Machine Learning For Kids :: Teachers' notes

Worksheet	What does Twitter think?
Activity	Use machine learning in Scratch to analyze sentiment of discussion in social media
Objective	**Teach a computer to recognise the sentiment of public discussion** • How computers can be trained to recognise the sentiment behind writing. • How sentiment analysis is used to measure public opinion
Difficulty level	Intermediate
Time estimate	1 hour
Summary	Students will choose a topic and search for tweets about that. They'll copy examples and use these to train a machine learning model to classify the sentiment of tweets. They use this in Scratch to analyze Twitter messages & represent this in a live graph.
Topics	sentiment analysis, supervised learning

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
	Access	Access to twitter.com (no username or account needed)

Class account will need:

	API keys	**Watson Assistant** - 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: https://github.com/IBM/taxinomitis-docs/raw/master/docs/pdf/machinelearningforkids-apikeys.pdf

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**.

Project templates	https://github.com/IBM/taxinomitis-docs/tree/master/scratch-templates Scratch 3 templates end .sb3 Scratch 2 templates end .sb2
Worksheets	https://github.com/IBM/taxinomitis-docs/tree/master/project-worksheets/msword

Help

Potential issues	• This activity involves reading unfiltered messages from Twitter. As such, it is not appropriate for younger students. • Not all topics lead to an effective project. Help students find a topic that people express opinions about. If they choose a common word (e.g. "Starbucks") they may find most tweets mention it as a location without expressing an opinion. • "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. General troubleshooting and help at https://machinelearningforkids.co.uk/help