



Machine Learning For Kids :: Teachers' notes

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| Worksheet | Secret Code |
| Activity | Make a spy in Scratch and teach it to recognize your secret code words. |
| Objective | Teach a computer to recognise speech <ul style="list-style-type: none"> Learn how computers can be trained to recognise words |
| Difficulty level | Intermediate |
| Time estimate | 1 hour |
| Summary | Students train a speech recognition system to recognize words. They use this in Scratch to make a spy that recognizes the words, and guide it around a town. |
| Topics | speech recognition, sound recognition, supervised learning |

Setup

Each student will need:

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| 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:

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| 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**.

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| 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

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| 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. Some students may feel self-conscious recording their voice. The project can be done with non-voice sounds like finger clicks or jangling a bunch of keys instead. You can suggest this as an alternative if that helps. "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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