

Instructions for customizing the synthetic map

In the following document, we will provide instructions on setting up your customized synthetic map.

You will require the following programs (or their equivalents):

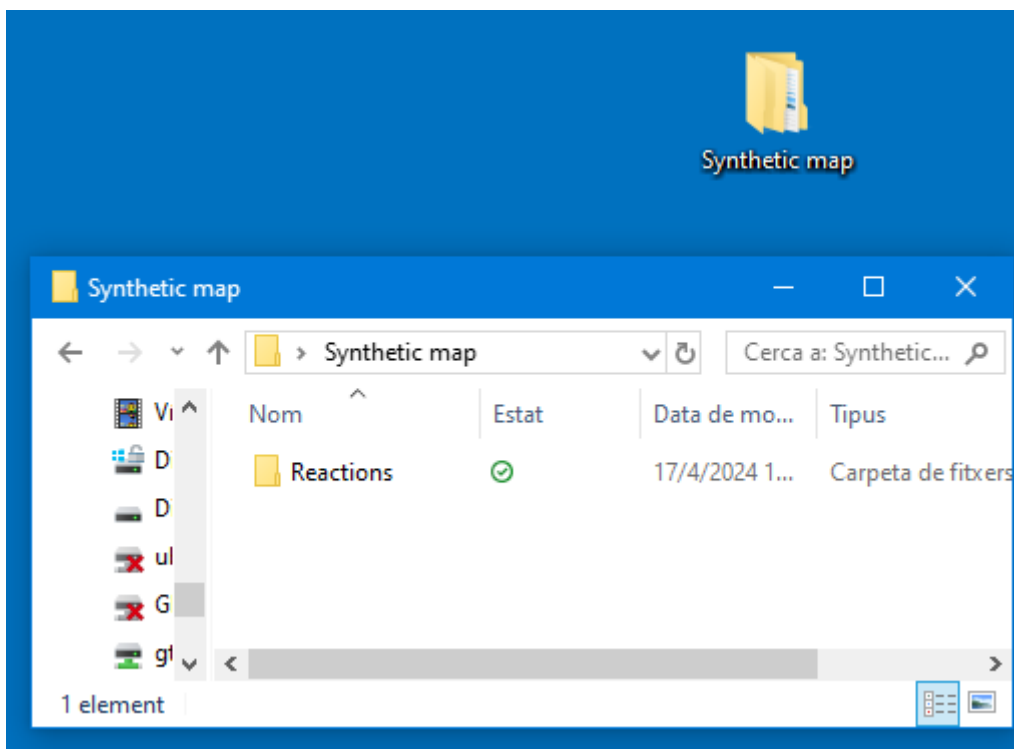
- ChemDraw Professional
- Adobe Dreamweaver
- A web hosting service and a domain name

The basic steps to follow are the following:

1. Setup the file structure to store your customized synthetic map
2. Design your own customized synthetic map
3. Set up the main page
4. Make pages for individual reactions
5. Link the reactions to the main page of the synthetic map
6. Upload your customized synthetic map to a server

1. Setup the file structure to store your customized synthetic map

Set up a folder called “Synthetic map,” where you store all your files for your customized synthetic map. Inside this folder, set up a subfolder called “Reactions.”

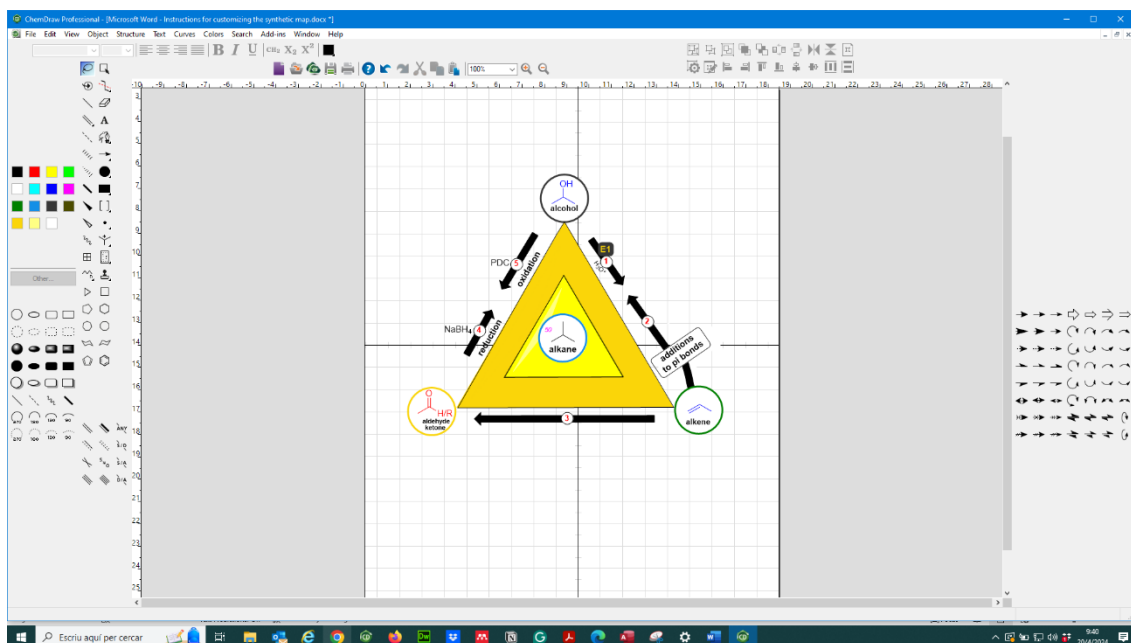


2. Design your own customized synthetic map

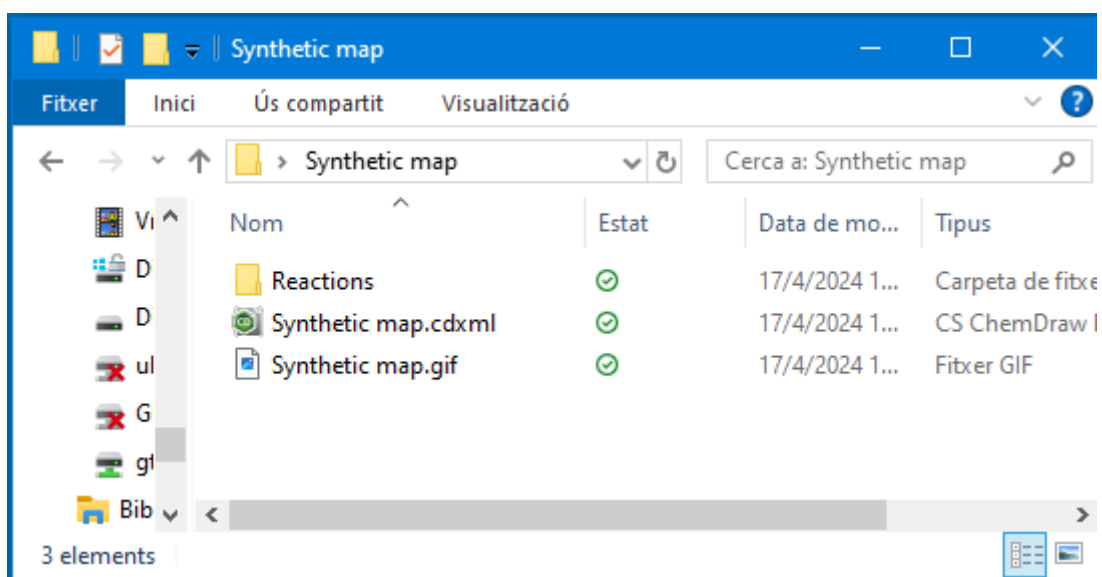
You can design your synthetic map from scratch using the basic design principles we outline in the “An Introduction to Synthetic Map video.”

Alternatively, you can use our Chemdraw diagram (which we provide on the website as a download) as the starting point for your customized synthetic map and modify it to your needs.

For this demonstration, we will use the following very simplified version of the synthetic map:

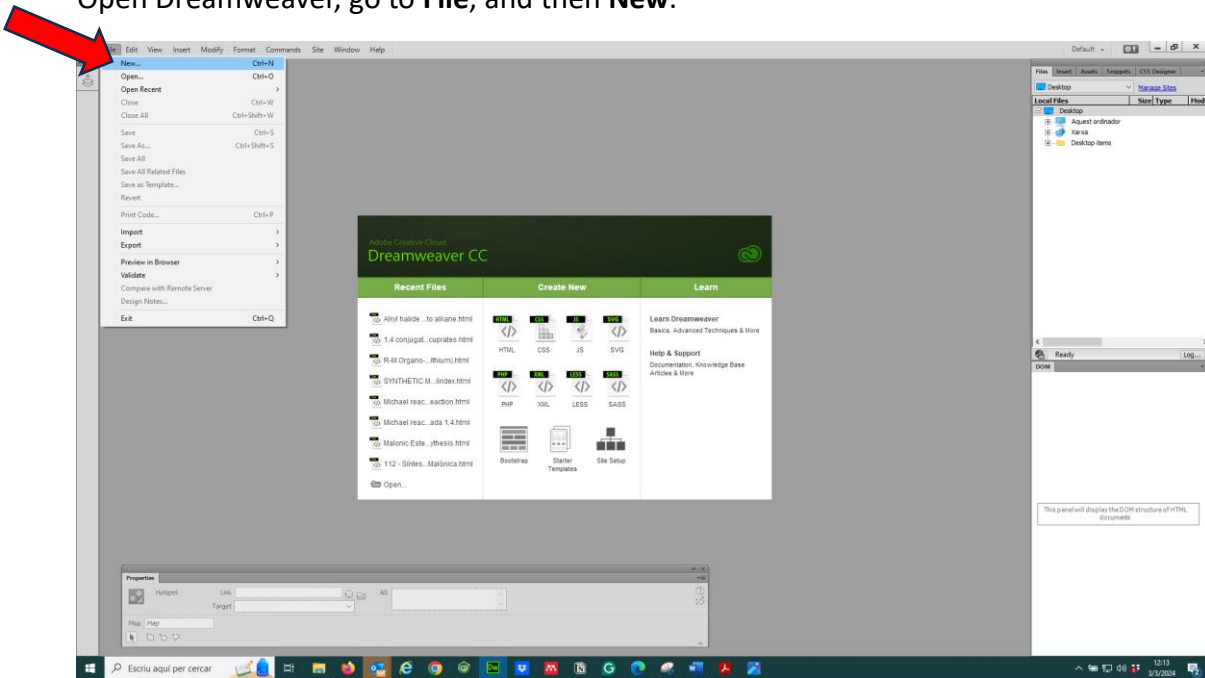


Once you have prepared your synthetic map, save the drawing in the main site folder as a chemdraw file named **Synthetic map.cdxml** and as a .gif file named **Synthetic map.gif**.

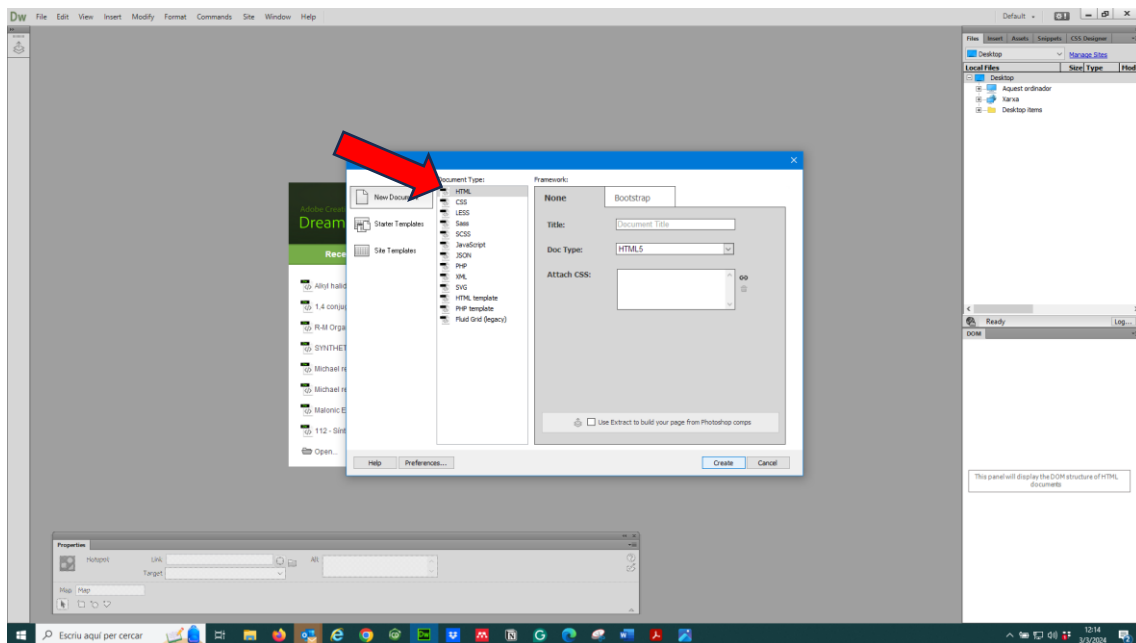


3. Set up the main page

Open Dreamweaver, go to **File**, and then **New**.



Then select the **HTML** file option and hit **Create**.

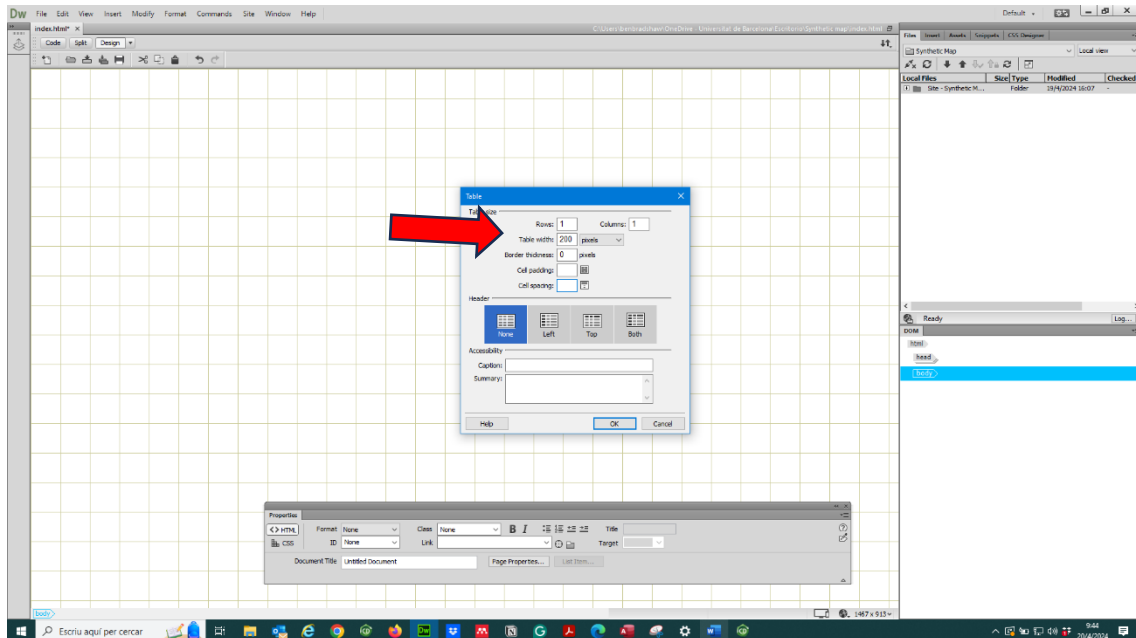


Save the page as **index.html** in the main folder.

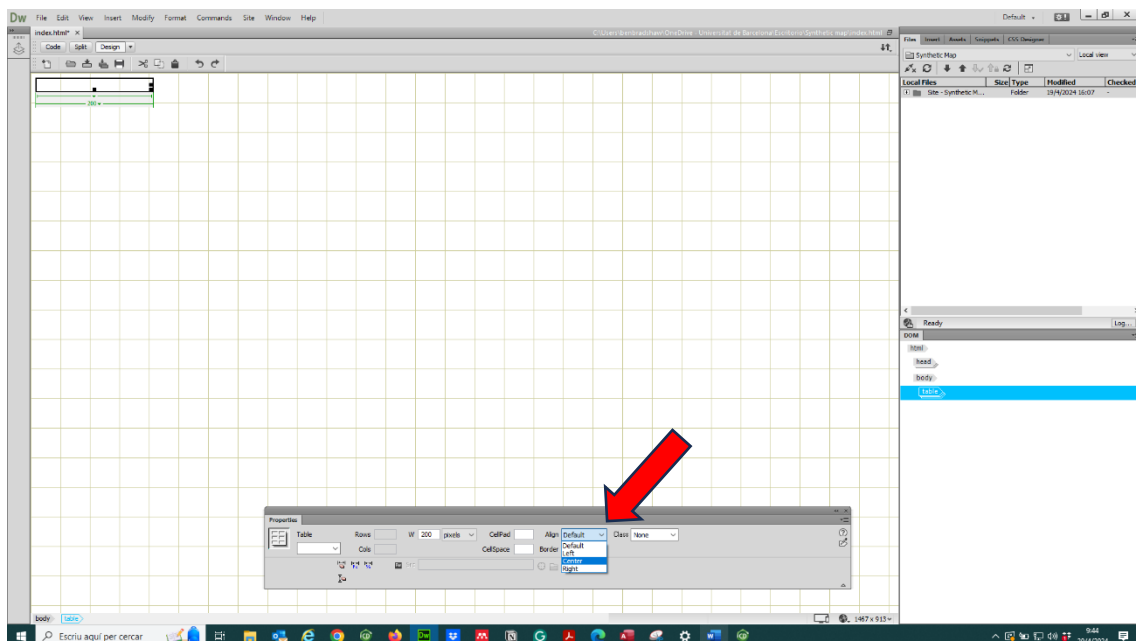
Go to the **Insert** menu and select **table**

Settings:

- Rows: 1
- Columns: 1
- Border thickness: 0

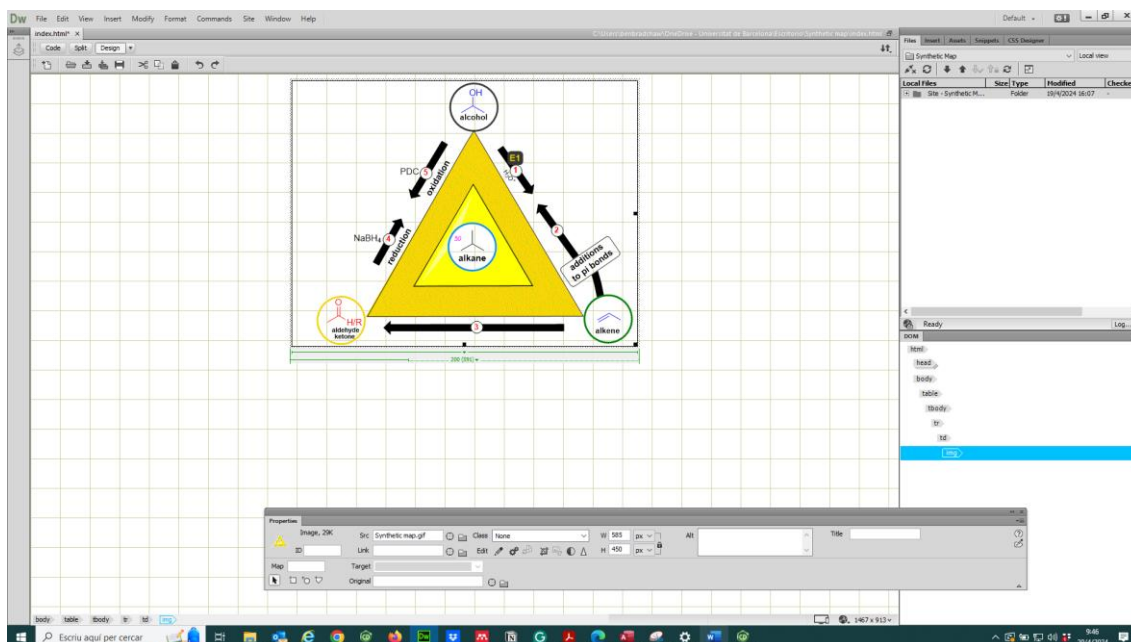


Select your table, and in the properties box, select **center**.



Place your cursor in your table, then go to **Insert** and select **Image**.

Select the .gif image of your synthetic map from the site folder.



Save your work.

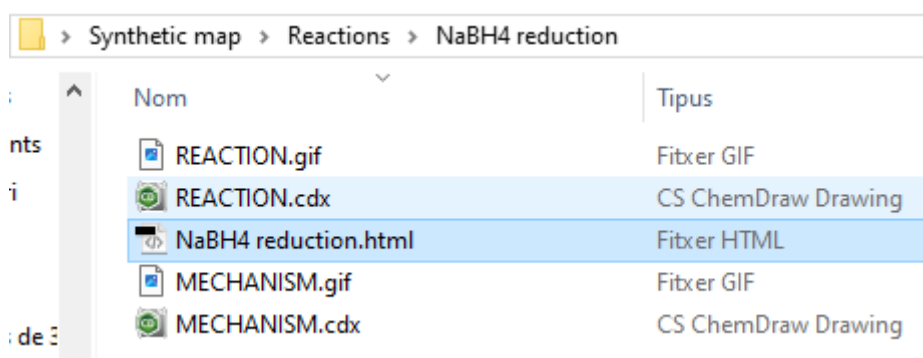
4. Make pages for individual reactions

To make your page for any reaction the process is similar to that described above.

Make a new folder for your reaction in the reactions folder set up in part 1. Use a name that describes the reaction: for example, "NaBH₄ reduction."

Open a new HTML file and save it in the folder you created with the same name. In Chemdraw, prepare the corresponding images required – one for the reaction (save as reaction.cdx and reaction.gif) and one for the mechanism (save as mechanism.cdx and mechanism.gif)

You should now have a folder with the following files:



As before, insert a centered table, but this time, it should have six rows and one column.

To each row of the table, add the information required:

1. Title of the reaction
2. Reaction image (reaction.gif)
3. Information about the reaction
4. Mechanism title
5. Information about the reaction
6. Image of the mechanism (mechanism.gif)

The screenshot shows a Dreamweaver workspace with a table containing the following content:

NaBH₄ Reduction	
1. sodium borohydride	2. protonation (H ₃ O ⁺)
aldehyde/ketone → 1° alcohol/2° alcohol	
Reduction of aldehydes or ketones with sodium borohydride gives alcohols.	
Mechanism	
<ul style="list-style-type: none"> In the first step, an H⁻ breaks off from BH₄⁻ and adds to the carbonyl carbon (an example of [1,2] addition). This forms the C-H bond and breaks the C=O bond, giving rise to a new pair of electrons on oxygen, making it negatively charged. 	
<p>1. Addition</p>	
<p>2. Protonation:</p>	

To add subindex or superindex to formulas and charges, it is necessary to do it through the code view by selecting “Split” view:

The screenshot shows the Dreamweaver workspace in split view. A red arrow points to the 'Split' button in the top-left corner. The code view shows the following HTML code:

```

1 <!doctype html>
2 <html>
3 <head>
4 <meta charset="utf-8">
5 <title>Untitled Document</title>
6 </head>
7 <body>
8 <table width="288" border="0" align="center">
9 <tbody>
10 <tr>
11 <td colspan="2" style="text-align:center">
12 <strong>NaBH4 Reduction</strong></td>
13 </tr>
14 <tr>
15 <td style="text-align:center">
16 </td>
17 </tr>
18 <tr>
19 <td colspan="2" style="text-align:center">
20 <strong>Mechanism</strong></td>
21 </tr>
22 <tr>
23 <td colspan="2">
24 <div>
25 <ul>
26 <li>In the first step, an H- breaks off from BH4- and adds to the carbonyl carbon (an example of [1,2] addition). This forms the C-H bond and breaks the C=O bond, giving rise to a new pair of electrons on oxygen, making it negatively charged.
27 </li>
28 </ul>
29 </div>
30 </td>
31 </tr>

```

Add the HTML tags `^{` and `}` around any number or charge you want to display in superindex.

Use the HTML tags `_{` and `}` around the item to display in subindex format.

The screenshot shows a web editor interface with a chemical reaction diagram and its corresponding HTML code. The reaction diagram illustrates the reduction of an aldehyde or ketone (R₂CHO) to a primary or secondary alcohol (R₂CHOH) using sodium borohydride (NaBH₄) followed by protonation (H₃O⁺). The HTML code below the diagram uses `^{` and `}` tags for superscripts and `_{` and `}` tags for subscripts. A red arrow points to the code for the reagent NaBH₄, which is written as NaBH₄.

Finally, make any changes formatting changes by clicking on page properties to select the font and size.

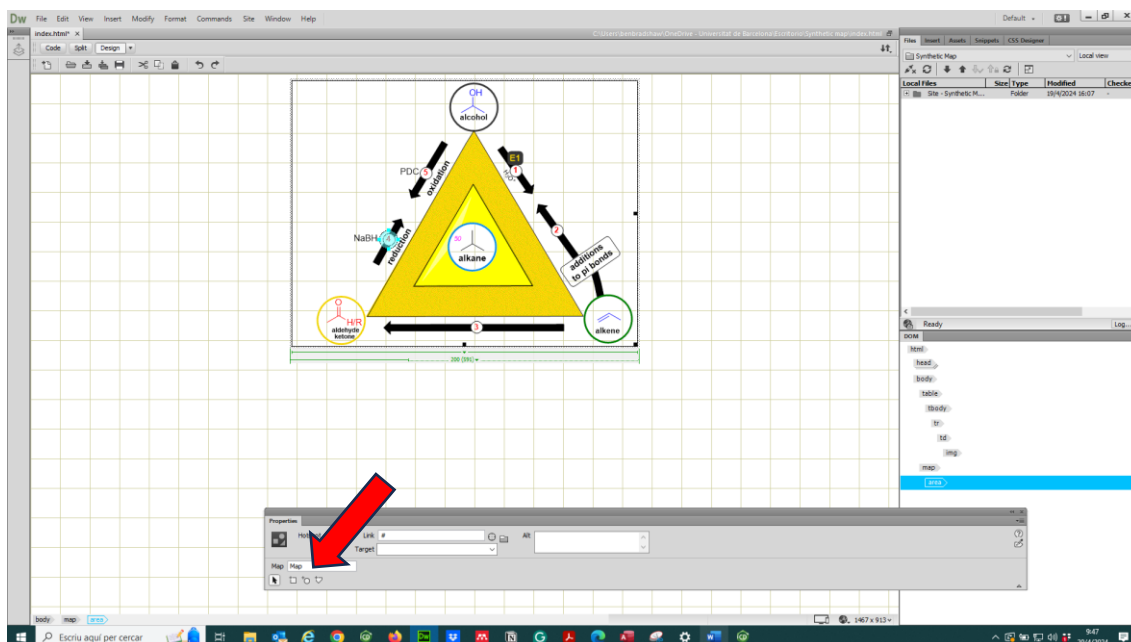
For this example, we chose page font: Segoe, ... and text size: 18

The screenshot shows the same web editor interface as before, but with a 'Page Properties' dialog box open. The dialog box is set to the 'Appearance (CSS)' tab, and the 'Page font' is set to 'Segoe UI, D...' and the 'Size' is set to '18'. A red arrow points to the 'Page Properties' dialog box.

Repeat this process for each of the reactions in your map.

5. Link the reactions to the main page of the synthetic map

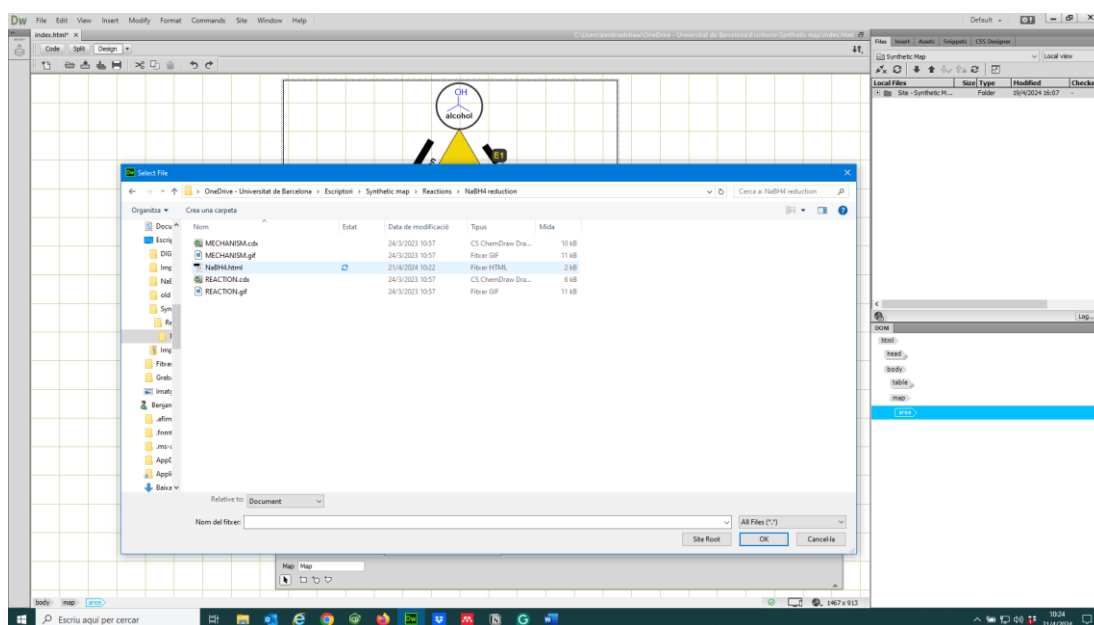
In the properties bar, select the circle option and outline one of the reactions.



Then click on the blue circle and add where you want it to link. Here there are two possible options:

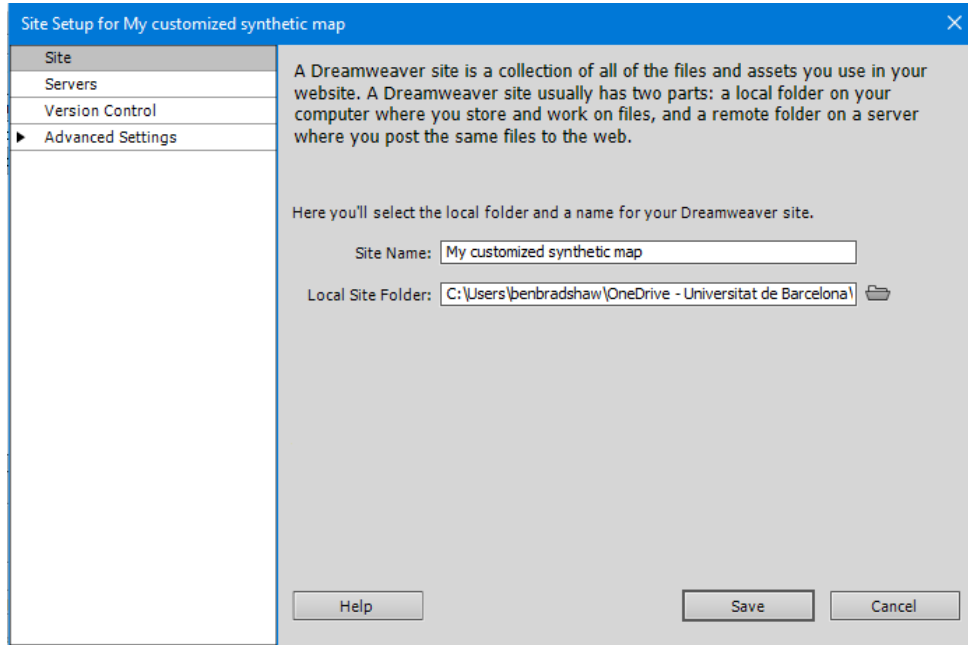
Option 1 - Link to a web address: Go to the web address of a page that contains information about the reaction. For example, you can link to the corresponding reaction page of our synthetic map by opening the page in your browser and copying the web address to the link box in the properties tab.

Option 2 - Link to a page you made in Dreamweaver in step 4: Click on the folder icon and find the corresponding HTML page in your synthetic map reactions folder.

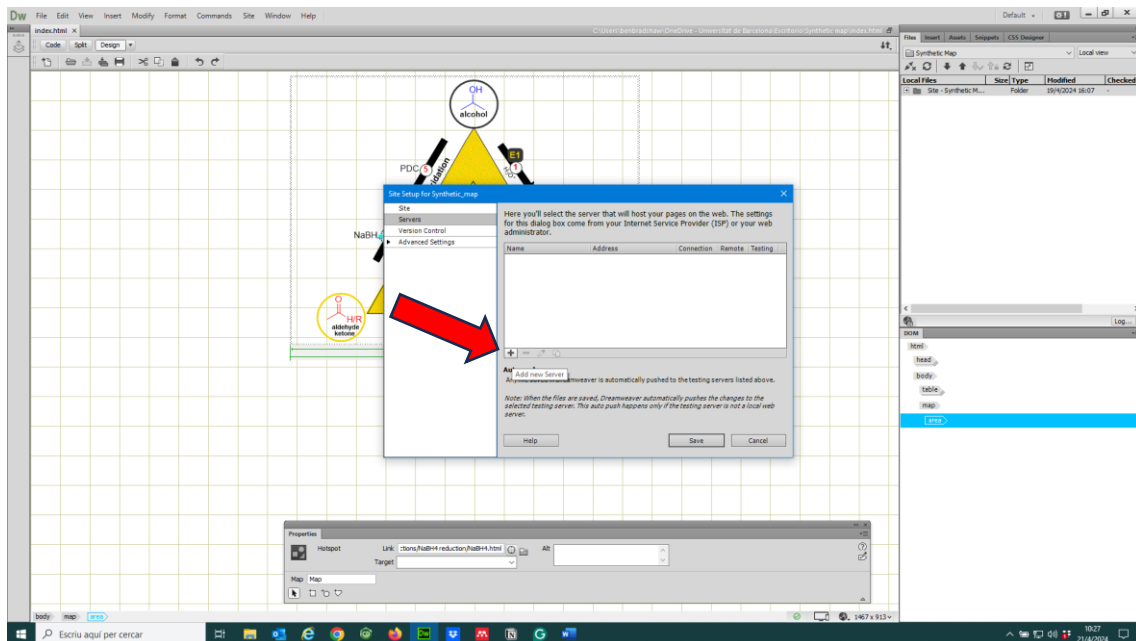


6. Upload the synthetic map to a server

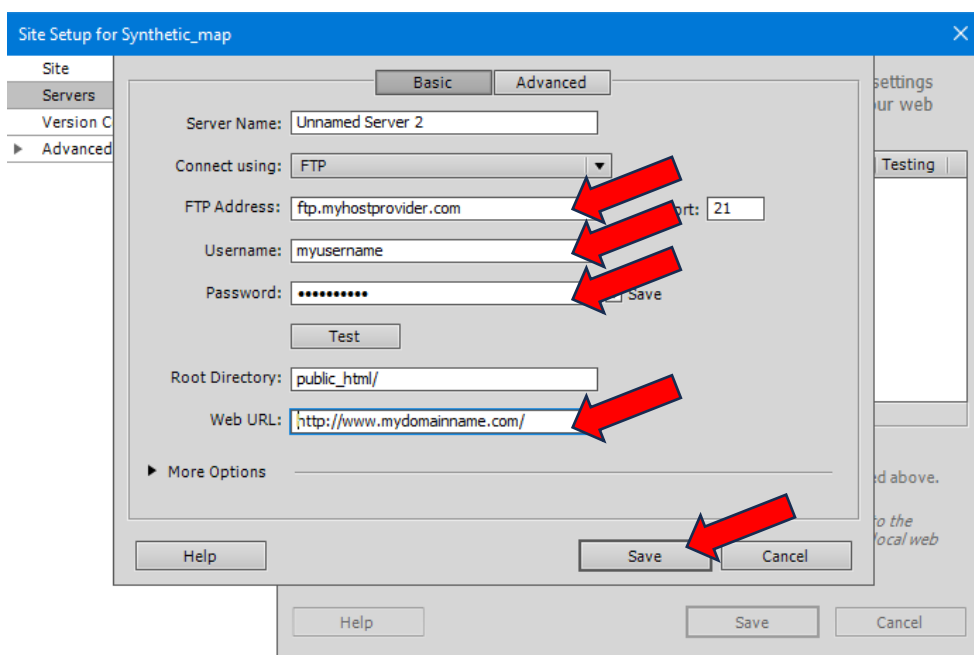
Open the tab **Site** menu, add the name of your site, and indicate the location of the site folder.



Then select the **Servers** tab and click on the + to add a new server.



In the dialog box, fill in the required information. Your hosting provider will have provided you with the required codes. In the Web URL box, add your domain name linked to your hosting provider.



Now go to the right-hand tab of your files view – and press the ↑ arrow. Dreamweaver will upload your synthetic map to the hosting server.

