

# Machine Learning For Kids :: Teachers' notes

<b>Worksheet</b>	<b>Chatbots</b>
<b>Activity</b>	Create a chatbot that can answer questions about a topic of your choice.
<b>Objective</b>	<b>Teach a computer to recognise questions</b> <ul style="list-style-type: none"> <li>• How computers can be trained to recognise the intent behind writing.</li> <li>• How chatbots are used to automate answering people's questions</li> </ul>
<b>Difficulty level</b>	Beginner
<b>Time estimate</b>	1 hour
<b>Summary</b>	Students will train a machine learning model to recognise questions by typing examples of how those questions could be asked. They will use this in Scratch to make a character that answers those questions.
<b>Topics</b>	sentiment analysis, 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>Access</b>	Username and password for machinelearningforkids.co.uk

Class account will need:

<b>API keys</b>	<b>Watson Assistant</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 to create 20 workspaces 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>
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## Customizing

If you use **PRIMM** approaches with your class, add a step where students predict how the project template works. If you want to **increase the amount of coding** involved, delete some of the code from the project template and add steps to the worksheet so students code it themselves.

If you want to **encourage problem solving**, delete some of the detail in the worksheets and provide more general instructions instead.

Project template files & worksheets in MS Word format are available so you can **modify them to suit your class**.

<b>Template</b>	<a href="https://github.com/IBM/taxinomitis-docs/tree/master/scratch-templates">https://github.com/IBM/taxinomitis-docs/tree/master/scratch-templates</a>
<b>Worksheets</b>	<a href="https://github.com/IBM/taxinomitis-docs/tree/master/project-worksheets/msword">https://github.com/IBM/taxinomitis-docs/tree/master/project-worksheets/msword</a>

## Help

<b>Potential issues</b>	<ul style="list-style-type: none"> <li>• The worksheet tells students to make a chatbot that can answer five questions. If you think that might be too much typing for your students, you could tell them to train it to answer three or four questions instead.</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> <li>• 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.</li> <li>• There is a version of this project that uses Python instead of Scratch. Chatbots are a text-based project, so this is a good fit for using Python for students starting to learn about text-based programming.</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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