

# Machine Learning For Kids :: Teachers' notes

<b>Worksheet</b>	<b>Locate Larry</b>
<b>Activity</b>	Make a Where's Wally? game in Scratch and teach the computer to find your character.
<b>Objective</b>	<b>Teach a computer to find something in a picture</b> <ul style="list-style-type: none"> <li>How computers can be trained to recognise pictures.</li> <li>How image pre-processing is used to find a small item in a larger picture</li> </ul>
<b>Difficulty level</b>	Intermediate The project is reasonably straightforward but builds on being able to do image classification of individual images. It's better used as a follow-on project to another images project.
<b>Time estimate</b>	1 hour
<b>Summary</b>	Students will make a Scratch project that generates a scene, cuts it into a grid of smaller squares, and trains an image classifier on those grid squares.
<b>Topics</b>	image classification, supervised learning, image pre-processing

## 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>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/IBM/taxinomitis-docs/raw/master/docs/pdf/machinelearningforkids-apikeys.pdf">https://github.com/IBM/taxinomitis-docs/raw/master/docs/pdf/machinelearningforkids-apikeys.pdf</a>
-----------------	---

## Help

<b>Potential issues</b>	<ul style="list-style-type: none"> <li>Machine Learning models for image projects sometimes take up to 5 minutes to train. Students can continue to work on their Scratch project scripts while they wait, if you like. They won't be able to run the project until the status light next to their project name in Scratch will go green when it's ready.</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>
-------------------------	--