

Handout 1 Webinar: An Hour of Code... with Artificial Intelligence!

[Topic: Artificial intelligence](#)

Provides a starting point to find out about AI, learn more and find relevant resources.

Lesson ideas

Year level	Title	Description	Aspects of AI covered
Years F-4	<u>Can AI guess your emotion?</u>	Discuss emotions as a class, and introduce the idea of artificial intelligence (AI). This lesson can also be used to introduce image classification – a key application of AI.	Classification, Supervised learning, Feature extraction
Years 3-4, 5-6	<u>AI smartphone security</u>	This lesson provides an opportunity to investigate security measures, including those powered by artificial intelligence (AI), that are used to protect users from unauthorised (unapproved, unwanted) access to their digital devices.	Classification, Supervised learning, Feature extraction Links to cybersecurity

Years 5-6, 7-8	<u>Data bias in AI</u>	Artificial intelligence can sometimes be biased to certain shapes or colours. When such AI systems are applied to situations that involve people, then this bias can manifest itself as bias against skin colour or gender. This lesson explores bias in AI, where it comes from and what can be done to prevent it.	Classification, Supervised learning, Feature extraction Artificial neural network
Years 5-6, 7-8	<u>AI image recognition – exploring limitations and bias</u>	A hands-on activity to practise training and testing an artificial intelligence (AI) model, using cartoon faces, including a discussion about sources of potential algorithmic bias and how to respond to these sources..	Classification, Supervised learning, Feature extraction
Years 3-4, 5-6	<u>Note the music</u>	We can program a computer to play music. Conventionally this is done by hard coding, which is the process of coding all possible expected behaviours. Alternatively, we can train an artificial intelligence (AI) computer about what notes go well with others, so it can play a duet with a human musician. Students can make their own instrument that plays a particular note for a set beat, for example when a piano key is pressed or a guitar string is strummed or a drum skin is hit. Alternatively, students can incorporate the random function to mimic AI.	Recommender systems
Years 3-4, 5-6	<u>Fun projects with language translation</u>	Natural language processing is growing in importance. We often converse with automatic chatbots for customer service without even knowing. We also use online translation services or mobile apps. But how do these services work? Is there artificial intelligence (AI)	Natural language processing

		in them? Three projects are offered to cater for student interest and different programming skill levels.	
Years 5-6, 7-8	Home automation with AI	Home automation is all the rage. You talk to your mobile phone to control the lights, the fan, the air conditioner, or your pool pump. But how does it work? In this lesson, we explore the AI that could power a home automation system.	Natural language processing Artificial neural network
Years 5-6, 7-8	Anti-bullying AI	Sometimes we write and post things on social media in a hurry. Such posts can hurt people and even make them feel bullied. Wouldn't it be great if an Artificial Intelligence application could check our posts as we write them, and warn us if they were potentially hurtful?	Natural language processing Artificial neural network

Case study

Year level	Title	Description	Aspects of AI covered
Years 9-10	WHAT WOULD MY PREFERRED AI FUTURE LOOK LIKE?	Malyn Mawby, Head of Personalised Learning at Roseville College, explains how she implemented project-based learning (PBL) with her year 10 class to explore Artificial Intelligence (AI). Through the PBL task, students selected an area of interest and investigated what is possible, probable, and preferred.	Classification, Machine learning, Ethical understanding