Machine Learning For Kids :: Teachers' notes

Worksheet	Smart Classroom
Activity	Create a smart assistant in Scratch that lets you control virtual devices.
Objective	**Teach a computer to recognise the meaning of your commands** • How computers can be trained to recognise the intent behind writing. • Confidence thresholds indicate when the machine cannot recognise the meaning. • How virtual assistants (e.g. Apple Siri, Amazon Alexa, Google Home) work.
Difficulty level	Beginner
Time estimate	1 hour (for full version of the project, where students try making it without machine learning first) or 45 minutes (if students only make a machine learning project)
Summary	Students will train a machine learning model to recognise the meaning of instructions. They will use this in Scratch to make a virtual assistant like Alexa that will respond to commands.
Topics	digital assistants, confidence thresholds, 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. There are **two versions of the worksheet** – one that assumes students will try making the assistant without machine learning first and compare, the other assumes students will only use machine learning.
Access	Username and password for machinelearningforkids.co.uk

Class account will need:

API keys	**Watson Assistant** 1 workspace per student One "Lite" API key is free but can only be used to create 5 workspaces One "Standard" API key can be used to create to create 20 workspaces more detail at: https://github.com/IBM/taxinomitis-docs/raw/master/docs/pdf/machinelearningforkids-apikeys.pdf

Help

Potential issues	• "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. • The worksheet screenshots are based on Scratch 2. You may prefer to use Scratch 3 instead, however students may find it harder to find some blocks. General troubleshooting and help at https://machinelearningforkids.co.uk/help