AI for Children

Artificial Intelligence Curriculum for Elementary and Secondary Schools

Card

Interpreting Data Using Chatbots

02 Data Deck

https://kurikulum.aidetem.cz/cards

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National Pedagogical Institute of the Czech Republic

We create methodologies in cooperation with the National Pedagogical Institute.

Form for comments

Teaching Material for the AI Curriculum for Elementary and Secondary Schools
Computer Science at Secondary Schools - Cards, Machine Learning Deck

Interpreting Data Using Chatbots

About the activity

Chatbots' ability to reason—or in other words, to "understand" certain problems—has improved dramatically in recent times, and this trend is likely to continue. That's why it makes sense to start exploring practical ways to take advantage of these developments. And that's exactly what this lesson is about. Just like in the previous activity (Big Data), we'll use Google Trends as a source of data, which we'll then interpret using different chatbots. We'll then critically evaluate and verify their output.

Lesson Overview

Recommended Age, Lesson Length
Children aged 14–19, 45 minutes.

Building Blocks
Data interpretation.

What Are the Students Learning?
Data can also be interpreted with the help of a chatbot.

Why Are They Learning This?
To develop critical thinking and the ability to analyze and interpret phenomena.

How Do We Know They Have Learned It?
Students interpret data from Google Trends using a chatbot.
They critically assess and verify the chatbot's interpretation.

Tools
Teacher: Projection device, presentation or visuals.
Students: Digital device per student or pair.

Digital Competence
Communication and Collaboration.

Bloom's Taxonomy
Understanding: Students compare and interpret graphical representations based on big data.
Analyzing: They analyze big data visualizations.
Evaluating: They critically assess machine-generated interpretations of data.

Five Big Ideas
3-A-II Nature of Learning (Finding patterns in data).

Data Deck

Big Data
Interpreting Data Using Chatbots

Note: In this lesson, students will use chatbots that require prior registration.

Lesson presentation in PDF

Editable presentation in Canva

Note 1: Gender equality is a key value for AI for Children, but to keep our teaching materials concise, we use masculine grammatical forms.

Engage

5 min

Let's talk.

Do you know the singer Taylor Swift? And if so, what do you know about her?
Taylor Swift is an American singer and songwriter, born on December 13, 1989, in Pennsylvania. She is one of the most successful and influential figures in today's music industry, widely recognized for her talent in writing songs often inspired by her personal life.
Taylor Swift started out in country music but gradually transitioned into pop. Her debut album, Taylor Swift, was released in 2006 and quickly gained popularity. Some of her best-known albums include Fearless, 1989, Reputation, Lover, Folklore, Evermore, and Midnights. She has won numerous music awards, including several Grammys, and her songs frequently top international charts.
Beyond her music career, Taylor Swift is also known for advocating for women's rights, LGBTQ+ rights, political engagement, and philanthropic causes.

Does the name Michael Jackson ring a bell? What do you know about him?
Michael Jackson (August 29, 1958 – June 25, 2009) was an American singer, songwriter, dancer, and music producer, often referred to as the "King of Pop." He is considered one of the most important and influential figures in the history of popular music. He was known for his distinctive voice, signature dance moves (including the iconic Moonwalk), and groundbreaking music videos.
Jackson began his music career as a child in the 1960s with The Jackson 5, performing alongside his brothers. His solo career, which took off in the 1970s and 1980s, propelled him to worldwide fame.
His 1982 album Thriller remains the best-selling album of all time and features hits like Billie Jean, Beat It, and Thriller. Jackson earned numerous music awards, including 13 Grammy Awards, and was inducted into the Rock and Roll Hall of Fame. His music and style have influenced generations of artists around the world.

Do you think what happens in our lives is reflected in online data?
Students will discover the answer during the lesson.

Understand

35 min

10 min

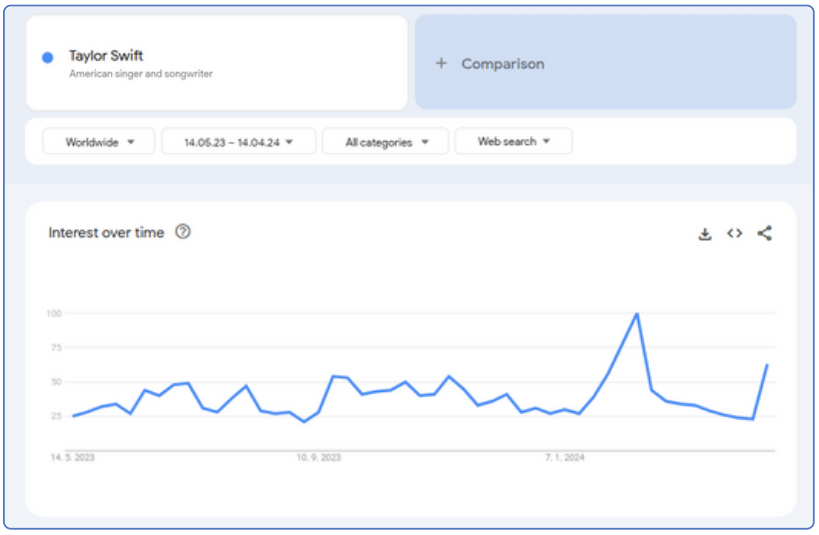
Student Example 01

Google Trends

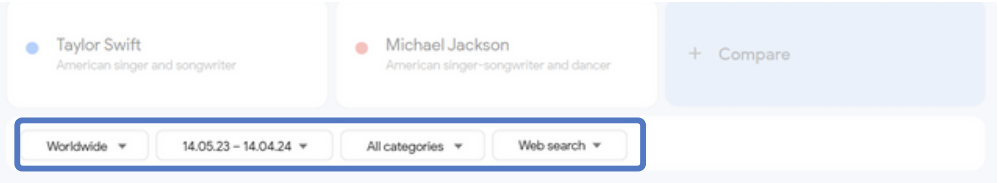
Presentation slide 02

Go to the Google Trends tool:
trends.google.com/trends/explore

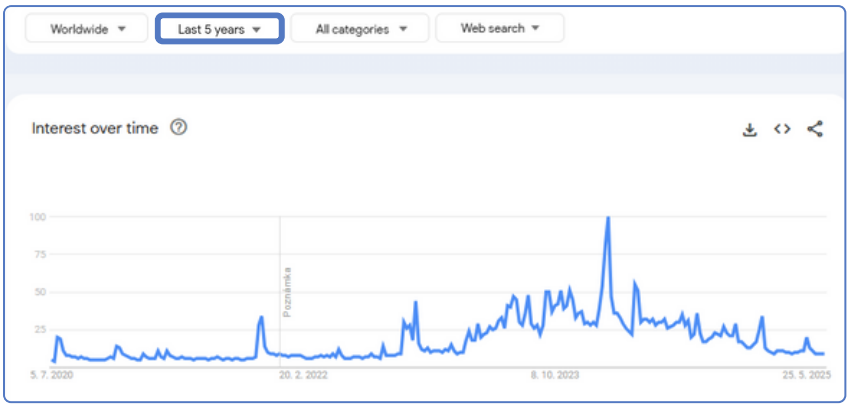
Enter the search term "Taylor Swift."
Search type: American singer and songwriter.



Show students how to navigate the Google Trends interface.
You can search by region, time range, category, or even by platform—such as web search or YouTube.



Display the search term "Taylor Swift" with a time range of the past five years.
In February 2024, the singer's name was searched frequently. Ask students if they know why that might have been.



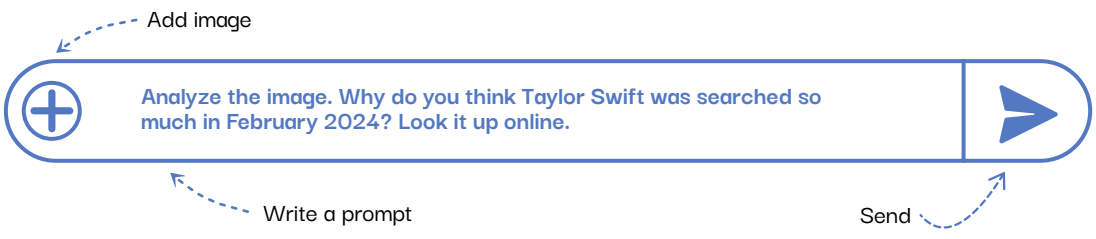
Presentation slide 03

Choose a chatbot.
Select one from the options provided. Students should be registered in advance, as mass registrations (not logins) from a single school IP address are often blocked.

Presentation slide 04

Use the selected chatbot to analyze graphs.
Show students how to analyze graph images from Google Trends.

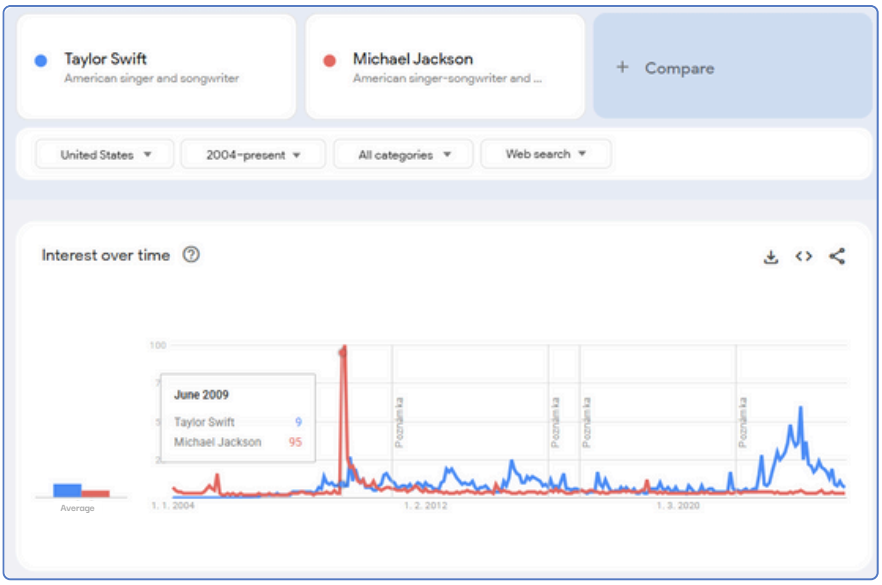
1. Take a screenshot in Google Trends and crop it to show only the graph.
2. Save the cropped image.
3. Go to the selected chatbot, upload the image, write a prompt, and send it.



Read the text generated by the chatbot together with the students and show them the presentation on slide 02.
Remind students that chatbots can sometimes "hallucinate"—in other words, make things up. When working with chatbots, it's essential to follow the steps outlined in the presentation on slide 02. Critically review the chatbot's output with the students and verify the information together using the internet.

Student Example 02

Make a comparison.
Show students how to compare multiple search terms in Google Trends. Have them compare "Taylor Swift" and "Michael Jackson." Set the time range to "2004–present."



5 min

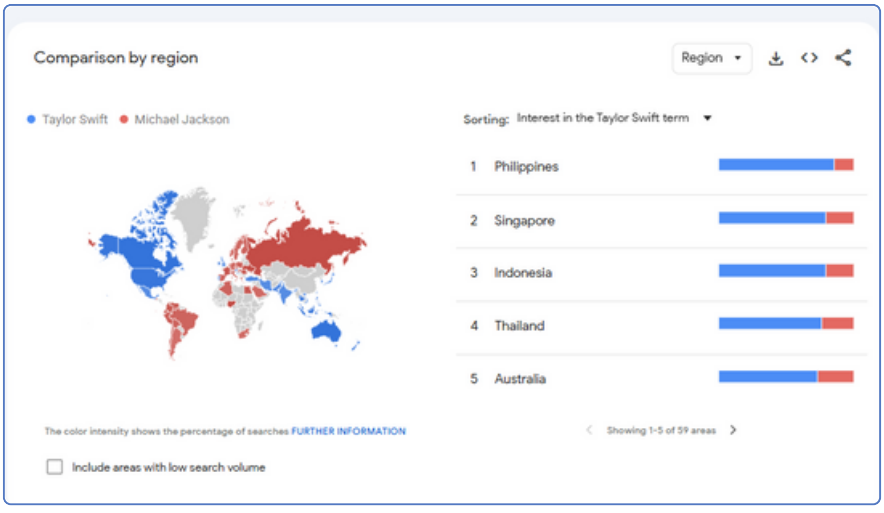
Activity 01

Students investigate why the search term "Michael Jackson" was so popular in June 2009.
Michael Jackson passed away during this period. Compare with students the relative search interest for Michael Jackson in June 2009 versus Taylor Swift in February 2024. Explain that we don't know the exact number of searches made by users, but we can see how the interest levels compare to each other.

Compare the students' findings with the chatbot's interpretation of the graph.

Student Example 03

You can also show students additional display options.
Below the "Interest over time" graph in Google Trends, you'll find a comparison by region.



20 min

Activity 02

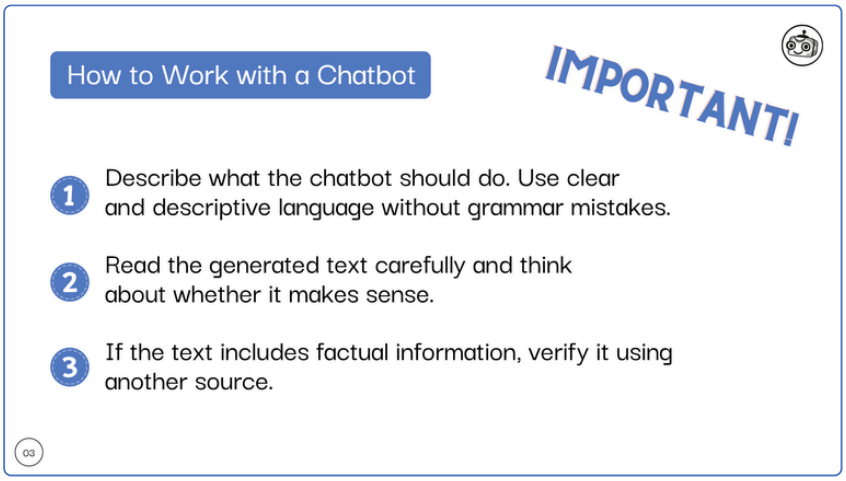
Students open the Google Trends web app (see slide 03 of the presentation).
The app works on all devices–mobile phones, tablets, and computers.

They then choose a chatbot (see slide 04).
Students can work in groups or individually. It's recommended that they use different chatbots so their results can be compared.

Students carry out their own comparison based on topics they choose (see slide 05).
Encourage them to think about what kinds of topics might be interesting to compare using Google Trends. They can jot down their ideas on paper or brainstorm with a chatbot. Once they've chosen a topic, they try a comparison in Google Trends and, if the result is interesting, they interpret it with the help of the chatbot.

If you have extra time
Ask students to document their findings–for example, by making a short presentation with a screenshot of the graph and the chatbot's interpretation.

Important! If students are working independently, keep slide 02 visible and quickly review the correct steps for using a chatbot.



Students present their interesting findings.

Reflect

5 min

Discuss & evaluate

Today we used a chatbot to interpret graphs showing how often certain search terms appear in Google. Did you find the chatbot interpretations accurate or useful? Were you surprised by anything?

Compare how well different chatbots interpreted the data.

What interesting things did we learn about the world today?

What other kinds of interpretations could we use chatbots for in the future?