

# Machine Learning For Kids :: Teachers' notes

<b>Worksheet</b>	<b>Tourist Info</b>
<b>Activity</b>	Create a mobile app in Scratch that recommends tourist attractions based on people's interests.
<b>Objective</b>	<b>Teach a computer to make recommendations</b> <ul style="list-style-type: none"> <li>The impact of training bias on machine learning systems</li> <li>Ethical questions introduced by training bias in machine learning systems.</li> </ul>
<b>Difficulty level</b>	Intermediate It can involve a lot of typing. Although simple to implement, appreciating the objectives requires an understanding of the implications of machine learning so this is more effective as a follow-on to another project.
<b>Time estimate</b>	1 hour (for full version of the project, where the students make more of the Scratch project) or 45 minutes (if students use the shorter-version of the project with a more pre-made Scratch file)
<b>Summary</b>	Students will train a machine learning model to make recommendations to holiday-makers based on their descriptions of likes and interests. They will use this in Scratch to make a mobile app. They will then be guided to make this more biased, and to consider the impact of bias in AI.
<b>Topics</b>	training bias, recommendations, 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> – depending on the amount of Scratch coding to do.
<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/dalelane/ml-for-kids/raw/master/doc/machinelearningforkids-apikeys.pdf">https://github.com/dalelane/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 type about 25 short sentences. For some younger children, this might not be achievable in a single lesson, so you may wish to allow extra time. Alternatively, it might be better to do this as a “whole class project” (create the project yourself and tick “whole class project”) so that the class only have to write 25 sentences between all of them.</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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