what3words

User Guide
what3words Excel add-in

User Guide
what3words Excel add-in

Setting Up

Before you start, you will need a what3words API key and the what3words Excel Add-in installer. Here's how to find them:
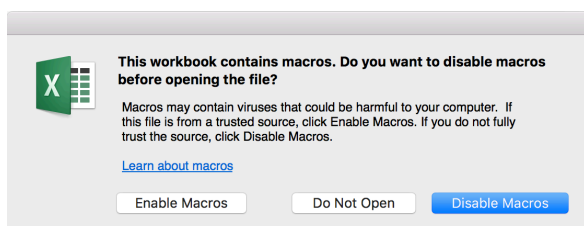
API Key

If you don't have an API key, visit http://accounts.what3words.com and create an account, then head to 'Developer API Keys' and click 'Create application' to generate an API key.

Installer for what3words Excel Add-in.xls

You can download the file here. It's compatible with Excel 97-2003 and upwards, and has been tested on the most recent versions of Excel for Windows and Mac.

Open the installer. When the pop-up appears, click 'Enable Macros'.

Then click 'Install'.
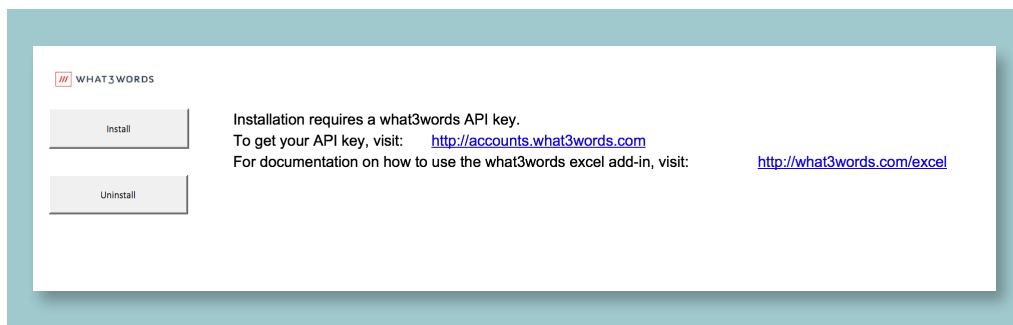
This box will pop up.

If you don't have an API key, you can generate one at http://what3words.com/register.

Enter the API key into the next box.
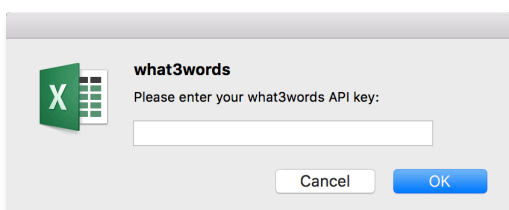
The installer may close by itself. If it doesn't, close it and open a new document before you start working.

Congrats! You can now start using the add-in.

Formulas

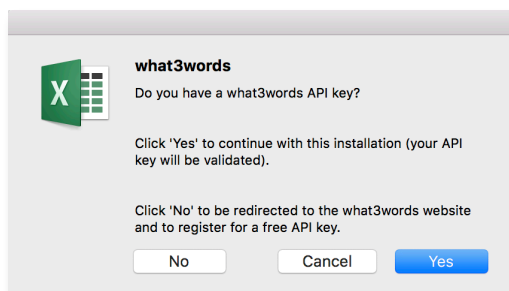| Formula	Description	Input
=w3wForward()	Convert a 3 word address to coordinates	3 word address
=w3wReverse()	Convert coordinates to a 3 word address	Latitude/longitude coordinates
=w3wAutoSuggestML()	Get AutoSuggest results	3 word address, rank Optional parameters for clipped results: Long, lat, radius in km
=w3wAutoSuggest()	Get AutoSuggest results in a specific language	3 word address, rank, language code Optional parameters for clipped results: Long, lat, radius in km
=w3wNorth() =w3wSouth() =w3wEast() =w3wWest()	Find an adjacent 3 word address, north, south, east or west of the 3 word address you already have	3 word address
=w3wLanguageChange()	Change the language of a 3 word address	3 word address, language code

Getting Started

This add-in allows you to:
- Convert a 3 word address to coordinates
- Convert coordinates to 3 word addresses
- Change the language of a 3 word address
- Get AutoSuggest results
- Find a nearby 3 word addresses

General instructions

You will need an active internet connection to use formulas.

Under each feature, you will find predefined **formulas**, **inputs** and outputs. The **formula** tells Excel what type of calculation you're after.

what3words formulas in Excel work just like other Excel formulas, and they always start with **=w3w**. When you type **=w3w** into a cell, a drop-down list of available formulas appears.
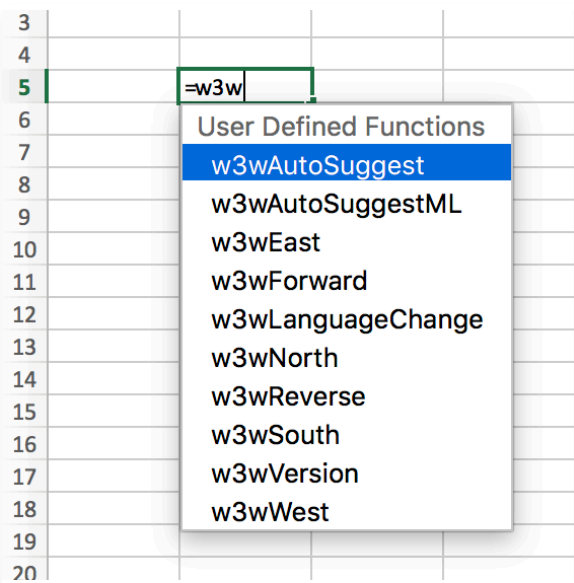
The formula always follows the format **=w3wFormula()**
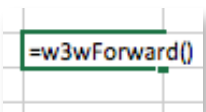
As is normal for an excel formula, the **input** goes inside the parentheses **()**. The inputs will be the information that you already have, like a 3 word address or coordinates.

We strongly recommend that you build your formulae by referencing the inputs in other cells. So for example, if your input data is in cell C4, you can use **=w3wFormula(C4)**.

If you choose to put the inputs directly inside the parentheses, then there are two important things to remember:

- When you enter **text** into the input parentheses, it should always be in quotation marks. For example, the 3 word address table.lamp.chair should be typed in as "table.lamp.chair".
- When you enter **numbers** as your inputs, they should be entered without quotation marks.

So, we recommend formulas that look like this:

B	C	D	E
	table.lamp.chair		=w3wForward(C4)

But you can write your formula like this:

=w3wForward("table.lamp.chair")

If there is more than one input, they should be typed in the specified order (defined below for each formula), separated by commas only, no spaces:

=w3wFormula(B4,C4, D4) (where your inputs are defined in cells B4, C4, D4)

=w3wFormula("input1","input2",12345)

The **output** is the result of the calculation. Depending on the formula and input, it might be latitude/longitude coordinates, or a 3 word address (in one of the available languages). The output will appear after you've selected the formula, typed the input(s) separated by commas in the parentheses, and pressed Enter.
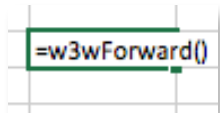
32.784835,-117.084119

Notes:
- In formulas with multiple inputs, some might be optional and will be included at the end of the input string. If they're not important for your task, just close the parentheses without including them.
- Colour codes: formula, input, optional input.

Using the formulas: step-by-step guide

Core formulas

Convert a 3 word address to coordinates

This formula allows you convert a 3 word address to lat and long coordinates.

=w3wForward()

Formula: **=w3wForward()**
Input: **"word.word.word"** | e.g. **"table.lamp.chair"**
Output: Lat,long | e.g. 32.784835,-117.084119
e.g. **=w3wForward("table.lamp.chair")**

Step 1. Enter **=w3wForward()** into a cell.

Step 2. Enter the 3 word address you need coordinates for between the parentheses. Make sure you use quotation marks.

=w3wForward("table.lamp.chair")
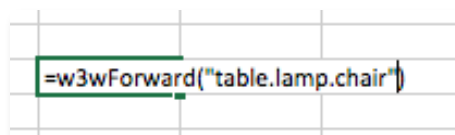
You can also type in the 3 word address into another cell and select this cell to include it in the formula.

B	C	D	E
	table.lamp.chair		=w3wForward(C4)

Step 3. Press Enter to get the coordinates for the 3 word address.

32.784835,-117.084119
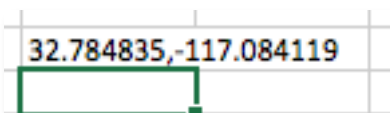
The output is the latitude,longitude coordinates separated by a comma in the same cell.

Convert coordinates to a 3 word address

This formula allows you to convert lat and long coordinates to a 3 word address.

Formula: =w3wReverse()
Input: latitude, longitude, "languagecode" (optional) e.g. 32.784835,-117.084119,"en"
Output: word.word.word (e.g. table.lamp.chair)
E.g. =w3wReverse(32.784835,-117.084119,"en")

Step 1. Enter =w3wReverse() into a cell.

Step 2. Enter the lat,long coordinates between the parentheses.
The language parameter is optional. You can include a two-letter language code (find them here https://docs.what3words.com/api/v2/#lang) in quotation marks and then close the parentheses, or you can close them after the coordinates.
E.g. =w3wReverse(32.784835,-117.084119)

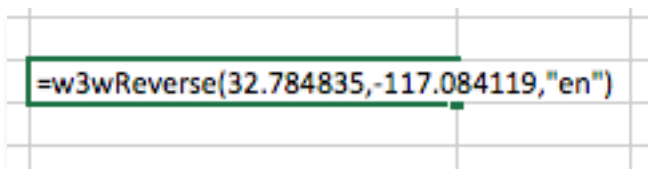| =w3wReverse(32.784835,-117.084119,"en")	

Step 3. Press Enter to find the 3 word address for these coordinates.
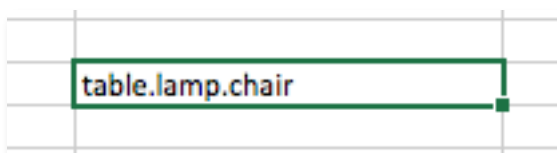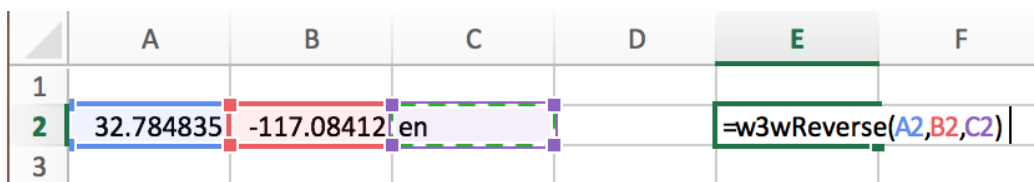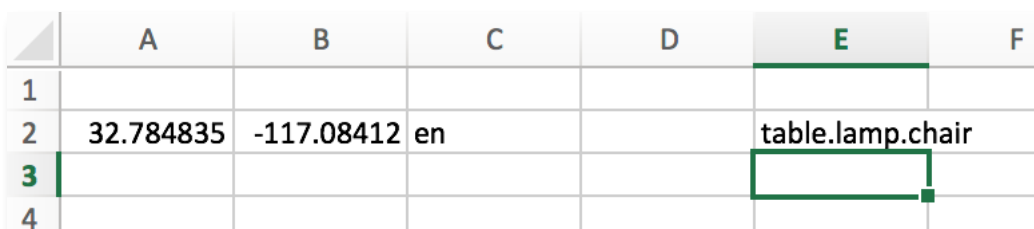
table.lamp.chair	

If no language parameter is specified, the coordinates will be converted to the English 3 word address.

The language parameter is text-based and needs to be in quotation marks. It can also be referenced in a separate cell, e.g. =w3wReverse(A2,B2,C2) in which A2 contains the latitude, B2 contains the longitude and C2 contains the optional language parameter.

	A	B	C	D	E	F
1						
2	32.784835	-117.08412	en		=w3wReverse(A2,B2,C2)	
3						

	A	B	C	D	E	F
1						
2	32.784835	-117.08412	en		table.lamp.chair	
3						
4						

Note:
The latitude coordinate is a separate input from the longitude coordinate. As such, you cannot use the output of =w3wForward as a direct input for =w3wReverse. If you need to do this, you should use the "text to columns" function of excel, with a comma as delimiter. This will then give you separate cells for latitude and longitude which can form the required inputs for =w3wReverse.

Advanced formulas
Get AutoSuggest Results

On the what3words map, AutoSuggest is a feature that returns a list of 3 word addresses based on user input and other parameters.

This resource provides corrections for the following types of user input error:
- typing errors
- spelling errors
- misremembered words (e.g. singular vs. plural)
- words in the wrong order

AutoSuggest determines possible corrections to the supplied 3 word address string based on the probability of the input errors listed above and returns a ranked list of suggestions.

AutoSuggest can also take into consideration the geographic proximity of possible corrections to a given location to further improve the suggestions returned [next section].

There are two AutoSuggest functions:

=w3wAutoSuggestML() which is multilingual AutoSuggest. Here, you do NOT specify the language of the 3 word address being input. The system attempts to work this out.

=w3wAutoSuggest() and for this you do need to specify the language of the 3 word address being input. If you do not, you will get an error message when you press enter.

Formula: =w3wAutoSuggestML()
Input: "word.word.word",rank where rank is the rank of the Autosuggest result you wish to return.
Output: Suggested 3 word address, country code, nearby place
e.g. =w3wAutoSuggestML("table.lamp.chai",1)

This equation requests the suggested 3 word address that would come up first (rank 1) if a user typed in the incorrect 3 word address "table.lamp.chai".

Step 1. Enter =w3wAutoSuggestML() into a cell.

Step 2. Type in the input.

```
=w3wAutoSuggestML("table.lamp.chai",1)
```

Step 3. Press Enter.

```
table.lamp.chat, us, Brooklyn, New York
```

The output shows that if someone types table.lamp.chai into the what3words map, the first result to come up will be the 3 word address table.lamp.chat in the US, specifically in Brooklyn, New York, as this is the closest match to the input.

Formula: =w3wAutoSuggest()
Input: "word.word.word",rank,"language" where rank is the rank of the Autosuggest result you wish to return, and language is the two-letter code for the language of the 3 word address being input. This example uses a french 3 word address: "cheval.serpe.trajet"
Output: Suggested 3 word address, country code, nearby place
e.g. =w3wAutoSuggest("cheval.serpe.traje",1,"fr")

This equation requests the suggested 3 word address that would come up first (rank 1) if a user types in the incorrect french (fr) 3 word address "cheval.serpe.traje"

Step 1. Enter =w3wAutoSuggest() into a cell.

Step 2. Type in the input.

```
=w3wAutoSuggest("cheval.serpe.traj",1,"fr")
```

Step 3. Press Enter.

```
cheval.serpe.cran, ng, Ebute Ikorodu, Lagos
```

The output shows that if someone types cheval.serpe.traje into the what3words map, the first result to come up will be the 3 word address cheval.serpe.cran in Nigeria (ng), specifically in Ebute Ikorodu in Lagos, as this is the closest match to the input.

This formula is specifically able to, and designed to, accept an input with a partially incomplete 3rd word

Get clipped AutoSuggest Results

On the what3words map, AutoSuggest is a feature that returns a list of 3 word addresses based on user input and other parameters.

This resource provides corrections for the following types of user input error:
- typing errors
- spelling errors
- misremembered words (e.g. singular vs. plural)
- words in the wrong order

AutoSuggest determines possible corrections to the supplied 3 word address string based on the probability of the input errors listed above and returns a ranked list of suggestions.

AutoSuggest can also take into consideration the geographic proximity of possible corrections to a given location to further improve the suggestions returned. These formulas are the same as the ones above, with added input items to specify a geographic area (lat,long and a radius around that spot). Clipping means that only search results within the clipped area will be considered.

There are two AutoSuggest functions:

=w3wAutoSuggestML() which is multilingual AutoSuggest. Here, you do NOT specify the language of the 3 word address being input. The system attempts to work this out.

=w3wAutoSuggest() and for this you do need to specify the language of the 3 word address being input. If you do not, you will get an error message when you press enter.

Formula: =w3wAutoSuggestML()
Input: "word.word.word",rank,lat,long,radiuskm where lat, long and radius (in km) are optional clipping parameters.
Output: Suggested 3 word address, country code, nearby place
e.g. =w3wAutoSuggestML("table.lamp.chai",1,48.25367,3.47269,200)

This equation is requesting the suggested 3 word address that would come up first (rank 1) if a user typed in "table.lamp.chai", on a map clipped to a 200km radius around the location defined by lat,long coordinates 48.25367, 3.47269.

Step 1. Enter =w3wAutoSuggestML() into a cell.

Step 2. Type in the input. Rank is the rank of the Autosuggest result you wish to return.

=w3wAutoSuggestML("table.lamp.chai",1,48.25367,3.47269,200)

Step 3. Press Enter.

table.lamp.shams, fr, Gournay-en-Bray, Haute-Normandie

The output shows that if someone types in table.lamp.chai on a map clipped to a 200km radius around the location defined by 48.25367,3.47269 lat,long coordinates, the first result to come up will be the 3 word address table.lamp.shams in Haute-Normandie, France.

Formula: =w3wAutoSuggest()

Input: "word.word.word",rank,"language",lat,long,radiuskm where lat, long and radius (in km) are optional clipping parameters, rank is the rank of the Autosuggest result you wish to return, and language is the two-letter code for the language of the 3 word address being input. This example uses a french 3 word address: "cheval.serpe.trajet"

Output: Suggested 3 word address, country code, nearby place

e.g. =w3wAutoSuggest("cheval.serpe.traje",1,"fr",48.25367,3.47269,200)

This equation requests the suggested 3 word address that would come up first (rank 1) if a user types in the incorrect french (fr) 3 word address "cheval.serpe.traje", on a map clipped to a 200km radius around the location defined by lat,long coordinates 48.25367, 3.47269.

Step 1. Enter =w3wAutoSuggest() into a cell.

Step 2. Type in the input.

=w3wAutoSuggest("cheval.serpe.traje",1,"fr",48.25367,3.47269,200)

Step 3. Press Enter.

cheval.serpe.trajet, fr, Asnières-sur-Seine, Île-de-France

The output shows that if someone searches cheval.serpe.traje in a map clipped to a 200km radius around the location defined by 48.25367,3.47269 lat,long coordinates, the first result to come up will be the 3 word address cheval.serpe.trajet in Asnières-sur-Seine, Île-de-France, France.

This formula is specifically able to, and designed to, accept an input with a partially incomplete 3rd word

Find a nearby 3 word address

North, east, south, west of a given 3 word address.

Formula: =w3wNorth() or =w3wEast() or =w3wSouth() or =w3wWest()
Input: "word.word.word"
Output: the 3 word address directly north, east, south or west of the input 3 word address.
e.g. =w3wNorth("table.lamp.chair")

Step 1. Enter =w3wNorth() into a cell.

Step 2. Add the 3 word address in quotation marks between the parentheses.

Step 3. Press Enter. The 3 word address north of table.lamp.chair will appear.

You can also use a formula such as =w3wSouth(A2) in which the 3 word address is in cell A2.

Change Language

3 word addresses can be discovered in a range of languages. To avoid confusion, no words are shared between language versions. Once you find a 3 word address in one language, you can use this formula to find the 3 word address in a different language.

You can find languages and language codes here
https://docs.what3words.com/api/v2/#lang

Formula: **=w3wLanguageChange()**
Input: **"word.word.word","languagecode"**
Output: The 3 word address in the language defined by the language code in input

Typing in **=w3wLanguageChange("index.home.raft","ru")**
returns теоретик.изгиб.крошечный, the 3 word address referring to the exact same 3m x 3m square on the Russian map.

Step 1. Enter **=w3wLanguageChange()** into a cell.

Step 2. Type in the 3 word address and the language code in quotation marks, separated by a comma.


```
=w3wLanguageChange("table.lamp.chair","fr")
```

Step 3. Press Enter.


```
traverse.couette.empêcher
```

If the words or language parameter are included directly in the formula they need to be in quotation marks. You can also use a formula such as =w3wLanguageChange(C2,B3) in which the words are in cell C2, in the form word.word.word and the language parameter in B3 using the two-letter language code.

	A	B	C	D	E
1					
2			table.lamp.chair		
3	German	de			=w3wLanguageChange(C2,B3)
4	Mongolian	mn			
5	Finnish	fi			
6	Russian	ru			
7	Swedish	sv			
8	Portuguese	pt			
9	Swahili	sw			
10	English	en			
11	Italian	it			
12	French	fr			
13	Spanish	es			
14	Arabic	ar			
15	Polish	pl			
16	Turksih	tr			
17					

	A	B	C	D	E
1					
2			table.lamp.chair		
3	German	de			aufgerufen.zuschlag.erlauben
4	Mongolian	mn			оньс.цэлмэг.шуудхан
5	Finnish	fi			säilöä.maltti.apuri
6	Russian	ru			прибавка.супруг.слабость
7	Swedish	sv			inflöde.författare.endorfin
8	Portuguese	pt			gasosa.aposta.sapato
9	Swahili	sw			masika.uamini.kiko
10	English	en			table.lamp.chair
11	Italian	it			pittori.abili.miglia
12	French	fr			traverse.couette.empêcher
13	Spanish	es			música.interés.estrena
14	Arabic	ar			أتقدم.يدرك.المدرس
15	Polish	pl			chłopiec.dowcipy.pływał
16	Turksih	tr			=w3wLanguageChange(C2,B16)
17					