Activity: Once upon a time...

Instructions and tasks

In this activity, the students solve bandolinos on historical facts in the field of artificial intelligence.

The bandolinos are printed out, folded as marked and glued together. The bandolinos are then cut out; the holes for facts and questions can easily be made with a perforator. Use thick paper (200g) for printing or glue a thin cardboard between the front and back of the Bandolino to give the materials the necessary stability. Laminating is also possible. Then attach a string to the top of each Bandolino that is long enough to wrap around the entire Bandolino. To do this, punch a hole in the centre of the Bandolino at the top. Alternatively, all 4 sides can be combined into one Bandolino with a string.

The students work on the bandolinos either alone or in small groups. You can use the overview poster to present the information required to solve the problem in a compact format. It is advisable to print this out as large as possible. Alternatively, the more detailed information text can also be used as a source of information for solving. You can hang up the pages with the individual facts in different places in the classroom or in the school corridor so that the learners can go on an information walk (based on a cartoon walk from the language and humanities subjects), during which various discussion groups can be formed.

After the activity, individual events can be picked out and explored in more depth. They are also suitable for introducing technical requirements.

The task can be found on the overview poster. If the information texts are used directly, the following instructions can be printed out:

1748

Who first had the idea of building intelligent machines? Books on this topic can be found as early as 1748.
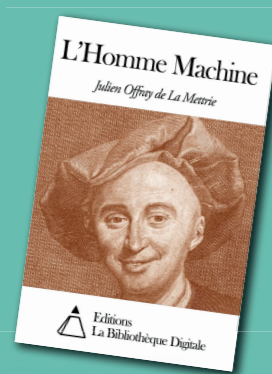
1941

Konrad Zuse develops the first functional digital computer, the ZUSE Z3. It achieves 2 arithmetic operations per second, measured as 2 FLOPS.

1950

Can a machine be comparable to a human being? To assess this, Alan Turing develops the Turing test.

1956

„Artificial Intelligence"

The term "artificial intelligence" was born at a research conference to find out how to make machines intelligent.

1976

Doctors use an AI system called MYCIN that helps them to diagnose blood diseases. To do this, it uses a large collection of medical data and rules.

ELIZA >

HI, I'M ELIZA.
WHAT DO YOU
WANT TO TALK ABOUT ?

For the first time, the chatbot Eliza manages to have meaningful dialogues with people in simulated therapy conversations.

1966

1981

The first PC from IBM comes onto the market and computers are now used more and more frequently in offices. The processor used achieves 50 kilo-FLOPS.

FLOPS:

Floating Point Operations Per Second, is the number of operations (e.g. adding or subtracting) that a computer can do in a second.

1992

A truck full of technology, but it's the first one to drive autonomously! However, it still doesn't work properly, so we still drive ourselves. For self-driving cars to become reality in the future, all the cars' systems and all the cars themselves have to be connected to each other.

2000-2008

Now computers really become part of every household. With 6 GigaFLOPS, the Pentium 4 processors are already pretty fast.

1997

The World Chess Champion is beaten by the AI system Deep Blue.

GARRY KASPAROV

2001

Facial recognition is possible in real time in videos for the first time. A lot has happened since then: Filters on Instagram adapt precisely to your face, a camera at the airport checks whether you look like your ID. This is possible thanks to very precise sensors and advanced cameras, whose data is then analysed by AI algorithms.

PROCESSING

2014

We all carry mini-computers in our trouser pockets in the form of mobile phones. The Samsung Galaxy S5 achieves 142 GigaFLOPS.
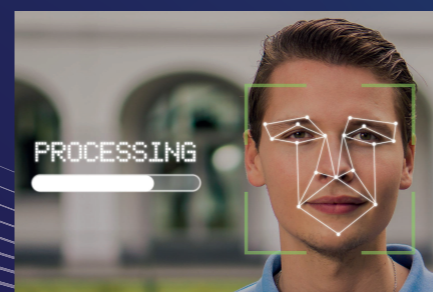
2016

The AlphaGo AI system learnt to play the board game Go by playing countless games against itself, before beating the European Champion. Such learning systems use new types of algorithms that enable the system to evaluate its own behaviour and decide how to act.
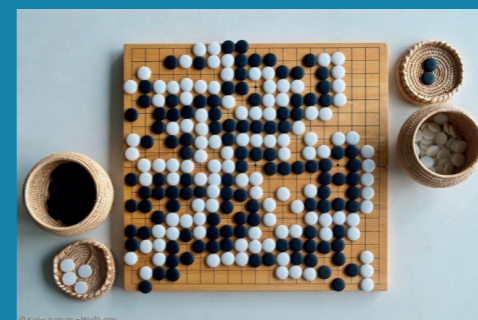
2017

Translating is now easier: the service DeepL, which generates translations with the help of AI algorithms, is published.

Welcome Alexa!

2015

2020

The Fugaku supercomputer has been set up in Japan. It can perform calculations at a rate of 442 petaFLOPS. Such computers are particularly suitable for handling big data, i.e. huge amounts of data. Very large storage capacities are required to store and analyse this data. These data collections are extremely useful for AI systems as they use data to learn specific behavioural patterns, such as recognising faces.
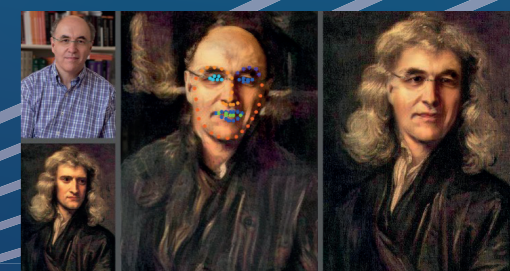
2018

Watch out for fake videos! The FakeApp uses AI methods to replace faces in videos. Super-fast special processors are needed to create such deepfakes - otherwise the video creation process takes too long.

How It Works

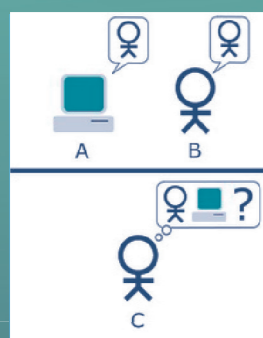CONNECT the correct elements with the coloured string!

Start at **START** and clamp the line when you have finished to the end.

You will find all the necessary information on the picture.

Check your solution on the back of each bandolino!

TIPP

MATCH
the historical event with the correct year:

START

The term **Artificial Intelligence** is beeing used for the first time.

1950

The AI-System **AlphaGo** beats the European Champion in the board game GO.

1997

The AI-System **Deep Blue** beats the World Champion in chess.

1956

Alan Turing develops the **Turing test**.

2015

Amazon releases the intelligent assistant **Alexa**.

END

2016

MATCH
the historical event with the correct year:

START

For the first time, a chatbot can have **meaningful conversations** with people.

2017

For the first time, people are writing about creating **intelligent** machines.

1992

The **DeepL** translation service has been launched on the market.

1976

The **MYCIN** computer system assists doctors in treating blood diseases.

1966

The **first autonomous car** drives on German roads.

END

1748

MATCH the computers with the correct number of possible floating point operations per second (FLOPS):

ZUSE Z3 [1941]
First functioning digital computer.

First PC from IBM [1981] with an INTEL-8088 processor.

First desktop PC [early 2000s] with a Pentium 4 processor.

Samsung Galaxy S5 [2014] Android Smartphone with Qualcomm Krait 400 processor.

Fugaku [2020] Supercomputer of the latest generation

142 GigaFLOPS

6 GigaFLOPS

442 PetaFLOPS

50 KiloFLOPS

2 FLOPS

END

MATCH the applications with their most important technical requirements!

START

Autonomous Driving

Deep Fake

Facial Recognition

Learning Systems

Big Data

New types of Algorithms

Integration of individual systems

Memory Capacity

Very precise Sensors

super-fast specialised processors

END