

Introduction to AI Teacher Guide

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This guide accompanies the 'Introduction to AI' presentation slide deck of the AI in My Life workshop series, which is available at www.adaptcentre.ie/courses/introduction-to-ai/. The programme was developed by the Education and Public Engagement team at the Research Ireland ADAPT Centre at Dublin City University.

Through active discussions, real-world examples, and ethical scenarios, this lesson moves students beyond basic AI tool usage, empowering them to understand how AI works, recognise its limitations, and embrace human agency as critical, responsible digital citizens. By so doing, they'll enhance their critical AI literacy.

Learning Intentions

By the end of this workshop, students will be able to:

1. **Explain AI Mechanics:** Describe the Input → Data → Pattern → Output process.
2. **Identify System Types:** Contrast everyday tools (recommenders, navigation, diagnostics) with Generative AI.
3. **Recognise Risks:** Explain how training data causes algorithmic bias and hallucinations.
4. **Apply Human Agency:** Use the Human-in-the-Loop concept to determine when human judgement is essential.
5. **Practice Digital Literacy:** Critically evaluate AI-generated media and information.

Overview & Setup

- **Target Audience:** Primary audience is Transition Year (TY) students, but content is suited all Second Level students with a little tweaking.
- **Module Duration:** 60 Minutes (with guidance for shortened 40-minute class periods).
- **Curriculum & Skills Alignment:** Media & Digital Literacy, Critical Thinking, Ethical Awareness, and Active Citizenship (see details on Page 2).
- **Materials Needed:** Laptop with Google Slides or PowerPoint, Projector/Screen, WiFi access, student devices (for interactive quizzes). If devices are limited, activities can be done in pairs / small groups.
- **Prerequisites:** There are no prerequisites for this workshop. Students do not need any previous knowledge of AI.
- **Key Vocabulary:** Artificial Intelligence, Training Data, Pattern Recognition, Bias, Hallucination, Human-in-the-Loop.

Curriculum Links

This module aligns with the overarching mission of Transition Year in Ireland: *to promote personal, social, educational, and vocational development, preparing students to become autonomous, participative, and responsible members of society.*

1. Senior Cycle Key Skills Alignment (NCCA)

- **Critical & Creative Thinking:** Evaluate data collection, pattern recognition, and the ethics of algorithmic bias and generative outputs (Slide 11 & Slide 14).
- **Information Processing:** Spot AI "hallucinations," evaluate biased training data, and analyse real-world system applications (Slides 6–10, 12–13).
- **Communicating:** Express opinions in class polls and discuss ethical scenarios (Slides 6, 21)
- **Being Personally Effective:** Reflect on personal AI use and apply the "Human-in-the-Loop" concept to take accountability for created work (Slides 5-6, 19-20).

2. Core Leaving Certificate Subject Alignment

- **Computer Science:** Data, algorithm design, societal impacts of computing, and machine learning principles.
- **Politics & Society:** Power structures, public opinion, digital citizenship.
- **English:** Media literacy, evaluating source credibility, digital rhetoric, and distinguishing AI vs. human text.
- **Society & Ethics / RE:** Moral decision-making, ethical technology design, and human dignity in automated systems.
- **Career Guidance / LCVP:** Emerging job roles, future-of-work skills, and AI in industry.

3. Cross-Curricular Themes

- **Media & Digital Literacy:** Critical evaluation of online information, identifying hallucinations, and recognising bias (Slides 7-15).
- **STEM & Innovation:** Real-world applications of technology, pattern recognition, and data-driven problem solving (Slides 8-13, 19-20).
- **Ethical Awareness:** Question systemic bias in training data, evaluate algorithmic fairness, and examine the societal impact of machine learning outputs (Slides 14-15, 18-19).
- **Active Citizenship:** Evaluate rights to privacy, consider how algorithmic recommender systems influence public debate, and reflect on human agency in an automated society (Slides 6, 10, 19-20).

Suggested Lesson Timing Matrix

60 MINUTES (Recommended)

Complete the full workshop, allowing time for discussion and activities.

40 MINUTES (Possible)

Follow the same sequence, but skip slides marked **OPTIONAL** and shorten overall discussion time.

Activity / Topic	40-Min Workshop	60 Min Workshop	Slide No.
Introduction & Learning Goals	1 min	1 min	Slides 1–2
What is AI?	5 mins	5 mins	Slide 3
Royal Society Video	Skip	3 mins	Slide 4
AI in Your Life, AI in Everyday Life	4 mins	6 mins	Slides 5, 6
What is AI?	1 min	2 mins	Slide 7
How AI Works (Inputs, Data, Patterns, Outputs)	7 mins (Skip Slide 10 – Navigation Systems)	10 mins	Slides 8–12
Training AI & Bias Example ("Athlete")	3 mins	5 mins	Slide 13
Testing AI, Bias, & Hallucinations	3 mins	5 mins	Slides 14–15
AI or Human (Art or AI? & What Makes Us Human)	10 mins	14 mins	Slides 16–18
Human-in-the-Loop & Interactive Scenarios	5 mins	7 mins	Slides 19–20
Wrap-Up	1 min	2 min	Slide 21
Total Duration	40 Mins	60 Mins	

Teacher Notes & Scripting

Important Note for Teachers: Detailed suggested presenter scripts are built directly into the Presenter Notes section of the slide deck for your convenience.

- **If you want a ready-to-read script:** Feel free to use or adapt the built-in slide notes directly during your delivery. *Best for teachers with limited existing knowledge of AI.*
- **If you prefer a conversational approach:** Use the Key Concepts and Talking Points outlined in this guide to lead the discussion naturally in your own voice. *You'll need some basic knowledge of AI for this option.*

Tip: To view the built-in scripts while presenting, use Presenter View in PowerPoint or Google Slides.

Slide-by-Slide Alternative to using 'Presenter Notes' Script (use only if you prefer more flexibility in delivery):

[Slide 1: Title / Introduction to AI]

- Key Concept: AI is transforming digital systems and everyday life, making it essential to understand how it impacts us as citizens.
- Suggested Teacher Script / Discussion Prompts: "Welcome! Today we're diving into Artificial Intelligence – how it works, where you encounter it, and how it's shaping your world."
- Student Activity / Engagement Check: Quick hands-up poll: "How many of you think you interacted with AI before arriving at school today?"
- Discussion Extension: "What does the word 'intelligence' mean to you when applied to a machine vs. a human?"

[Slide 2: Learning Intentions]

- Key Concept: Clear objectives set the roadmap for understanding AI concepts, applications, and ethical considerations.
- Suggested Teacher Script / Discussion Prompts: "By the end of today's session, you'll be able to explain basic AI concepts, spot AI in daily life, and question how these systems make decisions."

- Student Activity / Engagement Check: Thumbs up / Thumbs middle: "How confident do you feel right now explaining what AI actually is?"
- Discussion Extension: "Which key skill (Critical Thinking, Communication, Working with Others) do you think will be most important today?"

[Slide 3: What is AI? (Definition)]

- Key Concept: Artificial Intelligence refers to computer systems engineered to perform tasks that typically require human intelligence, such as learning, reasoning, and problem-solving.
- Suggested Teacher Script / Discussion Prompts: "At its core, AI isn't magic; it's advanced software designed to process data and make decisions or predictions."
- Student Activity / Engagement Check: Call-and-response: "Name one human task that machines can now do better or faster than us."
- Discussion Extension: "Is a calculator AI? Where do we draw the line between a basic automation rule and actual artificial intelligence?"

[Slide 4: What is AI? (Video)]

- Key Concept: A short video introduction illustrating how AI processes information and learns from feedback.
- Suggested Teacher Script / Discussion Prompts: "Let's watch this brief clip from The Royal Society. Pay close attention to how the video defines machine learning."
- Student Activity / Engagement Check: Reflection prompt: Write down one new fact or takeaway from the video.
- Discussion Extension: "How does machine learning differ from traditional coding where a programmer writes explicit line-by-line rules?"

[Slide 5: AI in Your Life]

- Key Concept: AI is seamlessly integrated into daily routines, often operating unnoticed in background applications.
- Suggested Teacher Script / Discussion Prompts: "Have you used AI today? Think beyond chatbots. Think about your phone, apps, and games."
- Student Activity / Engagement Check: Stand up / Sit down: "Stand up if you checked a phone screen, unlocked via Face ID, or checked a social feed this morning."

- Discussion Extension: "If all AI-powered services shut down for 24 hours, how would your typical school day be disrupted?"

[Slide 6: Some Everyday Uses of AI]

- Key Concept: Recommendation engines, facial recognition, search algorithms, and predictive text are common AI tools.
- Suggested Teacher Script / Discussion Prompts: "Here are the main areas where AI touches your day: entertainment, navigation, communication, and search engines."
- Student Activity / Engagement Check: Quick poll: "Which everyday AI tool do you rely on the most: predictive text, camera filters, or recommendation algorithms?"
- Discussion Extension: "Are these everyday tools making us more efficient, or are they making us overly dependent on technology?"

[Slide 7: What is AI? (Data & Patterns)]

- Key Concept: AI systems rely heavily on massive datasets to recognise patterns and make predictions.
- Suggested Teacher Script / Discussion Prompts: "AI doesn't 'think' like a human. Instead, it finds patterns in data. The quality of the output depends directly on the quality of data provided."
- Student Activity / Engagement Check: Quick mental exercise: "If I show an AI 1,000 pictures of cats, how does it recognise a 1,001st picture of a cat?"
- Discussion Extension: "Where do you think companies get these massive datasets, and should they be allowed to use content you create online to train their models?"

[Slide 8: How does AI work? (Input / Data / Pattern / Output)]

- Key Concept: The core workflow of AI consists of taking Input Data, analysing Patterns, and producing an Output.
- Suggested Teacher Script / Discussion Prompts: "Think of AI as a factory pipeline: Data goes in (Input), the system calculates relationships (Pattern), and a decision (e.g., prediction or recommendation) or creation comes out (Output)."
- Student Activity / Engagement Check: Diagram check: Have students sketch a quick 4-box flowchart in their notebooks mapping this pipeline.
- Discussion Extension: "In this pipeline, at which stage are human errors most likely to be introduced?"

[Slide 9: Recommender Systems]

- Key Concept: Algorithms track user behaviour to predict and suggest content that maximises user engagement.
- Suggested Teacher Script / Discussion Prompts: "Ever wonder how TikTok, Netflix, or Spotify know exactly what video or song you want to watch or listen to next?"
- Student Activity / Engagement Check: Hands-up poll: "How many of you have found yourselves doomscrolling because an algorithm kept feeding you content you liked?"
- Discussion Extension: "How do recommender systems create 'filter bubbles' or 'echo chambers' on social media, and why might that be dangerous for society?" [Filter Bubble: When an algorithm tracks what you click and feeds you only what you already agree with, trapping you in a customised content loop.
Echo Chamber: When everyone in a group or feed keeps repeating the same opinions, making it feel like everyone thinks the exact same way you do].

[Slide 10: Navigation Systems]

- Key Concept: Navigation apps analyse real-time GPS data, traffic patterns, and historical speeds to optimise routes.
- Suggested Teacher Script / Discussion Prompts: "Google Maps and Waze don't just know routes; they predict traffic bottlenecks before you hit them."
- Student Activity / Engagement Check: Pair-Share: "How does Google Maps know a road is congested in real time even before a traffic report is filed?"
- Discussion Extension: "If every driver uses the same AI navigation app, could the app accidentally create a traffic jam by sending everyone down the same detour?"

[Slide 11: Diagnostic Systems]

- Key Concept: Medical AI analyses scan data to assist healthcare professionals in identifying diseases faster and more accurately.
- Suggested Teacher Script / Discussion Prompts: "In medicine, AI acts as an assistant to doctors by scanning thousands of X-rays or MRIs in seconds to spot anomalies."
- Student Activity / Engagement Check: Quick Reflection: "Would you trust an AI to analyse your medical scan if a doctor double-checked the work?"
- Discussion Extension: "If a diagnostic AI misinterprets an X-ray and misses an illness, who is ethically and legally responsible: the doctor, the hospital, or the software developer?"

[Slide 12: GenAI Systems]

- Key Concept: Generative AI creates new content (text, images, code, audio) by learning from vast existing data.
- Suggested Teacher Script / Discussion Prompts: "Generative AI tools like ChatGPT or Gemini don't search the web like a search engine. Instead, they generate brand new responses word by word based on probability."
- Student Activity / Engagement Check: Hand-vote: "Who here has used a Generative AI tool for homework, brainstorming, or image generation in the past month?"
- Discussion Extension: "What is the difference between using Generative AI as a learning assistant versus using it as a replacement for critical thinking?"

[Slide 13: Train the AI (Bias Example)]

- Key Concept: AI bias occurs when historical human prejudice or skewed datasets cause systems to make unfair decisions.
- Suggested Teacher Script / Discussion Prompts: "If we ask an AI to generate an image of an 'athlete', what features does it pick? Why might its results reflect stereotypes?"
- Student Activity / Engagement Check: Group Brainstorm: Name three physical traits or sports you think an AI trained primarily on Western web data would default to when asked for an 'athlete'.
- Discussion Extension: "How can tech companies ensure their training datasets represent diverse cultures, genders, and backgrounds fairly?"

Slide 14: Test the AI (Bias & Fairness)

- Key Concept: AI systems can reflect, amplify, and repeat societal biases present in their training data.
- Suggested Teacher Script / Discussion Prompts: "Bias isn't a glitch in the code; it's systematically unfair or skewed training data. If the data fed into an AI reflects past human stereotypes, the AI's outputs will reproduce those exact stereotypes."
- Student Activity / Engagement Check: Scenario Analysis: *"If an AI tool is trained on historical hiring data from the past 50 years to screen job applicants, why might it unfairly penalise certain groups of people?"*
- Discussion Extension: "Who should be responsible when an AI system makes a biased or discriminatory decision: the developers, the users, or the organisation applying it?"

Slide 15: Test the AI (Hallucinations)

- Key Concept: AI tools can present false, made up, or inaccurate information with high confidence (known as AI hallucinations).
- Suggested Teacher Script / Discussion Prompts: "A hallucination happens when an AI doesn't know the answer, but instead of saying 'I don't know,' it generates plausible-sounding facts, dates, or citations that are completely made up."
- Student Activity / Engagement Check: True or False Challenge: "If ChatGPT, Gemini or Copilot give you a historical date complete with citation links, is it guaranteed to be true?"
- Discussion Extension: "What strategies can you use as a student to fact-check AI-generated information before relying on it in school projects?"

[Slide 16: AI or Human? Quiz]

- Key Concept: Generative AI can create visually convincing images that mimic human creativity and artistic techniques.
- Suggested Teacher Script / Discussion Prompts: "Let's test your eye! Examine these artworks and decide which were painted by a human artist and which were generated by AI."
- Student Activity / Engagement Check: Art or AI Quiz: "How did you guess which artworks were created by AI and which by a human hand? Were there any obvious signs?"
- Discussion Extension: "Should AI-generated art be allowed to enter traditional art competitions or get copyright protection? Why or why not?"

[Slide 17: I'm Not a Robot]

- Key Concept: CAPTCHA tests differentiate humans from bots by testing tasks that require human visual and contextual understanding.
- Suggested Teacher Script / Discussion Prompts: "We've all clicked 'select all squares with traffic lights.' You are actually helping train AI vision models when you do that."
- Student Activity / Engagement Check: Quick Question: "Why do you think computers struggle with curved text or obscured street signs while humans read them instantly?"
- Discussion Extension: "As AI vision gets smarter, CAPTCHAs are getting harder for humans. What happens when AI gets better at passing 'human' tests than humans are?"

[Slide 18: What makes us Human?]

- Key Concept: Humans possess empathy, emotional intelligence, moral judgment, lived experience, and genuine creativity that AI cannot replicate.
- Suggested Teacher Script / Discussion Prompts: "AI can process data at incredible speeds, but what human qualities and skills can AI *never* truly duplicate?"
- Student Activity / Engagement Check: Quick Pair-Share: Name two qualities or skills you have that an algorithm will never possess.
- Discussion Extension: "How do human qualities like empathy and moral reasoning play into future careers alongside automated tools?"

[Slide 19: Human-in-the-Loop]

- Key Concept: Critical AI systems require human oversight (Human-in-the-Loop) to ensure ethical, accurate, and safe outcomes.
- Suggested Teacher Script / Discussion Prompts: "Human-in-the-Loop means AI makes suggestions, but a human retains ultimate authority and responsibility over important decisions."
- Student Activity / Engagement Check: Scenario Check: "Should an automated system decide who gets a bank loan, or should a human review the final decision?"
- Discussion Extension: "In fields like criminal justice or healthcare, what ethical dangers arise if we remove the human element completely?"

[Slide 20: What Would You Do?]

- Key Concept: Evaluating the real-world impact of AI requires personal reflection and ethical decision-making frameworks.
- Suggested Teacher Script / Discussion Prompts: "Imagine your school wants to use facial recognition for attendance. Would you support this? What privacy concerns might you raise?"
- Student Activity / Engagement Check: Four Corners activity or Stand/Sit vote: Stand if you agree with using facial recognition in schools, sit if you disagree.
- Discussion Extension: "How do we balance convenience and security against individual privacy rights in modern digital society?"

[Slide 21: Further Workshops & Wrap-up]

- Key Concept: Understanding AI literacy opens doors to exploring AI ethics, the future of work, and exciting future career pathways.
- Suggested Teacher Script / Discussion Prompts: "Today was just an introduction. Next, we can explore AI Ethics, Future of Work, and AI careers."
- Student Activity / Engagement Check: Final Reflection: Write down one thing that surprised you today about AI.
- Discussion Extension: "What can you do to further enhance your AI literacy?"

Additional Resources

- **ADAPT Centre / DCU – AI Literacy in the Classroom Course:**

A 90-minute self-led online course designed by ADAPT, DCU, and Irish post-primary teachers (supported by Google). It equips post-primary educators with foundational AI concepts, AI ethics, and practical strategies to guide students in using AI safely and critically.

- **Oide Technology in Education (AI Hub):**

Provides official Department of Education guidance, the *RASE Prompting Framework*, and short online courses to help teachers understand generative AI, policy considerations, and ethical use in classroom settings.

- **Webwise Ireland:**

Offers dedicated post-primary lessons on Generative AI, online safety, digital citizenship, and data privacy. Its *A Parents' Guide to Generative AI* (developed with ADAPT and the National Parents Council) provides useful discussion prompts on digital footprints and algorithmic influence.

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