



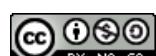
# Jargon Buster

In this project you will train the computer to listen out for specific words.

You'll use that to create a project in Scratch that will listen out for when those words are spoken. It will display what they mean any time it hears them.

The screenshot shows the Scratch interface with the following details:

- Scratch Project:** Jargon Buster
- Script Area:** A script for the "Jargon Buster" sprite. It starts with a green flag click event. Inside, it switches the backdrop to "backdrop1", trains a machine learning model, and then enters a loop. The loop checks if the model is ready to use. If yes, it starts listening. While listening, it checks for four specific words: "DSL", "SEN", "NQT", and "EAL". When it hears each word, it switches the backdrop to a corresponding stage (e.g., "DSL" to "DSL"). After hearing each word, it waits for 2 seconds and then switches back to "backdrop1".
- Stage Area:** Shows a light blue stage with the word "SEN" in large black letters. Below it, the text "Special Educational Needs" is displayed.
- Scratch Editor:** Shows the "Code" palette on the left, which includes categories for Motion, Looks, Sound, Events, Control, Sensing, Operators, Variables, My Blocks, and Images. The "Jargon Buster" block is listed under "My Blocks".
- Backpack:** Shows several blocks from the "Sensing" category, including "when I hear [word]" blocks for "DSL", "SEN", "NQT", and "EAL".
- Stage Area:** Shows a light blue stage with the word "SEN" in large black letters. Below it, the text "Special Educational Needs" is displayed.
- Scratch Editor:** Shows the "Code" palette on the left, which includes categories for Motion, Looks, Sound, Events, Control, Sensing, Operators, Variables, My Blocks, and Images. The "Jargon Buster" block is listed under "My Blocks".
- Stage Area:** Shows a light blue stage with the word "SEN" in large black letters. Below it, the text "Special Educational Needs" is displayed.



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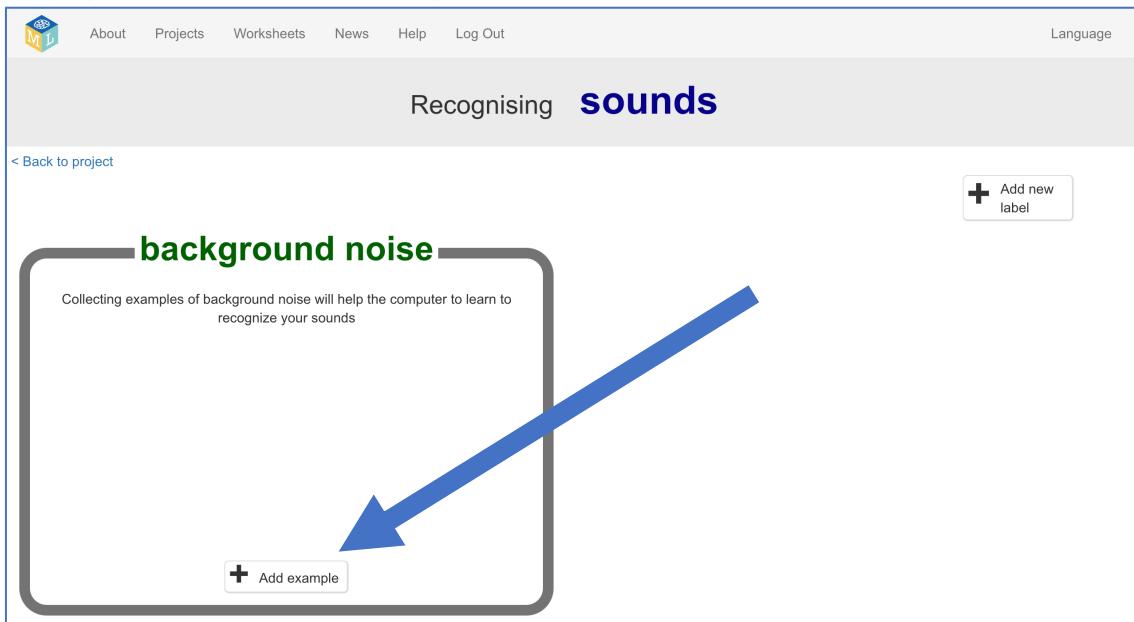
This project requires a **microphone**. If you don't have a computer with a microphone, you might prefer to try a different worksheet.

1. Go to <https://machinelearningforkids.co.uk/>
2. Click on “**Log In**”
3. Click on “**Try it now**”
4. Click on “**Projects**” on the top menu bar
5. Click the “**+ Add a new project**” button.
6. Name your project “**Jargon Buster**” and set it to learn how to recognise “**sounds**”.  
Click the “**Create**” button

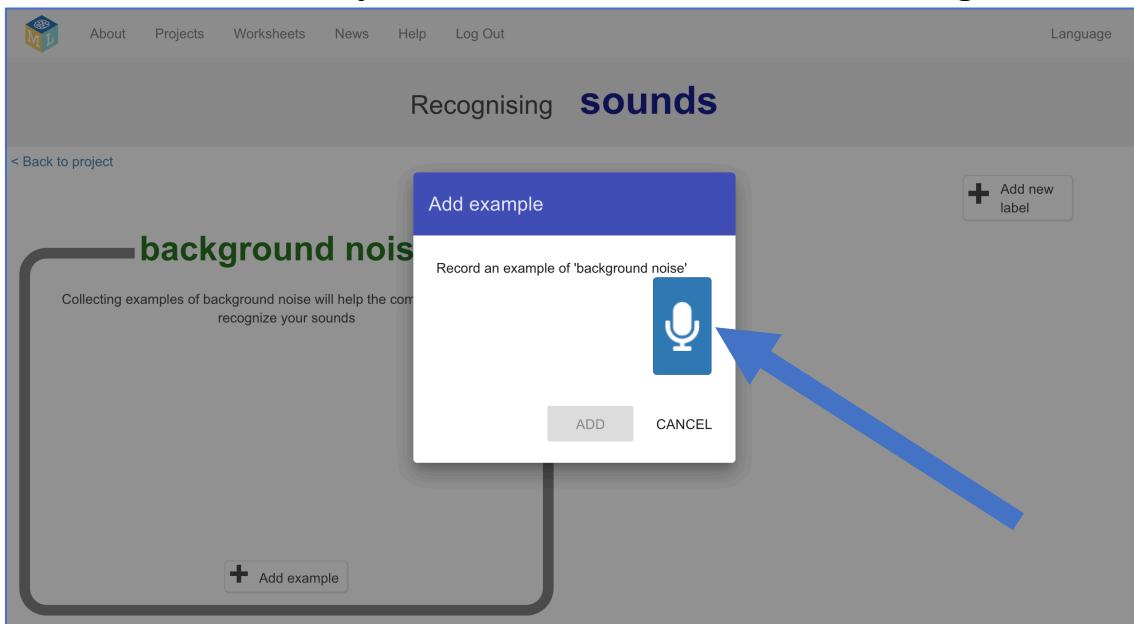
The screenshot shows a web page titled "Start a new machine learning project". At the top, there is a navigation bar with links for "About", "Projects", "Worksheets", "News", "Help", and "Log Out". On the right side of the header, there is a "Language" dropdown. Below the header, there are two input fields: "Project Name \*" containing "Jargon Buster" and "Recognising \*" containing "sounds". To the right of these fields is a small explanatory box with the following text:  
What type of thing do you want to teach the computer to recognise?  
For words, sentences or paragraphs, choose "text"  
For photos, diagrams and pictures, choose "images"  
For sets of numbers or multiple choices, choose "numbers"  
For voices and sounds, choose "sounds"  
At the bottom right of the form are two buttons: a blue "CREATE" button and a white "CANCEL" button.

7. You should now see “**Jargon Buster**” in the list of your projects.  
Click on it.
8. Click on the **Train** button to start collecting examples.

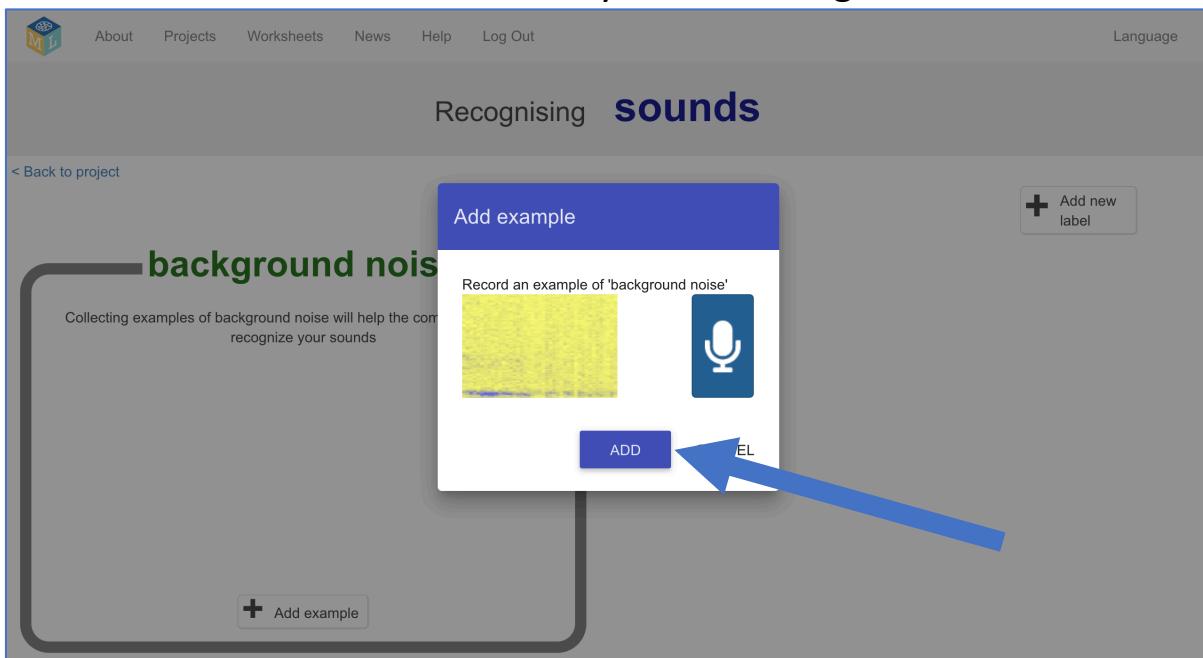
- 9.** Click on the **Add example** button in the **background noise** bucket  
*Recording background noise will help your machine learning model to tell the difference between the sounds you will train it to recognize, and the background noise where you are.*



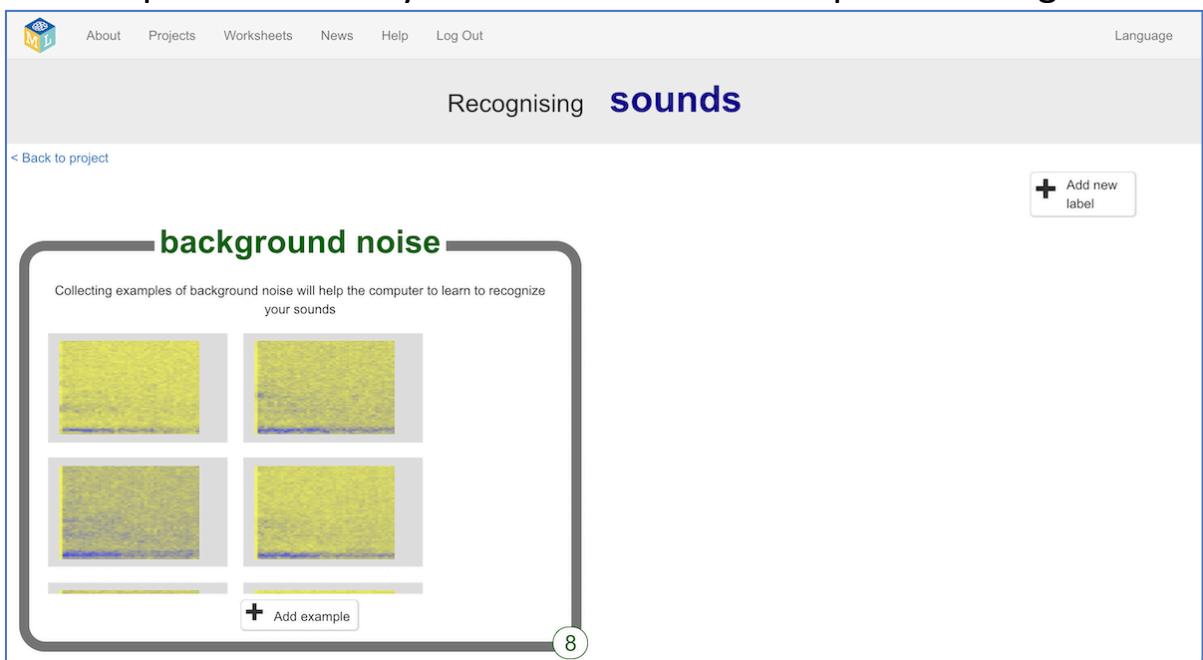
- 10.** Click the **microphone** to record 2 seconds of background noise



## 11. Click the Add button to save your recording



## 12. Repeat that until you have **at least 8** examples of background noise

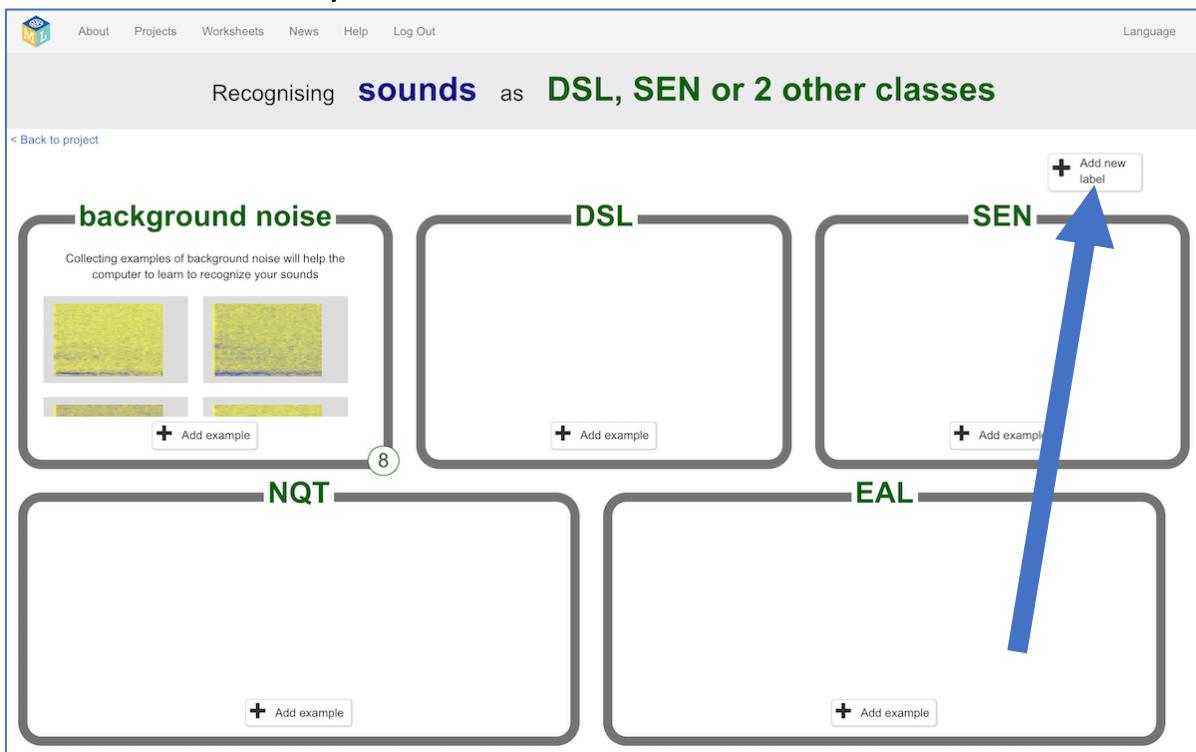


## 13. Think of some weird terms, abbreviations or acronyms that are used at your school, that people often don't understand.

For my project, I'll use these four:

- |   |  |
|---|--|
| "DSL" ( <i>designated safeguarding lead</i> ) | "SEN" ( <i>special educational needs</i> )         |
| "NQT" ( <i>newly qualified teacher</i> )      | "EAL" ( <i>English as an additional language</i> ) |

## 14. Use the **Add new label** button in the top right to create a training bucket for each of your terms

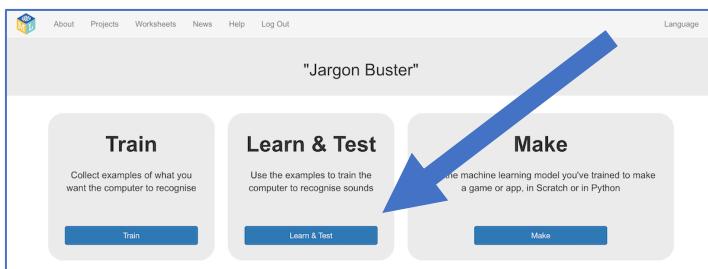


## 15. Use the **Add example** button in each training bucket to record **eight** examples of you saying each of your jargon terms *You can add more than eight if you would like, but add at least eight.*

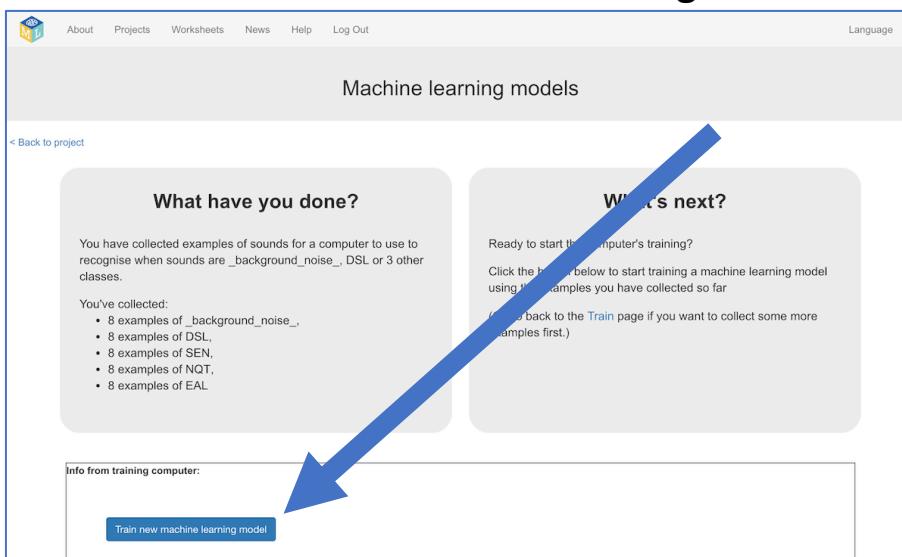


**16.** Click the “Back to project” link in the top left

**17.** Click the **Learn & Test** button

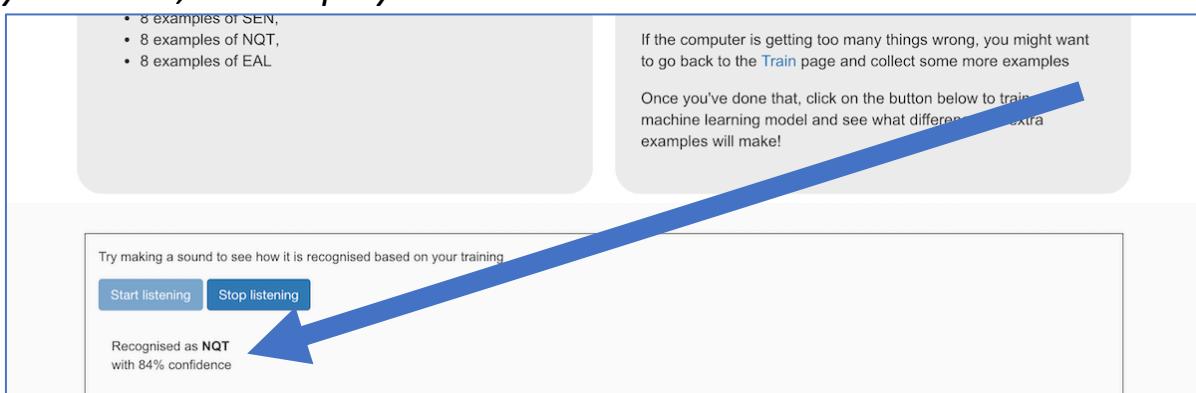


**18.** Click “Train new machine learning model”



**19.** Once the training is finished, click the **Start listening** button to test your machine learning model

*Start talking. Talk in complete sentences. Every now and then, use one of your jargon terms. Your machine learning model should recognize that you said it, and display it.*

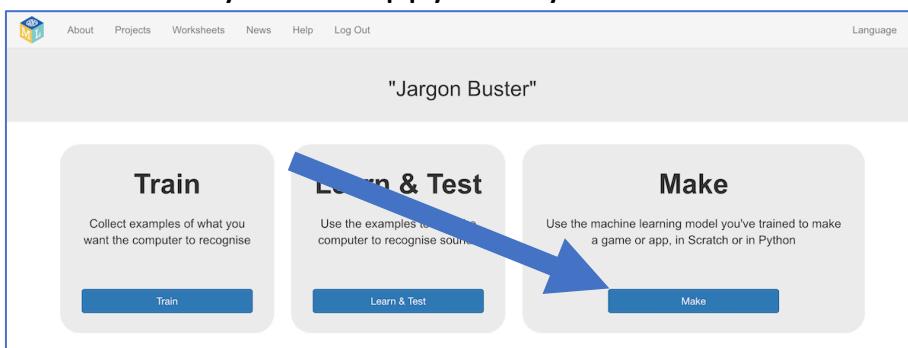


- 20.** If you're not happy with how the model is working, go back to the **Train** page and add more training examples.

*If your machine learning model thinks you said one term, when you actually said another one, go back and add examples of both of them so that it can learn to tell the difference between them.*

*If your machine learning model thinks that you said one of your jargon terms when you hadn't said any of them, go back and add more "background noise" examples. It can help to add examples of you talking (without mentioning any of your jargon terms) to the background noise bucket, so it learns to ignore you when you're not saying one of the special words.*

- 21.** When you're happy with your machine learning model, click **Make**

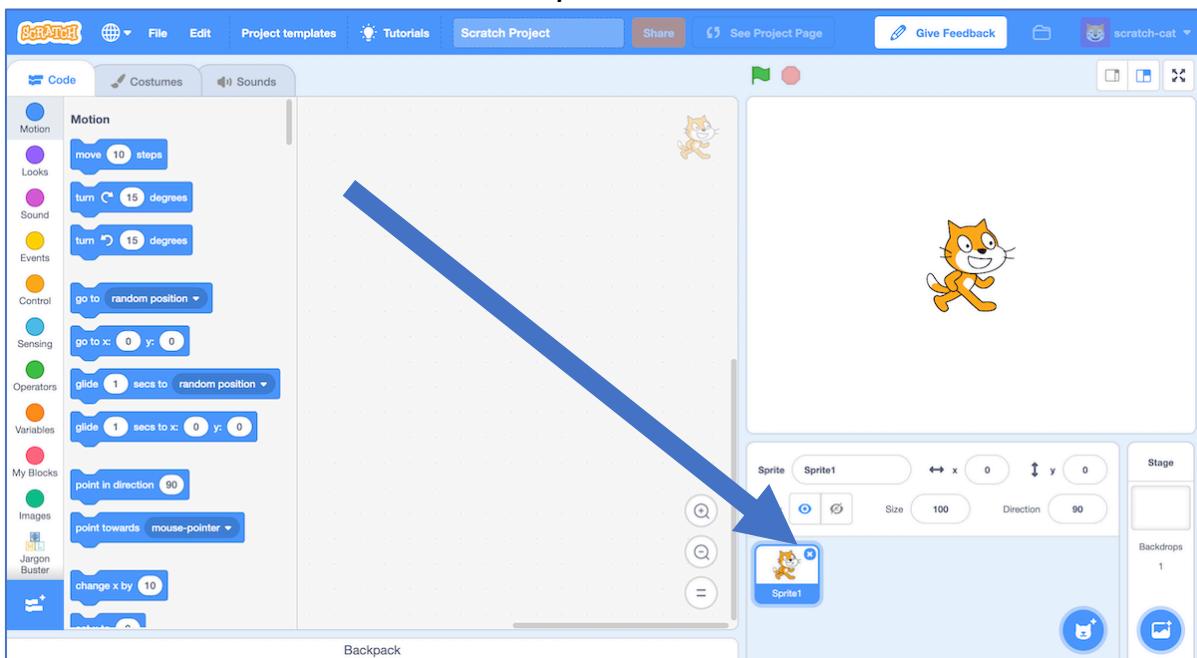


- 22.** Click on the **Scratch 3** button

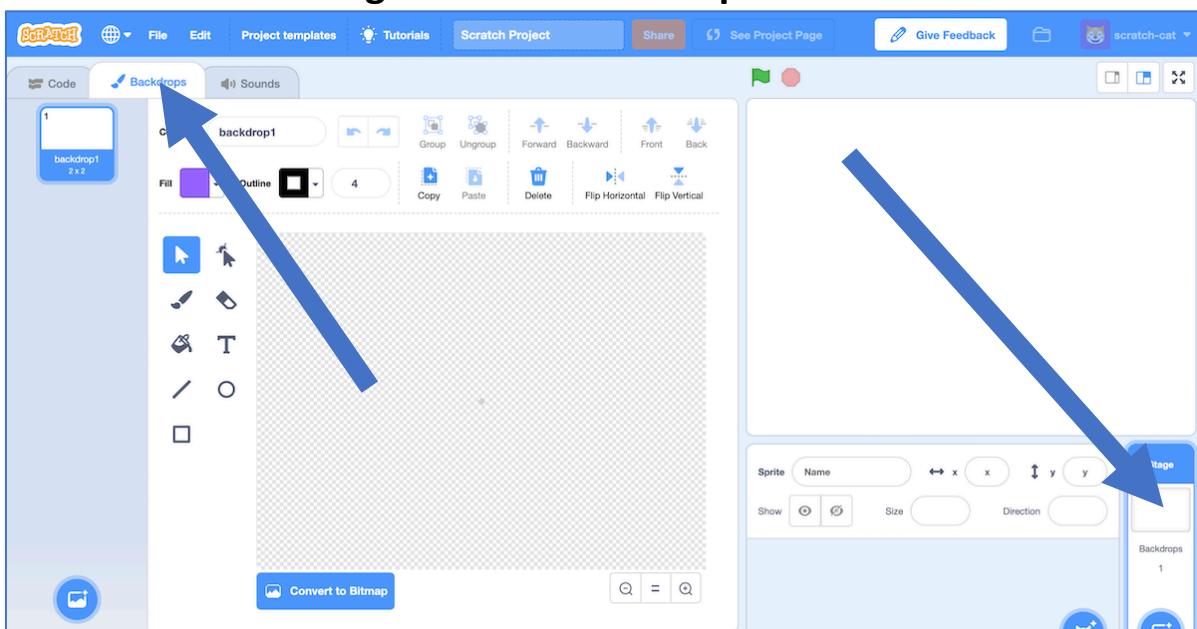
- 23.** Click the **Open in Scratch 3** button

## 24. Delete the cat sprite

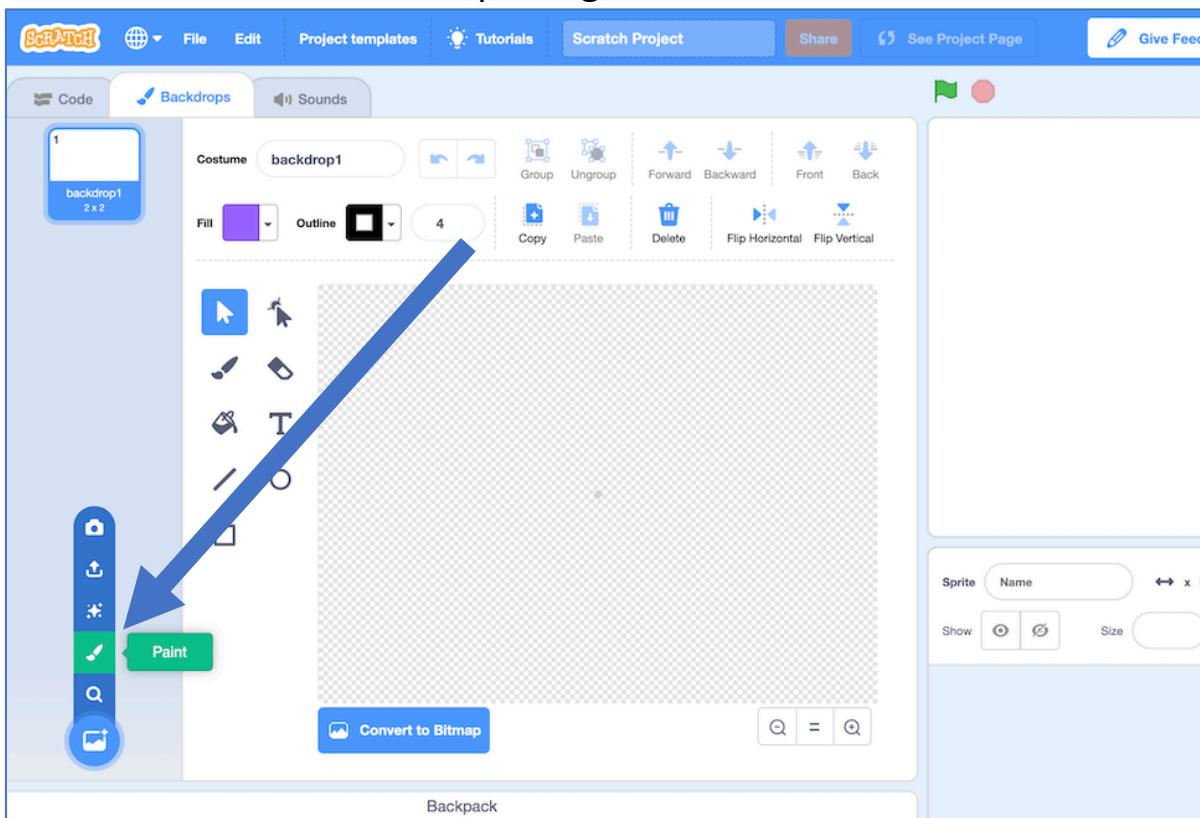
Click on the cross button in the sprite icon to remove it.



## 25. Click on the Stage then the Backdrops tab

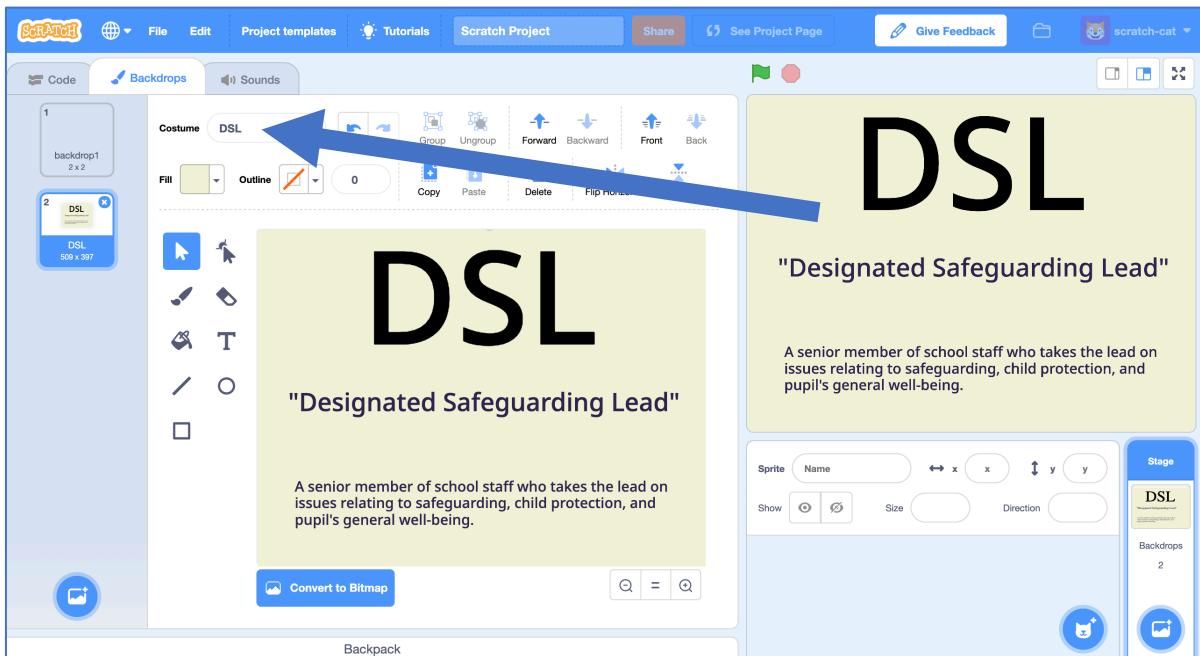


## 26. Create a new Backdrop using the Paint button



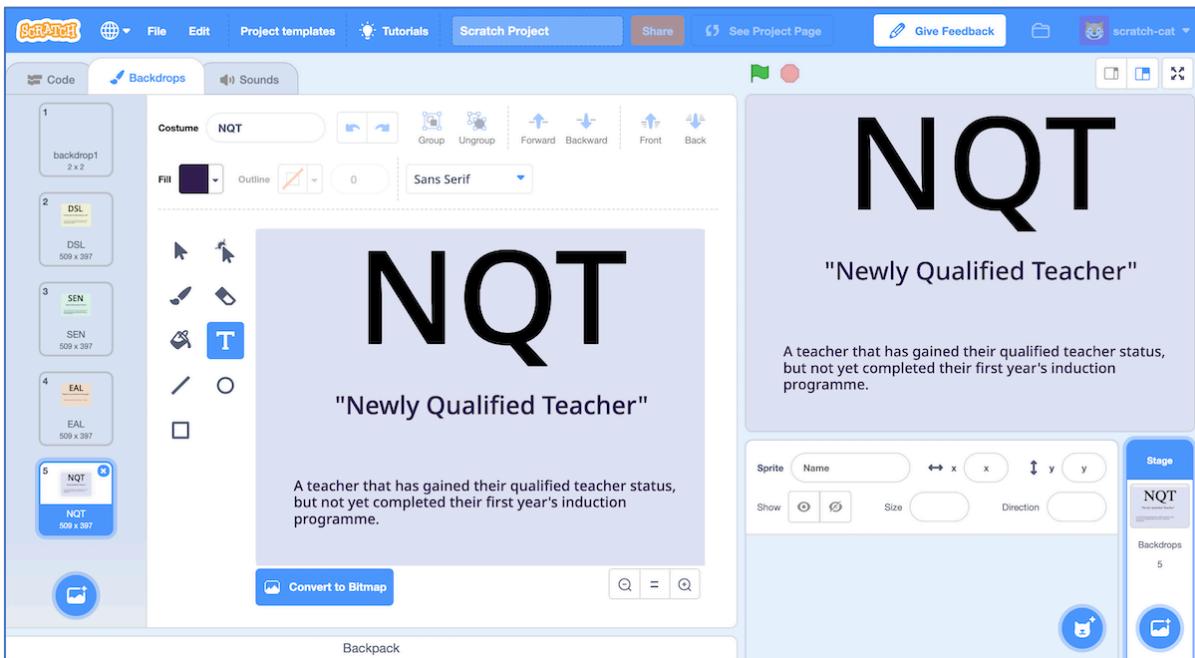
## 27. Create a backdrop that explains the first of your jargon terms

*You can design your project to explain the jargon however you would like. Give the costume a name that matches the jargon term, by typing in the name in the box shown by the arrow below.*

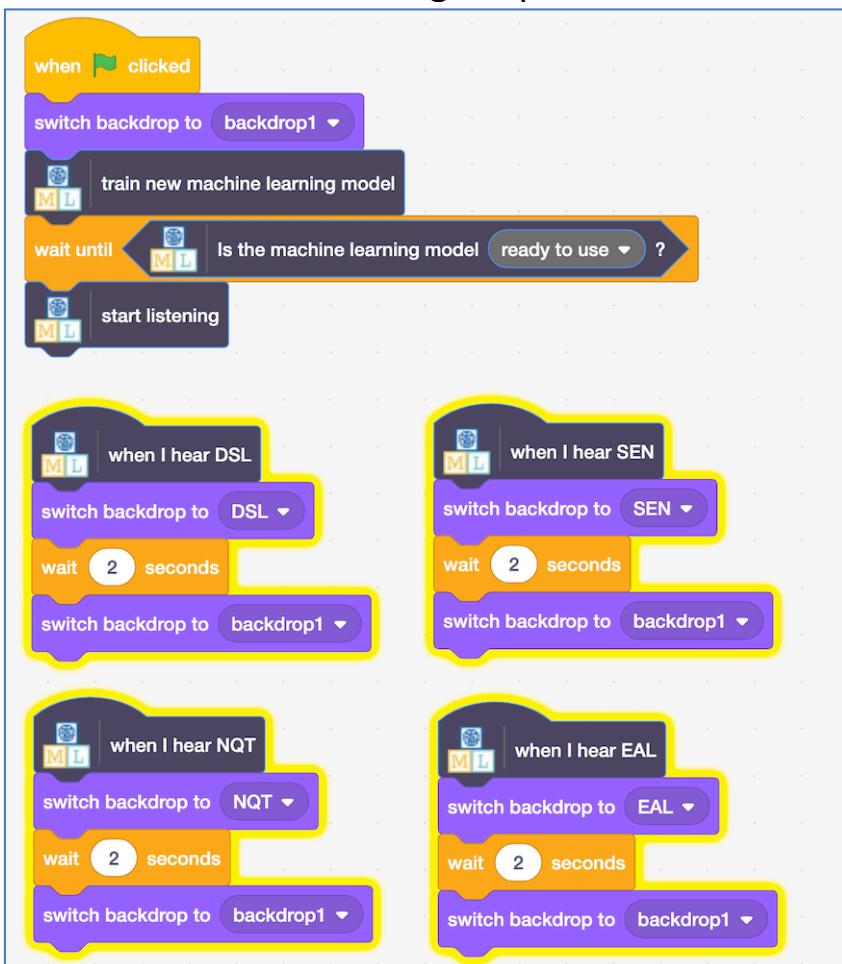


**28.** Use the **Paint** button again to create a costume for each of your jargon terms.

*Make sure you name them all to match, like you did your first one.*



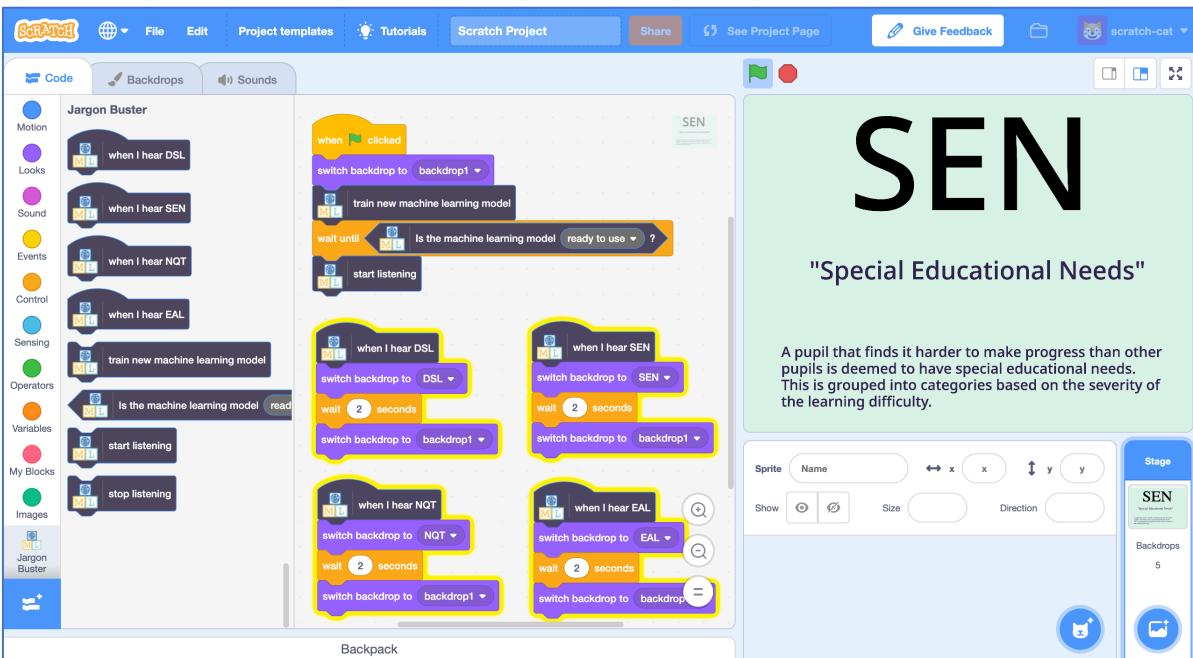
**29.** Create the following script



## 30. It's time to test. Click the Green Flag.

Once your machine learning model is ready, start talking.

Occasionally mention one of your jargon terms. Your project should flash up an explanation of the term for a couple of seconds.



## What have you done?

You've trained a machine learning model to use for speech recognition. You used that to build a project in Scratch that listens for some special terms and react to them.

The ability to listen in the background and react to certain keywords is a common use of machine learning. Devices like Amazon's Alexa and Apple's Siri use this to be able to recognise when you say their name.