Artificial Intelligence - Overview	start Time: 10:20 AM

This activity will introduce key ideas in Artificial Intelligence (AI).

Before you start, share this document with your team member(s) and then complete the form below to assign the role of speaker.

Team Role	Team Member
Speaker: shares your team's ideas with the class.	Arogya Upadhyaya Kelii Kiilehua Lauren Morgenthaler

Part 1: AI Overview

1. (2 min) **Individually on paper**, list 10 very different **activities or tasks** that seem to require "intelligence". For example:

play checkers write poetry
Solving a math problem Solve a puzzle
Writing essay Identify a human or a computer
Read human gestures Read numbers of license plates on 1000s of cars
Translate a language Generate live captions
Correct grammar on writing Analyze handwriting to text

2. (5 min) **As a team**, verbally share your lists, and then identify and list them here:

Scheduling Stock Trading
Quality control of manufacturing

3. (2 min) **As a team**, group your ideas into 4-6 **general categories** of activities or tasks. For example:

play games with simple rules
Making decisions based on data
Make predictions based on data
Analyzing human language and giving suggestions

Take notes here based on the classroom discussion:
AI for analyzing patterns
Problem solving

Creativity
Language/Communication
Physical Interaction

What Is Intelligence?

4. (5 min) Identify 3-5 things that computers can do **now**
that would have seemed intelligent (or even magical) **5 years ago**.
- Writing advanced algorithms
- Finding bugs in code
- Creating a podcast episode based discussing research papers
- Proof-reading papers

5. (5 min) Identify 3-5 things that computers could do **5 years ago**
that would have seemed intelligent (or even magical) **25 years ago**.
- Video calling
- Deep fakes
- Self-driving cars
- Taxes by computers
- Facial Recognition
- Google maps

6. (5 min) Identify 3-5 things that you expect computers will do **within 5 years**
that would seem intelligent or (even magical) now.
- Undetectable deep fakes to the human eye
- AI air traffic control
- Text-edited photographs (example edit someone out of the picture)
- Create a decent orchestral piece with scores and synthetic music of different instruments

7. (5 min) Identify 3-5 things that you expect computers will do within **25 years**
that would seem intelligent or (even magical) now.
- Flying Cars
- Self-flying planes
- Automated kitchens (fast food)
- Robot personal assistants/butlers
- Surgery on Human beings

8. (3 min) In complete sentences, explain how and why the definition of "artificial intelligence" seems to change over time.
The definition changes because AI is in constant progress of advancement and is facing rapid changes.

The definition of intelligence itself is subjective.

9. (10 min) In the remaining time, search the internet to find impressive examples of what AI can do today. List the links here.
- Generate faceless video for social media: https://autopilotshorts.com/
- Swap faces in videos and photos: https://aifaceswapper.io/
- Paper to Podcast: https://notebooklm.google/?gad_source=1&gclid=Cj0KCQiAqL28BhCrARIsACYJvkdosyXETg4miP6Hub2syddLXDcJcYCfIH07LEnctyY7gkVGylDlJtMaAl4BEALw_wcB
- Voice Generation: https://elevenlabs.io/?utm_source=google&utm_medium=cpc&utm_campaign=us_brandsearch_brand_english&utm_id=20455649470&utm_term=elevenlabs&utm_content=brand_exact&gad_source=1&gclid=Cj0KCQiAqL28BhCrARIsACYJvkcir910UhWeQwTX6zET76FWIDAVHySt52DCdLDJdEZ3P66HUGqkIWcaAmYiEALw_wcB

10. (10 min) Which of the following can be performed by a computer at present? Which cannot?

Play a decent game of table tennis? Yes - https://www.technologyreview.com/2024/08/09/1096102/google-deepmind-trained-a-robot-to-beat-humans-at-table-tennis/

Play a decent game of Jeopardy? Yes - https://thinktv.pbslearningmedia.org/resource/nvsn5.sci.eng.jeopardy/can-a-computer-play-jeopardy/#:~:text=Watson%20played%20the%20game%20by,the%20field%20of%20artificial%20intelligence.

Drive safely along a curving mountain road? Somewhat - Tesla
Buy a week's worth of groceries on the web? Yes - Instacart
Buy a week's worth of groceries from Walmart? Yes
Discover and prove a new mathematical theorem? No
Converse successfully with another person for an hour? No
Perform a surgical operation? No
Put away the dishes and fold the laundry? No
Translate spoken Chinese into spoken English in real time? Yes - Google Translate
Write an intentionally funny story? No

11. (10 min) List out at least three risks or misuse of AI.
    - Fake videos and calls
    - Job scarcity
    - Media manipulation
    - Rogue behavior from the computers

Part 2: Turing Test

Background Information: The Turing Test, introduced by Alan Turing in 1950, evaluates whether a machine can exhibit behavior indistinguishable from a human. It highlights how AI aims to replicate human intelligence.

1. Why did Alan Turing believe that successfully imitating human behavior was a meaningful measure of AI?
- Because humans would be the ones using and getting benefits from AI and humans are known as intelligent creatures so measuring with human intelligence would be a reference point for measurement.

2. Does passing the Turing Test mean that a machine is truly intelligent? Why or why not?
- Possibly, but it is subjective to human intelligence, which is what we best have to base intelligence off of.
- Intelligence could be tied to sentience and if that is the definition of intelligence then any modern machine could be truly intelligent

3. Provide an example of a modern AI system that could convincingly pass the Turing Test.
- ChatGPT

4. Discuss why some tasks that were considered a sign of intelligence in Turing's time are now seen as routine operations.
- Since technology is evolved very far from Alan Turing's time, the intelligent things of that era are now the basic features of every phone that people use, for example setting a reminder based on location. Therefore the tasks are routine tasks and are not a special task that requires intelligence today.

Part 3: Gorilla Problem

Background Information: The Gorilla Problem, as described by Stuart Russell in AI and the Problem of Control, explores the potential risk of AI surpassing human intelligence and autonomy. It draws an analogy to how humans, the "accidental" successors of gorillas, now

dominate them. The concept highlights the existential risks of creating machines that could evolve beyond human control.

1. What does the Gorilla Problem suggest about the importance of maintaining control over advanced AI systems?

The Gorilla Problem suggests that there is a danger of AI evolving so far that it may one day dominate/control humans or even do things that were not intended by humans. As humans did with gorillas.

2. What safeguards could be implemented to prevent AI from surpassing human autonomy?
Understanding how the AI works, not fully relying on the outputs provided by the AI agent and fact-checking them, AI is based on what humans provide - so if we only teach them what humans need then they will benefit us rather than take over
Regulations On AI

3. Why might the Gorilla Problem be considered both a technical and ethical challenge?

AI driving on it's own goals and interest and not aligned with the human interest

AI needs to be altruistic but that is very difficult to achieve since the progress of AI is dictated by individuals and corporations who are inherently flawed by the human condition