded Scientific Theories</a>	Guide to real-life scientific theories that have since been abandoned; potentially useful for developing how your denizens understand the world.
<a href="#">Elements of Agricultural Chemistry</a>	Free eBook that talks about agricultural chemistry. Use this to develop a more detailed understanding of plants and the process of growing them, especially in the context of food production, medicine, and other applications.
<a href="#">Alchemical Texts</a>	Repository of alchemical texts and images from various eras, pertaining to both physical and philosophical beliefs. Also includes resources to learn more about alchemy. If you need symbology, refer to <a href="#">this link</a> on this website.
<a href="#">Ian Mladjov's Chronologies / Genealogies</a>	A comprehensive guide to the monarchs and ruling families in history.
<a href="#">Heraldry Links</a>	This site links to resources useful for learning heraldry in the real world.
<a href="#">Flags of the World</a>	Vexillology (flags) resources, including information about all the flags in the real world.
<a href="#">Family Echo</a>	This is a tool to create family trees.

## Objects & Animals

Resource	Description
<a href="#">Food Timeline</a>	Timeline of major events in food history, and links to more information.
<a href="#">Herbs for the Medieval Household, for Cooking, Healing, and Diverse Uses</a>	"Covering nearly seventy different herbs, this book details each plant's specific role in several aspects of medieval society including cooking, healing, and pest control."
<a href="#">Technology Timeline</a>	Timeline of major events in technology and invention.
<a href="#">Clothing and Fashion</a>	Blog post that discusses many important talking points for designing clothing and fashion in your world, including the types of clothing to consider, its composition, and significance.
<a href="#">The Greek Age of Bronze</a>	"Weapons and warfare in the late Helladic time 1600-1100 BC"

<a href="#">Medieval Art / Architecture Glossary</a>	
<a href="#">Guide to Conworld Architecture</a>	Short tips on how to design buildings in a fictional setting.
<a href="#">Desert Cities Thread</a>	Brief Twitter thread that is a picture guide to desert cities, with a glimpse into some architectural designs and history.
<a href="#">Guide to European Armor / Weapons</a>	Imgur album with labeled images of European armor and weaponry.
<a href="#">Oakeshott Typology for Medieval Swords</a>	<a href="#">(Abbreviated image here)</a> Resource detailing the different types of swords found in the medieval era, with brief notes about their qualities and usage.
<a href="#">Japanese Swords</a>	Huge repository of information regarding the different types of Japanese sword, including many supplementary articles. See also: <a href="#">this cute picture</a>
<a href="#">How a Handgun Works</a>	High quality animations of the inner workings of the modern handgun, with supplementary information about parts, terminology, and how each piece works together.
<a href="#">Wikipedia: List of legendary creatures by type</a>	
<a href="#">Medieval Bestiary</a>	An encyclopedia for animals in medieval times, real or fictional.
<a href="#">Circle of the Dragon</a>	Information about dragons and dragon-like creatures around the world.
<a href="#">Yokai</a>	Encyclopedia of Japanese yokai (phantom, apparition), which are the rough equivalent of spirits or demons in Western culture.
<a href="#">Fearsome Creatures of the Lumberwoods</a>	This 1910 fictional field guide details some creatures of the North American lumberjack folklore.
<a href="#">All Your Yesterdays</a>	This book is a collection of speculative depictions of dinosaurs and other prehistoric creatures from various paleoartists.
<a href="#">Common Animal Niches</a>	<a href="#">/r/SpeculativeEvolution</a> post about common animal niches, for inspiration when filling up the fauna of your world.
<a href="#">List of Feeding Behaviors</a>	Wikipedia article on the different types of feeding behaviors found in real-life animals.
<a href="#">Everything You Need to Know About Feathers</a>	Be sure to look at all 6 pages of this very helpful guide on how feathers work.
<a href="#">Picture Guide to Animal Eye Types</a>	Guide to the different types of eye types found in animals on Earth, with a brief blurb on their prevalence and function.
<a href="#">Picture Album of the La Brea Tar Pits</a>	These are some pictures of select exhibits and plaques from the La Brea Tar Pits (natural history museum) in Los Angeles.

## Demography & Law

Resource	Description
<a href="#">Town (13-15th cen Europe)</a> <a href="#">(Direct Download Link)</a>	This 150 page book details life in 13-to-15th century Europe, painting an expansive (but cursory) glance at important issues, infrastructures, and systems within society.
<a href="#">Fief (Medieval Society)</a> <a href="#">(Direct Download Link)</a>	By the same author as above, this 100 page book details life in medieval fiefdoms.
<a href="#">Medieval Demographics Made Easy</a> <a href="#">(Direct Download Link)</a>	Population size and allocation between classes / castes and professions are important to making your society both functional and convincing. Updated broken link 7 Nov 2018.



<a href="#">Notes on Medieval Population Geography</a>	A discussion of population densities at a country/kingdom and town level in the Middle Ages, as well as size and placement of towns, cities, castles, military resources, etc.
<a href="#">100 Jobs for Fantasy Characters</a>	This neat image lists 100 potential professions (that aren't knight or peasant) for your yet-employed fantasy character.
<a href="#">Pirates and Privateers</a>	Information about piracy throughout the ages, with links to other reads / resources
<a href="#">Welsh Piper: Medieval Demographics Calculator</a>	This calculator will help you approximate the makeup of your medieval settlements based on land size and population.
<a href="#">Political Simulator</a>	A resource to analyze your world's possible ideologies and how they fall on the political spectrum.

## Real-Life Languages

Resource	Description
<a href="#">Omniqnot: Alphabets</a>	Compendium of alphabets from times past and present in the real world.
<a href="#">"Language Stuff"</a> (Mega.nz folder)	A modestly-named repository of resources to learn over 1300 different languages.
<a href="#">Lexicity</a>	A repository of resources to learn ancient languages.
<a href="#">A Guide to Names and Naming Practices</a>	How names are structured and constructed in various languages and cultures
<a href="#">Skyscript Glossary</a>	A glossary of miscellaneous archaic words (originally found in astrological texts).
<a href="#">Dictionary of Victorian Slang</a>	It's a dictionary of Victorian slang.
<a href="#">How Language Works</a>	This is the table of contents page for the Indiana University page for linguistics / cognitive science. It goes through the science and methodology of linguistics.
<a href="#">Old English Translator</a>	Simple indexed translator for Old English.
[47:24] <a href="#">Animated History of Writing Systems</a>	This lengthy YouTube video goes through a history of writing systems in the real world.
<a href="#">Google Ngrams Viewer</a>	This online tool searches for how often your input word(s) was used in literature during a given year, represented by a line plot.

## Conlangs: Tutorials & Tools

Miscellaneous things you might find useful when developing a language or script.

Resource	Description
<a href="#">How to Design A Script</a>	This forum thread has some vital talking points about designing scripts for your conlang, including some references to real world examples. (25 April 2020 -- Link appears to have broken; archive link provided)
<a href="#">IPA Guide</a>	This guide to the international phonetic alphabet (IPA) is practically mandatory if you want to create a new language.
<a href="#">Itinerarium (Phoneme Synthesis)</a>	IPA to speech
<a href="#">Forvo</a>	This tool pronounces words.
<a href="#">Type IPA</a>	Use your mouse to type IPA symbols
<a href="#">Shapecatcher</a>	Shapecatcher will try its best to identify any unicode character you draw and return its name, unicode hex, and meaning.

<a href="#">PolyGlot (Programming-based)</a>	A programming toolkit that helps you make conlangs.
<a href="#">LexiquePro</a>	“Lexique Pro is an interactive lexicon viewer and editor, with hyperlinks between entries, category views, dictionary reversal, search, and export tools. It's designed to display your data in a user-friendly format so you can distribute it to others.”
<a href="#">Universal Language Dictionary</a>	A comprehensive list of common definitions (language basics) to help you ensure you don't miss basic vocabulary when constructing a language
<a href="#">Conlangers Thesaurus</a>	This is a very important resource to implement when creating a conlang. This link is a guide to creating languages on the basis of word meaning, including concept mapping of words with related contexts. Also includes some minor commentary about the usage of words in real life.
<a href="#">Diachronica</a>	Searchable index of phonetic changes over time in many languages
<a href="#">Awkwords</a>	Input a syllable pattern and this tool will generate words using that pattern.
<a href="#">Sound Change Applier</a>	Takes an input lexicon and changes the sounds in it to whatever language family you define.
<a href="#">burgundy.io</a>	Refresh the page in this link to generate a random word.
<a href="#">Vulgar: Language Generator</a>	“Vulgar is a constructed language (conlang) generator for fantasy fiction writers that creates unique and usable languages for your race of peoples in the click of a button.”
<a href="#">TextMechanic Permutation Tool</a>	Finds every permutation of a given (1) set of strings and (2) number of strings per word.

# Sci-Fi & Hard Science

Building a sci-fi world opens up vast new possibilities, but generally requires a different knowledge set than the fantasy genre. If you like physics and chemistry, these guides should help you out.

## Relevant Scientific Literature

Resource	Description
<a href="#">Orion's Arm</a>	Collection of sci-fi worldbuilding resources.
<a href="#">Atomic Rockets</a>	The motherlode of equations and resources to build your own realistic space rocket.
<a href="#">NASA Pubspace</a>	Free research documents published by NASA.
<a href="#">Atlas of the Universe</a>	Map of the universe.
<a href="#">Unconventional Rocket Drives</a>	Webpage that details types of rocket drives from a conceptual level.
<a href="#">Habitable Planets for Man</a>	This 176 page book goes through the prerequisites for a planet to be habitable by Earth-like creatures such as ourselves, including general requirements, potential problems, and models.
<a href="#">Habitable Zones of Earth-Like Planets</a>	Scientific paper on theoretical habitable planets.
<a href="#">Atmospheric Pressure of Earth-Like Planets</a>	Scientific paper on atmospheres in Earth-like planets. Lots of equations.
<a href="#">SpecWiki (Speculative Evolution)</a>	This wiki compiles information about speculative evolution, drawing from (complete) past projects that detail especially the scientific aspect of alternate ways life forms could have developed. This is not for adding fan-made projects.
[Video] <a href="#">Isaac Arthur's Youtube Channel</a>	Talking points on how to incorporate hard science fiction themes into your world.

# Guides & Tools

Resource	Description
<a href="#">Shagomir's Planet Calculator</a>	Excel spreadsheet to figure out important details about your planets. Edit the green fields with information, and the calculator will return parameters.
<a href="#">An Apple Pie From Scratch</a>	Blog about building a scientifically-grounded world from the bottom up, with crash courses on the size and characteristics of planets and moons, including basic physics and chemical elements.
<a href="#">NASA Exoplanet Archive</a>	Official exoplanet and star catalog, including a lot of metrical data and scientific jargon
<a href="#">Star Chart List</a>	Approximate temperatures and life expectancies of stars (by Drift11)
<a href="#">Ace009 Starchart</a>	Spreadsheet of distance between exoplanet stars.
<a href="#">Impact Earth</a>	A calculator to estimate the effects of meteor impacts.
<a href="#">Asterank</a>	A 3D database of over 600000 asteroids.
<a href="#">Shapewright</a>	This tool takes any name and procedurally spits out a space vessel. Use this for inspiration.
<a href="#">Galactic Mapping Guide</a>	Mapping doesn't quite work the same when we look at 3D space that extends towards infinity.
<a href="#">Alternative Biochemistries</a>	This is a good beginner's guide to alternative forms of theoretical biochemistry for alien biological systems.
<a href="#">Extraterrestrial Plants Guide</a>	/u/Shagomir's guide on the colors of plants using other pigments.
<a href="#">Guide to Megastructures</a>	Imgur gallery with infographics about sci-fi megastructures.

# Generators & Worksheets

If you are really stuck on the concept phase, or you just need help adding to a pre-existing concept, a random generator may be of use to you. This section will list general-use generators, as well as more specific ones. It will also list out some worksheets to highlight other considerations you may not have considered when developing your favorite character, city, country, planet, etc.

## Generators

Type	Generators
<b>See also:</b> <a href="#">D&amp;D Compendium</a> -- Gold tier compilation of generators, geared toward Dungeons & Dragons but generally applicable to all	
Miscellaneous Collections	<div>→ <a href="#">Chaotic Shiny</a></div> <div>→ <a href="#">Megacosm</a></div> <div>→ <a href="#">donjon Generators</a></div> <div>→ <a href="#">Auto Roll Tables</a></div> <div>→ [Dice Roll] <a href="#">/r/BehindtheTables</a></div>
Name Generators  (See also: <a href="#">A Guide to Names and Naming Practices</a> )	<div>→ <a href="#">Onym</a> -- Not generator, but a repository of resources to come up with names for things</div> <div>→ <a href="#">Fantasy Name Generators</a></div> <div>→ <a href="#">Behind the Name</a> -- Generates names based on your choice of real-life language</div> <div>→ <a href="#">NameGenerator.zip</a> (Direct Download Link)</div>
Character Generators	<div>→ <a href="#">FakeNameGenerator</a> -- Generates entire identities, not just names</div> <div>→ <a href="#">Random Family Tree Generator</a></div>
Place Generators	<div>→ <a href="#">Perchance World Generator</a> -- Generates an entire world (without names), with suggested</div>

	features of specific landmasses → [Dice Roll] <a href="#">Random Continents Dice-Roller</a> -- For concepts regarding standalone continents → [Dice Roll] <a href="#">Quick City-Building</a> → <a href="#">Culture and Nation Dice Roll Generator</a> → <a href="#">Community History Generator</a> -- Spreadsheet-based generator that takes user-defined parameters (e.g. races and qualities) to generate towns, etc. → <a href="#">Fantasy Kingdom Generator</a> -- Generates population size, infrastructure, and livestock values
<i>(See “Mapmaking Inspiration” section for map generators)</i>	
Other	→ [Dice Roll] <a href="#">Monster Generator</a> → <a href="#">Fantasy Prompt Generator</a> -- Generates ideas for art pieces, but really can be useful if you just want a random fantasy idea → [Dice Roll] <a href="#">Mutations Tables</a> -- Surprisingly thorough tables for creating mutant characters → <a href="#">Sprite Draw</a> -- Randomly generates sprites for inspirational purposes → <a href="#">Talk To Transformer</a> -- Predictive text tool that takes an input and guesses what comes next; useful for awkwardly generating lore.

## Worksheets

Type	Worksheets
Nations / Cultures	→ <a href="#">Nation-Building Wiki Template</a> → <a href="#">Peoples &amp; Customs Questionnaire</a> → <a href="#">Zaharam-Chapelle-Parunas Ethnographic Questionnaire</a> → <a href="#">Dr. Zahir's Ethnographic Questionnaire</a> → <a href="#">Basic Overlooked Questions</a>
People & Things	→ <a href="#">100 Things to Know About Your Character</a> → <a href="#">Creature / Race Creation Sheet</a> → <a href="#">Some character development questions from Comic Con</a>
Fantasy	→ <a href="#">Fantasy Worldbuilding Questions</a> → <a href="#">Let's Build A Magic System</a> – Someone abused the edit system and added a strikethrough to the entire document. Please turn off “suggesting” mode and go to “view” mode to view the document as intended. → <a href="#">12 Questions (Magic Systems)</a>
General	→ <a href="#">Worldbuilding Bible Template</a> -- NOT religion; just general things to talk about → <a href="#">Storyplanner</a> -- A form to fill out with basic concepts → <a href="#">Worldbuilding Worksheet</a>

## Miscellaneous

### Organization / Notetaking (Wikis)

Aside from keeping a formal notebook or pages in Google Docs, you might consider one or more of these tools useful when keeping track of your world. As you add more and more information, wiki platforms become more and more attractive because they keep everything systematized and cross-linked for ease of access.

Resource	Description
Free-form notetaking	→ <a href="#">Microsoft OneNote</a> → <a href="#">Obsidian</a> – Link-based notetaking with built-in graph / canvas, among other plugins → <a href="#">Evernote</a> → <a href="#">Gingko</a> -- Free-form tree-based outline; free account has 100 “cards” per month, with pay-what-you-want subscription available to upgrade → <a href="#">TiddlyWiki</a> -- Non-linear web-based notebook, similar to a wiki → <a href="#">Trillium</a> -- Hierarchical note taking application

Writing & plot organizers	<ul style="list-style-type: none"> <li>→ <a href="#">yWriter</a> -- Tool to outline scenes / chapters in your novel</li> <li>→ <a href="#">Scrivener</a> -- Similar to above (<b>costs money</b>)</li> <li>→ <a href="#">Liquid Story Binder</a> -- Multimedia word processor / chapter organizer, with tools aimed toward writers (<b>costs money</b>)</li> <li>→ <a href="#">Bibisco</a> -- Novel-writing helper; almost like a wiki of sorts</li> <li>→ <a href="#">Plotist</a> -- Writing organizer; use to categorize elements and create plot timelines</li> <li>→ <a href="#">Chronodex</a> -- Printable writing organizer (<b>pay what you want; physical medium via PDF</b>)</li> <li>→ <a href="#">Storyboarder</a> -- Storyboard planner for graphic novelists / comic artists</li> </ul>
Other notetaking	<ul style="list-style-type: none"> <li>→ <a href="#">Fantasia Archive</a> -- Structured offline worldbuilding journal</li> <li>→ <a href="#">WorldAnvil</a> -- Online worldbuilding notetaking system, with wiki, timeline, and map support</li> <li>→ <a href="#">WorldMuncher</a></li> <li>→ <a href="#">Notebook.ai</a> -- Worldbuilding notebook organizer, with free and paid option</li> <li>→ <a href="#">Kanka.io</a> -- RPG character / story organizer</li> <li>→ <a href="#">Moodboard</a> -- Barebones picture-based pin board</li> </ul>
Offline wiki software	<ul style="list-style-type: none"> <li>→ <a href="#">ConnectedText</a> (<b>has one-time license fee after trial</b>)</li> <li>→ <a href="#">Wikidpad</a></li> <li>→ <a href="#">Zim Wiki</a></li> </ul>
Online wiki hosting	<ul style="list-style-type: none"> <li>→ <a href="#">Wikia</a></li> <li>→ <a href="#">Wikidot</a> -- Not MediaWiki</li> <li>→ <a href="#">Miraheze</a> -- Free MediaWiki hosting (you will get removed if you are inactive)</li> <li>→ <a href="#">SlimWiki</a> -- Fairly barebones online wiki</li> <li>→ <a href="#">Chronographer</a> -- Wiki-style map-based worldbuilding tool with basis on map and map pins</li> </ul>
Networks, timelines, etc.	<ul style="list-style-type: none"> <li>→ <a href="#">Freeplane</a> -- Free open-source "mind map" tool</li> <li>→ <a href="#">Family Echo</a> -- Creates family trees</li> <li>→ <a href="#">Timeline Making Tools</a> -- Master list <ul style="list-style-type: none"> <li>◆ In addition, check out <a href="#">The Timeline Project</a> (<b>download</b>)</li> <li>◆ <a href="#">TimeGraphics</a> -- Free online timeline creation tool</li> </ul> </li> <li>→ <a href="#">draw.io Flowchart Maker</a> -- Creates flowcharts and diagrams</li> <li>→ <a href="#">Parliament Diagram Organizer</a></li> <li>→ <a href="#">TreeGraph 2</a> -- Phylogenetic tree creator</li> <li>→ <a href="#">Fantasy Calendar Generator</a></li> </ul>

## Art Resources

While art is a very important part of the Worldbuilding community, it would definitely benefit you to learn more about creating art from a dedicated art community as well. Below, I have included a master list of art programs and a repository of art resources highlighted in orange.

Resource	Description
<a href="#">Digital Art Software List</a>	
<a href="#">The w-ic-i</a>	Repository of art resources and guides.
<a href="#">Writer's Knowledge Base</a>	Collection of blog posts and other relevant texts about the writing process.
Fonts	<ul style="list-style-type: none"> <li>→ <a href="#">Fontstruct</a> -- Online / offline font creation tool</li> <li>→ <a href="#">FontSquirrel</a> -- Free fonts</li> <li>→ <a href="#">Calligraphr</a> -- Turn your handwriting into a font</li> </ul>
References	<ul style="list-style-type: none"> <li>→ <a href="#">Doll Atelier</a> -- Human pose references</li> <li>→ <a href="#">LilyNion's Anatomy Boards</a></li> <li>→ <a href="#">Landscape Palettes</a></li> <li>→ <a href="#">ColorLeap</a> -- Color schemes through the ages</li> <li>→ <a href="#">Senshistock DeviantArt</a> -- Non-nude reference poses</li> <li>→ <a href="#">Concept Art World</a> -- Showcase of concept artists for inspiration</li> <li>→ <a href="#">Height Comparison Tool</a></li> </ul>
Heraldry misc.	<ul style="list-style-type: none"> <li>→ <a href="#">SVG Images for Heralds</a></li> <li>→ <a href="#">Book of Traceable Heraldic Art</a></li> <li>→ <a href="#">Coat of Arms Design Studio</a></li> <li>→ <a href="#">Flag Designer</a></li> </ul>



	<ul style="list-style-type: none"> <li>→ [PDF] <a href="#">5 Basic Principles of Flag Design</a></li> <li>→ <a href="#">Historic Tale Construction Kit</a></li> </ul>
Misc. tutorials	<ul style="list-style-type: none"> <li>→ <a href="#">Making Comics</a> -- Repository of tools and guides to help you get into comic making</li> <li>→ <a href="#">Star Fields in Photoshop</a></li> <li>→ <a href="#">Low Poly Illustrations in Blender</a></li> </ul>
<a href="#">Online Sequencer</a>	Online music composition tool
[Video] <a href="#">Terrible Writing Advice</a> Youtube Channel	In actuality, not terrible.
<a href="#">Streak Club</a>	Motivational tool that promotes users to make one submission a day. Use it as a way to organize worldbuilding materials and make sure you keep coming up with fresh ideas.
<a href="#">FlowScape</a> (Steam) (costs money)	Wasn't really sure where to put this one. 3D nature scene tool, using premade models to render a natural landscape