AI for Children

Artificial Intelligence Curriculum for Elementary and Secondary Schools

Creating AI assistants

School Hackathon

https://kurikulum.aidetem.cz/en

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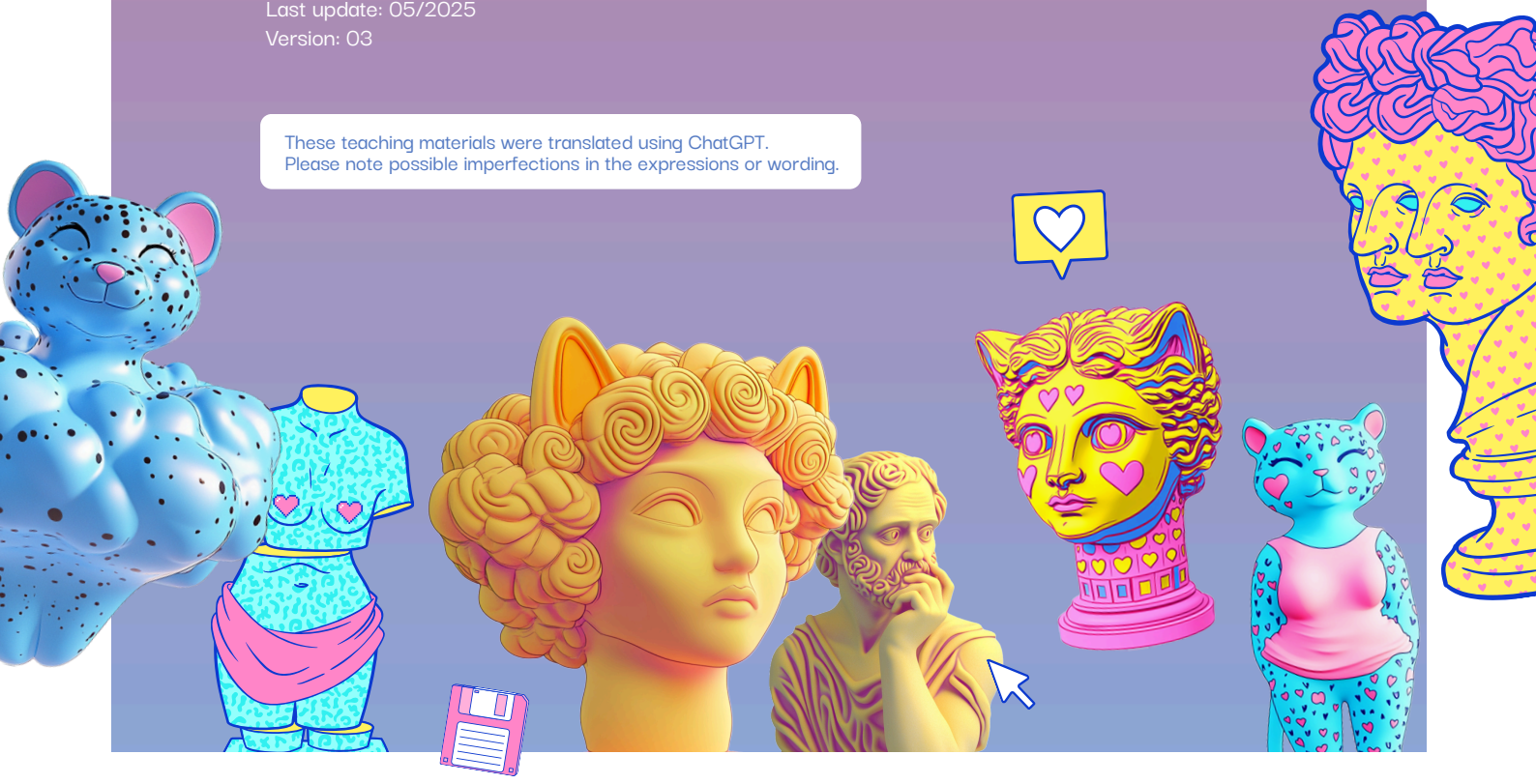
Please note possible imperfections in the expressions or wording.



Creating AI Assistants – School Hackathon

A few words to begin

Dear Teacher,
You are receiving a teacher material developed to support the teaching of artificial intelligence at the elementary and secondary school levels. This guide will walk you through how to organize a hackathon, an event where you and your students create AI assistants together. These assistants can help students with their learning, and they can also support you with lesson planning or school administration. The goal of the hackathon is to teach students how to build useful AI assistants – a skill they will no doubt benefit from in the future. Thank you for your courage and commitment to bringing AI into your school. We wish you every success!

– AI for Children team

⚠ ChatGPT Paid License

To carry out this hackathon, a paid ChatGPT subscription is required. On the Chatbots in School website, you'll find information about pricing, registration, age restrictions (students under 13 are not allowed to use ChatGPT), and much more.

⚠ Chatbots in Education Worksheets

Before the hackathon, we recommend doing the Chatbots in the Classroom worksheet activity with your students. It will help them grasp the basics of working with chatbots and learn how to write effective prompts.

Lesson presentation in PDF

Editable presentation in Canva

Lesson Overview

Recommended Age, Lesson Length
Children aged 13–15. Ideally, students should complete the Chatbots in the Classroom worksheet activity beforehand. Time allocation 4× 45 minutes. The activity can also be divided into two 90-minute blocks.

Building Blocks
AI assistents.

What Are the Students Learning?
AI assistants help with specific tasks they were designed for and can be valuable tools in the learning process.

Why Are They Learning This?
Students explore methods and strategies for effective and meaningful learning.

How Do We Know They Have Learned It?
They design, test, and refine their own AI assistant.

Tools
Teacher: Projection equipment, presentation, whiteboard and flipchart.
Students: Paid ChatGPT subscription, one device per group, writing tools, post-it notes, and a worksheet.

Digital Competence
Professional Engagement.

Bloom's Taxonomy
Understanding: Students understand the difference between a regular conversation with a chatbot and working with a purpose-built AI assistant.
Evaluating: Students evaluate how well their AI assistant performs.
Creating: Students design and build their own AI assistant.

Five Big Ideas
AI for Social Good (Democratization of AI Technology).

Note: Gender equality is key for AI for children, but for brevity we use masculine formulations in our methodologies.

Glossary of terms

Artificial Intelligence (AI)
There is no single, universally accepted definition of artificial intelligence. However, all definitions agree that AI refers to systems designed to simulate human thinking and actions.
Artificial intelligence typically takes the form of a computer program and is used to solve problems that once required significant human intelligence – tasks that were considered uniquely human.
Besides being a technology, AI is also a scientific field that emerged in the first half of the 20th century.
It focuses not only on understanding intelligent systems but, more importantly, on building them.

Machine Learning (ML)
Just as humans can learn from examples and experience, machines created by humans can do the same.
The method they use is called machine learning, which allows AI systems to go beyond following pre-programmed instructions and instead come up with new solutions on their own.
The main goal of machine learning is to identify patterns in large amounts of data. Machine learning is a subfield of artificial intelligence.

Chatbot
A chatbot is a computer program designed to automatically hold a conversation with a user.
It uses artificial intelligence or predefined rules to answer questions, provide information, or perform various tasks – such as booking a hotel or ordering food. Chatbots can be found in apps, on websites, or in messaging platforms.

Generative Artificial Intelligence (GAI)
Generative AI is a type of artificial intelligence designed to create new content – such as text, images, music, or videos – based on the data it was trained on.
Unlike traditional AI systems that focus on analyzing or classifying information, generative AI uses algorithms (like neural networks) to "learn" the structure and style of existing data in order to generate new, original content.
This content is often so convincing that it can be difficult to distinguish from that created by humans.

Large Language Model (LLM)
A large language model, such as GPT-4o, is a sophisticated computer program designed to analyze and generate text. It can be used for tasks like machine translation, speech recognition, answering questions, or even composing literary works.
These models are trained on massive datasets – known as corpora – which often include data from sources like the internet (e.g., Common Crawl), digitized books, or Wikipedia.
There are only a few such models in the world due to their immense hardware requirements, and they are developed exclusively by major tech companies.
Currently, the most well-known LLMs include GPT (by OpenAI), Claude (by Anthropic), Gemini (by Google), Llama (by Meta), and LaMDA (by DeepMind).

What Is a Hackathon?
A hackathon is an event where teams collaborate to solve specific challenges.
The word hackathon combines hack and marathon.
But don't worry – you don't need to be a hacker.
The aim is to create something new that makes life easier or improves a specific area – in our case, education.
In this school hackathon, students will design and configure AI assistants to improve how we learn, communicate, and work with information.

Preparation for teachers

What are AI assistants and how are they different from regular chatbots?

A regular conversation with a chatbot usually works like this: the user types a prompt – a question or command – and the chatbot responds. The interaction is often short and focused on getting quick answers or information.

In contrast, AI assistants (also called GPTs) are designed for specific, often repeated tasks. They can be set up to act as experts in a particular field, such as education, tutoring, or working with spreadsheets. AI assistants have a deeper context and can tailor their responses more precisely to your needs. This is thanks to a system prompt and additional data you provide when creating the assistant.

How to create AI assistants

We've prepared two short videos showing how we created assistants in ChatGPT.
You can start by creating an AI assistant directly in ChatGPT. Simply describe your idea, and the app will guide you through the process – asking follow-up questions and generating a system prompt, avatar, and more. After that, you can switch to the Configuration window to fine-tune your assistant according to your needs. We recommend creating a trial assistant before the hackathon to get familiar with the process.

Name
An assistant must always have a name. It should describe what it is used for.

Description
A short and clear description helps users understand what the assistant is for. It shows up in the chat window when they start a conversation.

Instructions
This is the system prompt – a short text that tells the assistant who it is and what it should do.
You can structure it like this:
1) What is the assistant supposed to do?
2) Who is it helping?
3) What kind of tasks or problems should it solve?
4) How should it communicate?

Conversation starters
These are example questions shown to users in the chat window to help them get started.
Choose ones that could interest most users – or leave this section empty.

Knowledge
You can upload files the assistant should use. Supported formats include:
*.csv, *.pptx, *.pdf, .doc, .txt and others.
You can upload up to 20 files. Plain text (.txt) usually works best.

Additional options
You can turn on features like web browsing, image generation, or code and data analysis.
These allow the assistant to work with uploaded files, do calculations, or look things up online.

Creating a system Prompt

Goals, target users and communication style.

Every AI assistant is built for a specific purpose. It's important to clearly define that purpose in the system prompt:
+ what is the assistant supposed to do,
+ what problems or tasks should it help with,
+ who is it meant to support,
+ how should it communicate.

Example of a system prompt section:

This AI assistant is designed to help students aged 13+ practice math. Its main goal is to support students in reviewing and consolidating math skills, provide understandable explanations of math concepts, and improve their ability to solve problems independently.

Problems and tasks that the assistant should solve:
Help explain more complex mathematical concepts and procedures (e.g., algebra, equations, geometry, percentages). Provide students with practical problems to practice. Offer tips on solving mathematical problems strategically. Provide immediate feedback on the correctness of calculations and suggest ways to improve. Motivate students to improve their skills and encourage them to solve problems independently.

Method of communication and dialogue:
The assistant should communicate in a friendly, patient, and encouraging manner, keeping in mind their level of math. He/she should explain mathematical concepts simply and step-by-step. The dialogue should be interactive, adapting to the pace and level of the student. He/she should ask questions that stimulate thinking and help students discover the right answers, not just provide them.
When explaining, he should use examples and visualizations where appropriate.

Dialogue structure

The AI assistant should follow a clear and consistent dialogue flow. This sequence needs to be described in the system prompt so the assistant knows how to lead the conversation.

Example of a system prompt section:

The assistant will always follow this dialogue structure/sequence:
1) Greet the student and wish them a nice day. Ask for their name and use it throughout the conversation.
2) Wait for the student to reply.
3) Briefly explain that the assistant is here to help with understanding more complex math concepts and methods (e.g. algebra, equations, geometry, percentages).
4) Let the student know they can ask a question, upload a photo with a math problem, or get help checking their solution.
5) Ask how you can help them today.

We've already created this AI assistant based on the system prompt so you can try it out right away.

Try the assistant

What kind of data can be uploaded to an AI assistant

To provide better context, you can upload various files into the AI assistant, which it will then use as a source of information.

Keep in mind the following important points:
+ only upload data that is not protected by copyright restrictions prohibiting such use,
+ make sure the data does not contain any personal information.

You can upload files in various formats, such as spreadsheets (.csv...), presentations (.pptx...), text files (*.doc, *.pdf, *.txt...), and more. For detailed information, see page 03 of this guide, section Knowledge.

Examples of suitable files include: sample tests, school regulations, school curricula, freely available textbooks, vocabulary lists, sample math problems, and similar resources.

Testing the AI assistant

Creating an assistant is an iterative process.

At each step, make sure to verify whether the assistant is meeting your expectations (use the test window on the right):
1) Does it respond correctly to the assigned tasks?
2) Are its answers accurate and easy to understand?
3) Does it follow the intended sequence of steps?

If something isn't working, revise the prompt and test it again. It's also a good idea to let other people test the assistant (ideally children), as they may think and interact with it in different ways.

Publishing your assistant

You can create an AI assistant just for yourself, or make it available to others.

There are several publishing options:
+ private – only you can use it,
+ anyone with the link – anyone who has the link can access and use the assistant,
+ public in the GPT Store – your assistant will be publicly listed in the GPT Store.

Anyone using your AI assistant will be using their own tokens. This means that if you make it public, you won't be charged for other people's usage. Even users with the free version of ChatGPT can access and use your assistant.

A note of caution

Chatbots–including AI assistants–don't perform equally well across all subjects or domains. For example, they may struggle more with mathematics or specific grammar rules in less widely used languages. In contrast, they tend to handle English grammar with greater accuracy. That's why it's important to thoroughly test your chatbot and evaluate whether it's truly accurate and ready to be helpful. That said, their performance is improving every day, so it's worth staying engaged and actively looking for ways to use them in a positive and meaningful way.

Hackathon progress

01 Introduction

5 min

Presentation slide 02

Ask your students the following questions:

Do you know what an AI assistant is and what it's used for?
AI assistants are digital tools designed to help with specific tasks that are often repeated. For example, they can support learning in a particular subject or help organise and work with spreadsheets. Because they have more background information, they can adjust their answers better to fit your needs.

Presentation slide 03

How is it different from a regular chatbot conversation?
A typical chatbot conversation works like this: the user types a message or question (called a prompt), and the chatbot replies. This kind of interaction is usually one-off and focused on getting quick answers or basic information. The chatbot doesn't remember anything beyond the current conversation.
In contrast, AI assistants (also known as GPTs) are designed for more specific and repeated tasks. They draw on a broader context–such as a built-in system prompt or uploaded files–to deliver more accurate and relevant responses over time.

02 Ideation (Brainstorming)

10 min

Presentation slide 04

Students form groups of 3-4 (5 minutes).
Each group chooses a name and receives a set of sticky notes. The task for each student is to write down 5 ideas–one idea per sticky note–about how AI assistants could be helpful. Make it clear that every idea is welcome. Students don't need to overthink or worry about whether something is realistic or doable. You don't need to suggest possible answers in advance–let them come up with their own ideas. Encourage them to think about situations where someone might need help at school. It could be themselves, a classmate, a friend, or even a teacher. Ask them to imagine an AI assistant designed to help one specific person. The short time limit is intentional, so they stay focused and don't go too deep. The goal is that each student comes up with 5 ideas in 5 minutes. You can keep track of time and call out the passing minutes if that helps.

Students group sticky notes on the board (5 minutes).
After the brainstorming time is up, invite students to place their sticky notes on the board. Group similar ideas close together. This will help create clusters that clearly show which ideas were most common among students.

02 Instructions for creating AI assistants

20 min

Presentation slide 05

Play the video that shows students how an AI assistant is created in ChatGPT.
On the page you will find two short demos: x
You can also project the environment where AI assistants are created on the board and walk through it together.

After watching the video, students may come up with new ideas for how AI assistants could be useful—things they didn't think of during the first round of brainstorming. They can write these additional ideas on sticky notes and add them to the board.

Here are some examples of how AI assistants could be used—you can share these with students if they need extra inspiration:

Personalised tutoring: The assistant adapts to each student—helping where they're stuck and following their individual pace.
Examples: An assistant for practising algebra, or a preparation tool for entrance exams with tasks similar to national tests.

Language support: AI can help with learning foreign languages, correcting grammar, explaining how to use words and phrases correctly, and practising conversations.
Examples: An English essay corrector or a Spanish conversation partner.

Quick task correction: Assistants can help students—or even teachers—by checking tests or homework quickly and efficiently.
Examples: A history quiz reviewer, or a tool for checking dictations and grammar exercises.

Writing support: When writing essays or other texts, AI can suggest structure, offer wording tips, or help fix mistakes.
Examples: An outline generator for writing assignments, or a style and grammar checker.

Interactive practice: AI can create customised questions and tasks based on what the student needs to revise or learn.
Examples: A history quiz generator, or a vocabulary trainer.

Quick information lookup: When a student doesn't understand something, AI can explain it right away or help find the information they need.
Examples: A concept explainer, or a research helper for school projects.

Virtual experiments: AI can offer simulations that let students explore science—for example, by running virtual chemistry experiments and seeing the results.
Examples: A chemistry reaction simulator, or a virtual lab for physics experiments.

Learning feedback: An assistant can track a student's progress and suggest what to improve, where they're still struggling, and what they've already mastered.
Examples: A tool for tracking maths progress, or a vocabulary improvement monitor.

Time management: AI can help students and teachers organise their time—setting reminders for homework or tests, and helping break down bigger tasks.
Examples: A project planner or a task manager that helps set priorities.

03 Creating AI assistants

60 min

Presentation slide 06

Students will work in groups to choose an AI assistant to work on.
Students choose one AI assistant to develop within their group. Each group works on a single assistant. Write down the names of the teams along with the names of their assistants on a flipchart.

04 Testing AI assistants

40 min

Presentation slide 07–09

Students publish their assistants and agree on how to divide the testing.
Each team must test an AI assistant created by another team. Assistants are shared using the "link only" option (it's too early to make them public), and teams exchange links with each other. Students test the assistants and fill in the worksheet.

05 Revising assistants based on feedback

30 min

Teams briefly share verbal feedback on the assistant they tested and hand over the completed worksheet to the team that created the assistant.
. Each team then revises their assistant based on the feedback and tests whether the assistant's performance has improved. Teams reflect on the following questions:

+ Does the assistant meet the goal you originally set?
+ How could it be improved further for future use?

06 Final reflection and wrap-up

15 min

Discuss with students and evaluate what they learned during the hackathon.
Ask questions such as:
+ What were the biggest challenges you had to overcome?
+ What surprised you?
+ What would you do differently at the next hackathon?
+ How would you improve the assistant if you had more time?
+ Which AI assistant do you find the most useful, and why?
+ Can you imagine using an AI assistant in real life?
+ What AI assistant would you create next, who should it serve, and what would it be for?

We are testing an AI assistant!

Name of the testing team

Team and name of the tested AI assistant

Tested assistant rating – tick ☑ either or ☒

- ☐ The assistant gives relevant answers
- ☐ Speaks clearly and understandably
- ☐ Is helpful for the target group
- ☐ Provides correct information
- ☐ Fits the user's level
- ☐ Creates useful content

Rate the AI assistant on a scale

Needs improvement ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Works great!

What worked well with the assistant

Suggestions for improvement