

# Machine Learning For Kids :: Teachers' notes

<b>Worksheet</b>	<b>Shy Panda</b>
<b>Activity</b>	Make a character in Scratch that stops dancing if it recognises you looking at it
<b>Objective</b>	<b>Teach a computer to recognise pictures</b> <ul style="list-style-type: none"> <li>Learn how computers can be trained to recognise an object</li> </ul>
<b>Difficulty level</b>	Beginner
<b>Time estimate</b>	45 minutes
<b>Summary</b>	Students will train a machine learning model to recognise pictures by taking photos of their face with a computer webcam. They will use this in Scratch to make a character that recognises what they are doing.
<b>Topics</b>	image classification, 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.
<b>Technology</b>	Web-cam
<b>Access</b>	Username and password for machinelearningforkids.co.uk

Class account will need:

<b>API keys</b>	<b>Watson Visual Recognition</b> 1 custom model per student  One "Lite" API key is free but can only be used to create 2 custom models One "Standard" API key can be used to create multiple custom models  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>Students will be taking photos of their face and uploading them to a secure site, where they are kept until their photo or project is deleted. If this raises concerns it may be sensible to obtain parental permission.</li> <li>Machine learning models can sometimes take up to 5 minutes to train. It is okay for students to work on their Scratch projects during this time, rather than wait for this to complete first.</li> <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> <p>General troubleshooting and help at <a href="https://machinelearningforkids.co.uk/help">https://machinelearningforkids.co.uk/help</a></p>
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