

Machine Learning For Kids :: Teachers' notes

Worksheet	Hand Gestures
Activity	Train a computer to be recognize shapes that you make with your hands in Scratch.
Objective	Teach a computer to recognise shapes <ul style="list-style-type: none"> How computers can be trained to recognise pictures. How AI projects can be assembled from a combination of custom and pretrained models
Difficulty level	Advanced The Scratch script is a little complex. The final lesson explanation is a little complicated, and best attempted after a simpler project.
Time estimate	1 – 2 hours
Summary	Students will train the computer to recognise pictures of hand shapes.
Topics	decision trees, reinforcement learning, image classification, pretrained models

Setup

Each student will need:

Print-outs	Project worksheet (download from https://machinelearningforkids.co.uk/worksheets) Blocks in Scratch scripts are colour-coded, so printing in colour will make it easier for students.
Access	Username and password for machinelearningforkids.co.uk

Class account will need:

API keys	None
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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**.

Template	https://github.com/IBM/taxinomitis-docs/tree/master/scratch-templates
Worksheets	https://github.com/IBM/taxinomitis-docs/tree/master/project-worksheets/msword

Help

Potential issues	<ul style="list-style-type: none"> This project is most effective as a follow-on to the “Rock, Paper, Scissors” worksheet. “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. <p>General troubleshooting and help at https://machinelearningforkids.co.uk/help</p>
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