foundry10



Expanding Ideas About Learning. Creating Direct Value for Youth.

This lesson plan was developed by Adrienne Gifford and Maria DiGiovanni as part of foundry10's 2026 Computer Science Educator Fellowship. Drawing on their teaching experience and the ideas explored throughout the fellowship, this resource was designed to help other educators bring engaging CS learning into their classrooms.

Identity Expression with Wordplay

Animated Name & Interactive Map Blocks-Based Tutorials

Middle School

Social Justice Standards

- ➔ Students will develop positive social identities based on their membership in multiple groups in society.
- ➔ Students will develop language and historical and cultural knowledge that affirm and accurately describe their membership in multiple identity groups.
- ➔ Recognize that people's multiple identities interact and create unique and complex individuals.
- ➔ Students will recognize traits of the dominant culture, their home culture and other cultures and understand how they negotiate their own identity in multiple spaces.
- ➔ Respectfully express curiosity about the history and lived experiences of others and will exchange ideas and beliefs in an open-minded way.

Unit Overview & Inspiration

About Exploring Computer Science (ECS)

These tutorials are inspired by projects from the Programming Unit project in the Exploring Computer Science (ECS) curriculum. The ECS curriculum is copyrighted by the University of Oregon (© University of Oregon, 2025) and is provided to teachers for individual classroom use only.

Exploring Computer Science (ECS) is a curriculum focused on expanding access to computer science, especially for students historically underrepresented in the field. Its six units that introduce foundational computer science (CS) concepts through personal expression, cultural exploration, equity, and social justice. The original ECS Programming unit uses Scratch, but ECS encourages teachers to adapt the programming environment to meet the needs of their students and classrooms.

About Wordplay

Wordplay is a web-based programming language, IDE, and platform for creating accessible, interactive typography. It's a programming platform designed to support (and be about) all the world's languages, and to be fully accessible to learners with a wide range of abilities. Wordplay is centered at the University of Washington↗ Information School↗ in Seattle, Washington, USA.

We adapted two ECS-inspired programming projects for Wordplay because of Wordplay's commitment to language-inclusivity, accessibility, and creative expression. Also, because it's really fun for students!

This guide adapts two ECS-inspired programming projects into blocks-based tutorials for Wordplay:

- ➔ Animated Name Project
- ➔ Map Route Project (Interactive Map Project)

Getting Started with Wordplay

Creating an Account & Teacher Tools

Visit Wordplay.dev/join to create an account.

Wordplay has special Teacher tools for managing classes of students and their projects, you can access these tools (or request a new teacher account) by selecting Teach.



Once you have signed up for a teacher account, you will be able to:

- ➔ Create a new class
- ➔ Generate accounts for all of the students in your class
- ➔ Create a gallery that all of your students can add projects to

Selecting a Language for the Website

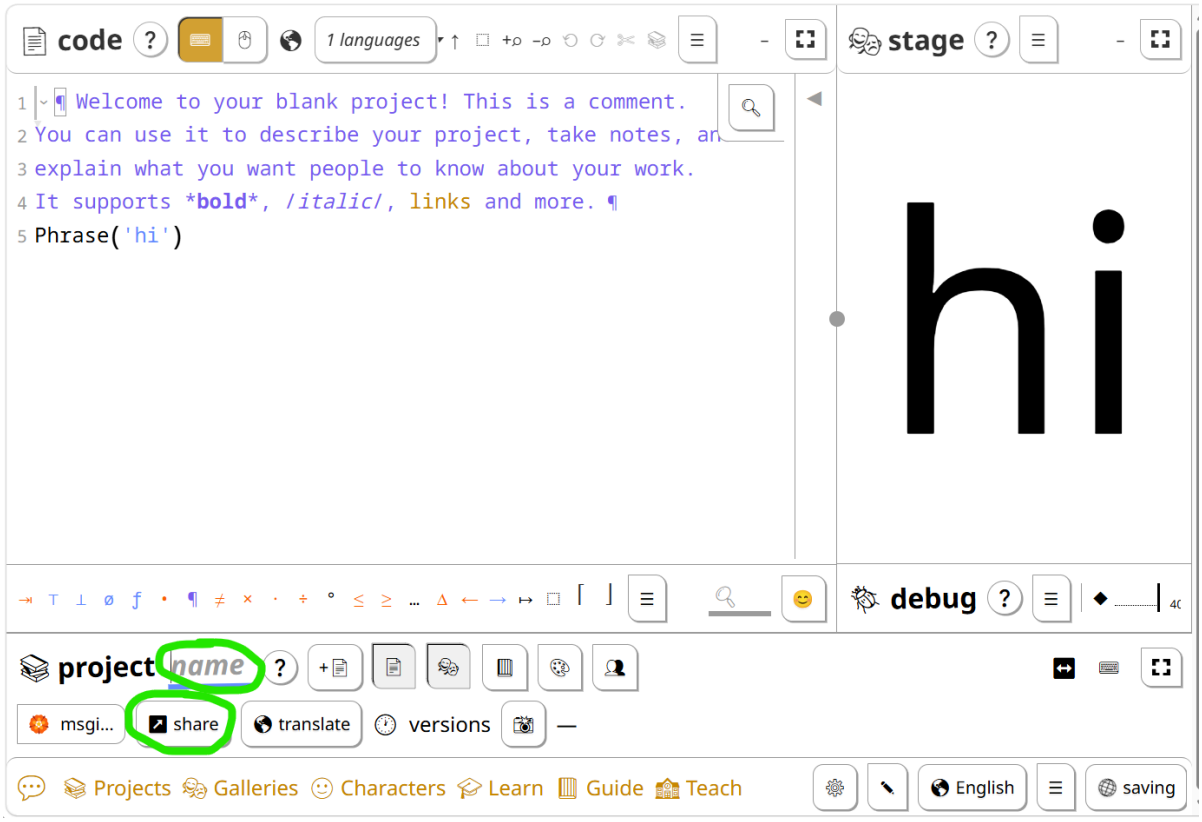
Students can select the language button at the bottom of the screen to select the **language** for the website.

Starting & Sharing a New Project

To start a new project, students should select **Projects**.



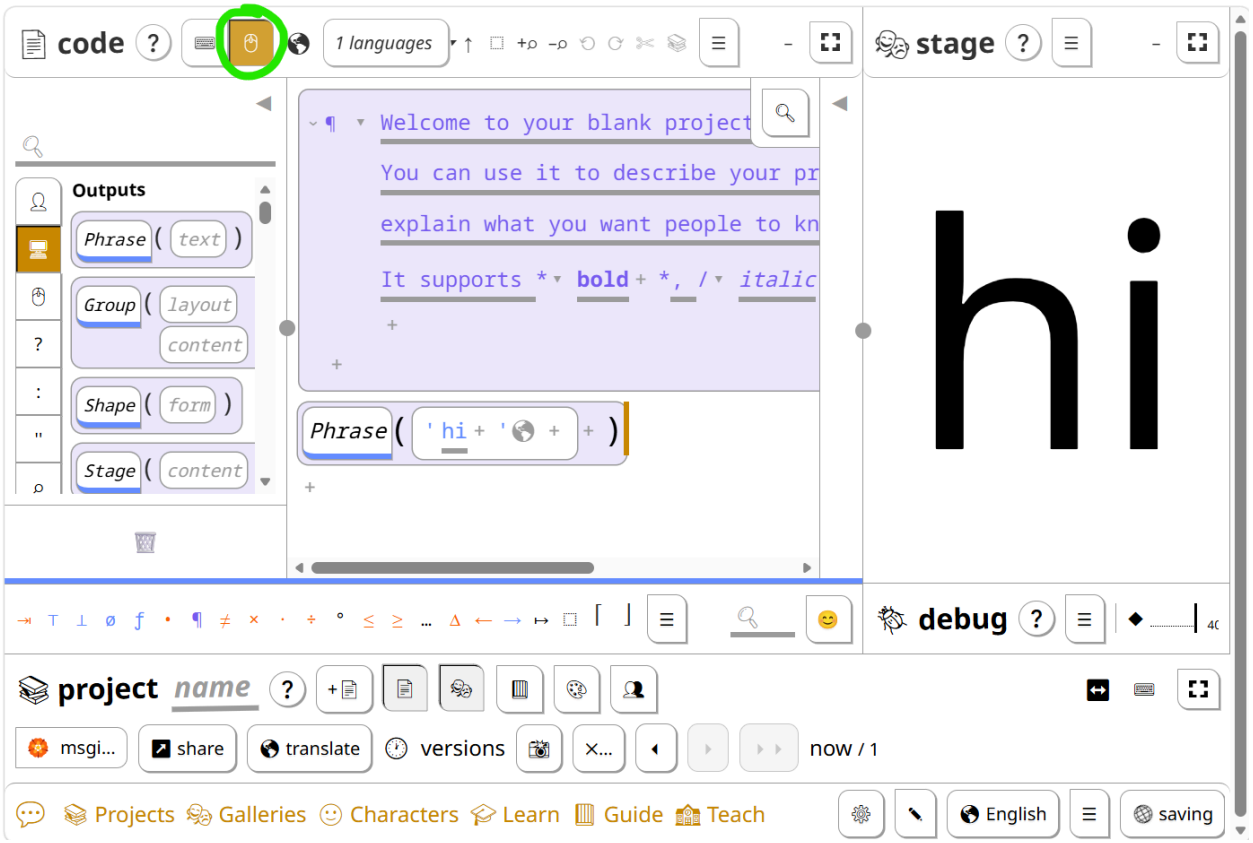
Once they have opened a new project, students should give the project a **name**. They can also add their project to a class gallery using the **share** button.



You'll notice that Wordplay has an **editor**, where you put instructions for how and what to show on the **stage**, and Wordplay uses those instructions to show output on the **stage**.

Switching from Text to Blocks in the Editor

Students can switch the Wordplay editor to blocks by selecting the **mouse "edit code as blocks"** icon at the top of the editor.



Wordplay Animated Name Tutorial

Adapted for Wordplay from Scratch with inspiration from the Scratch Animate a Name Tutorial.

You can use Wordplay to animate a name and bring it to life! Make the letters change color, spin, grow, or interact however you'd like. Here is a sample project: Wordplay - Animated Name

Add Phrases

To get started, we'll add a Phrase block from the outputs section. Phrase is a way of showing text on the stage but with style, including different fonts, sizes, and animations!



The **phrase** block has the name of the function (**phrase**), followed by parentheses, with a list of expressions between them that represent the inputs.

As our first input, inside the single quotes, we will put the first letter we want to animate - the quotes tell Wordplay that this is text. We can click the **globe emoji** to tag our text with the language we are writing in (this will help if we want to make our projects multilingual!).

We can go ahead and add additional **phrases** for the other letters we want to animate.



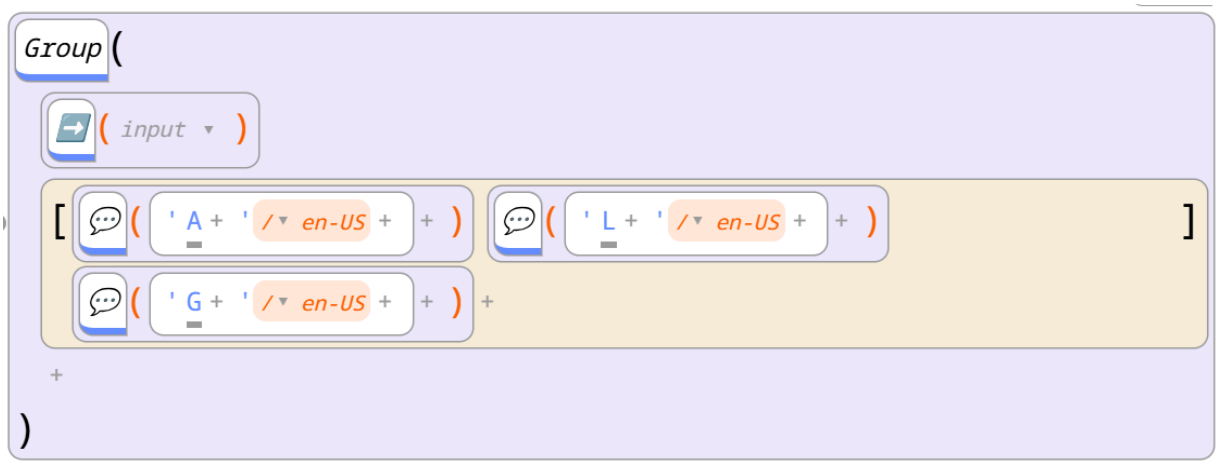
Arrange Letters in a Row

Since I want all three of my letters to show up in a horizontal row on the **stage**, I need to add some additional code to tell Wordplay that's what I want to do.

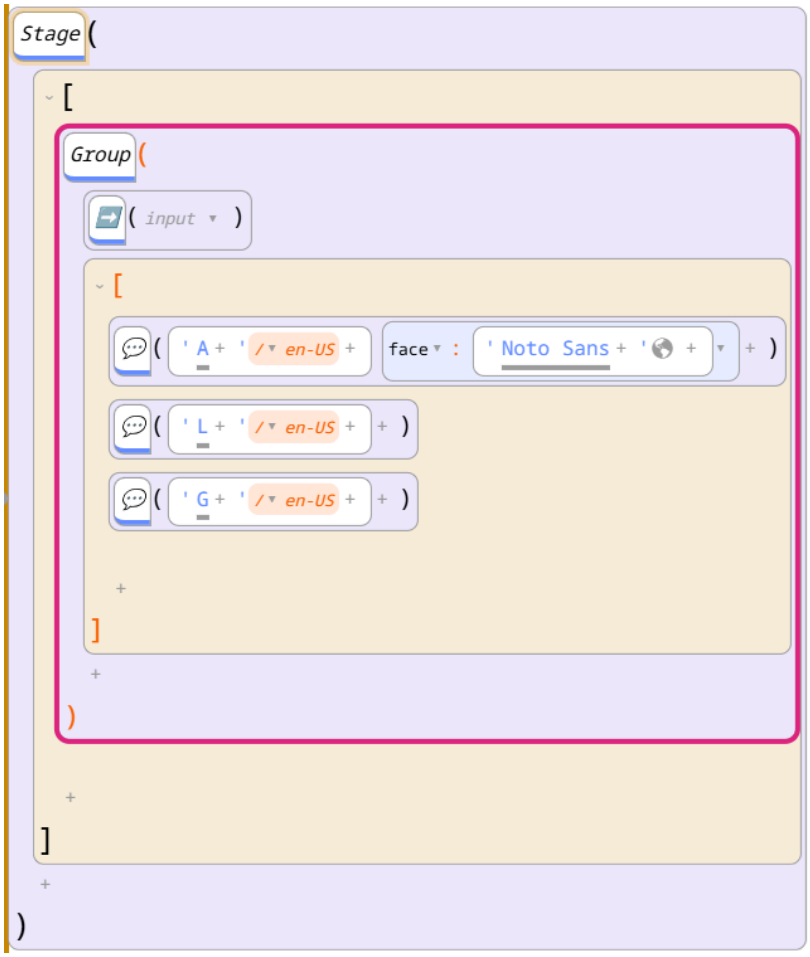
First, we can bring in a **group** block from **outputs**. **Group** is used to arrange **phrases** on the stage.



Inside our **group**, we can bring in a **row** block from **arrangements** to tell Wordplay we want our letters to show up in a horizontal row. Then we can add our three **phrases** as a list inside the **group** block. A **list** puts values in order, and always starts with **[** and ends with **]**.



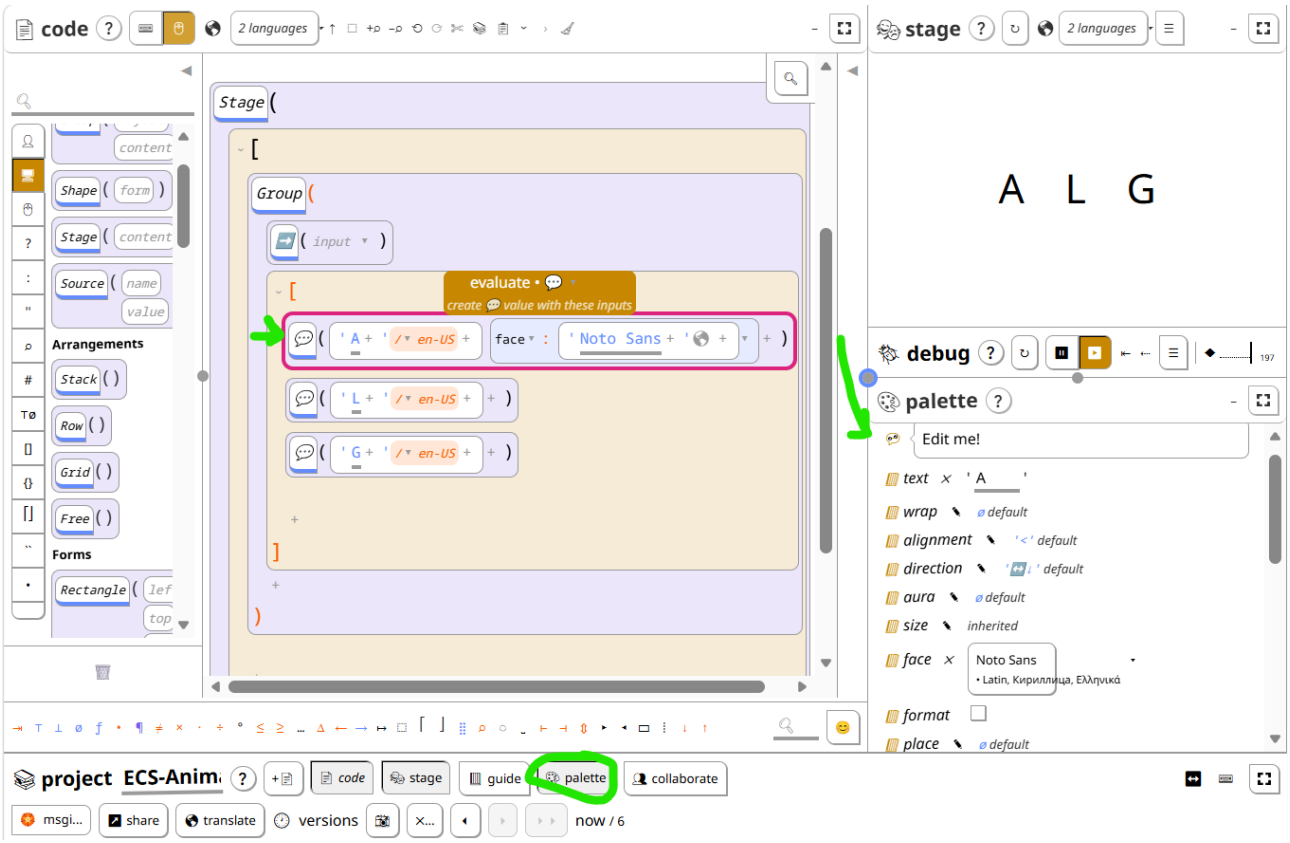
Then we'll put the whole thing inside a **stage** block so our output will all show up on the stage and we'll be able to make it fancy!



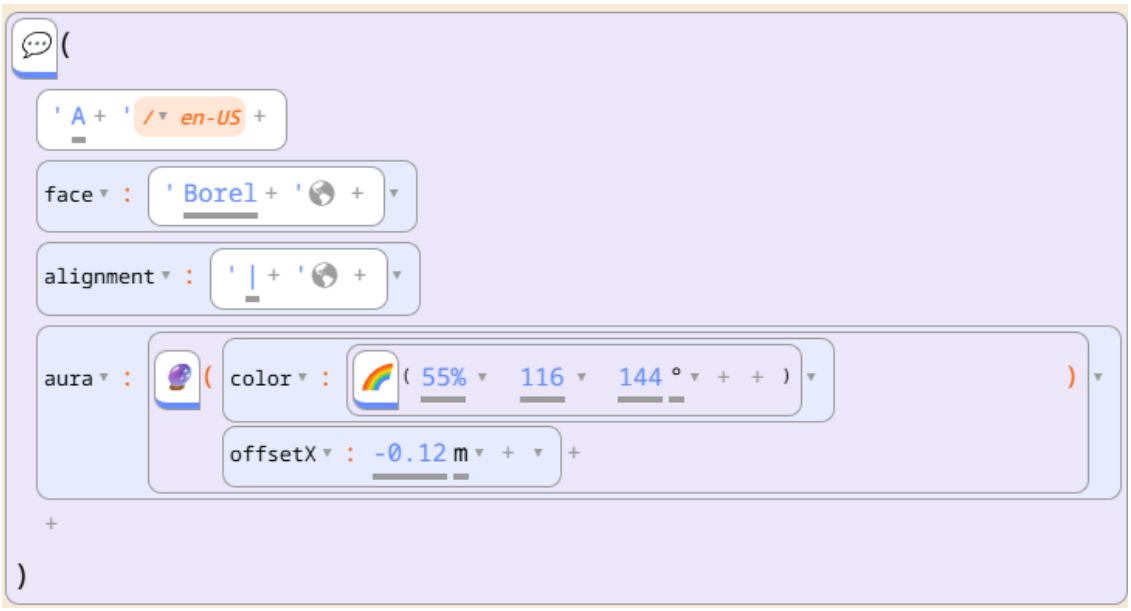
Style Your Letters

Yay! Now our letters all show up in a row on the **stage**. It's time to get fancy and figure out how to make each letter special in ways that represent our identity!

The easiest way to add some pizazz to your letters is to open the **palette**. You can then select the **phrase** of the letter you want to edit and play around with lots of different options to make each letter uniquely you! You'll see in the **palette** the many inputs that **phrase** accepts. For example, you can try pressing the **pencil button** next to **size** to get a slider for adjusting the size of the **phrase**.

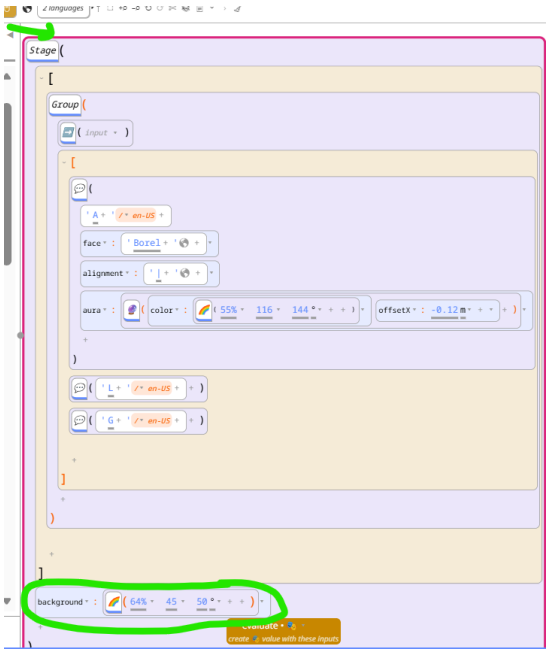


For my 'A' I selected a new font face, changed the alignment, and added a green aura (green is my favorite color!). You can see that as you select options in the **palette**, the code automatically gets added to your **phrase** block.



Style the Stage

If you want to change something about the whole **stage**, you can select **stage** when you are in the **Palette**. For example, I changed the background color of the whole **stage** in the **palette**, and you can see that the code was added for me at the end of the **stage** function.



What styling and movement effects can you add to the letters of your name to represent aspects of your identity? To learn all about the fun things you can do with a **phrase**, try the Phrase tutorial in Wordplay, or read the documentation on Phrase in the Guide.

Want to animate your letters? Check out the Code→Output→Animation in the Guide.

Wordplay Map Tutorial

Adapted for Wordplay from the Exploring Computer Science Map Route Project and "Mapping My World + Community" from the Critical Media Project.

Here are a couple of example maps made by the Wordplay team for inspiration:

- ➔ Wordplay - Personal Map – The Places I've Lived
- ➔ Wordplay - Simon's UW Map

Project Planning/Graphic Organizer

First, students can use a graphic organizer to plan out their map and landmarks. This example graphic organizer was created using inspiration and questions from the Critical Media Project "Mapping My World + Community" activity linked above.

Wordplay Personal Map Graphic Organizer

Step 1: Define Your Community Scope

Decide how you want to define your community for the purposes of this project (for example, you could focus your map on your home, neighborhood, city, country, other places that you've lived, places that are important to your family history or culture, or any combination).

Consider questions like:

- ➔ Where do I go on a typical day/week/month?

➔ Where are the people and activities I care about the most?
➔ Where have I had important life experiences?
➔ What places are important to my family history or culture?
➔ Where do I feel the most included or the greatest sense of belonging?

Step 2: Identify Your Personal Landmarks

Choose five to ten specific spaces or places of personal significance that you want to include on your map and draw a quick tiny sketch of each. You might include:

- Buildings and Institutions (Schools, churches, offices, etc.)
- Words and Images (street names, store signs, street art, etc.)
- Architecture and Design (fences, gates, benches, monuments, etc.)
- Nature and Landscapes (trees, parks, gardens, mountains, etc.)
- Community spaces (meeting spaces, places where you spend time with people, etc.)

For each place, write a few sentences describing the location and explaining the significance of the place. Think about questions like:

➔ What is its significance to you personally and/or to your community?
➔ How does it relate to your identity?
➔ Do you feel a sense of belonging in this place? What creates that feeling?

Tiny sketch	Why is this place significant to you? How is it connected to your identity?

Step 3: Sketch Your Map Layout

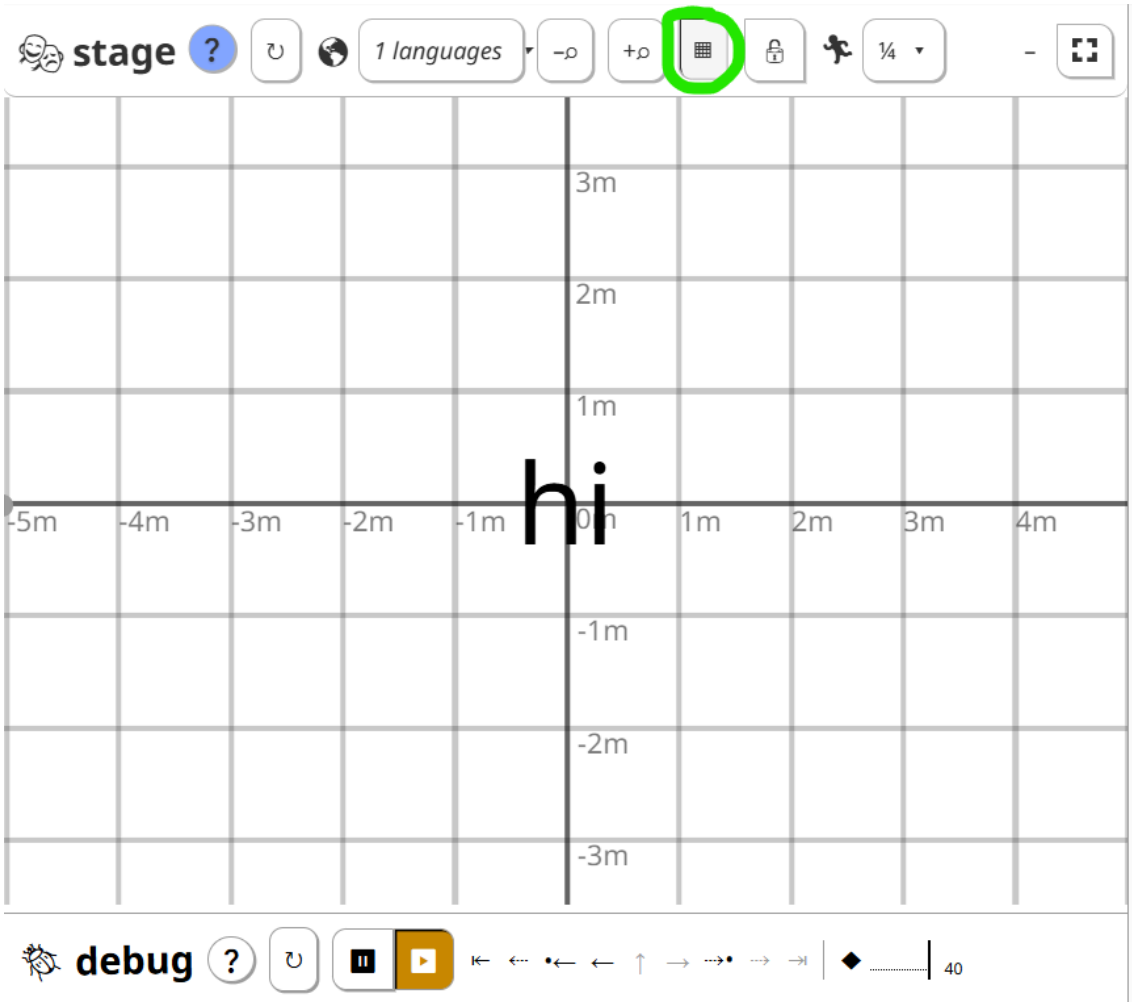
Create a basic visual representation of your map. You don't need to create an accurate geographic map, so feel free to get creative with it! Mark on the map the places you identified above.

After students complete their graphic organizers, you can use the Tutorial below to support students with creating their Interactive Maps in Wordplay.

Place Your Landmarks on the Stage Using Coordinates

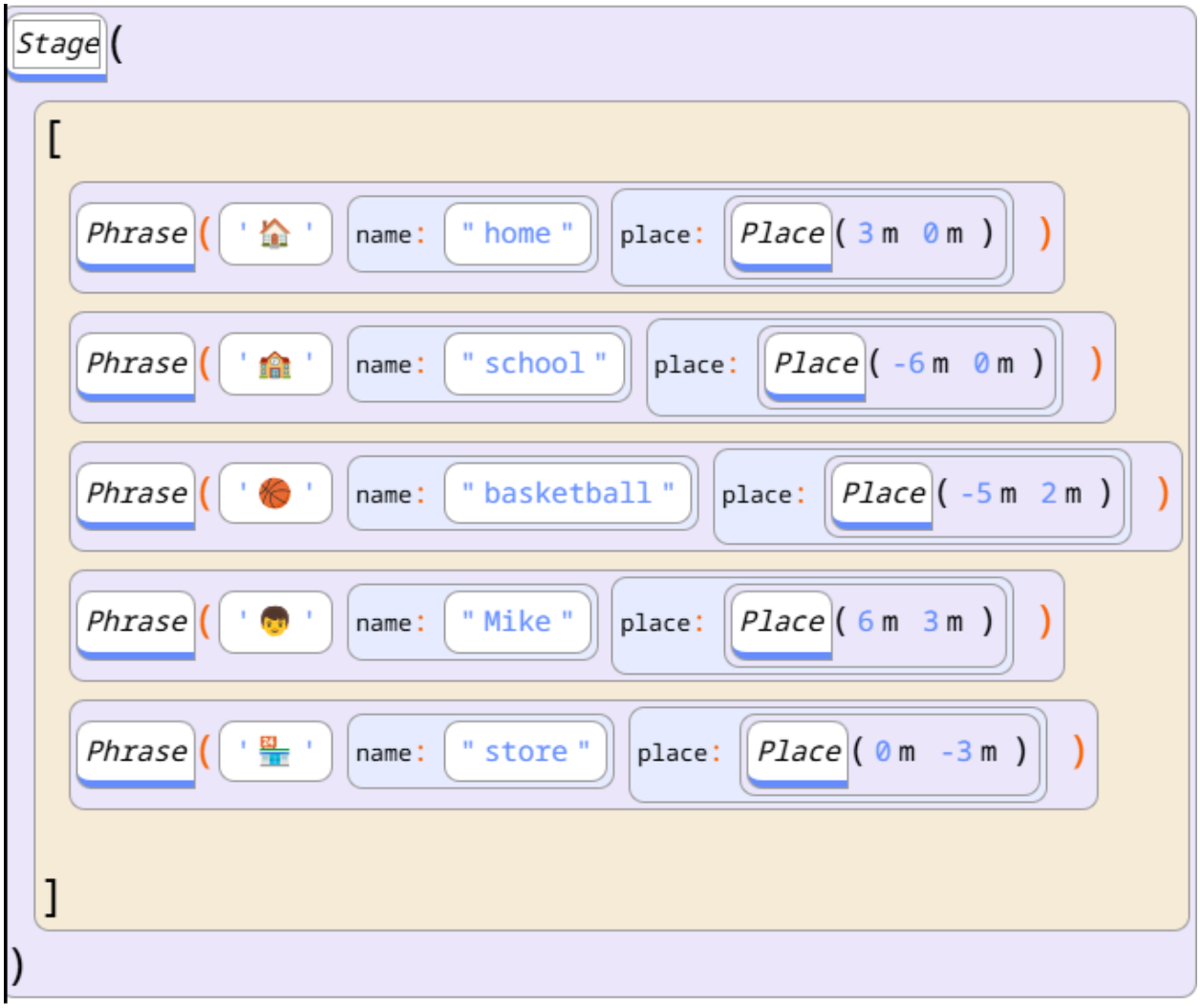
In Wordplay, the **stage** is where everything appears. Anything you want the audience to see has to be placed on it. Each item on the **stage** has a **place**, which is a location described with x and y coordinates.

You can use the *show grid lines* button at the top of the editor to turn on grid lines and see the coordinates. This helps you see where your coordinates will put things.



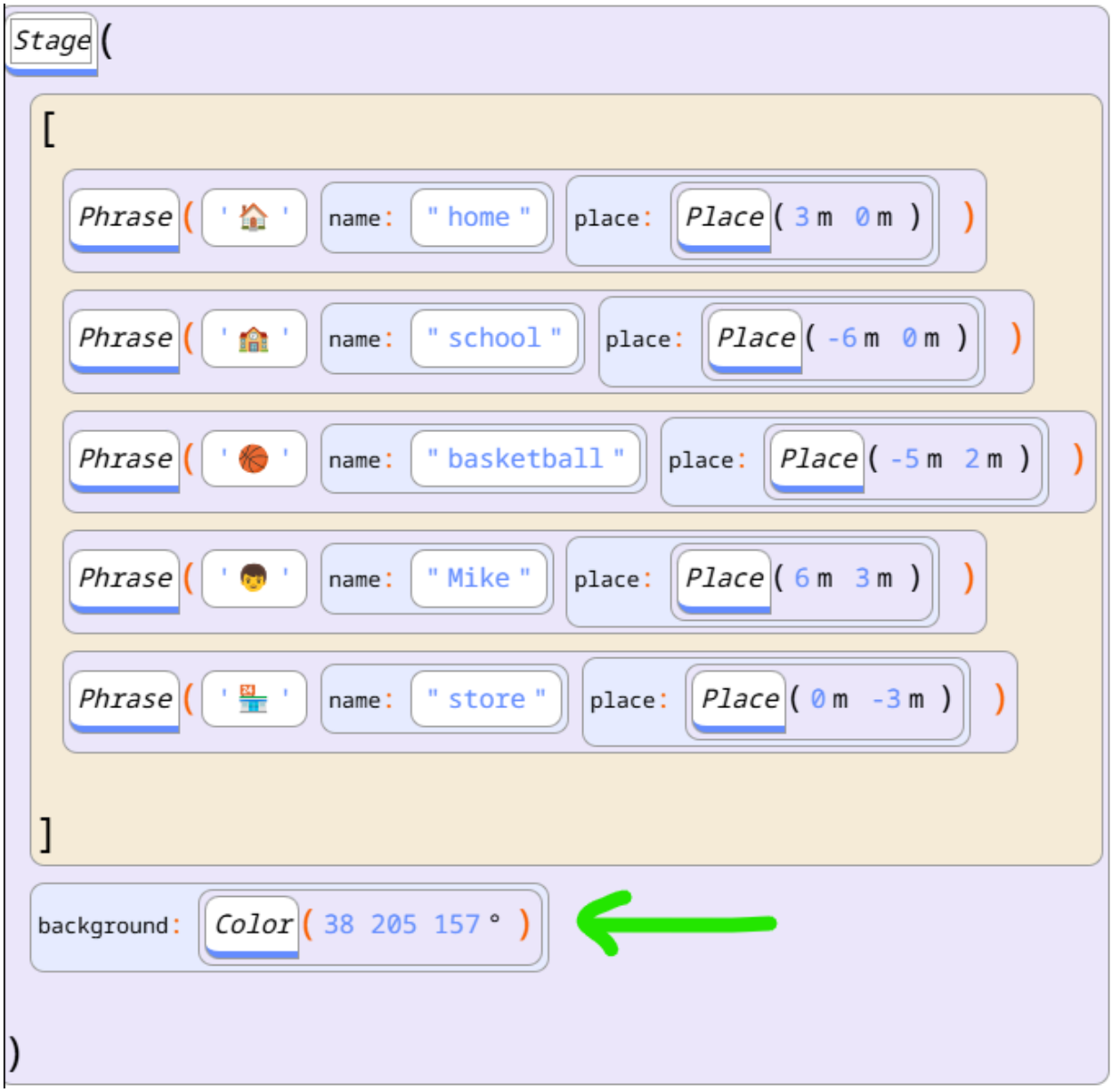
Each landmark emoji on your map can be placed in a **phrase** block, and each needs a **name** (so other parts of your program can refer to it) and a **place** (x and y coordinates describing where it sits on the **stage**) as inputs.

We can place all of our Phrase blocks into a **list** in a **stage** block to store all our landmarks in order and show them on the **stage**.



Tip: If you want to easily reposition your landmark emojis, you can open the **palette**, select the **phrase** of the emoji you want to move, and drag it to the desired position. Your x and y inputs in your code will be updated when you do! (Be sure to pause the program using the pause button at the bottom in the stage in order to be able to drag your emoji to a new position).

If you want to color the background of the stage, you can add a **background** Input to the **stage** block after the list.



Tip: You can easily adjust the color of the background using the **palette**!

Add Your Character

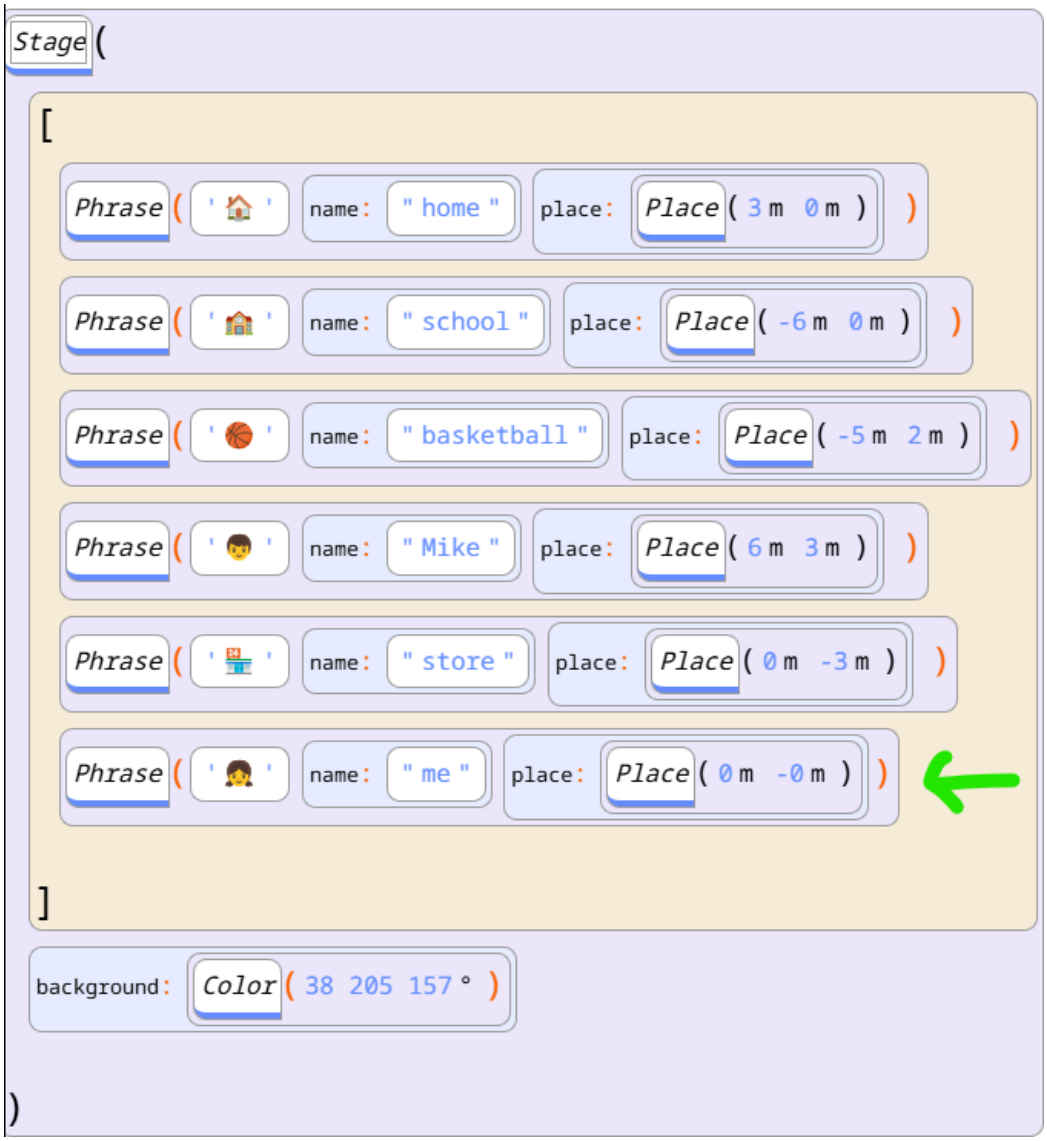
Now, let's add a character to represent you!

For all of your emojis, you can use one from the standard Unicode emoji set that is already built in OR you can create your own custom emoji using the **characters** tool in Wordplay. Try it out!



(Remember, you can use a standard emoji or create a custom one using the characters tool).

Add your character to the list of Phrases and give it a starting location on the Stage.



Make Your Character Move

Your landmarks stay in fixed places, but your character needs to be able to move around the map!

Wordplay has a special kind of value called **placement**. A placement produces a new **place** whenever the audience clicks or uses the arrow keys. This makes it perfect for characters that move.

We can use a variable to store information that can change. We'll create a variable called **where** to store our character's position.

Let's add a variable called **where** at the top of our code and set its value to **placement**. And then in the **phrase** for our character, we will update the place input of our character to be the variable **where** rather than a static location.



Try clicking around your map or using the arrow keys on the keyboard to move around your map!

Set Up Your Characters for Collisions

To detect when your character reaches a landmark on your map, the objects need to be able to collide.

Adding **matter** to a **phrase** tells Wordplay that an object is "solid" and can bump into other objects that also have **matter**. We can add **matter** to the end of each of our character and landmark **phrases** to make them collide-able.



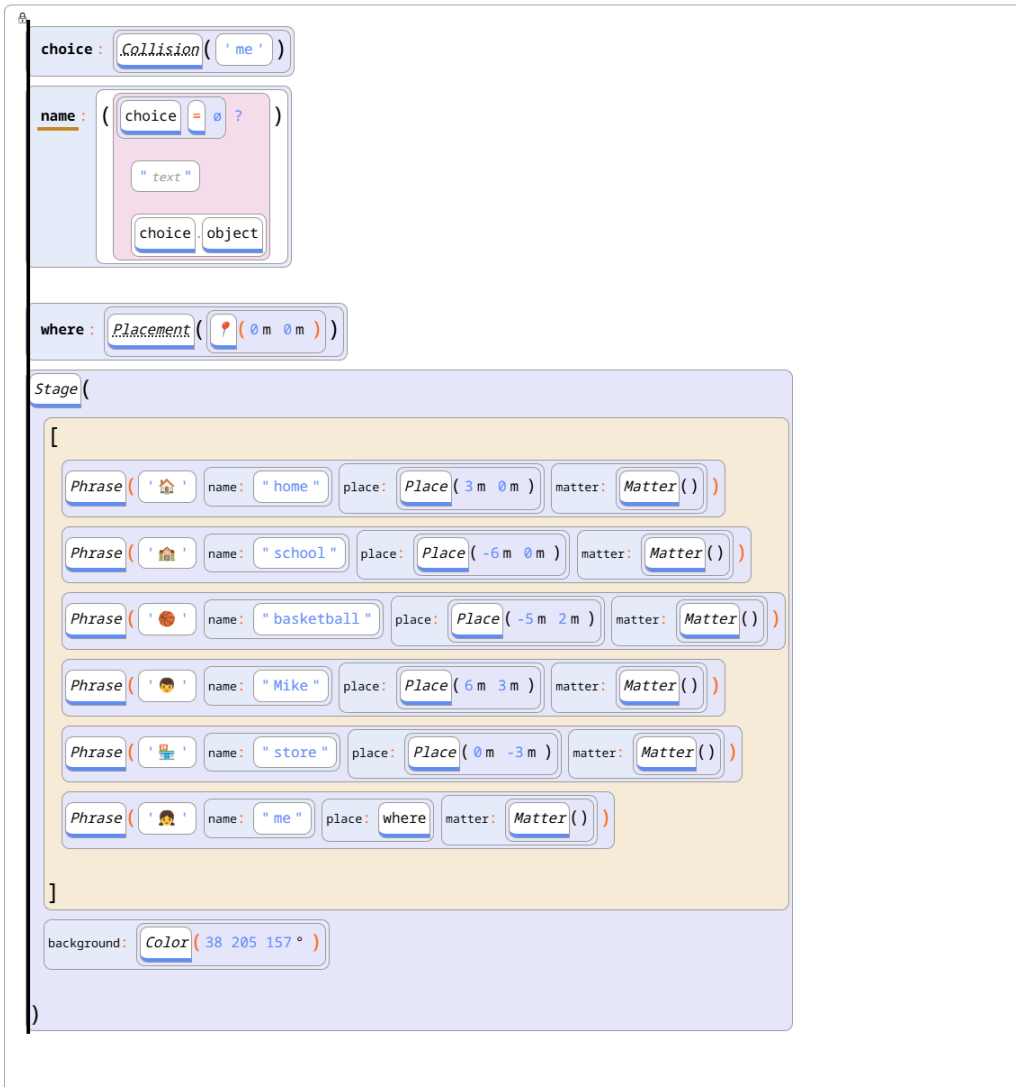
Detect Collisions

A **collision** in Wordplay is a stream that produces a value whenever named objects bump into something else with **matter**.

Since my character is named “me”,

```
Collision ( " me " )
```

will produce a Rebound object with information about what our character bumped into (including the name of the object we collided with). We can store that information in a variable called **name**.



Add Your Landmark Descriptions

A conditional chooses different outcomes depending on a value. We can use a conditional to choose which text to show based on the landmark our character touches.

We can use a **list** to store a group of items in order. We will use a **list** named **about** to store the text for each of our landmarks.



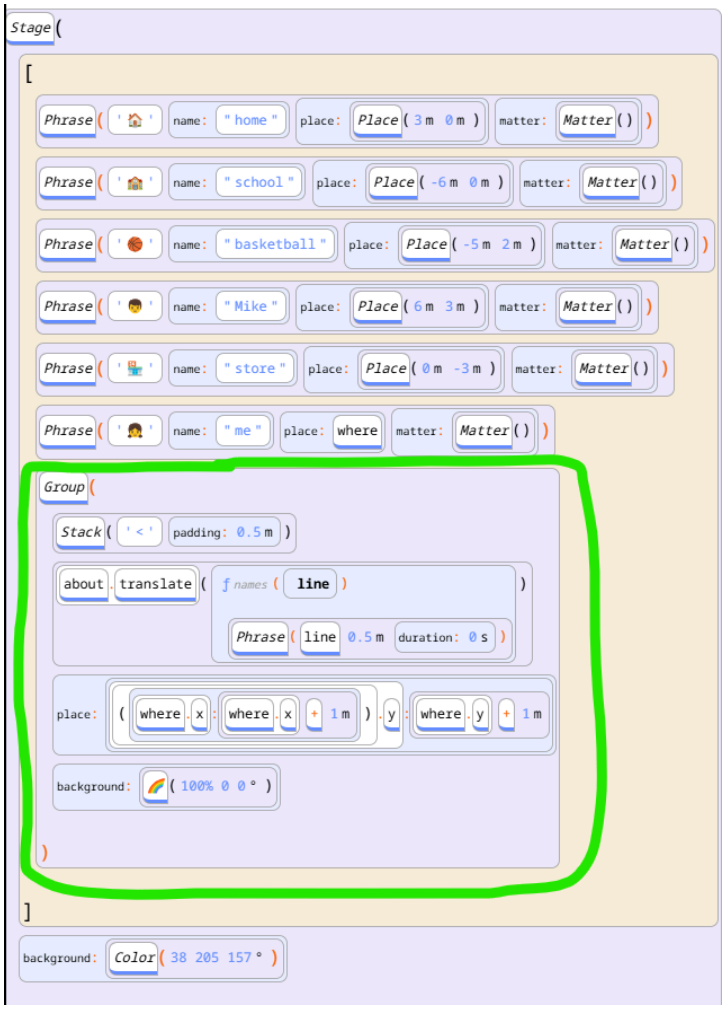
Make a Speech Bubble

Now that you have a list of text lines for each landmark, we can show them on the **stage**.

Our speech bubble will be made of three parts: First, we'll Translate each line of text into a Phrase using `List.translate`

Next, we'll `Stack` those **phrases** on top of each other vertically with some **padding** (space) between them to make them easier to read.

Finally, we'll **group** everything together, **place** it near our character, and give it a **background** color.



Customize!

Check out the Wordplay Learn section or Guide links at the bottom of the page and learn something new to add to your map to make it even more unique to you!

Some ideas you might consider are:

- ➔ Make your map multilingual and add translations for other languages you speak.
- ➔ Replace standard emojis with custom characters you create yourself.
- ➔ Replace the stage background with a giant custom character.
- ➔ Change the stage background to represent different weather or times of day that can change.
- ➔ Use the new say output to have your character read the speech bubble text aloud.
- ➔ Resize your landmarks, or give them movement.
- ➔ Add special items around the map for your character to collect.
- ➔ Anything else you can think of and learn!