

# Machine Learning For Kids :: Teachers' notes

<b>Worksheet</b>	<b>Titanic</b>
<b>Activity</b>	Train the computer to be able to predict who survived the sinking of the Titanic.
<b>Objective</b>	<b>Teach a computer to predict outcomes</b> <ul style="list-style-type: none"> <li>Predictive analytics can be used to identify patterns in structured data.</li> </ul>
<b>Difficulty level</b>	Beginner
<b>Time estimate</b>	45 minutes
<b>Summary</b>	Students will train a predictive model based on historical data.
<b>Topics</b>	predictive model

## 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
<b>Other</b>	A way of creating and running Python programs

Class account will need:

<b>API keys</b>	None
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## Help

<b>Potential issues</b>	<ul style="list-style-type: none"> <li>The Python code the students will run uses the third-party library "requests". There is a link on the student page to information about how to install requests, but it will be simpler if you can ensure that it's installed before beginning the class. See <a href="https://3.python-requests.org/user/install/#install">https://3.python-requests.org/user/install/#install</a> for more info.</li> <li>If you have time, get your students to find the information about the movie characters themselves. Get the original Word doc of the worksheet from <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> , delete the information about Jack and Rose, and replace it with an instruction to find it themselves.</li> <li>Reviewing and understanding the training data is the most significant part of this project. Allow a lot of time for this. You could invite them to speculate about possible patterns first (e.g. Men were more likely to survive if they had a wife and children with them as families might have been kept together? Or men were more likely to survive if were alone as they could've been more selfish?) and then look to see if the data matches that. You could invite them to find patterns in the data and then theorize for reasons after. Or you could let them do a bit of both. They should spend time looking for and thinking about patterns in the data.</li> <li>Make it clear that the computer will be looking for patterns in the data (but not interpreting, speculating or theorizing about those patterns).</li> <li>After the session, encourage the students to think of other applications of a predictive model. What other sets of numerical and categorical (multiple-choice) data can they think of that might have patterns a computer could learn?</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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