



Machine Learning For Kids :: Teachers' notes

Worksheet	Alien Language
Activity	Make an alien character in Scratch that learns to recognise an alien language.
Objective	Teach a computer to recognise sounds <ul style="list-style-type: none"> Learn how computers can be trained to recognise words
Difficulty level	Beginner
Time estimate	1 hour
Summary	Students train a sound recognition system to recognize two sounds in a pretend alien language. They use this in Scratch to make an alien character that can understand and carry out their commands.
Topics	sound recognition, supervised learning

Setup

Each student will need:

Print-outs	Project worksheet (download from https://machinelearningforkids.co.uk/worksheets) Blocks in Scratch scripts are colour-coded, so printing in colour will make it easier for students.
Technology	Microphone
Access	Username and password for machinelearningforkids.co.uk

Class account will need:

API keys	None
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Customizing

If you use **PRIMM** approaches with your class, add a step where students predict how the project template works. If you want to **increase the amount of coding** involved, delete some of the code from the project template and add steps to the worksheet so students code it themselves.

If you want to **encourage problem solving**, delete some of the detail in the worksheets and provide more general instructions instead.

Project template files & worksheets in MS Word format are available so you can **modify them to suit your class**.

Project templates	https://github.com/IBM/taxinomitis-docs/tree/master/scratch-templates Scratch 3 templates end .sb3 Scratch 2 templates end .sb2
Worksheets	https://github.com/IBM/taxinomitis-docs/tree/master/project-worksheets/msword

Help

Potential issues	<ul style="list-style-type: none"> Students will record their voice and use that to train a machine learning model. This can work using a microphone built in to a laptop but the background noise can make this tricky with a large class all doing it at once. Using dedicated microphones (such as a headset microphone) can be a big help with this. Younger students may enjoy inventing their own alien language. Encourage them to invent words that are weird and different! Older students may feel self-conscious making weird noises with their voice and may prefer doing things like finger clicks or jangling a bunch of keys instead. Either approach is fine. "https://machinelearningforkids.co.uk" is a long URL to type for some children. You may find it easier to set up a bookmark that they can click on instead. <p>General troubleshooting and help at https://machinelearningforkids.co.uk/help</p>
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