Oide

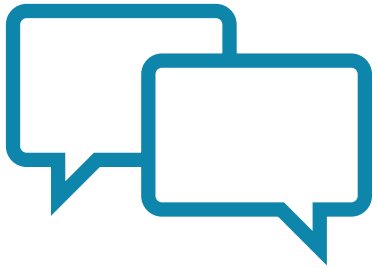
Tacú leis an bhFoghlaim Ghairmiúil i measc Ceannairí Scoile agus Múinteoirí

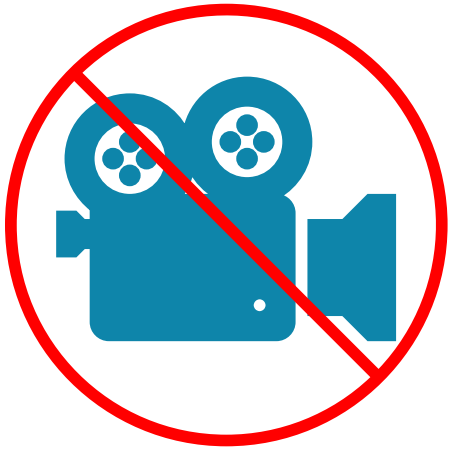
Supporting the Professional Learning of School Leaders and Teachers

Using Generative Artificial Intelligence (GenAI) to develop resources for teaching Mathematics

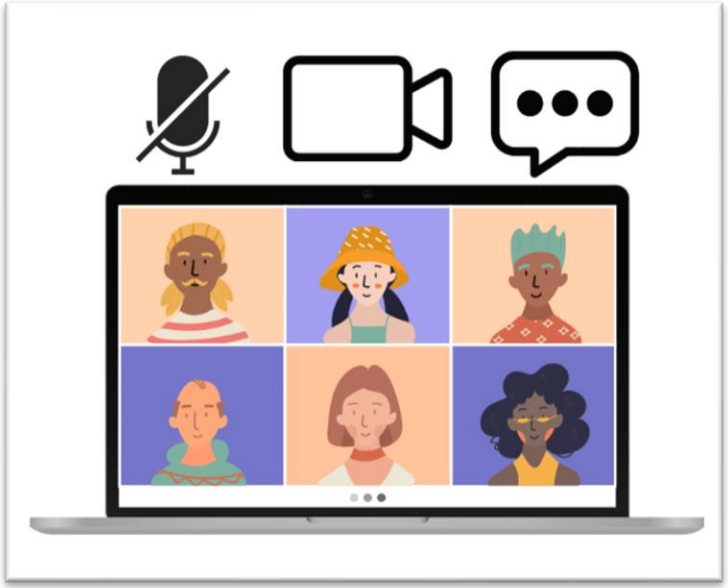
Collaborative

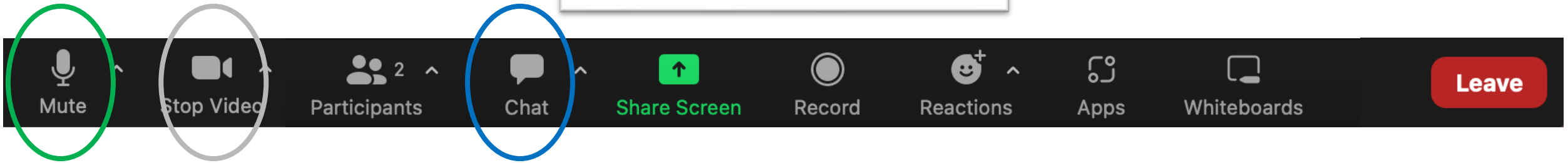
Before we begin…



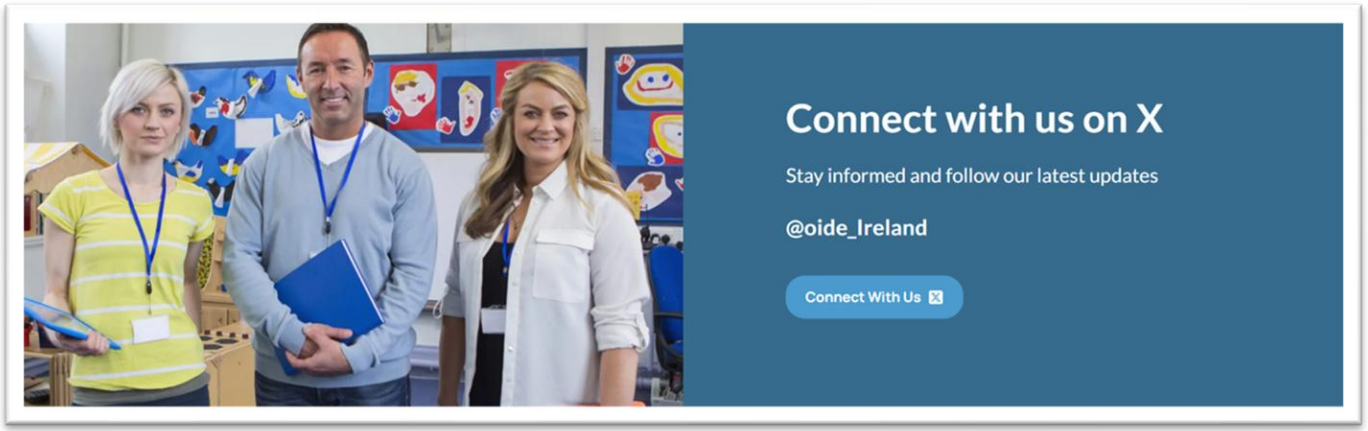


Zoom Functions/Breakout Rooms





Sign up to mailing list



SCAN ME

https://tinyurl.com/MathsMailList

Schedule

Session 1 19:00 – 19:40	Welcome Demonstrating the use of Generative Artificial Intelligence (GenAI)
5 min	Stretch Break
Session 2 19:45 – 20:30	Developing Maths resources Feedback on resources developed

SCAN ME

PADLET

https://tinyurl.com/GenAI-Maths

Learning Intention

To explore how GenAI can be harnessed to support continuity in pedagogical practices and make connections within the curriculum to inform individual and collaborative planning and enhance student learning.

Success Criteria

By the end of today we will have:

- Used the RASE framework as a tool to engineer prompts.
- Tested an AI tool, identifying benefits and challenges.
- Examined how AI can support pedagogy and make connections within the curriculum.
- Reflected on how AI could be used to support learner experience and outcomes.

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Supporting the Professional Learning of School Leaders and Teachers

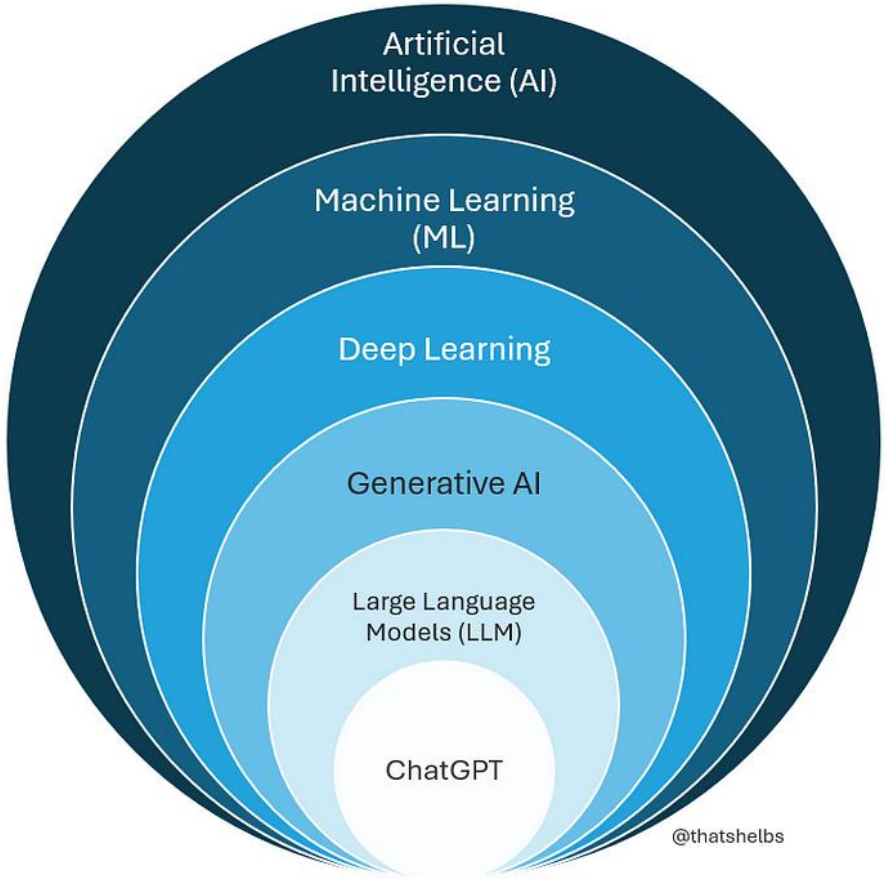
Session 1

What is Artificial Intelligence (AI)

Demonstrate using RASE prompts to create a Maths resource

Keywords

- AI – Artificial Intelligence
- GenAI - Generative AI
- LLM - Large Language Model
- Prompt
- RASE prompt framework
- Bias
- Ethics



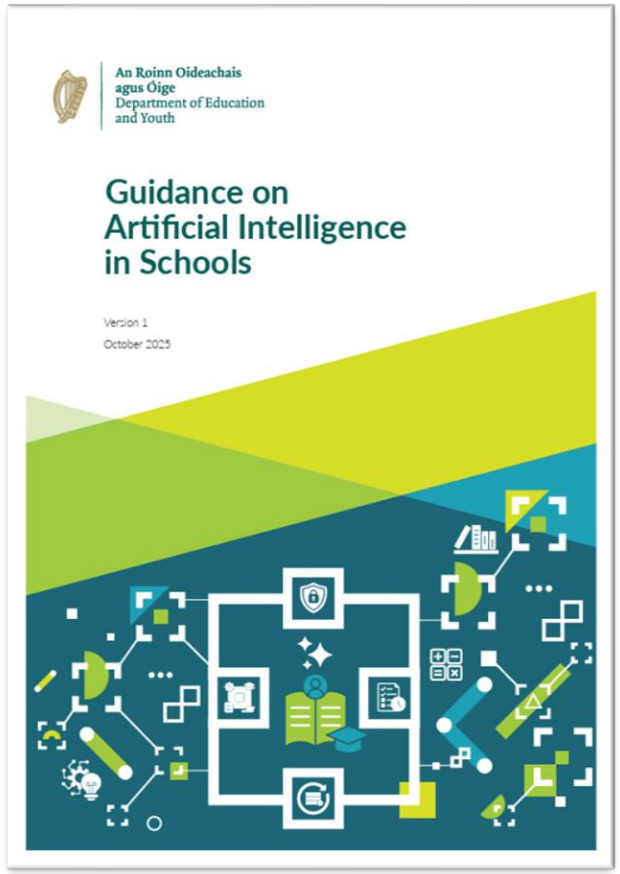
Using AI in my practice - Poll

Generative AI (GenAI)

Generative AI (GenAI) is a type of AI designed to generate content such as text, images, code, audio, video etc based on input data.

Examples include AI chatbots, image generation tools and content automation systems. With this capability, it responds to a query based on patterns learned from its training data.

Guidance on Artificial Intelligence in Schools, 2025, p.11



Limitations

Limitations

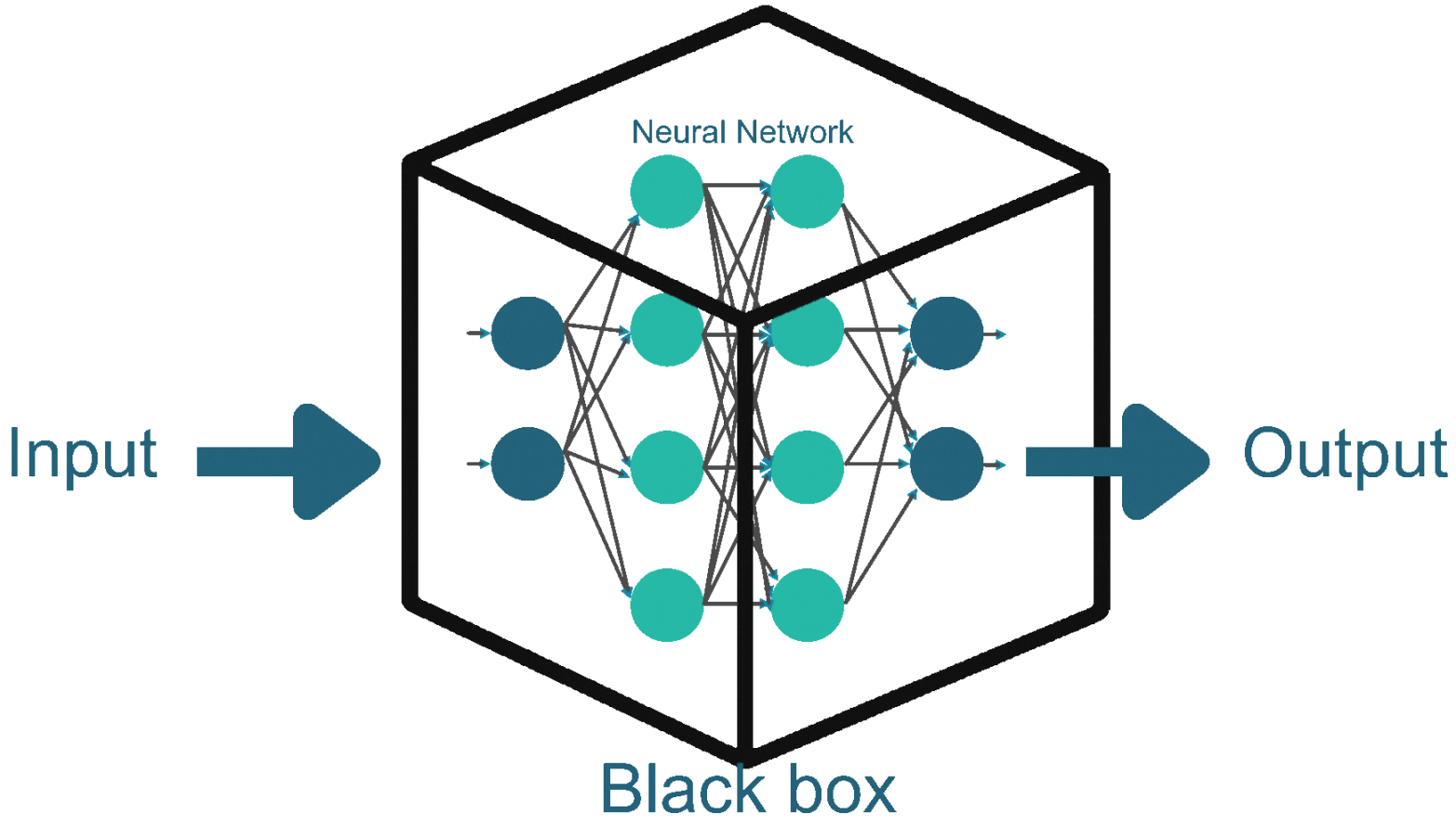
Bias: computational and human

Hallucinations

Explainability

Inability to think critically

Lack of personal experience



GIF: Created using Canva for Education

Critical Analysis

- Policies and Guidelines
- Ethical Data Use
- Evidence of Impact
- Bias Awareness
- Accuracy of Output

Choosing a GenAI Assistant

Microsoft LLM Copilot

Google LLM Gemini

Outside Platform

CHALKIE

Prompting using the RASE Framework

R	**ROLE**	Give the GenAI/LLM a role and provide a context
A	**ASK**	Clearly define the task that you want it to perform
S	**SPECIFIC**	Be specific about format, length, style etc required
E	**EXPERIMENT**	Refine your prompt. Ask the GenAI/LLM for suggestions

ALWAYS CHECK FOR ACCURACY OF OUTPUT AND SUITABILITY.

Developing a prompt

I am a Mathematics teacher at post-primary level in the Republic of Ireland.

Create TOPIC. It should align with the learning outcomes of the Junior/Senior Cycle Mathematics specification.

The TOPIC should reflect the success criteria (The language should be student-friendly).

Resources can be developed here such as strategies and resources to support students with dyslexia, dyspraxia, MGLD and high performing students.

Use the RASE approach to frame your prompts

ALWAYS CHECK FOR ACCURACY OF OUTPUT AND SUITABILITY.

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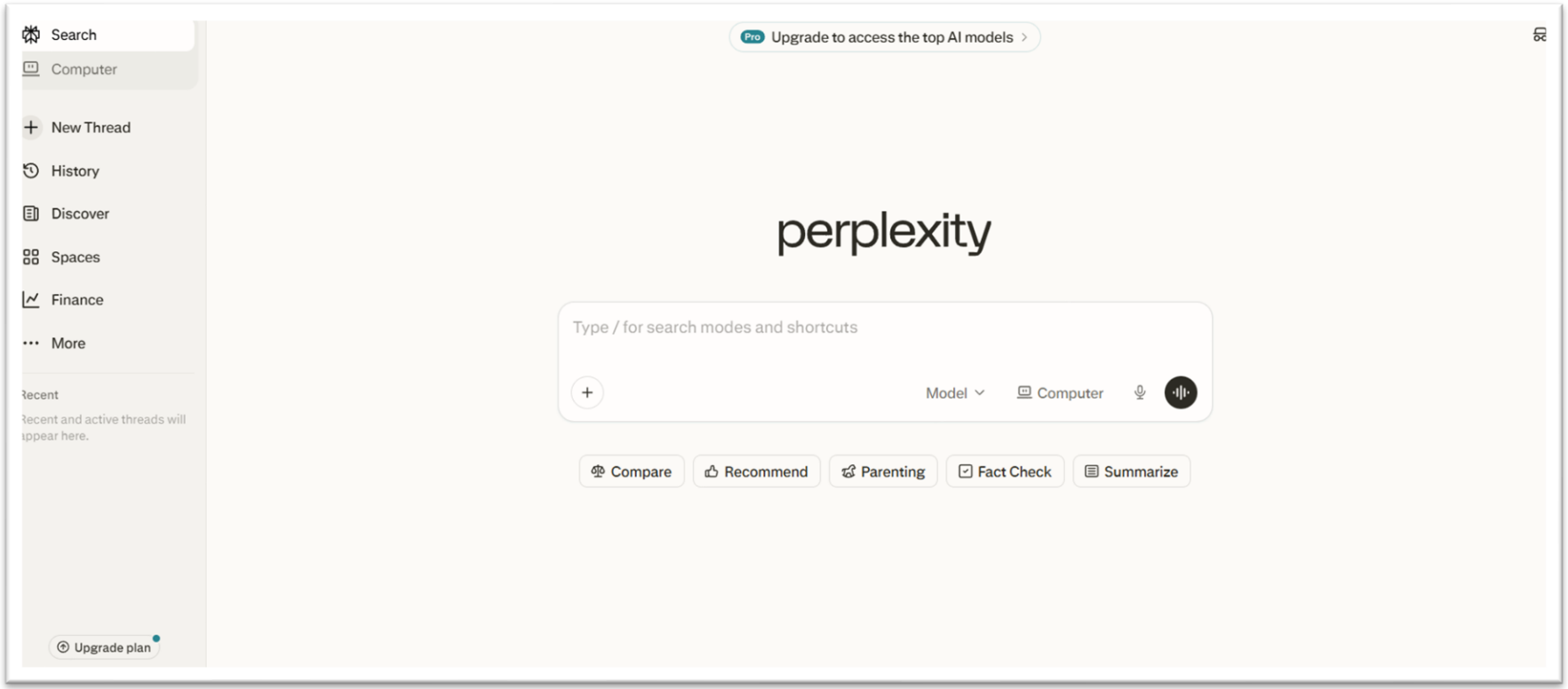
perplexity



perplexity Overview

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- Perplexity is an AI "answer engine" that gives concise, sourced answers
- For each output/response, it provides clickable citations that you can follow
- There is a free version that includes the use of Spaces

What are Spaces?

- A dedicated workspace – organise threads, files, and research by topic or project
- Collaborate with colleagues – invite others to view or contribute to shared spaces
- Private by default – you control who sees what
- Examples: "Junior Cycle Maths", "AI in Our School", "Leaving Certificate Resources"

Demonstration

perplexity

15 min

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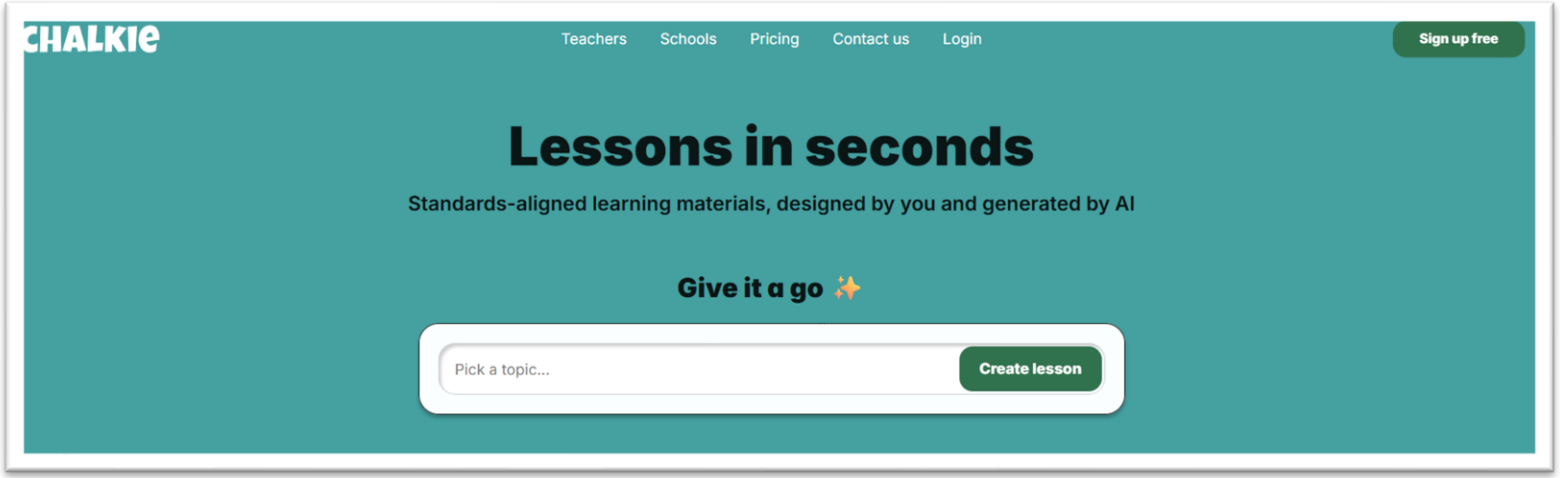
CHALKIE



Overview

Chalkie AI is best suited for teachers looking to quickly generate a solid, editable foundation for lessons and worksheets.

BENEFITS

- **Rapid Lesson Creation / High-Quality Worksheets**
- **Curriculum Alignment**
- **Export Functionality / Edit option**
- **Free Trial/Flexible Pricing:** Offers a free trial (up to 5 resources per week) and a paid Pro plan (£7.99/month for 200 resources).

DRAWBACKS

- **Accuracy and Hallucinations** (limited from my experience)
- **Limited Customisation / Design Flexibility**
- **Language / Image Irregularities**
- **Narrow Focus:** It is strictly for educational resources, lacking the broader, multi-use capabilities of other AI platforms like Gamma.ai or ChatGPT.

Examples

Algebra on the Pitch: Knowledge Check

The Function Machine ⚽

Remember: A function is like a **training drill**. You put a ball (**input**) in, the machine follows a **rule**, and a result (**output**) comes out.

1. In the notation **f(x)**, what does the letter **x** represent?

a) The name of the function
b) The output
c) The input
d) The final score

Coordinate Geometry: The Line

1. Midpoint & Distance Formula Challenge

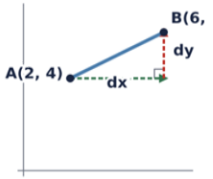
Use the formulas below to solve the problems. Remember to label your points (x_1, y_1) and (x_2, y_2) before substituting them into the formula.

Formulas:

- **Distance:** $\sqrt{[(x_2 - x_1)^2 + (y_2 - y_1)^2]}$
- **Midpoint:** $[(x_1 + x_2)/2 , (y_1 + y_2)/2]$

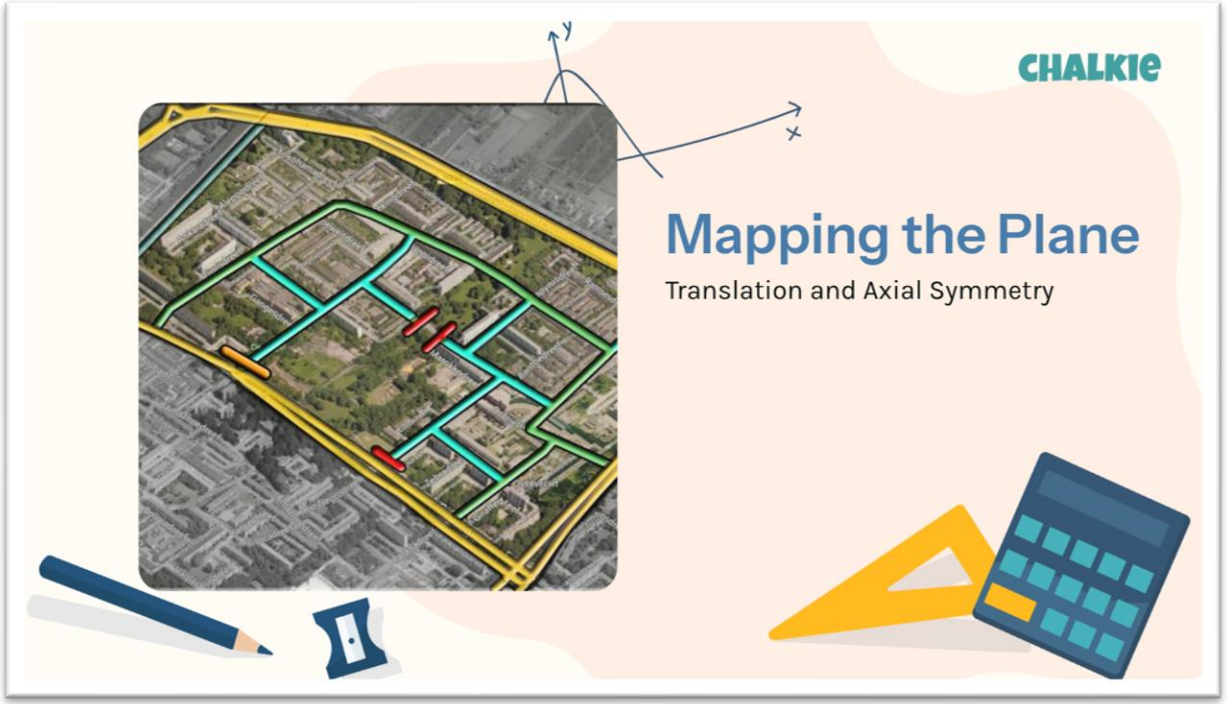
Calculate the **distance** between the following pairs of points. Give your answer in surd form (e.g. √50) or to two decimal places if specified.

Word bank: √20, √34, √45, 5



1. A(2, 4) and B(6, 6). Distance = _____
2. C(-3, 1) and D(0, 5). Distance = _____
3. E(-2, -2) and F(1, 3). Distance = _____

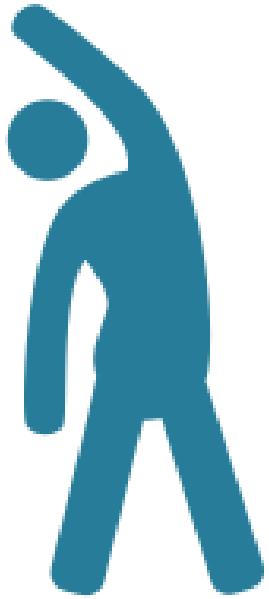
CHALKIE



Demonstration

10 min

Stretch Break



5 min

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Supporting the Professional Learning of School Leaders and Teachers

Breakout Rooms

Developing and Sharing our resources

Activities

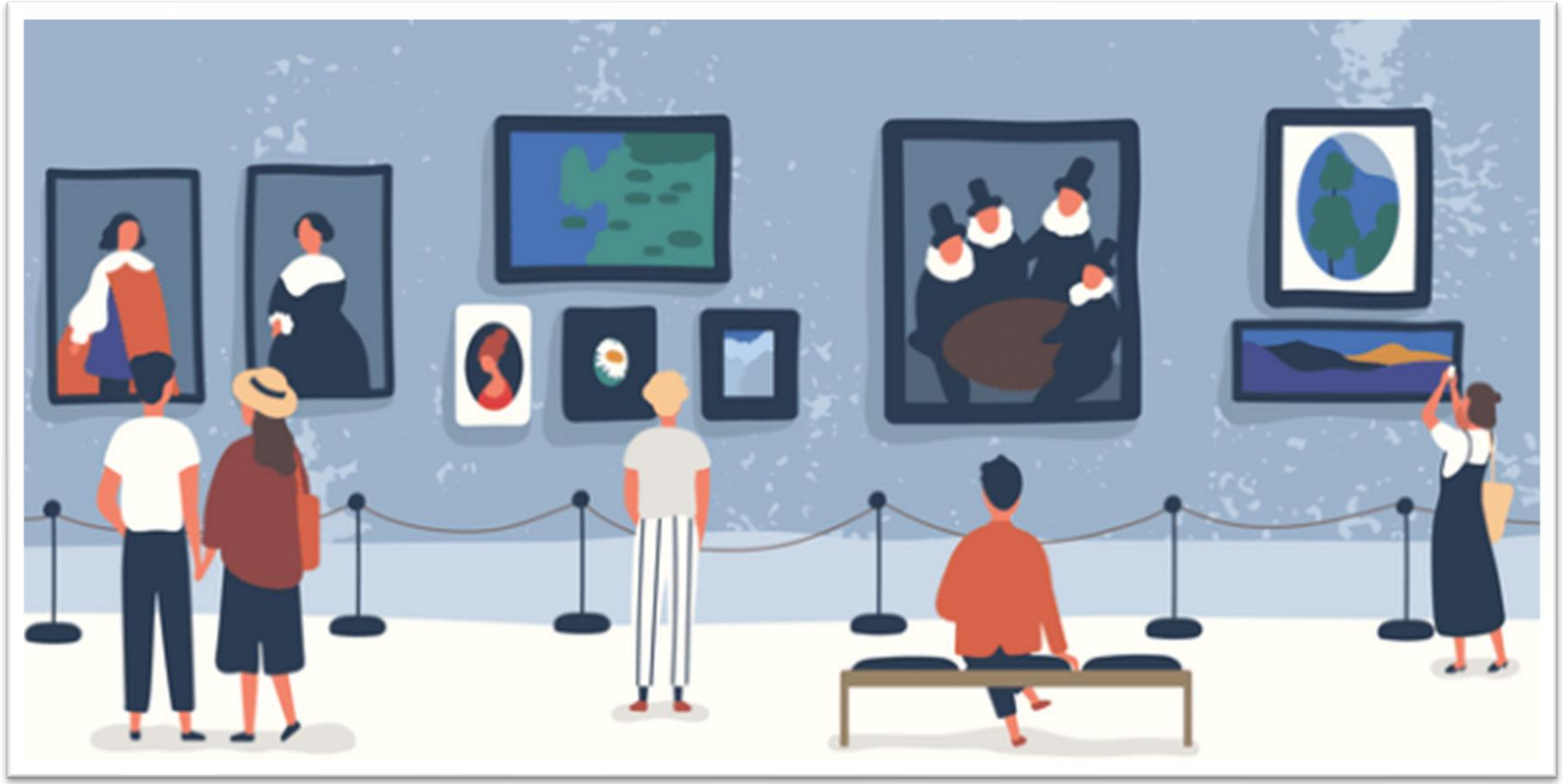
In our Breakout rooms:

- Sample prompts will be shared with you (Padlet)
- Choose the breakout room you would like to enter –if too many enter one room please be aware we will move you to another room
- Chose an LLM
- Prepare a resource that could be used in your teaching practice e.g. develop a resource for a JC class on Probability and if possible, extend it for a TY mathematics class.
- Share resource in main room

Breakout Rooms

Breakout Room	Theme
1a	I am new to GenAI
1b	I am new to GenAI
2a	I have some knowledge of GenAI
2b	I have some knowledge of GenAI
3a	I use GenAI occasionally
3b	I use GenAI occasionally
4a	I use GenAI regularly
4b	I use GenAI regularly

Feedback - Sharing our Resources



Reflection

3 Things I have learnt

2 Questions I still have

1 Action I will take