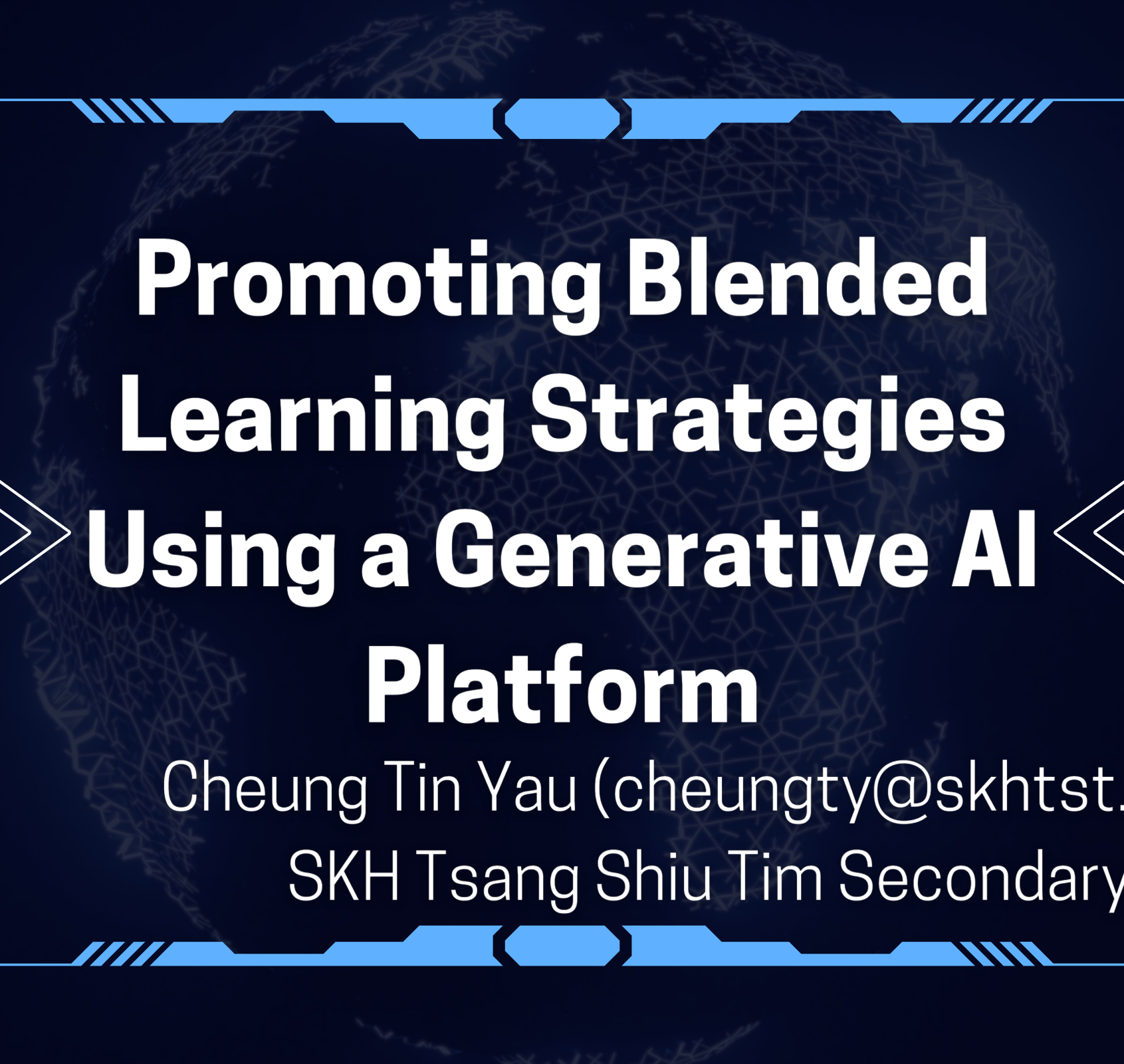
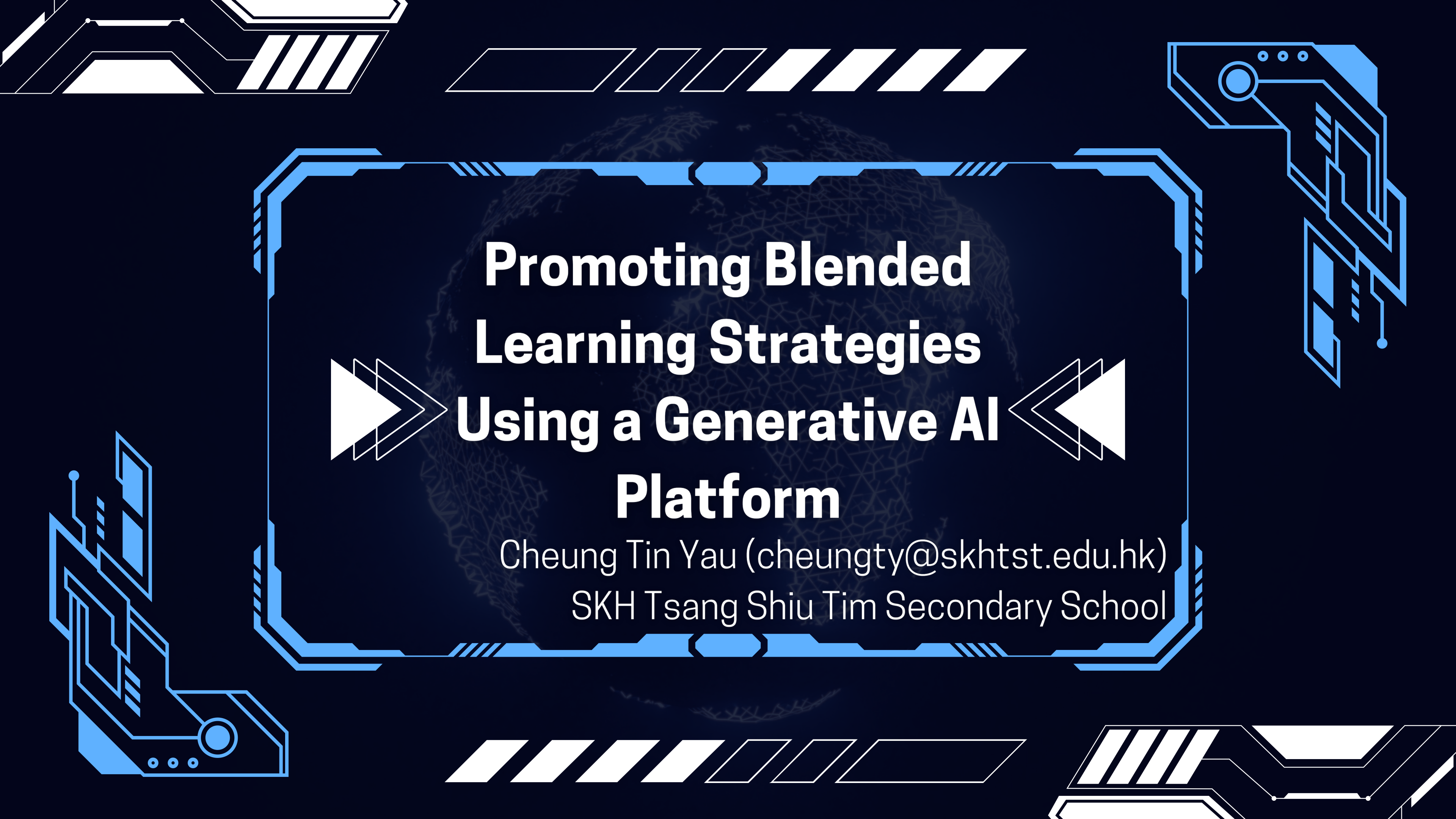




# **Promoting Blended Learning Strategies Using a Generative AI Platform**

Cheung Tin Yau ([cheungty@skhtst.edu.hk](mailto:cheungty@skhtst.edu.hk))  
SKH Tsang Shiu Tim Secondary School



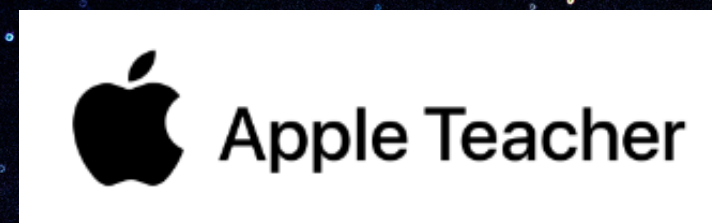
**Promoting Blended  
Learning Strategies  
Using ~~a~~ Generative AI  
~~Platform~~ Platforms**

Cheung Tin Yau (cheungty@skhtst.edu.hk)  
SKH Tsang Shiu Tim Secondary School



# About Me

- Head of Technology Enhanced Learning Team
- Director of STEM & Innovation Centre
- Mathematics, M2, ICT Teacher
- Apple Teacher
- Google Certified Educator
- Edpuzzle Coach
- Quizizz Game Changer







# Our School



- Established in 1978
- Sha Tin District
- EMI, Co-educational
- Strive to foster students' all-round development
- Nurture students into future leaders with a global perspective
- Students have excellent learning attitudes and brilliant academic achievements

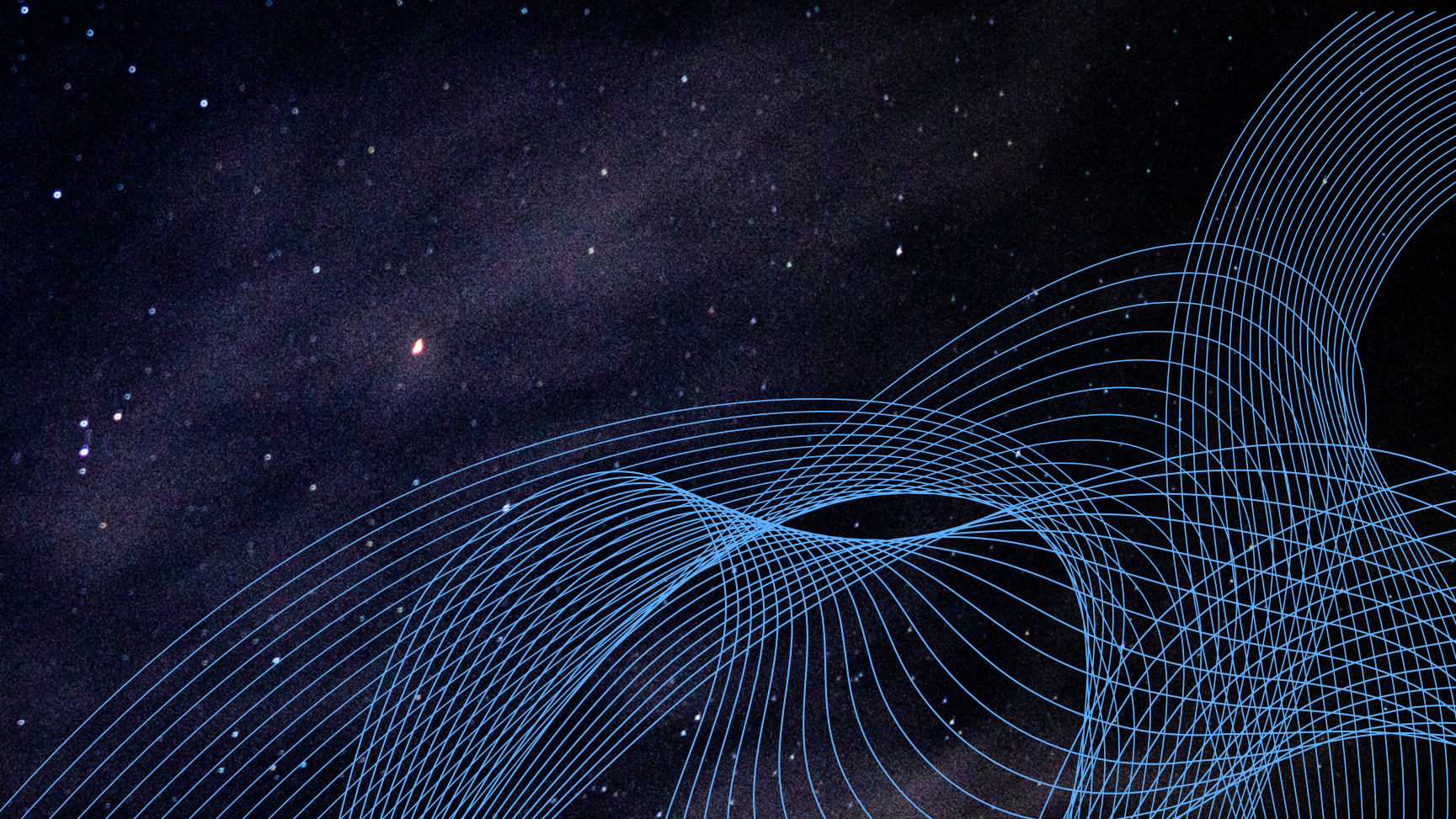


# Current Situation





# Overview



01

**Blended learning**

02

**Generative AI**

03

**Platforms**



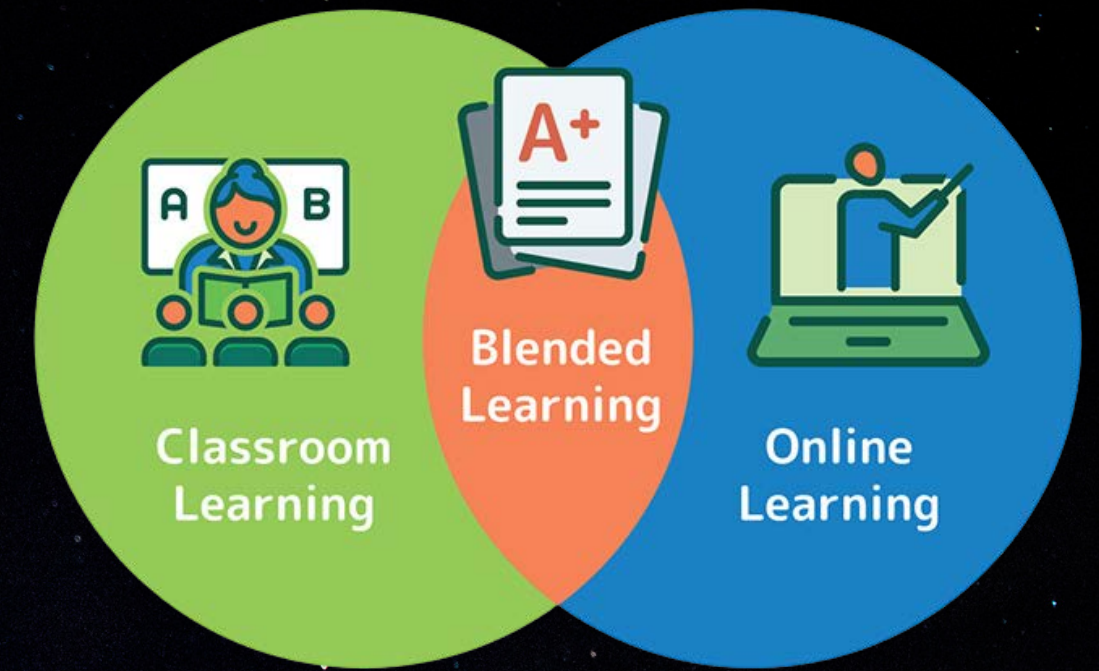
The image features a dark blue background with a starry space pattern. A large, stylized blue frame with a jagged, circuit-like border surrounds the central text. In the top-left and bottom-right corners of the frame, there are white double-lined arrowheads pointing towards the center. The background is decorated with abstract blue line art: swirling patterns in the top-left and bottom-right, and geometric, circuit-like structures in the top-right and bottom-left.

# Blended Learning



# Blended learning

- **Combining instructional modalities**
- **Combining instructional methods**
- **Combining face-to-face and online learning**

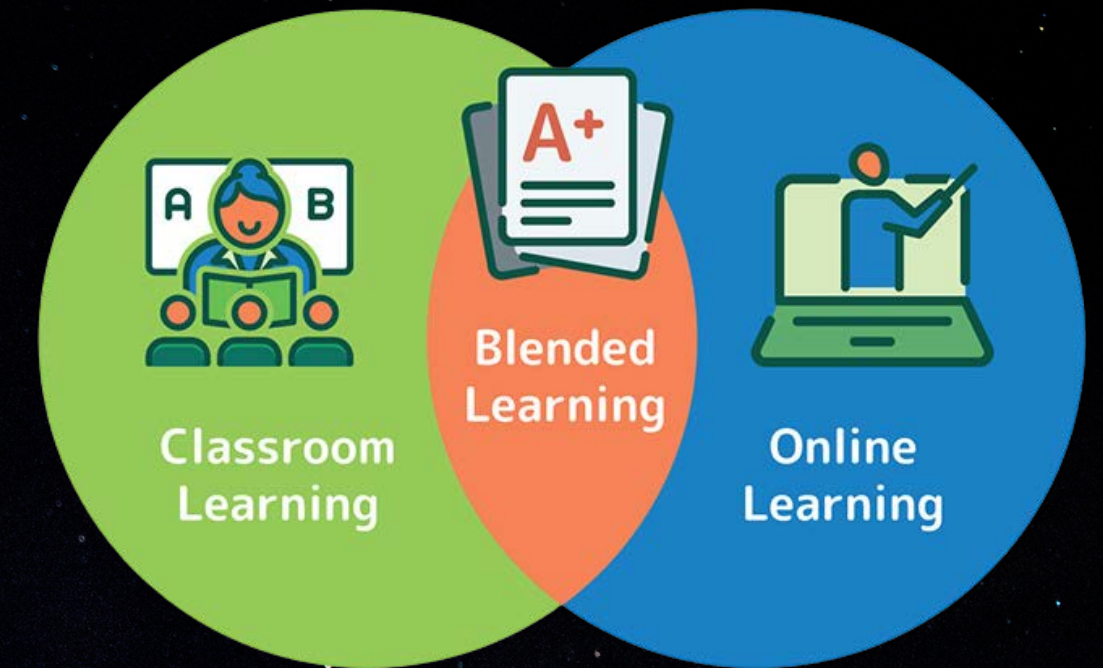


Reference: Graham, C. R. (2006). Blended learning systems. The handbook of blended learning: Global perspectives, local designs, 1, 3-21.



# Blended learning

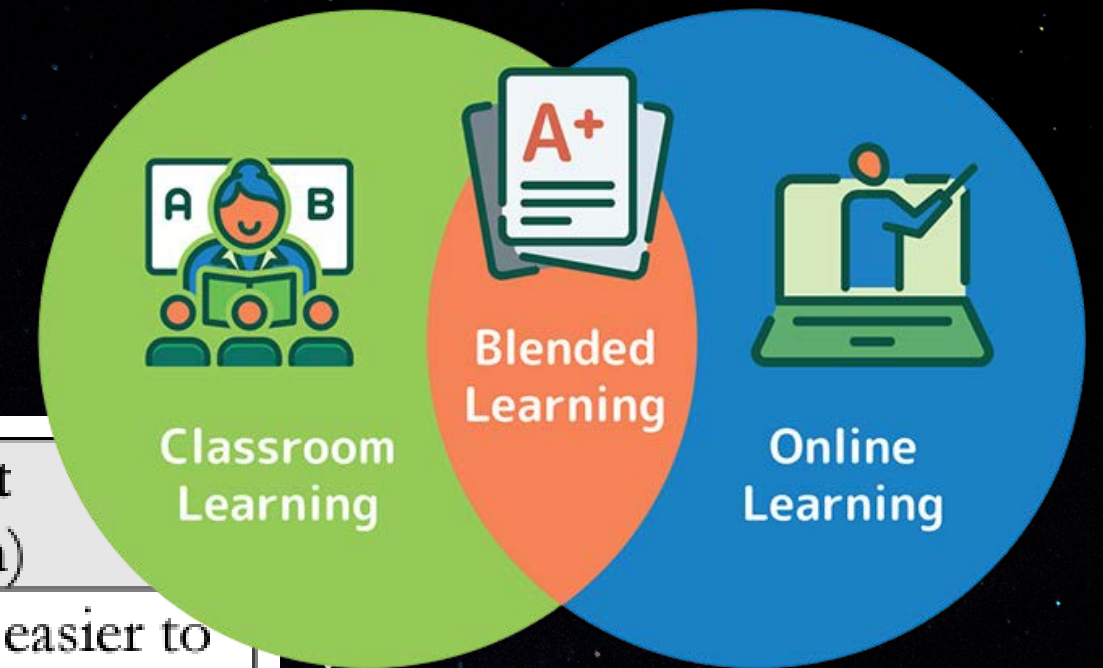
- Improved Pedagogy
- Increased access/flexibility
- Increased Cost Effectiveness



Reference: Graham, C. R. (2006). Blended learning systems. The handbook of blended learning: Global perspectives, local designs, 1, 3-21.



# Blended learning



|                  | Computer-mediated environment<br>(Asynchronous text-based discussion)                                                                                                                                                                                                                                                                                                                                                                                            | F2F environment<br>(In-class discussion)                                                                                                                                                                                                                                                      |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strengths</b> | <p><b>Flexibility:</b> Students can contribute to the discussion at the time and place that is most convenient to them.</p> <p><b>Participation:</b> 100% students can participate because time and place constraints are removed.</p> <p><b>Depth of Reflection:</b> Learners have time to more carefully consider and provide evidence for their claims and provide deeper more thoughtful reflections. (Mikulecky, 1998; Benbunan-Fich &amp; Hiltz, 1999)</p> | <p><b>Human Connection:</b> it is easier to bond and develop a social presence in a F2F environment. This makes it easier to develop trust etc.</p> <p><b>Spontaneity:</b> Allows for the generation of rapid chains of associated ideas and serendipitous discoveries (Mikulecky, 1998).</p> |

Reference: Graham, C. R. (2006). Blended learning systems. The handbook of blended learning: Global perspectives, local designs, 1, 3-21.

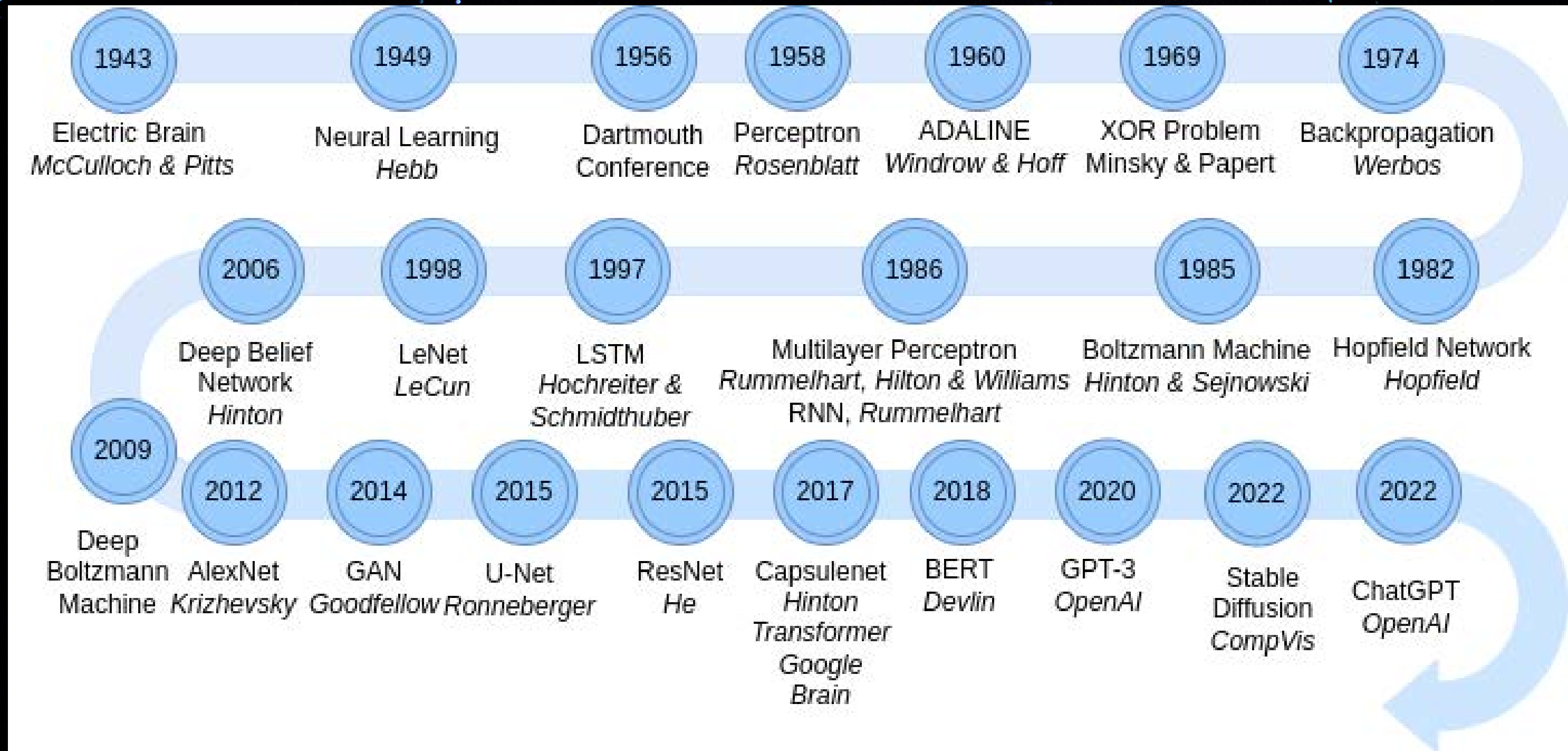




# Generative AI

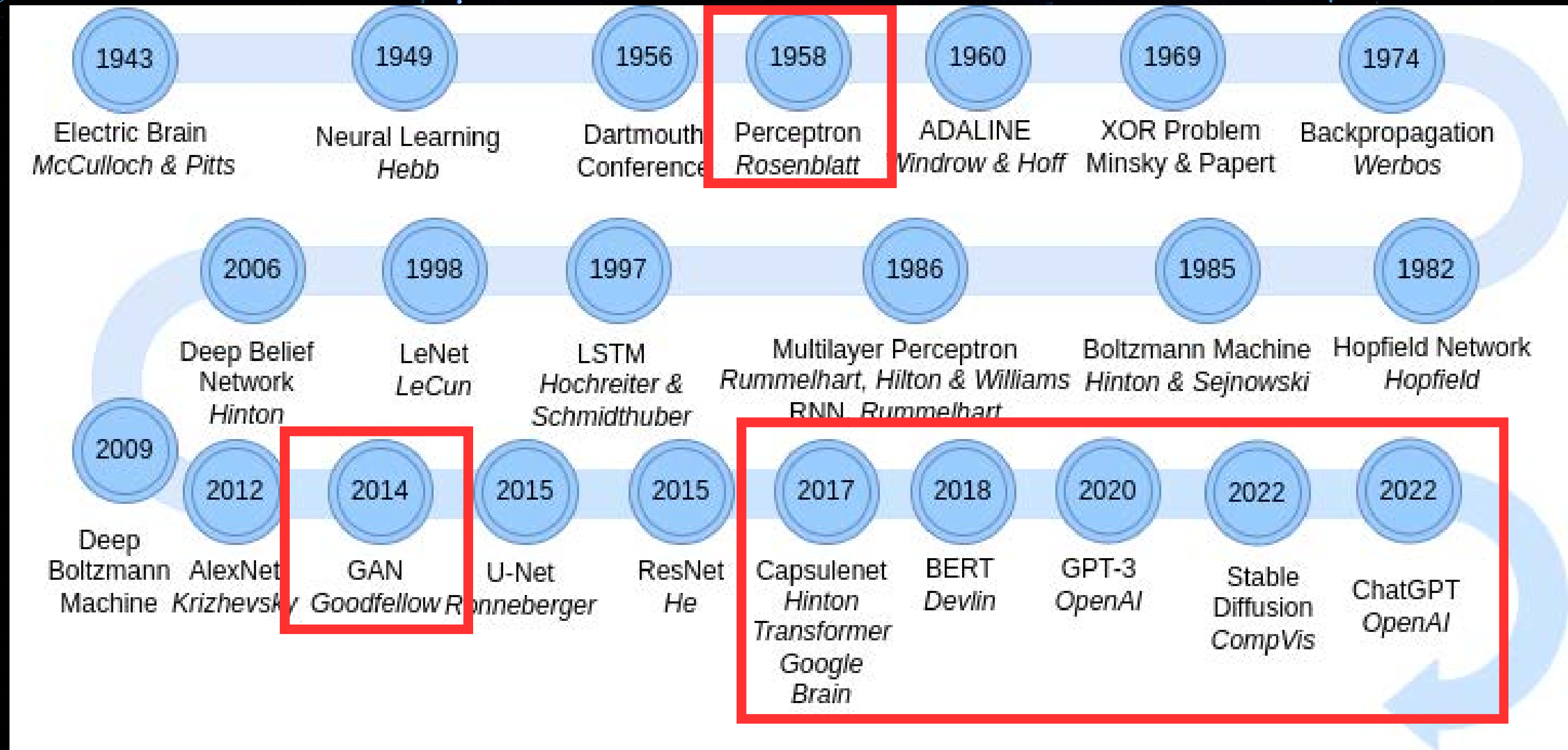


# Roadmap of Generative AI



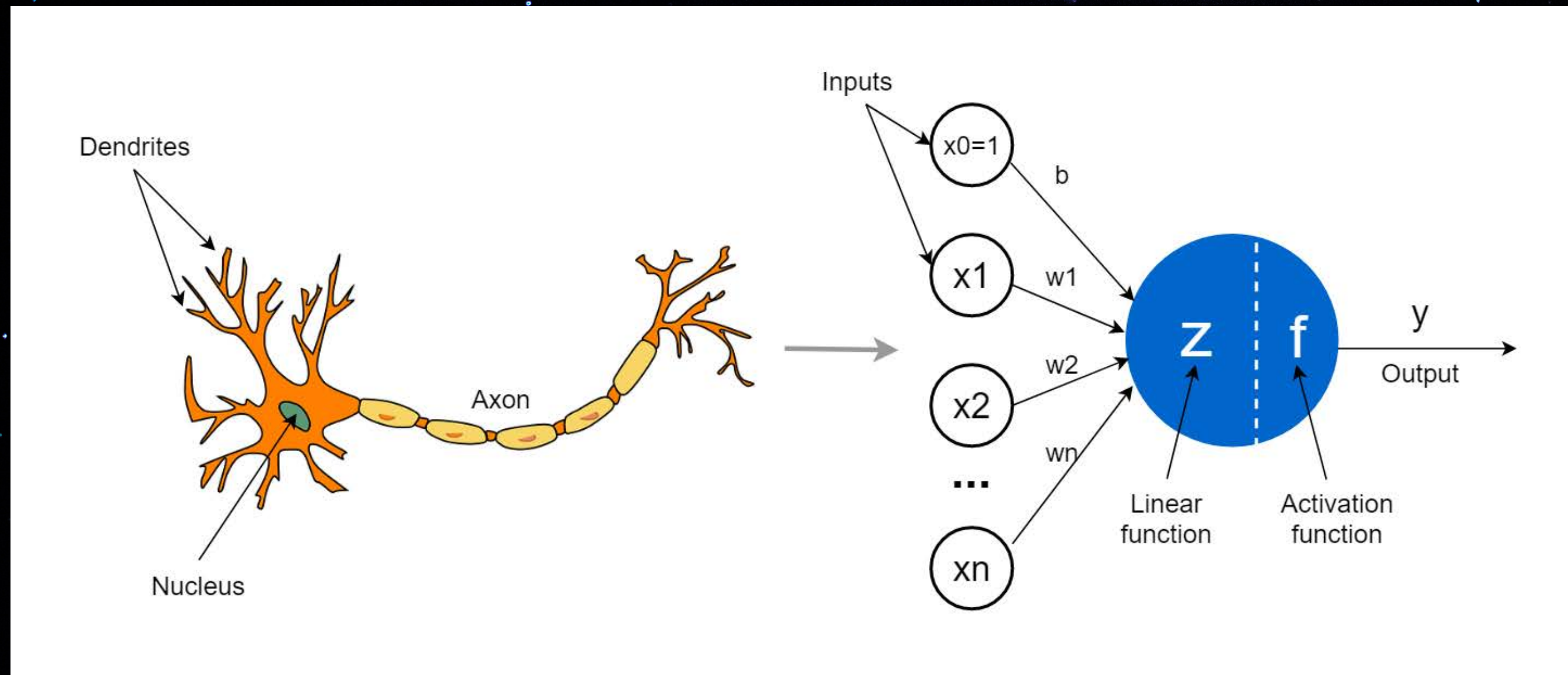


# Roadmap of Generative AI



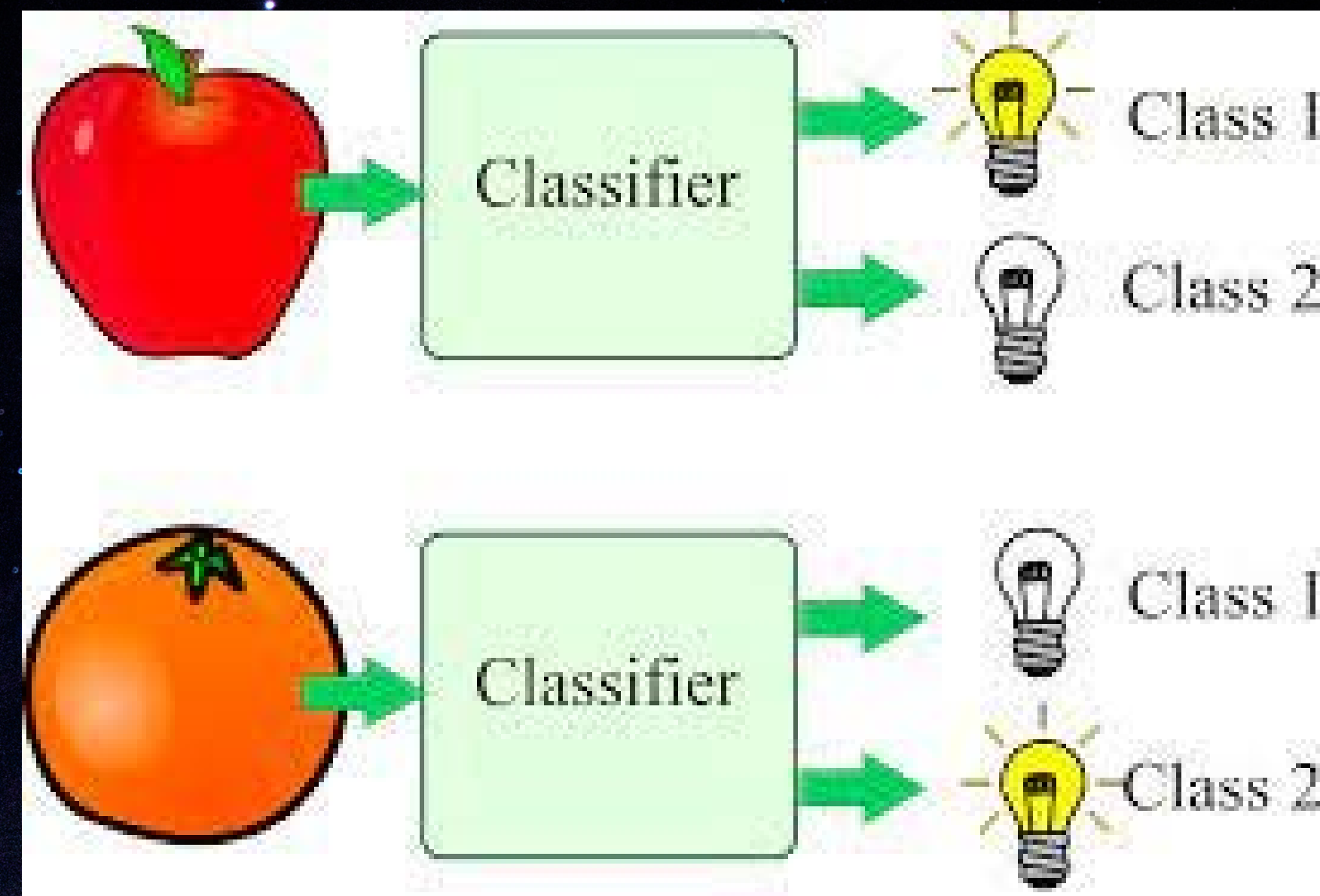
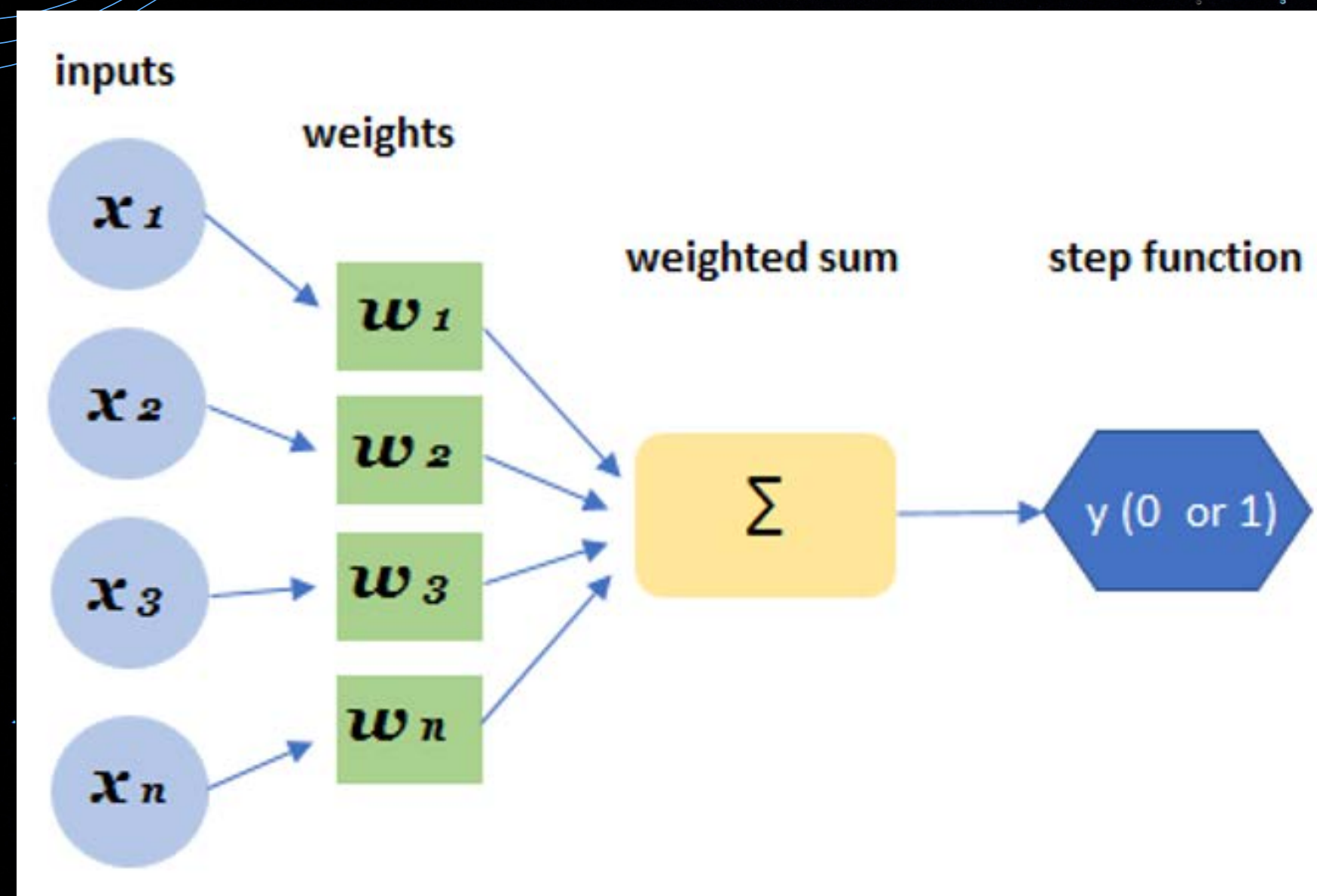


# Perceptron (1958)





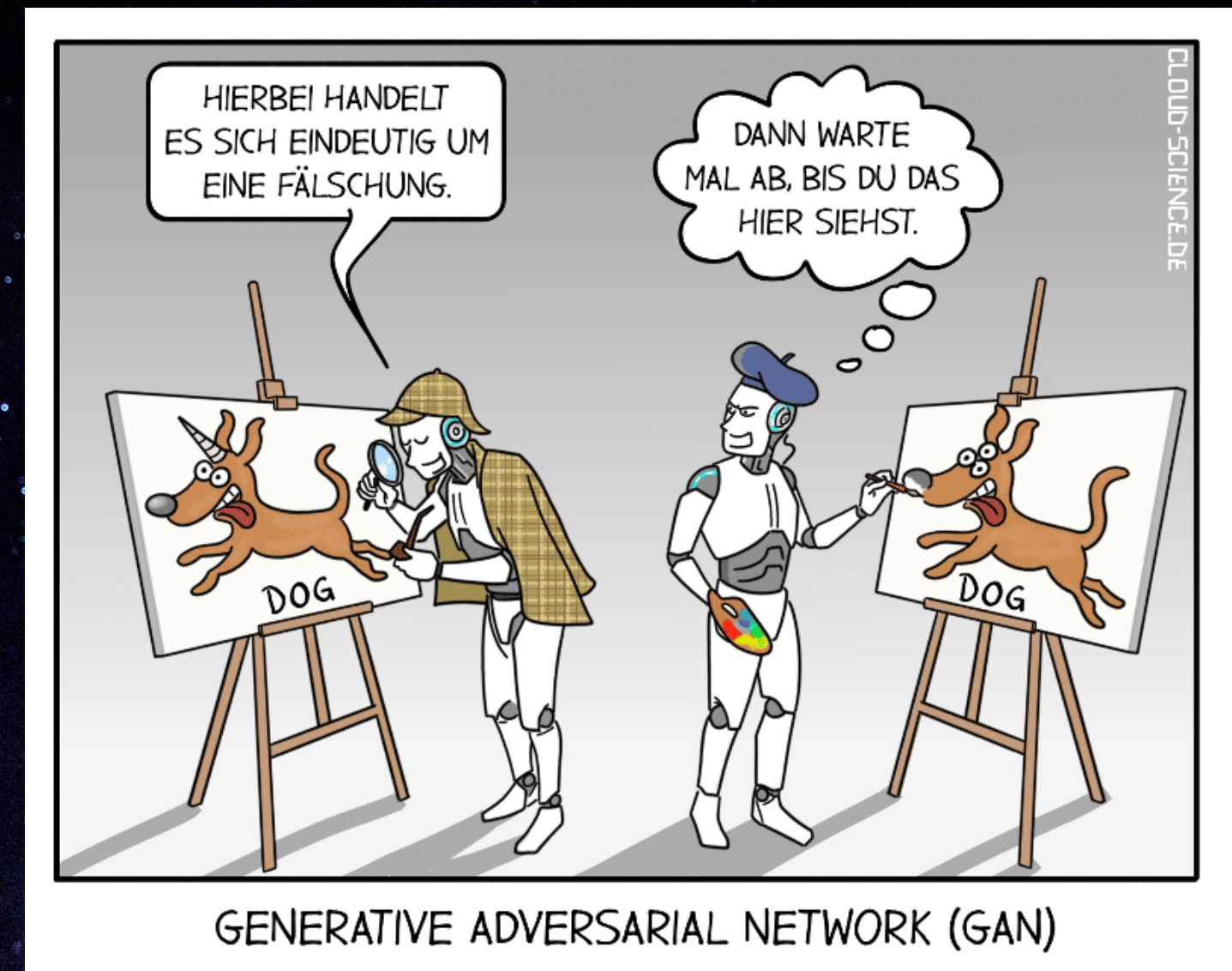
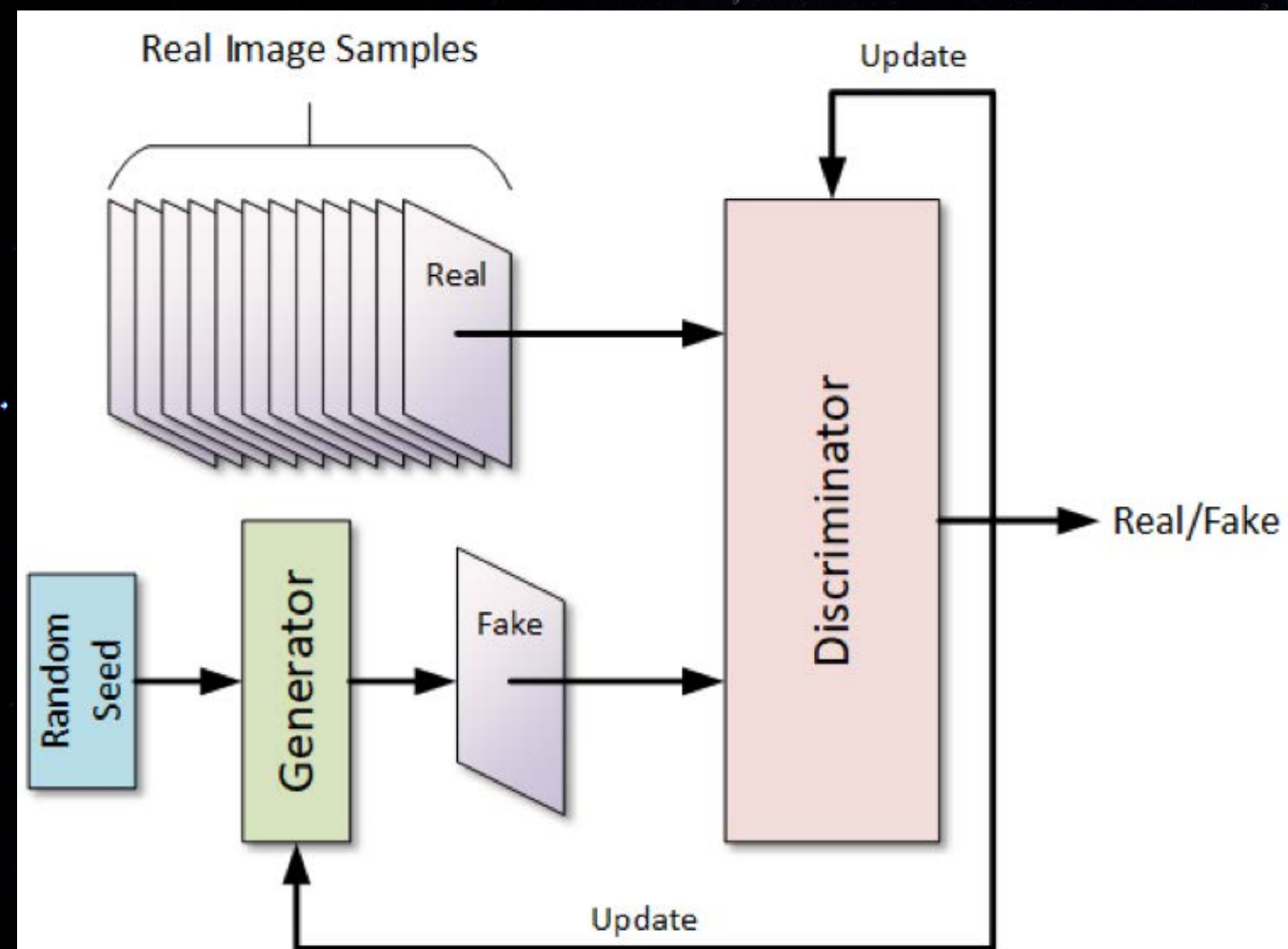
# Perceptron (1958)





# Generative Adversarial Network (GAN) (2014)

- Generator & Discriminator

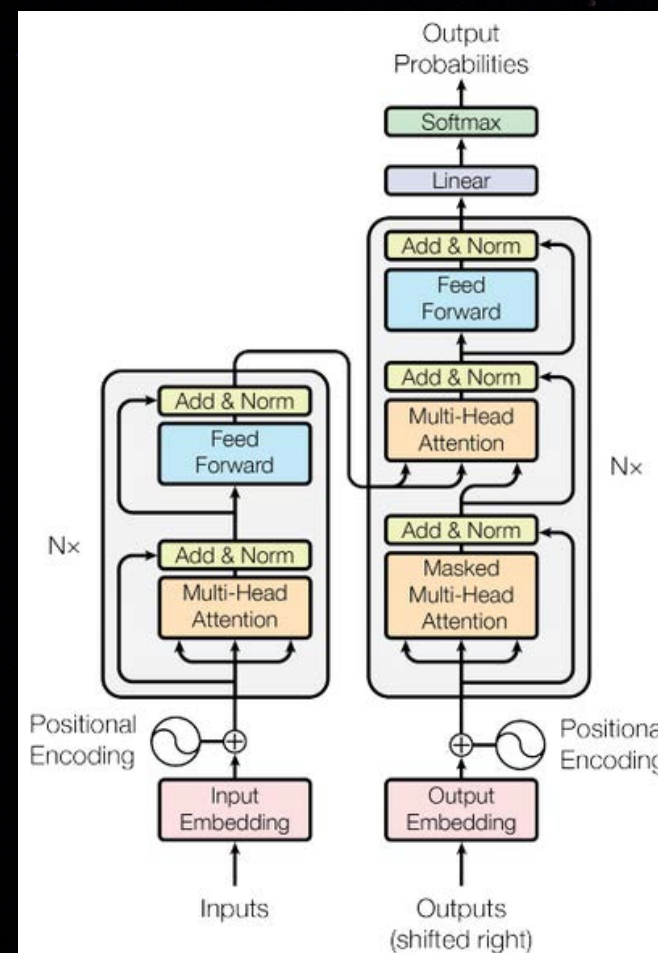


Reference: Mirza, M., & Osindero, S. (2014). Conditional generative adversarial nets. arXiv preprint arXiv:1411.1784.



# ChatGPT (2022)

- Generative
- Pre-trained
- Transformer



ChatGPT [Poe](#)

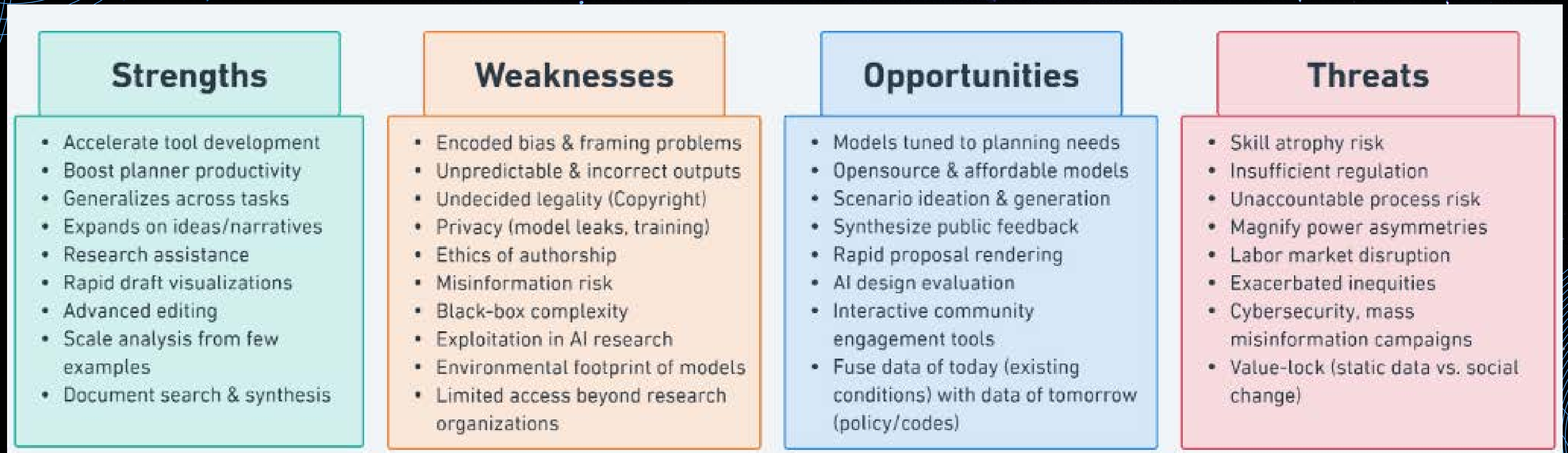
Certainly! Here's a concise list of functions for ChatGPT:

1. Language processing
2. Conversation generation
3. Question-answering
4. Knowledge retrieval
5. Text completion
6. Natural language understanding
7. Language translation
8. Sentiment analysis
9. Summarization
10. Recommendation systems

These functions cover the main capabilities of ChatGPT in understanding and generating human-like text, facilitating conversations, providing answers, retrieving information, and performing various language-related tasks.



# SWOT Analysis of AI Tools



Reference: David, W. (2023, May 9). Augmented: Planners in an Era of Generative AI. American Planning Association. <https://www.planning.org/blog/9269515/augmented-planners-in-an-era-of-generative-ai/>



# Platforms





# Generative AI Powered Platforms



## NOLEJ AI

A transformative platform that turns videos into interactive content, including interactive videos, quizzes, games, and flashcards.



## Edpuzzle (Teacher Assist)

A web-based eLearning platform that provides video upload and customization features, along with the flexibility to select videos from YouTube.



## Padlet (Magic Padlet)

A collaborative platform that empowers teachers to share posts and facilitates seamless online collaboration and interaction among students.



## Quizizz (QuizAI, LessonAI)

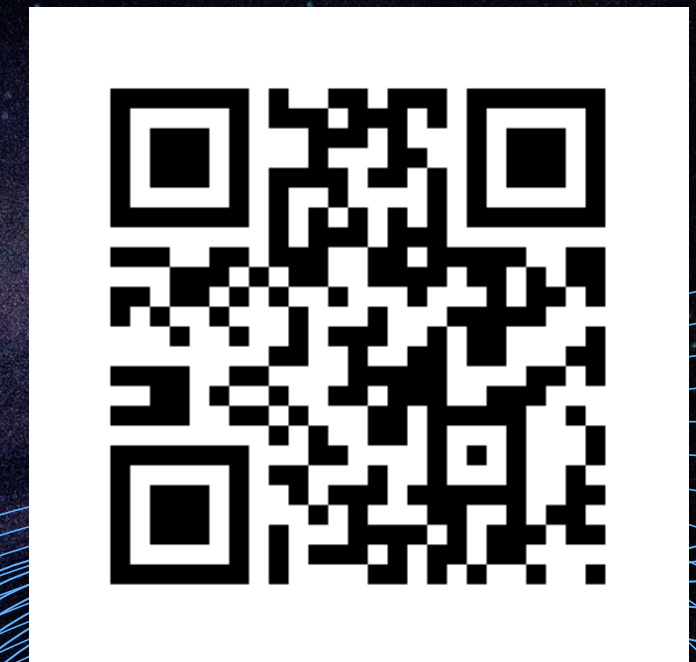
A quiz building platform that sparks deeper student engagement through its interactive elements and thoughtfully crafted design.



# NOLEJ AI



A transformative platform that turns videos into interactive content, such as interactive videos, quizzes, games, and flashcards.

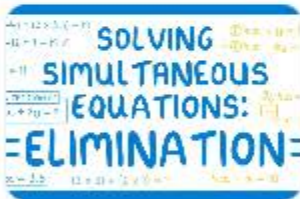




# NOLEJ AI



- Interactive Course

| Module                                                                                                                         | Type                                                                                        | Status                                                                                      | Date             |
|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------|
|  <b>Industrial Revolution</b><br>Public v2   |  Video |  Ready | 2023/05/08 20:35 |
|  <b>Simultaneous Equations</b><br>Public v2 |  Video |  Ready | 2023/05/09 16:56 |
|  <b>Output Devices</b><br>Public v2         |  Video |  Ready | 2023/05/08 19:46 |



# NOLEJ AI



- Interactive Course



### Industrial Revolution

2023/05/08 20:35  Video v2 Public ☒

Interactive Course ⓘ

✦ All-in-One Course

WHICH INCLUDES ⓘ

-  Interactive video
-  Quiz (formative) ⓘ
-  Transcription
-  Glossary
-  Summary
-  Concepts cards
-  Flashcards
-  Drag the Word

Additional Content ⓘ

-  Teacher materials
-  Crossword
-  Find the Word

All-in-One course



## Industrial Revolution

Learn, test, practice, and make your learning stick in one go.

[Let's start!](#)



# NOLEJ AI



- Interactive Course
  - Transcription

Transcription

Generated 50x faster with NOLEJ AI

## Industrial Revolution

### What Is the Industrial Revolution?

Hi, I'm John Green. This is crash course world history. And today we're going to discuss the series of events that made it possible for you to watch Crash Course and also made this studio possible and made the warehouse containing the studio possible a warehouse, by the way, that houses stuff for warehouses. That's right. It's time to talk about the Industrial Revolution.

Although it occurred around the same time as the French American, Latin American and Haitian revolutions between, say, 1750 and 1850, the Industrial Revolution was really the most revolutionary of the bunch. No way, dude. All those other revolutions resulted in, like, new borders and flags and stuff. We've studied 15,000 years of history here at Crash Courseme from the past, and borders and flags have changed plenty, and they're going to keep changing. But in all that time, nothing much changed about the way we disposed of waste, or located drinking water or acquired clothing.

Most people lived on or very close to the land that provided their food. Except for a few exceptions, life expectancy never rose above 35 or below 25. Education was a privilege, not a right. In all those millennia, we never developed a weapon that could kill more than a couple dozen people at once or a way to travel faster than horseback. For 15,000 years, most humans never owned or used a single item made outside of their communities.

Simone Bolivar didn't change that, and neither did the American Declaration of Independence. You have electricity. Industrial Revolution. Blueberries in February. Industrial Revolution you live somewhere other than a farm.

Industrial Revolution. You drive a car. Industrial Revolution. You get twelve years of free formal education. Industrial Revolution your bed, your antibiotics, your toilet, your contraception, your tap water, your every waking and sleeping second Industrial Revolution.

Here's one simple statistic that sums it up. Before the Industrial Revolution, about 80% of the world's population was engaged in farming to keep itself and the other 20% of people from starving. Today, in the United States, less than 1% of people list their occupation as farming. I mean, we've come so far that we don't even have to farm flowers anymore. Stan.

Are these real, by the way? Can't tell if they're made out of foam or digital. So what happened? Technology. Here's my definition.

The Industrial Revolution was an increase in production brought about by the use of machines and characterized by the use of new energy sources. Although this will soon get more complicated for our purposes. Today



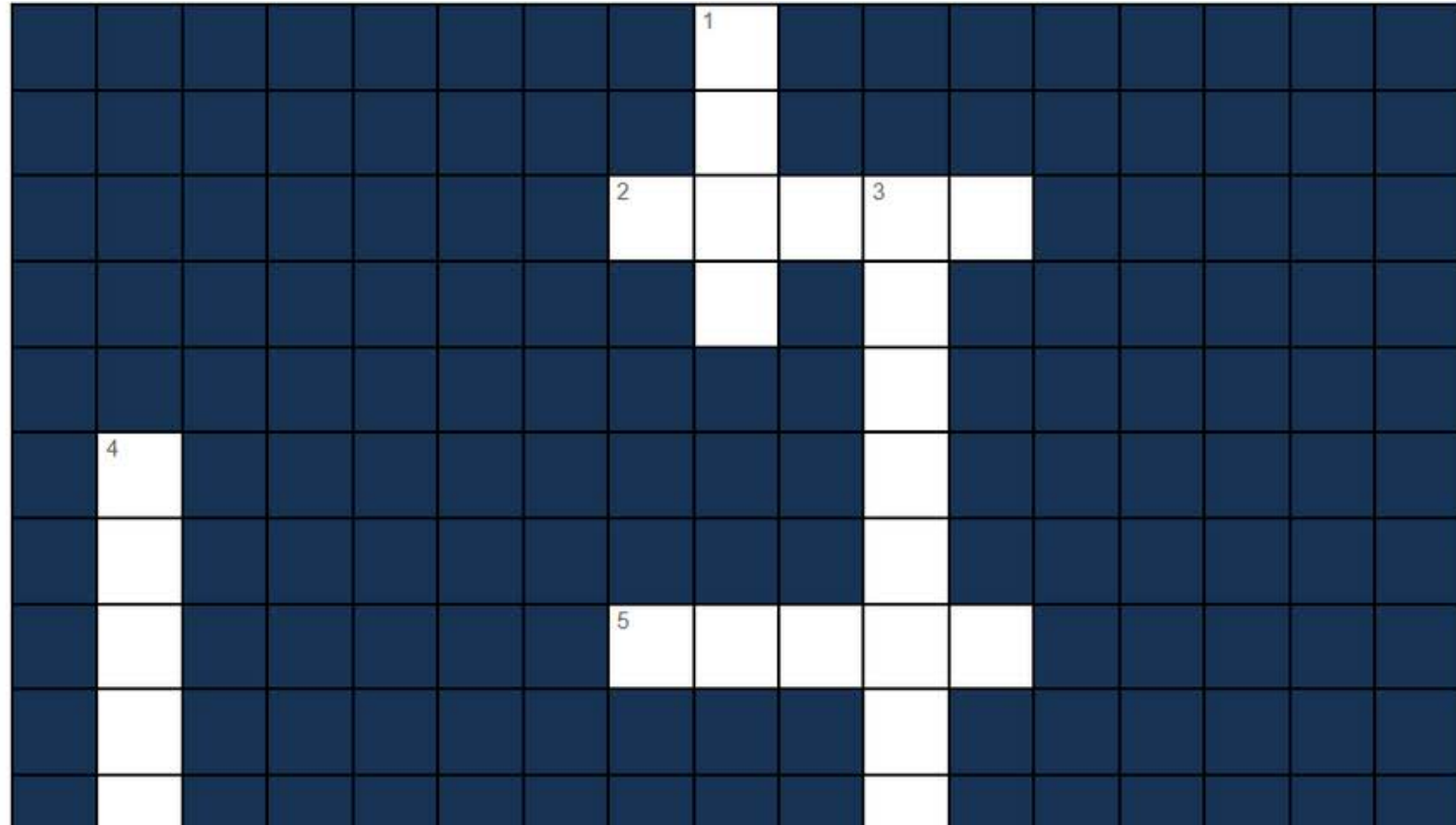
# NOLEJ AI



- Interactive Course
  - Transcription
  - Crossword

Crossword

Generated 50x faster with NOLEJ AI



**Across**

2 the monetary compensation paid to employees for the work they perform. (5)

5 the monetary compensation paid to employees for the work they perform. (5)

6 the transformation of an economy from an agricultural-based system to a manufacturing-based system. (17)

**Down**

1 a type of sedimentary rock that is primarily composed of carbon, hydrogen, and oxygen. (4)

3 a perspective or approach that places a disproportionate emphasis on European culture, history, and values. (11)

4 a perspective or approach that places a disproportionate emphasis on European culture, history, and values. (11)



# NOLEJ AI



- Interactive Course
  - Transcription
  - Crossword
  - Drag the word
  - ...

Drag the word

Generated 50x faster with NOLEJ

Drag the words into the correct boxes

- [ ] : The low cost of coal in Britain, which made it economically efficient for manufacturers to look to machines as a way of lowering their production costs.

- [ ] : The low cost of coal in Britain, which made it economically efficient for manufacturers to look to machines as a way of lowering their production costs.

- [ ] : A type of textile made from cotton fibers that drove the early Industrial Revolution and was produced in India before being imported to Britain.

- [ ] : The belief that Europeans are superior and smarter than other people.

- [ ] : The belief that Europeans are superior and smarter than other people.

- [ ] : Factories that used machines to spin and bleach yarn faster and cheaper than ever before.

- [ ] : An invention by John K in 1733 that dramatically increased the speed of weaving.

- [ ] : An innovation in the British textile industry that dramatically increased the speed of weaving.

- [ ] : An increase in production brought about by the use of machines and characterized by the use of new energy sources.

- [ ] : An increase in production brought about by the use of machines and characterized by the use of new energy sources.

Check

Cultural superiority argument

Flying shuttle

Cheap fuel costs

Flying shuttle

Industrial Revolution

Efficient cotton mills

Cotton textiles

Cultural superiority argument

Industrial Revolution

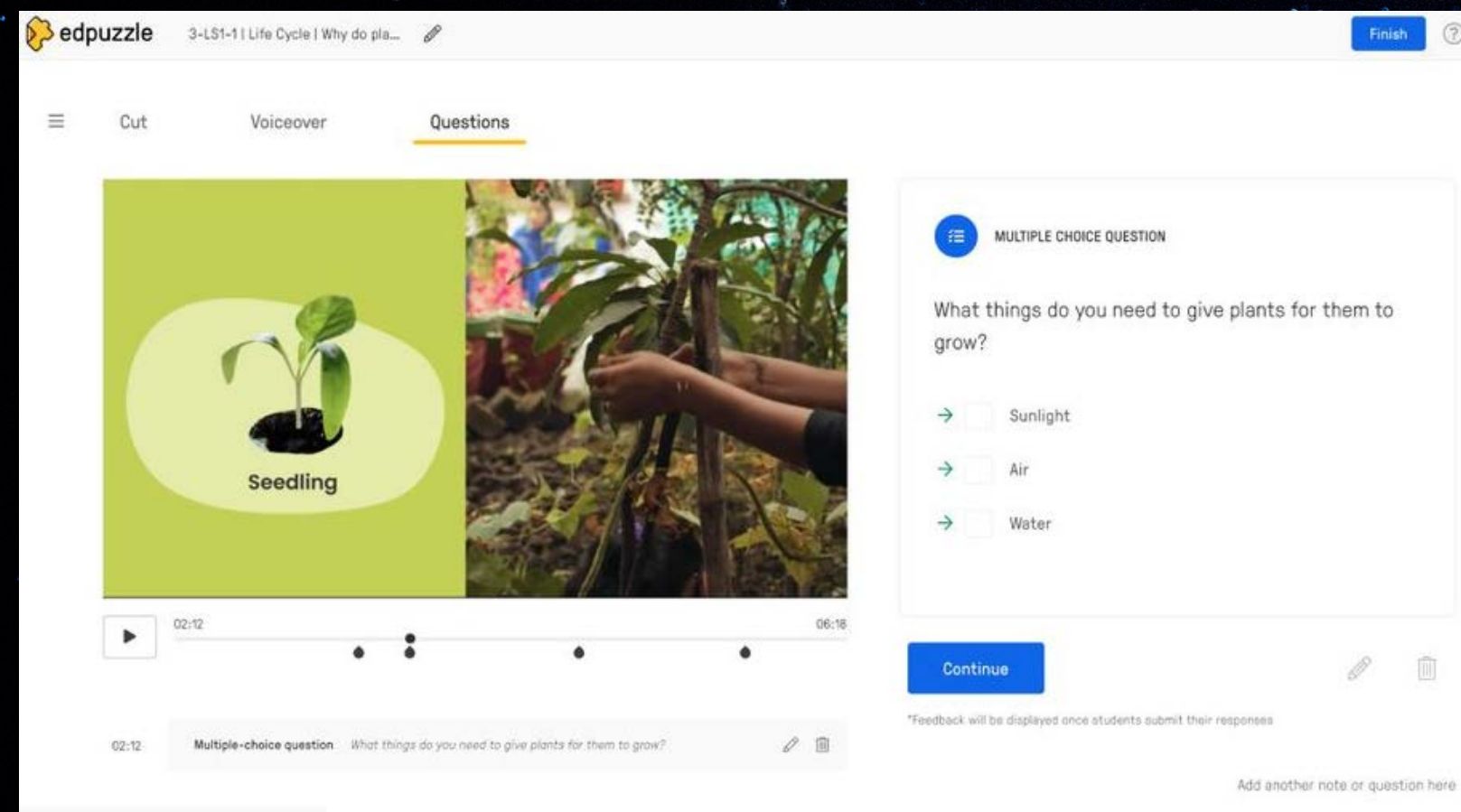
Cheap fuel costs



# Edpuzzle



**A web-based eLearning platform that provides video upload and customization features, along with the flexibility to select videos from YouTube.**

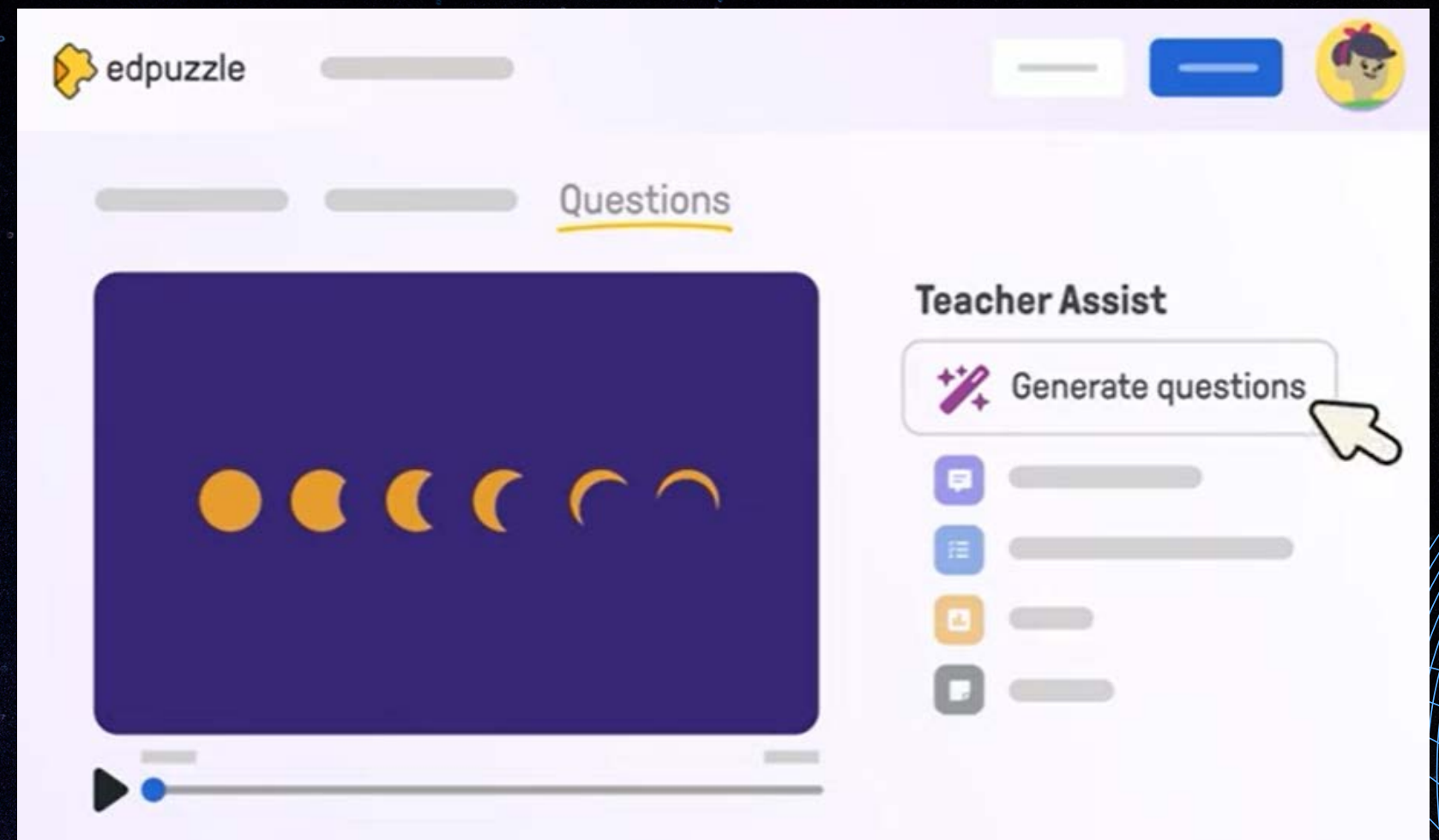




# Edpuzzle



- Teacher Assist features
  - Generate Questions

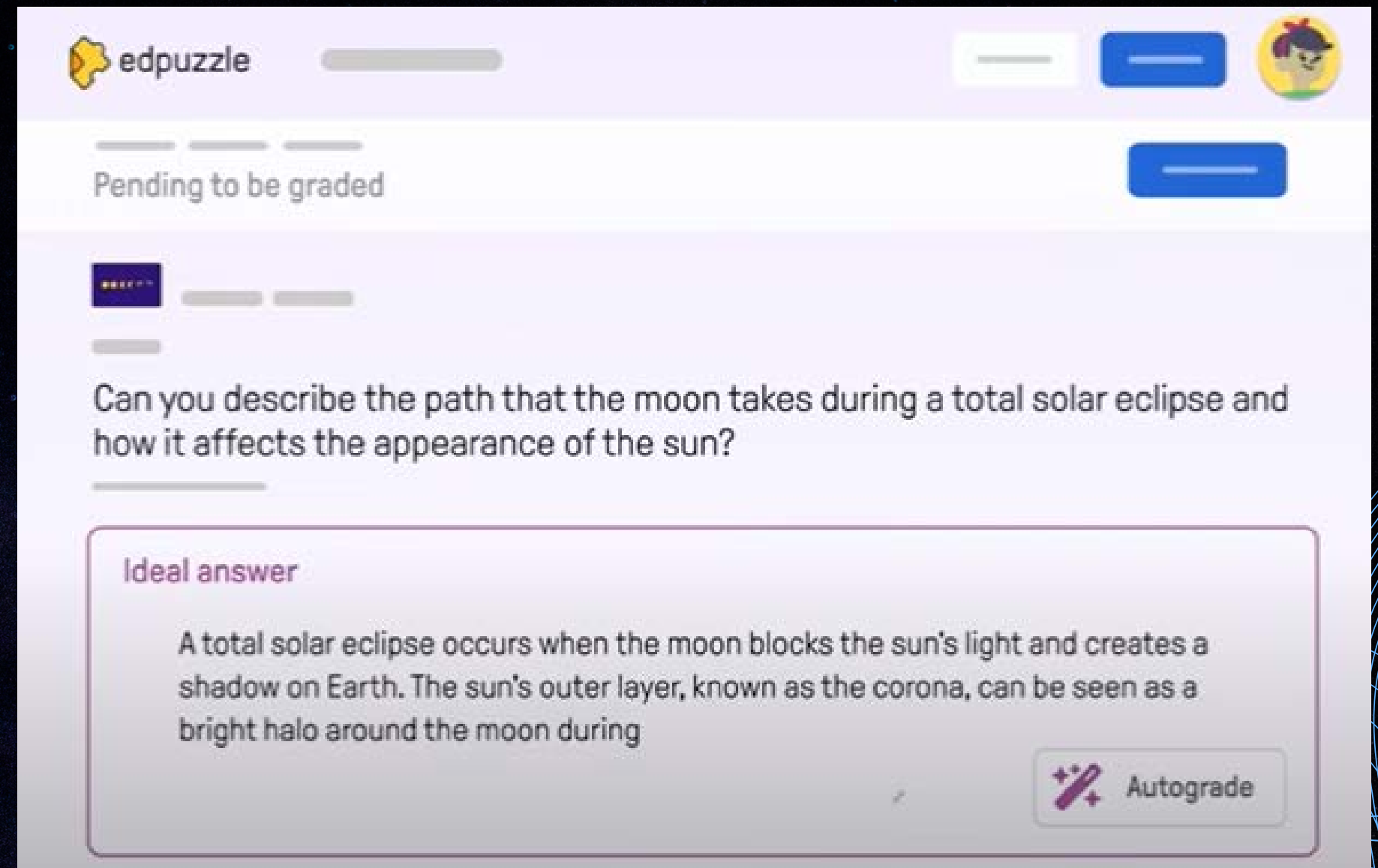




# Edpuzzle

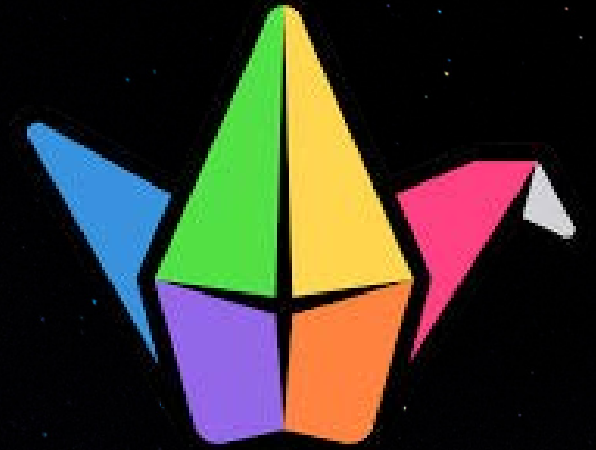


- **Teacher Assist features**
  - **Generate Questions**
  - **Autograde**

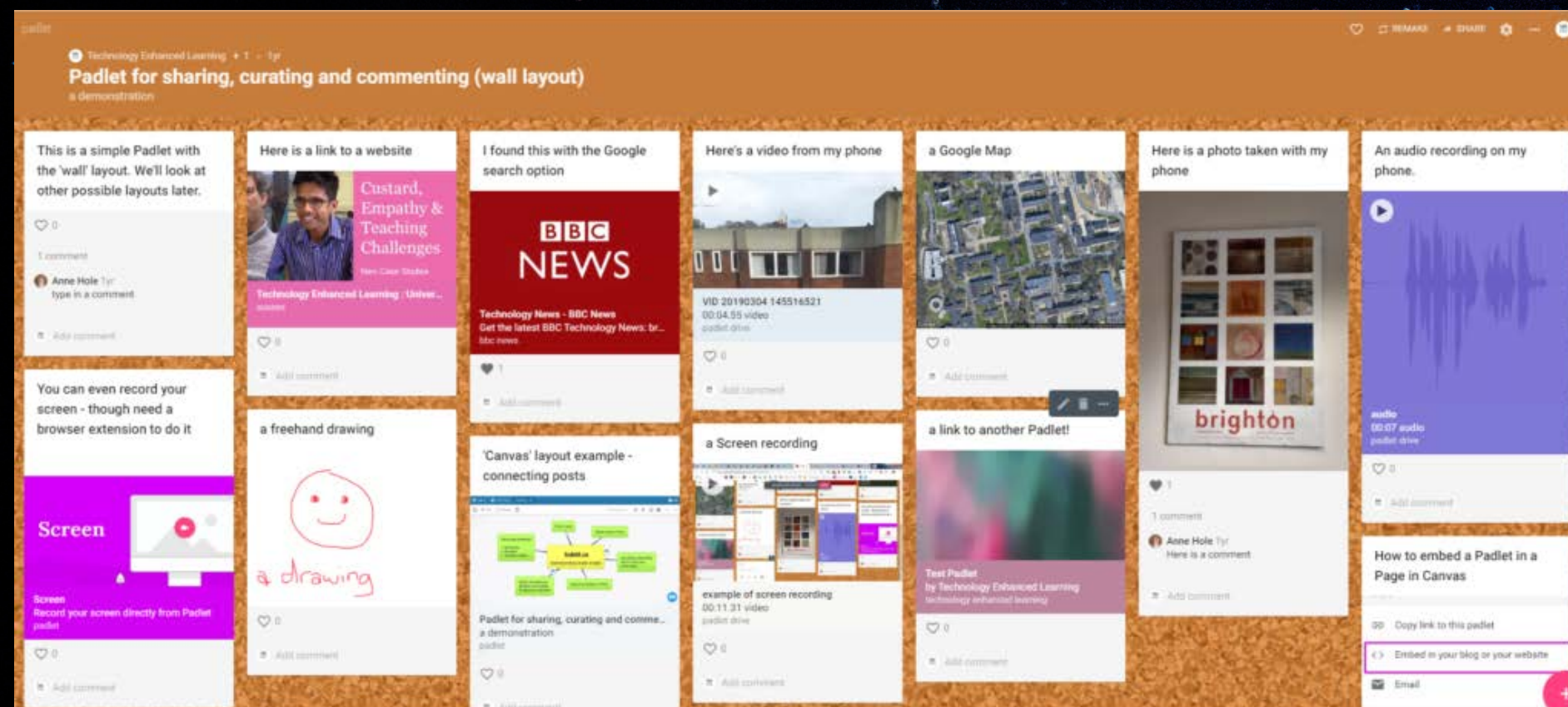




# Padlet



A collaborative platform that empowers teachers to share posts and facilitates seamless online collaboration and interaction among students.





# Padlet



- Magic Padlet

Cheung TY • 3d

## Chemistry Wonders: 7 Experiments for 10th Graders

Explore, Discover, and Learn

### Elephant Toothpaste

*Elephant Toothpaste*  
at Preschool Powol Packets

A spectacular demonstration of the decomposition of hydrogen peroxide, showing the catalytic powers of potassium iodide. Teaches about catalysts, exothermic reactions, and the

### Invisible Ink

**COLOR-CHANGING INVISIBLE INK**  
(No Heat Required)

Write secret messages with lemon juice, then reveal them with heat! This experiment explains the concept of acid-base reactions and the effect of heat on these substances.

### Rainbow in a Glass

|                          |                  |
|--------------------------|------------------|
| Lamp Oil                 | 90% Alcohol      |
| Baby Oil                 | 70% Alcohol      |
| Extra Virgin Olive Oil   | 50% Alcohol      |
| Water with Food Coloring | Vegetable Oil    |
| Whole Milk               | Slush Temp       |
| Maple Syrup              | Light Corn Syrup |
| Heavy Cream Syrup        | Chocolate Syrup  |
|                          | Honey            |

Create a density column with various solutions. Demonstrates density concepts, miscibility, and the principle of less dense liquids floating on more dense liquids.

### Copper Plating Coins

Transform the surface of coins using a copper sulfate solution. A great way to introduce electrochemical reactions and the concept of oxidation-reduction.

### Chemistry Rocket

**CHEMISTRY ROCKET**

SICK! Science

×

Magic padlet Beta

?

Describe the padlet you want and let AI generate a first draft for you. This feature is only available on teacher accounts.

I am a...

teacher

This will determine the voice of the posts.

I want to create...

eight ideas for a craft activity that I can do with my class of 1st graders to create something for mothers day.

Example

Conjure

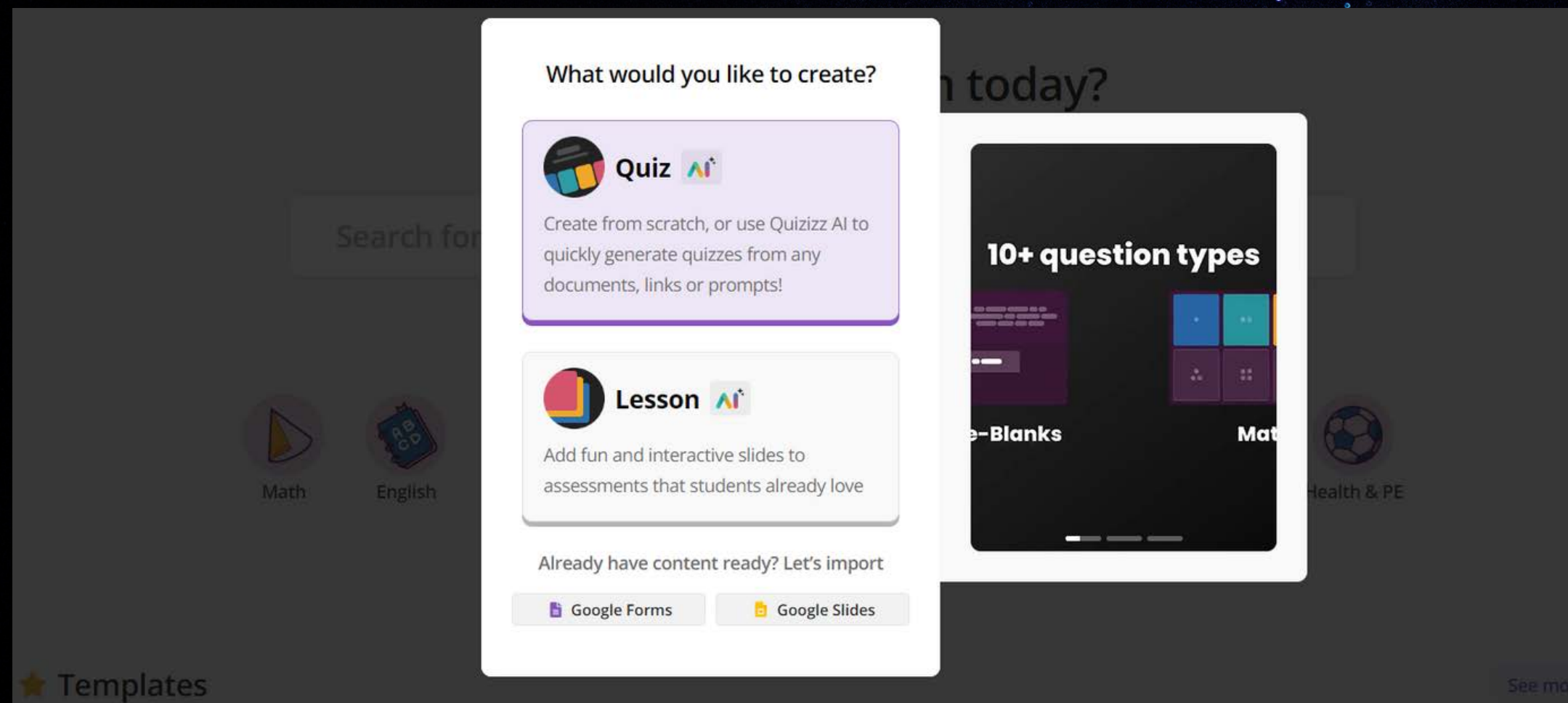
The information conjured by magic padlet is AI generated and may not always be accurate. Padlet will save your prompt for our records but the padlet contents will be private.



# Quizizz



A quiz building platform that facilitates deeper student engagement through its interactive elements and thoughtfully crafted design.





# Quizizz



## • QuizAI

← How would you like to create?

+ Create from scratch

Use 15+ interactive question types or select existing questions from the Quizizz Library

🔮 Generate from text 🔮 AI BETA

Prompt the AI or paste your own text

📄 Upload a document 🔮 AI BETA

Transform any PDF, DOC, and PPT into a quiz

🔗 Convert URL to quiz 🔮 AI BETA

YouTube videos, Wikipedia pages and more

📄 Google Forms

📊 Spreadsheet



# Quizizz



## • QuizAI

← How would you like to create?

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Use 15+ interactive question types or select existing questions from the Quizizz Library

✂ Generate from text AI BETA

Prompt the AI or paste your own text

📄 Upload a document AI BETA

Transform any PDF, DOC, and PPT into a quiz

🔗 Convert URL to quiz AI BETA

YouTube videos, Wikipedia pages and more

## What is the Five Layers Model?

There have been a few layer models proposed along the years – most notably, the five layers model, the 7 layers model (aka OSI model), and the four layers model (aka the TCP/IP model).

They are way more similar than different, and I choose to focus on the five layers model as it is the most practical of all – and best describes how the Internet actually works.

## The First Layer – The Physical Layer

The first layer is responsible for transmitting a single bit – 0 or 1 – over the network.

To get some intuition as to what this layer is responsible for, think of the time of transmission. Assume that we have some kind of cable for our data, and we use +5 Voltage to transmit 1, and -5 Volt

What is the responsibility of the first layer in the five layers model?

Determining the route for data transmission

Ensuring reliability of data transmission

Transmitting a single bit over the network

Transmitting data between directly linked devices



# Quizizz



- QuizAI

☒ Use an existing document

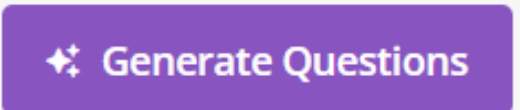
 Chap 1 More about Factorization\_V2.pdf 

Number of questions

Automatic ▼

Allow students to read this document while answering ☐

This quiz would be converted into a multi-part comprehension question type where students can read the document and answer the questions. [Learn more](#)



F.3 Chapter 1 More About Factorization\_V2

II. Factorize polynomials in the form of  $px^2 + qx + r$

**Example 1.10** Factorize  $3y^2 - 7y + 4$ .

Factorize  $3y^2 - 7y + 4$ .

|                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   <br>$(3y - 1)(y - 4)$ |   <br>$(3y + 4)(y - 1)$ |   <br>$(3y - 4)(y + 1)$ |   <br>$(3y - 4)(y - 1)$ |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

☐ Single correct answer ☒ Multiple correct answers



# Quizizz



## • QuizAI

Choose how you'd like to create

☒ Add a topic, a prompt or paste your excerpt here Max 10,000 characters

Machine cycle, CPU, Register, Memory

Grade: Grade 10 Number of questions: Automatic

[Generate Questions](#)

Generating quiz on Machine cycle, CPU, Register, Memory

**What topics would your quiz cover?**  
Select up to 5 topics

Fetch, Decode, Execute, Write Arithmetic Logic Unit (ALU) Control Unit Random Access Memory (RAM) Read-Only Memory (ROM)

[Add](#)

[Generate questions](#)

☒ Multiple Choice [New](#) [Remove](#)

Explain the function of the Arithmetic Logic Unit (ALU) in a CPU.

answer choices

- Performs arithmetic and logical operations
- Controls the flow of data within the CPU
- Stores the data temporarily
- Manages the input and output devices

☒ Multiple Choice [New](#) [Remove](#)

Describe the role of the Control Unit in a CPU.

answer choices

- Storing data in the CPU
- Displaying output from the CPU
- Generating power for the CPU
- Coordinating and controlling the activities of all the other units within the CPU



# Quizizz



## • LessonAI

Choose how you'd like to create your lesson

☒ Add a topic, a prompt or paste your excerpt here Max 10,000 characters

Machine cycle

Select preferred language

 English

Generate Lesson

### Introduction to the Machine Cycle

- **Machine cycle** is the sequence of operations performed by a computer to execute an instruction.
- It consists of fetching, decoding, executing, and storing stages.
- *Fetching* retrieves the instruction from memory.
- *Decoding* interprets the instruction.
- *Executing* carries out the instruction.
- *Storing* saves the result in memory or a register.





**Applying Generative AI in  
education opens a world of  
possibilities, revolutionizing the  
way we learn and explore.**





**Applying Generative AI in  
education opens a world of  
possibilities, revolutionizing the  
way we learn and explore.**

**(ChatGPT, 2023)**



A large, stylized blue frame with a jagged, futuristic border. The corners are decorated with blue geometric shapes resembling circuitry or mechanical components. Two white navigation arrows are positioned on the frame: one on the left pointing right, and one on the right pointing left. The background is a dark blue space filled with stars and nebulae, with white wavy lines in the corners.

**Thank You!**