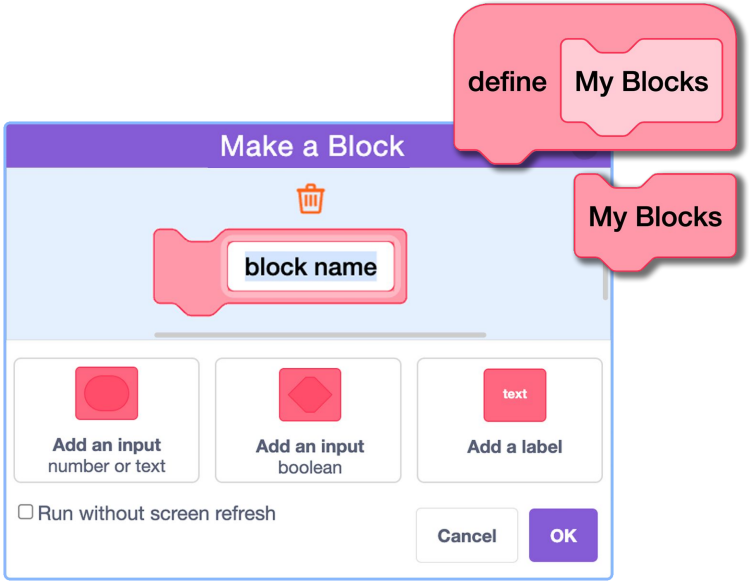
My Blocks

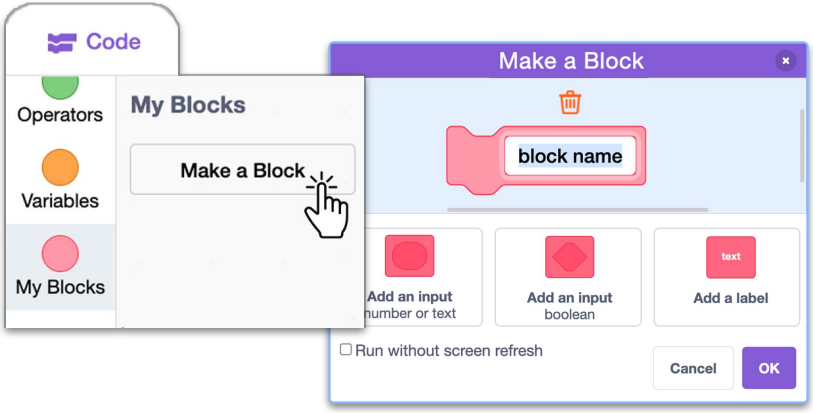


Explore procedures/routines and modularizing your code for effeciency

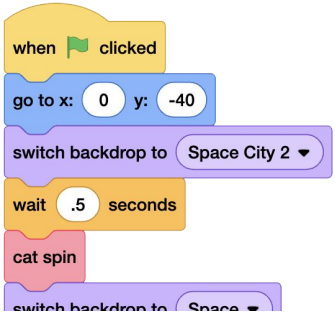
Cards in This Pack

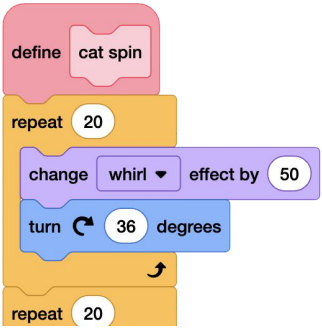
- Create a My Block
- My Block: Fade In and Out
- My Block: Music
- My Block with Parameters: Speak and Say
- My Block with Parameters: Move, Move
- My Block vs Broadcast

Create a My Block



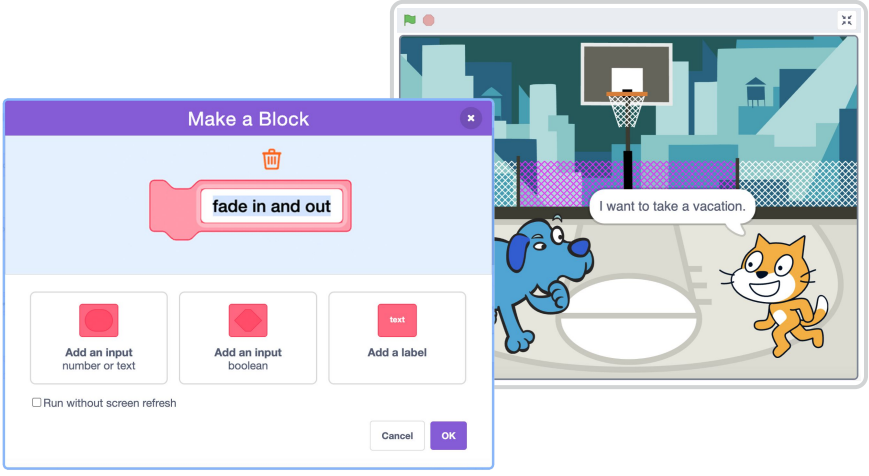
- Click on the “Make a block” button under the “My Blocks” category.
- Give your block any name you want, but it is best if it is a descriptive name so you can recall later what the block does.
- For a basic block, once you’ve provided a name, simply click “OK.”
- For an advanced block, add any additional inputs or labels needed.
- You can always edit blocks later.





- Once a new block is created, a “define” event handler block will appear on the scripts area. Place all the blocks to make up your steps (procedure) under it.
- Once defined, you can use your custom block in your main program.
- Creating separate procedures as custom blocks makes the code faster to write and read, and easier or quicker to edit.
- Note: A custom block is specific to the sprite where it was defined.

My Block: Fade In and Out



- Say you are creating an animation and you want a sprite to fade in and out as the scene changes/change opacity (also known as the “ghost” effect in Scratch).
- Rather than write the same steps over multiple times in a program, you can place those steps in a My Block and simply call that block each time you need it.

My Block: Fade In and Out

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GET READY

Choose any sprite.

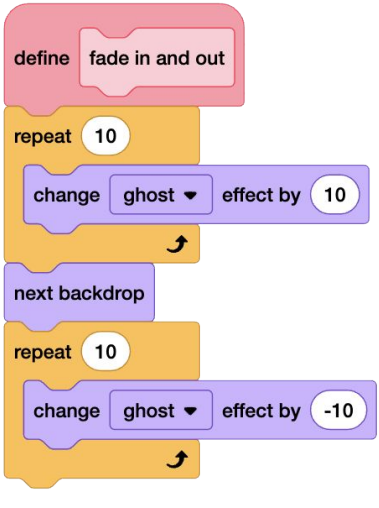
Cat

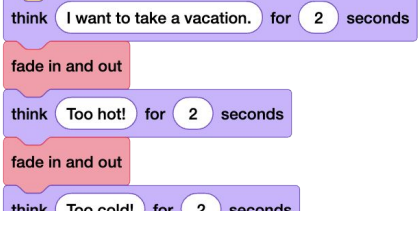
Choose any backdrop.

Basketball

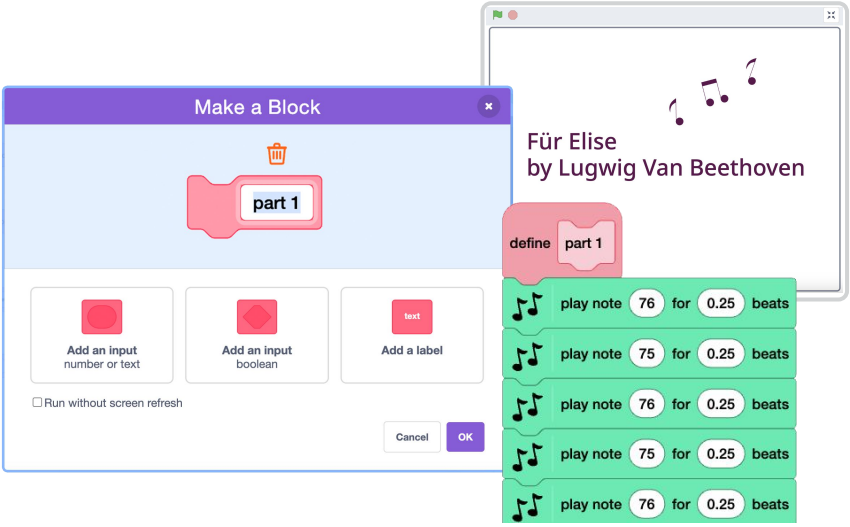
ADD CODE

1. Create a My Blocked called something like “fade in and out.”
2. Under the “define” block that appears on the stage, add steps to change the ghost effect to 100, switch the backdrop, and then change the ghost effect to 0.
3. Use the My Block in your main program each time you want the sprite to fade in and out and the backdrop to change.





My Block: Music



- You can use music blocks from the Music extension to create a song in Scratch.
- Rather than write the same sequence of notes over and over when they repeat in your song, you can place those notes in a My Block and simply call that block each time you need it, for instance each time a chorus is called.

My Block: Music

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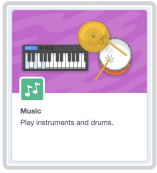
GET READY

Choose any sprite.

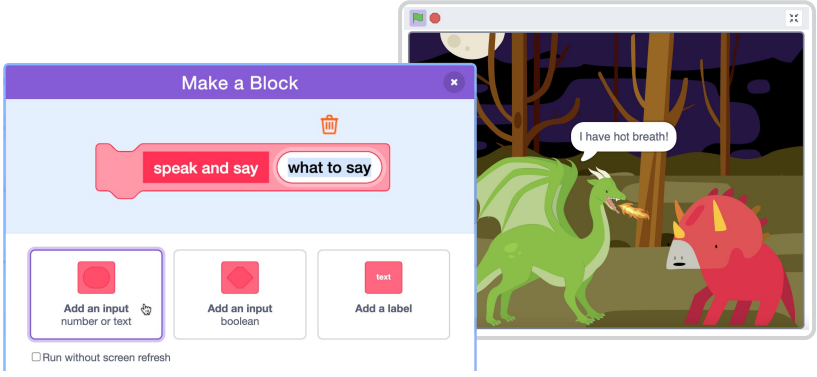
Add Music extension.



ADD CODE

1. Compose the sections of your song. You can create multiple My Blocks for different sections/parts.
2. My Blocks can also be placed within other My Blocks to further simplify the code.
3. Use My Blocks in the main program, along with repeat blocks (if applicable) to compose a whole song. Set the instrument and the tempo.

My Block with Parameters: Speak and Say



- What if you want to perform the same procedure (set of steps) each time the custom block is called in the main program, but with a small modification each time (like the text shown or spoken)? Create a My Block with parameters!
- With an input in place, the custom block will use the parameter (the data provided in the input bubble) when running.

My Block with Parameters: Speak and Say

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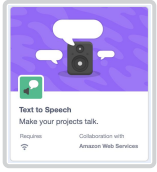
GET READY

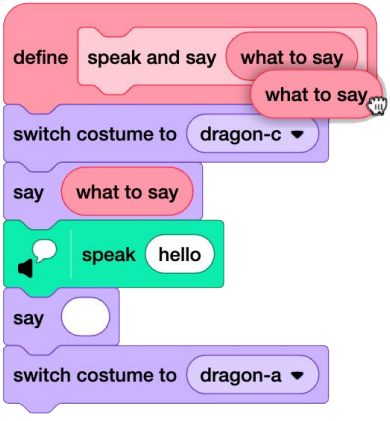
Choose any sprite.

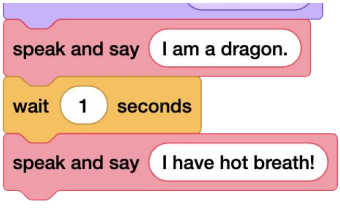
Add Text to Speech extension.



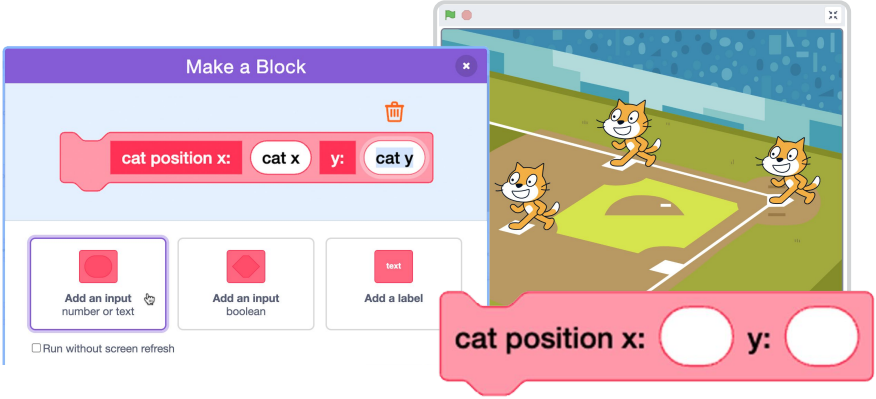
ADD CODE

1. Add an input when creating your My Block.
2. When defining the block steps, click on the input label and drag it out to place it in a code block. In this case, add it to the first “say” and “speak” blocks.
3. Now, when you use this custom block in the main program, you can see the blank input bubble where you can enter the parameter. In this case, the parameter is the text to say and speak.





My Block with Parameters: Move, Move



- What if you want to perform the same procedure (set of steps) each time the custom block is called in the main program, but with a small modification each time (like the sprites coordinates)? Create a My Block with parameters!
- With an input in place, the custom block will use the parameter (the data provided in the input bubble) when running.

My Block with Parameters: Move, Move

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GET READY

Choose any sprite.

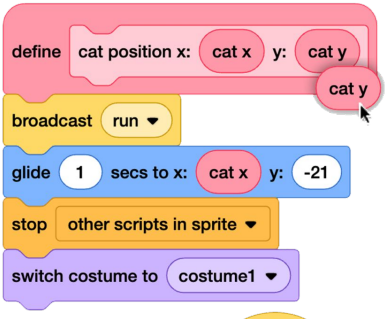
Cat

Choose any backdrop.

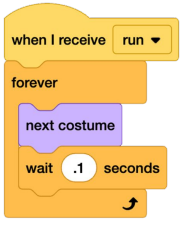
Baseball

ADD CODE

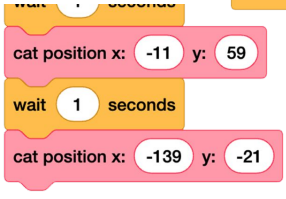
1. Add two inputs when creating your My Block (for x and y position). Add a label (descriptive text) between the inputs to help you remember what each input bubble is for when you use it in your main program.



2. When defining the block steps, click on the input label and drag it out to place it in a code block. In this case, x and y position. (Note, this My Block also sends a broadcast.)



3. Now, when you use this custom block in the main program, enter the new parameters each time.



My Block vs Broadcast

- My Block: the program pauses and runs through all the steps under the “define” block before preceding.
- Broadcast: the program sends the message and then proceeds with the next steps in the program, so code sequences may run simultaneously.
- Note: Unlike a broadcast that can be sent globally between all sprites and backdrops, a My Block is local, usable only by the sprite it is defined on. The call for the custom block isn’t received by any other sprites, even if their custom block has the same name.

My Block vs Broadcast

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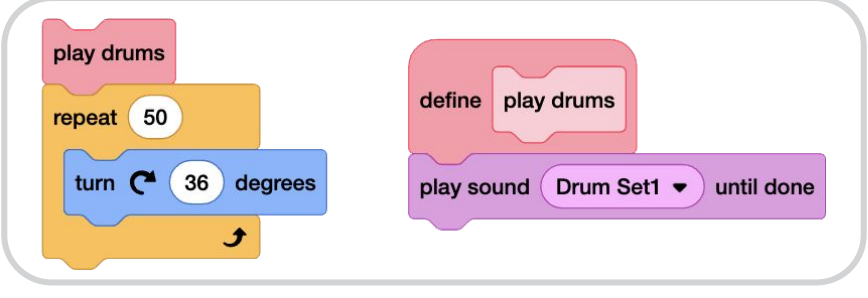
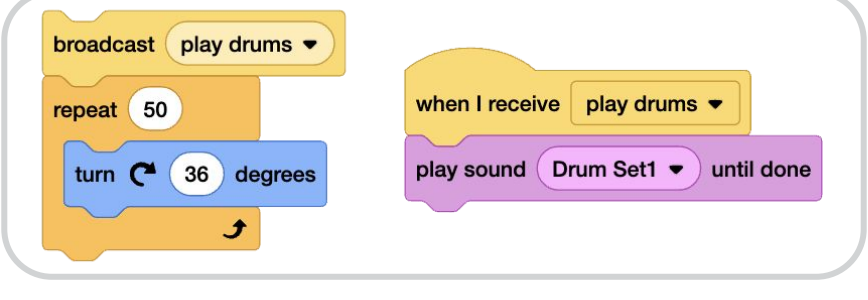
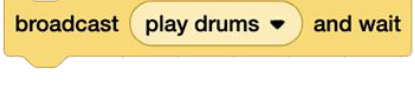
EXPERIMENT

Try these two code sequence pairings to see the difference between calling for a custom block and calling for a broadcast.

What else could you try? Costume changes? Motion?







What if you used “broadcast and wait”?