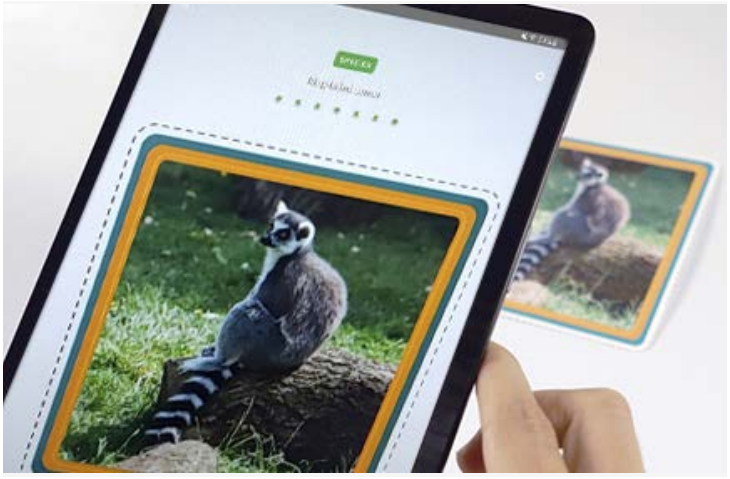


Artificial intelligence | Games

Learning about our environment using AI

55-60 minutes	9 - 12 years old	Difficulty intermediate

Description

Pupils, after being organised into groups, will search the class or school for the animal and plant cards that the teacher has previously hidden. Each time a group finds one of the cards, they will use the Seek app to identify its class and species, and then write it on the card. Once they have finished they will consider what other uses there could be for this type of technology.

Preparation

- Groups: small groups (3-5 people).
- Prepare the material needed for the activity.
- Charge the tablets before carrying out the activity.
- Install the *Seek* application on all the tablets from ***Google Play Store*** or ***App Store.***
- Have the document with the pictures already printed and cut out for each group, hide them around the class or school.
- Have the field notebook already printed onto paper.
- Important: the document with pictures must be printed in colour and in high quality for the Artificial Intelligence to work correctly.

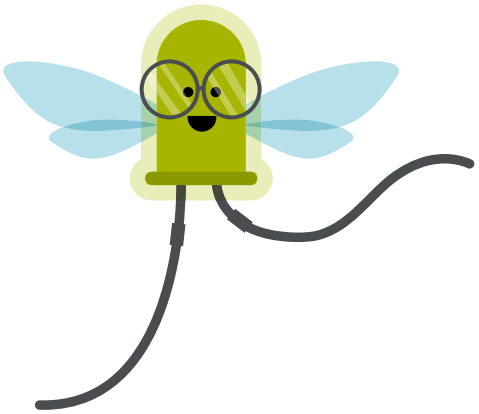
Materials

Pens	Stationery.
Tablets	Tablet Android or iOS.
Teacher download	Cards for different species of animals/ plants. One document per group.
Pupil download	Field notebook with photos of the animals and plants they have to find. One document per group.

Follow these steps

Introduction 10 minutes

Before starting the activity, the picture cards must be hidden somewhere in the class or school. Tell the pupils how an artificial intelligence identifies images.



Artificial intelligence goes through various steps to be able to recognise an image:

- **Detection:** take a picture for identification.
- **Extraction of characteristics:** it has a program that gathers information such as shape, distance between points (for example distance between the eyes, or from eyes to mouth etc.).
- **Comparison:** it checks this information with what it has in its database.
- **Decision-making:** identifies what it is analysing, selecting the most similar answer from the previous step.

Once they have understood how it works, inform the pupils that the next step is for them to become biologists. Tell them that they are going to explore and research fauna that have been hidden in the class or school by using an application that uses artificial intelligence to recognise pictures.

They must add the information they have found to their group's field notebook, just like biologists do.

Steps 40 minutes

Each group has to look for different hidden cards. For this task, they must follow these guidelines:

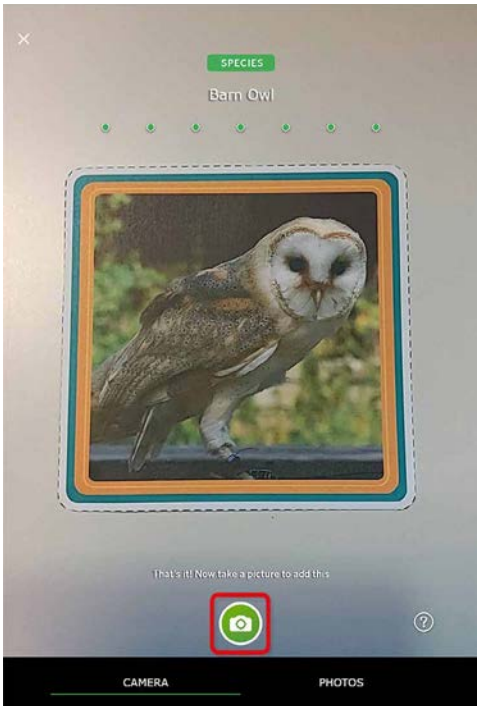
- Each group must work together, they cannot search separately.
- Once they have found a card, they can't move on until they have identified the animal or plant in the photo, and entered all the data to their field notebook. They will use the Seek app to carry out the identification.
- After identifying the species and class, the group keeps the card and doesn't hide it again.
- If they find a card with the same picture, they must leave it where it is for another group to find.

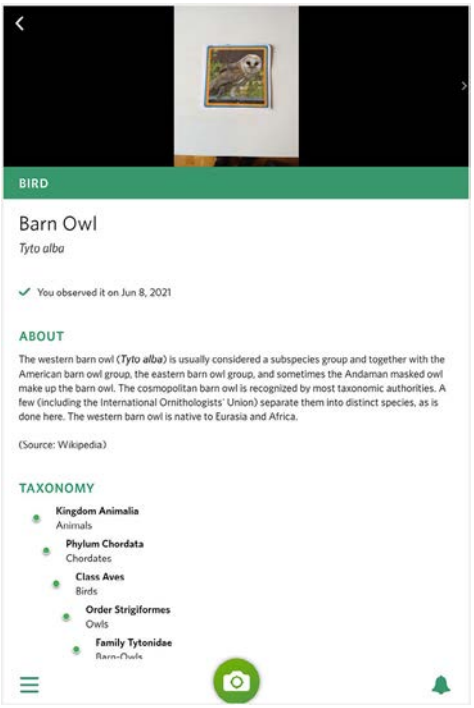
You should also give the pupils some guidelines for using the tablet:

- Keep the tablet screen about 40 cm away from their eyes so as not to strain them.
- Give the tablet to another classmate every 5 minutes, so that all participants get to use it at some point.
- Avoid moving through the class or school with the tablet raised, as it easy to bump into something, trip and/or fall while walking and watching the screen at the same time.

Explain how to use the *Seek* app:

- Once the app is open, press on the camera icon.
- Focus the camera until which class and species it belongs to appears.
- Press on the circular button to take a picture and show more information.



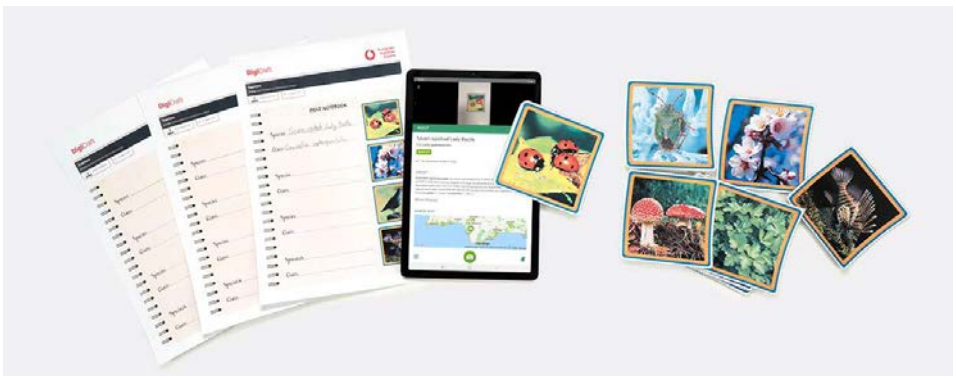


Artificial intelligence is very precise when trying to recognise elements in three dimensions, but with one dimension (such as a photo) it loses a lot of information and accuracy.

When analysing items, it is important to take photos from different angles to gather as much information as possible.

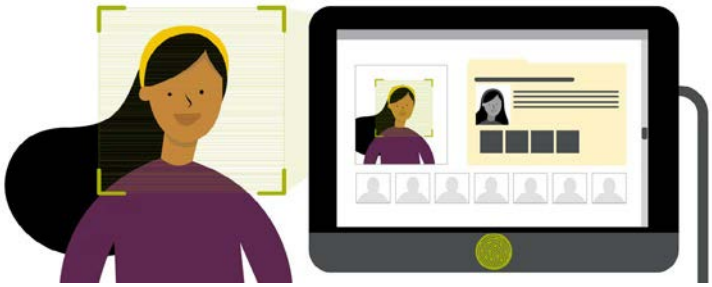
We give each group a field notebook and start the search.

For the last 5 minutes of this activity the groups discuss the information they have found. They check if any of the groups has missed anything, and if so the group with the information shares it explaining which class and species it belongs to.



Conclusion 10 minutes

To finish the activity, set up a brief discussion regarding which other applications they think may have this recognition technology and if they have used it without knowing. Also ask them what uses there could be for recognition by artificial intelligence.



In our day-to-day lives we use picture recognition technology frequently without realising it, for example:

- Facial recognition to block a device such as a mobile phone or tablet.
- Applications that superimpose a photo with other characteristics over our own face, such as adding cat ears or a moustache, or an image that shows what we may look like when we're older.
- Vehicle number plate recognition devices, when entering or leaving a car park for example.
- Labelling suggestions on social networks, which carries out facial recognition using your contacts.
- Applications that tell you who you look like.
- And more.

Objectives and competences

Objectives

- Demonstrate a systematic attitude in effectively organising information.
- Show an interest in using technology as a means to express personal opinions and for knowledge creation.
- Learn about health guidelines (ergonomics, vision, time etc.) for the correct use of technology.
- Be aware of the possibilities and limits of current technology in carrying out tasks and resolving problems.
- Be able to explore technological options to complete non-routine tasks.
- Learn about emerging digital technology that may be useful in carrying out personal, family and educational tasks.

Digital competences

Information and data literacy

- Browsing, searching and filtering data, information and digital content.

Digital content creation

- Developing digital content.

Safety

- Protecting health and well-being.

Problem solving

- Identifying needs and technological responses.
- Identifying digital competence gaps.

Other competences

- Ability to analyse and summarise.
- Ability to organise and plan.
- Oral and written communication.

- Ability to manage information.
- Problem solving.
- Decision-making.
- Teamwork.
- Interpersonal relationship skills.
- Awareness of environmental issues.
- Ability to negotiate.

Recommendations

- You can establish groups or allow the pupils to choose their team members.
- To minimise the number of photocopies, you could print only one copy and ask the pupils to hide the photos again once they have identified the species.
- If there is more time available or the pupils progress faster than expected, they can look for more information about the card they have found, such as habitat or eating habits (if its for an animal).
- If there is less time available, you can allow all team membes to search separately.