

# Machine Learning For Kids :: Teachers' notes

<b>Worksheet</b>	<b>Smart Classroom</b>
<b>Activity</b>	Create a smart assistant in Scratch that lets you control virtual devices.
<b>Objective</b>	<b>Teach a computer to recognise the meaning of your commands</b> <ul style="list-style-type: none"> <li>How computers can be trained to recognise the intent behind writing.</li> <li>Confidence thresholds indicate when the machine cannot recognise the meaning.</li> <li>How virtual assistants (e.g. Apple Siri, Amazon Alexa, Google Home) work.</li> </ul>
<b>Difficulty level</b>	Beginner
<b>Time estimate</b>	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)
<b>Summary</b>	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.
<b>Topics</b>	digital assistants, confidence thresholds, supervised learning

## Setup

Each student will need:

<b>Print-outs</b>	Project worksheet (download from <a href="https://machinelearningforkids.co.uk/worksheets">https://machinelearningforkids.co.uk/worksheets</a> )  Blocks in Scratch scripts are colour-coded, so printing in colour will make it easier for students.  There are <b>two versions of the worksheet</b> – one that assumes students will try making the assistant without machine learning first and compare, the other assumes students will only use machine learning.
<b>Files</b>	Starter file (download from <a href="https://machinelearningforkids.co.uk/worksheets">https://machinelearningforkids.co.uk/worksheets</a> )
<b>Access</b>	Username and password for machinelearningforkids.co.uk

Class account will need:

<b>API keys</b>	<b>Watson Conversation</b> 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 20 workspaces  more detail at: <a href="https://github.com/daledane/ml-for-kids/raw/master/doc/machinelearningforkids-apikeys.pdf">https://github.com/daledane/ml-for-kids/raw/master/doc/machinelearningforkids-apikeys.pdf</a>
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## Help

<b>Potential issues</b>	<ul style="list-style-type: none"> <li>“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.</li> </ul> General troubleshooting and help at <a href="https://machinelearningforkids.co.uk/help">https://machinelearningforkids.co.uk/help</a>
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