Kopemon Machine Learning Activity

This is an unplugged activity to teach about artificial intelligence and Machine Learning to children. It is ideal for use in KS2 but could be used with younger children to introduce the idea of sorting according to criteria.

KEY TERMS:

Artificial intelligence (AI) describes a computer system that simulates human intelligence and can improve with experience.

Machine Learning (ML) is a type of artificial intelligence that learns by identifying patterns in data to be able to do a specific task e.g. recognise images

All images created by DALL-E at https://chatgpt.com/

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Instructions

1. Explain that each group is going to work like a Machine Learning model to learn how to identify what **type** a Kopemon belongs to (explain that each creature has a type, e.g. grass). They will be trained on data to identify the key features of each type.

2. Hand out the training data images to each group. Ask them to sort them into different types and discuss as a group what features could help them work out what type a creature belongs to (e.g. colour, shape of ears, style of tail etc.)

3. Now hand out the testing data images. Ask the groups to sort each Kopemon creature into a type, and write it on the card. If they're not sure, they should choose the one they think is most likely. Remind them that they are an AI model – they can only make decisions based on their training data.

4. Ask pupils to give you their answers and the reasons why. Review the answers below:

Kopemon	Type	Reason
Kopemon 1	Electric	Shape of ears, lightning
Kopemon 2	Fire	Colour, shape of tail - fire
Kopemon 3	Grass	Leaf tail, plant on head - green
Kopemon 4	Ice	Colour, shape of tail and fur
Kopemon 5	Water	Has fins

5. Ask pupils if they got them all correct. If not, why not? What was the problem with the training data?

- The data didn't include all of the types of Kopemon – *ice* was missing.

- There wasn't enough data provided, for example if they had seen more *water* type creatures, they would have known that they aren't always blue.

6. Review – an AI model is only as good as the data it is trained on. Poor data can lead to unreliable results, but also to bias - you could link with issues with facial recognition (see BBC Click report).

Kopemon Training Data

Name	Seastorm
Type	Water

Name	Tidefin
Type	Water

Name	Aquarune
Type	Water

Name	Petaleaf
Type	Grass

Name	Thornix
Type	Grass

Name	Mossaroo
Type	Grass

Kopemon Training Data

Name	Blazera
Type	Fire

Name	Pyreva
Type	Fire

Name	Flareox
Type	Fire

Name	Jolturex
Type	Electric

Name	Sparklet
Type	Electric

Name	Ignivolt
Type	Electric

Kopemon Testing Data

Name	*Kopemon 1*
Type	

Name	*Kopemon 2*
Type	

Name	*Kopemon 3*
Type	

Name	*Kopemon 4*
Type	

Name	*Kopemon 5*
Type	