



ARTIFICIAL INTELLIGENCE CURRICULUM

Class 6-8
Facilitator Handbook



ARTIFICIAL INTELLIGENCE CURRICULUM

Curated with support from Intel®

Acknowledgement

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About the Book

Artificial Intelligence (AI) is being widely recognized to be the power that will fuel the future global digital economy. AI in the past few years has gained geo-strategic importance and a large number of countries are striving hard to stay ahead with their policy initiatives to get their country ready.

India's own AI Strategy identifies AI as an opportunity and solution provider for inclusive economic growth and social development. The report also identifies the importance of skills-based education (as opposed to knowledge intensive education), and the value of project related work in order to “effectively harness the potential of AI in a sustainable manner” and to make India's next generation 'AI ready'.

As a beginning in this direction, CBSE has introduced Artificial Intelligence as an optional subject at Class IX from the Session 2019-2020 onwards. To enhance the multidisciplinary approach in teaching learning and also to sensitize the new generation, it was decided that Schools may start AI “Inspire module” of 12 hours at Class VIII itself.

CBSE is already offering various Skill subjects at Secondary and Senior Secondary level to upgrade the skills and proficiency of the young generation and also to provide them awareness to explore various career options. At Secondary Level, a Skill subject may be offered as additional sixth subject along with the existing five compulsory subjects.

CBSE acknowledges the initiative by Intel India in curating this Facilitator Manual, the AI training video and managing the subsequent trainings of trainers on the Artificial Intelligence Curriculum.

The aim is to strive together to make our students future ready and help them work on incorporating Artificial Intelligence to improve their learning experience.

Contents

Conceptual Framework

Introduction to Artificial Intelligence	3
Rationale	4
The Purpose	4
Overview of the AI Curriculum	5
Overview and Learning Objectives of the AI Program	6
Essential Learning Experience from AI	6
Developing Key Competencies for Lifelong Learning	6

The AI Curriculum

School Procedures for AI Implementation	7
AI Implementation Procedures	7
AI Syllabus	8
Unit wise Distribution	8
Assessment	9
Suggestive Assessment Approaches for AI	9
AI Curriculum Mapping	10
Interdisciplinary Integration with Artificial Intelligence - Class IX	10
AI Learning Indicators	11
Translating AI on Ground	13
Creating the Mindset	13
Preparatory Groundwork	13
Facilitating and Feedback	13
Mentoring and Monitoring	13

Unit 1

1.1 Excite	14
Introduction to AI	14
Dream Smart Home	16
Activity – Game Time	18
Quiz Time: AI Quiz	23
Activity: Letter to Future Self	24
1.2 Relate	26
Floorplan Activity	26
Creating a Story: Are you a good Storyteller?	30
1.3 Purpose	34
Sustainable Development Goals	34
Go Goals:	36

1.4 Possibilities	40
Group Activity: Research on current AI Trends	41
Poster Making – Job Advertisement for 2029!	46
1.5 AI Ethics	49
Activity – Watch the video AI for Good.	49
Balloon Debate	50

All curated material has been responsibly sourced online or purchased

Conceptual Framework

Introduction to Artificial Intelligence

Artificial Intelligence has always been a term which intrigues people all over the world. Various organisations have coined their own versions of defining Artificial Intelligence. Some of them are mentioned below:

Niti Aayog: National Strategy for Artificial Intelligence

AI refers to the ability of machines to perform cognitive tasks like thinking, perceiving, learning, problem solving and decision making. Initially conceived as a technology that could mimic human intelligence, AI has evolved in ways that far exceed its original conception. With incredible advances made in data collection, processing and computation power, intelligent systems can now be deployed to take over a variety of tasks, enable connectivity and enhance productivity.

World Economic Forum

Artificial intelligence (AI) is the software engine that drives the Fourth Industrial Revolution. Its impact can already be seen in homes, businesses and political processes. In its embodied form of robots, it will soon be driving cars, stocking warehouses and caring for the young and elderly. It holds the promise of solving some of the most pressing issues facing society, but also presents challenges such as inscrutable “black box” algorithms, unethical use of data and potential job displacement. As rapid advances in machine learning (ML) increase the scope and scale of AI’s deployment across all aspects of daily life, and as the technology itself can learn and change on its own, multi-stakeholder collaboration is required to optimize accountability, transparency, privacy and impartiality to create trust.

European Artificial Intelligence (AI) leadership, the path for an integrated vision

AI is not a well-defined technology and no universally agreed definition exists. It is rather a cover term for techniques associated with data analysis and pattern recognition. AI is not a new technology, having existed since the 1950s. While some markets, sectors and individual businesses are more advanced than others, AI is still at a relatively early stage of development, so that the range of potential applications, and the quality of most existing applications, have ample margins left for further development and improvement.

Encyclopaedia Britannica

Artificial intelligence (AI), the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience.

In other words, AI may be defined as:

AI is a form of intelligence; a type of technology and a field of study. AI theory and development of computer systems (both machines and software) are able to perform tasks that normally require human intelligence. Artificial Intelligence covers a broad range of domains and applications and is expected to impact every field in the future. Overall, its core idea is building machines and algorithms which are capable of performing computational tasks that would otherwise require human like brain functions.

Rationale

Schools have an important and responsible role to provide learning opportunities for the students and guide them on the path to success. There is need to channelize learning towards applying innovative skills and application that will contribute towards a robust future in a sustainable world.

A school is recognized because of the capability of its teachers to bring out the best in the students. Students are the ones who will shape the future of the country – they are the ones who need to pave the way to sustainable development and to preserve the planet.

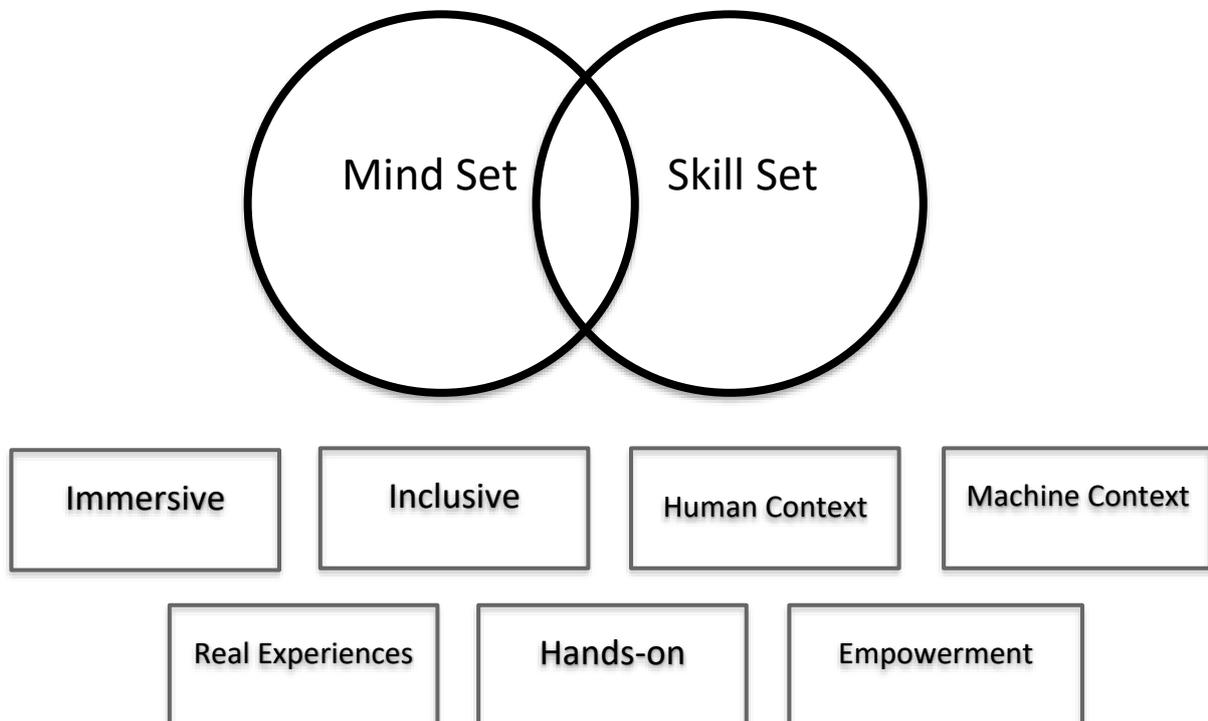
Much aligned to this are the sustainable development goals (SDG) that focus on the well-being of the planet and teachers have the role of introducing these SDGs to the students.

Students also need to be guided on recognizing the pros and cons of Artificial Intelligence and on being able to differentiate between what is right and acceptable and what is not.

The Purpose

Artificial intelligence is gaining the spotlight across applications in our personal and professional lives. We need to take charge of preparing ourselves and our students for the future. Hence, Central Board of Secondary Education (CBSE) has decided to introduce artificial intelligence as an elective subject.

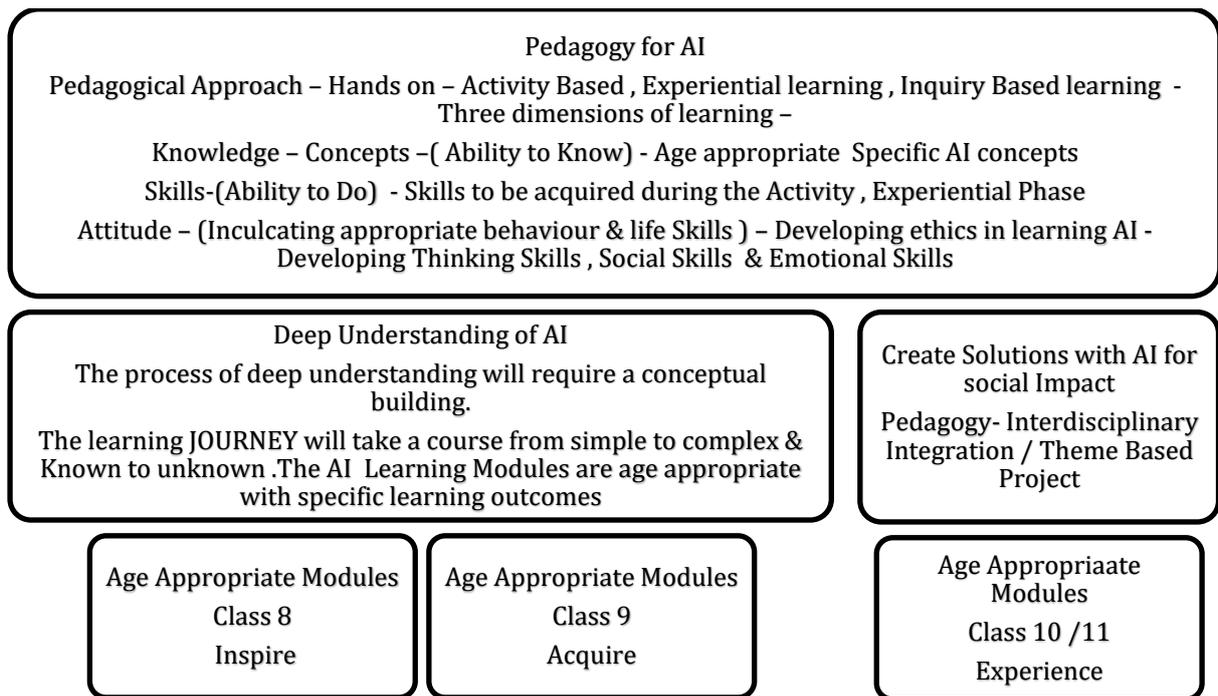
Uniqueness of the Program



Overview of the AI Curriculum

Artificial Intelligence Curriculum aims at developing the learner's mind set and skills set towards artificial intelligence and how it is understood and applied. The important principle that artificial intelligence embraces is holistic inclusive and progressive development in immersive ways by problem solving, creative thinking, and critically analysing data.

Overview and Learning Objectives of the AI Program



Essential Learning Experience form AI

The core essential learning experiences from the AI course are

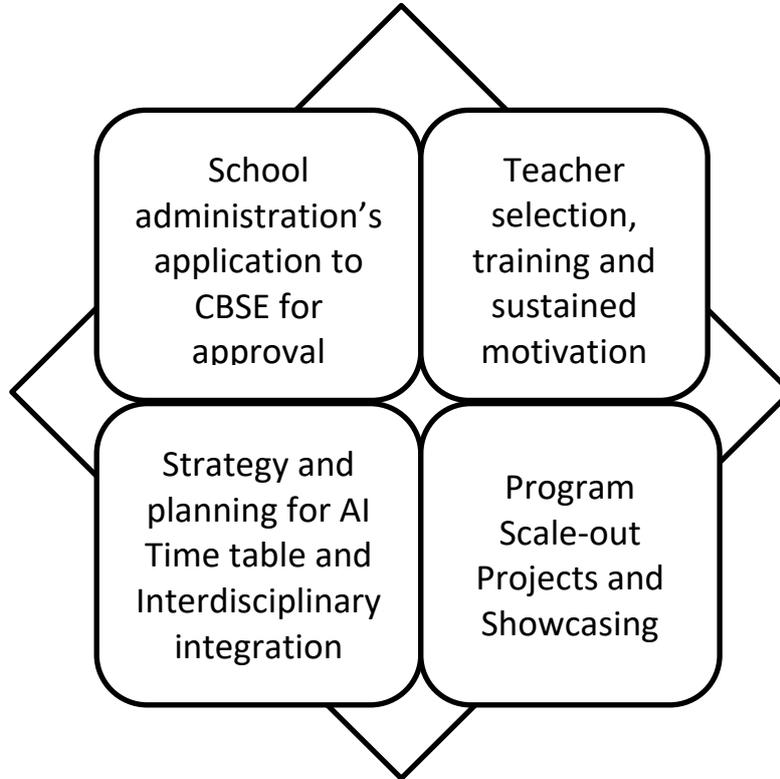
- Experiences of creating by Identifying Problem solving
- Experiences of Informed decision making
- Experiences of demonstrating responsible citizenship
- Experiences of self-reflection, values and ethics.
- Experiences for exploring future career opportunities

Developing Key Competencies for Lifelong Learning

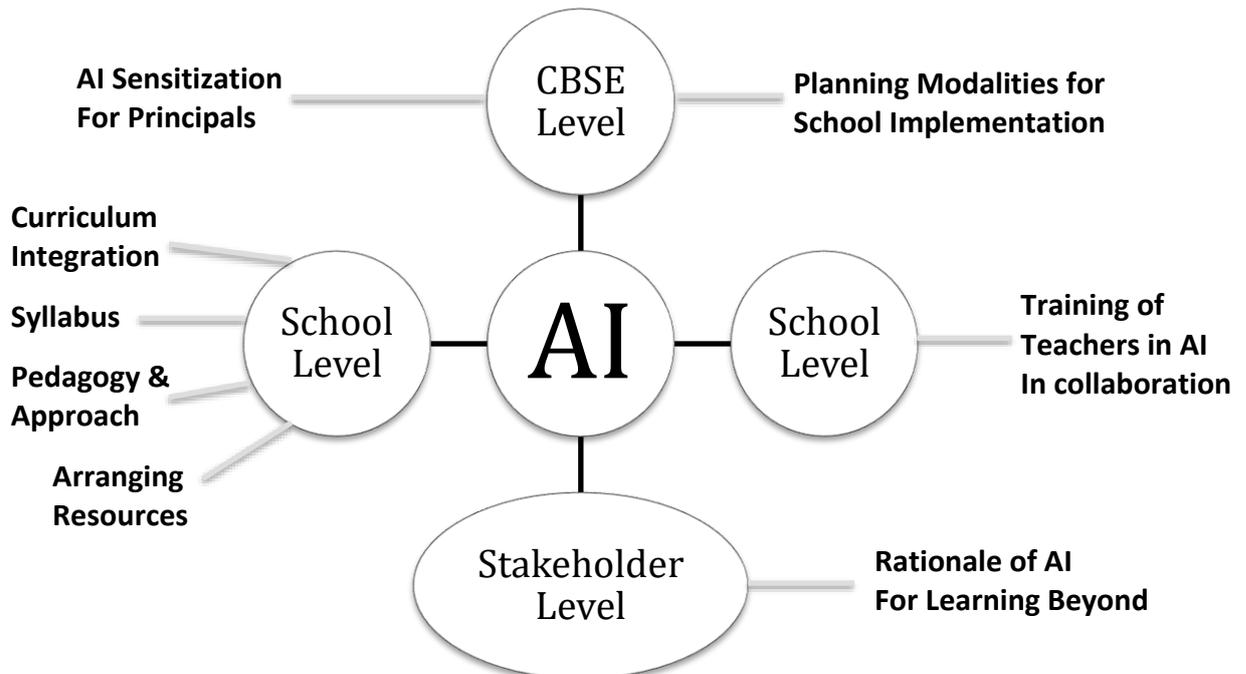
- Learning and problem solving
- Developing interaction and cooperation
- Innovativeness and initiative
- Application across key disciplines
- Social responsibilities and applications
- Vocational ethics
- Communication skills

The AI Curriculum

School Procedures for AI Implementation



AI Implementation Procedures



Translating AI on Ground

Creating the Mindset

The aim is to familiarize students into understanding the AI Program. The foundation on which AI is built upon is Patterning; Data interpretation; Sorting; Comparing; Classifying; Identifying. The AI Applications that surround us are proof of innovation using technology. We need to prepare ourselves to unlearn, learn and relearn!

Preparatory Groundwork

Reading and gathering all information one can get about what is AI and what is not - is imperative for a better understanding of the subject. Be prepared to connect to new learning on the basis of your previous knowledge. – Read, Research, inquire, ask questions, watch videos, talk for and against AI, walk through Malls, airports, hospitals and try to figure out what is AI and what is not.

Facilitating and Feedback

Learning to Facilitate is learning to know the difference between when to guide/suggest and when to allow students to figure out and understand for themselves, question, hypothesize and take the challenge.

Being a Facilitator is mostly about how to motivate, encourage and simplify.

Learning to use appropriate vocabulary while giving feedback is the skill set most required by a Facilitator. Give feedback in a positive manner to inspire students to explore and persevere in their learning.

Mentoring and Monitoring

Ensure that continuity is maintained in mentorship and monitoring to facilitate students' learning. Online feedback, Interactive discussions on problems and challenges are some of the ways to assist this.

Facilitator Instructions for each activity can be found in such Boxes throughout the manual.

Unit 1

1.1 Excite

Facilitator Guide

Title: Excite	Approach: Game
Summary: Students will play a few games that involve AI technology and computer applications. Consequently, they will learn about the 3 Domains of AI and do a quiz and reflection about this session.	
Objectives: <ol style="list-style-type: none">1. Students get their first taste of what problems Artificial Intelligence can solve and become excited about learning the technology behind it.2. Gain the habit of solving problems by practicing critical thinking and self-directed learning.3. To discover more about themselves and their friends.	
Learning Outcomes: <ol style="list-style-type: none">1. Describe application of AI in their daily lives.2. Identify the 3 domains of AI.	
Pre-requisites: Basic computer literacy	
Key-concepts: 3 Domains of Artificial Intelligence	

Introduction to AI

Purpose: Introduce the program to students.

Say: *“The Artificial Intelligence Curriculum hopes to inspire AI-Readiness in you. At the end of this program, we hope you will get a deep understanding of AI, access to AI-powered tools and the ability to create solutions with AI.”*

Ask the students to answer the questions that follow. Let them write their own views without any guidelines or instructions. After filling the questionnaire, discuss the answers with the whole class so that you get to know what their expectations are regarding the AI curriculum.

Welcome to an Introduction to Artificial Intelligence!

What do you think Artificial Intelligence is?

What do you want to learn about AI?

How do you think we should go about it?

What will you learn?

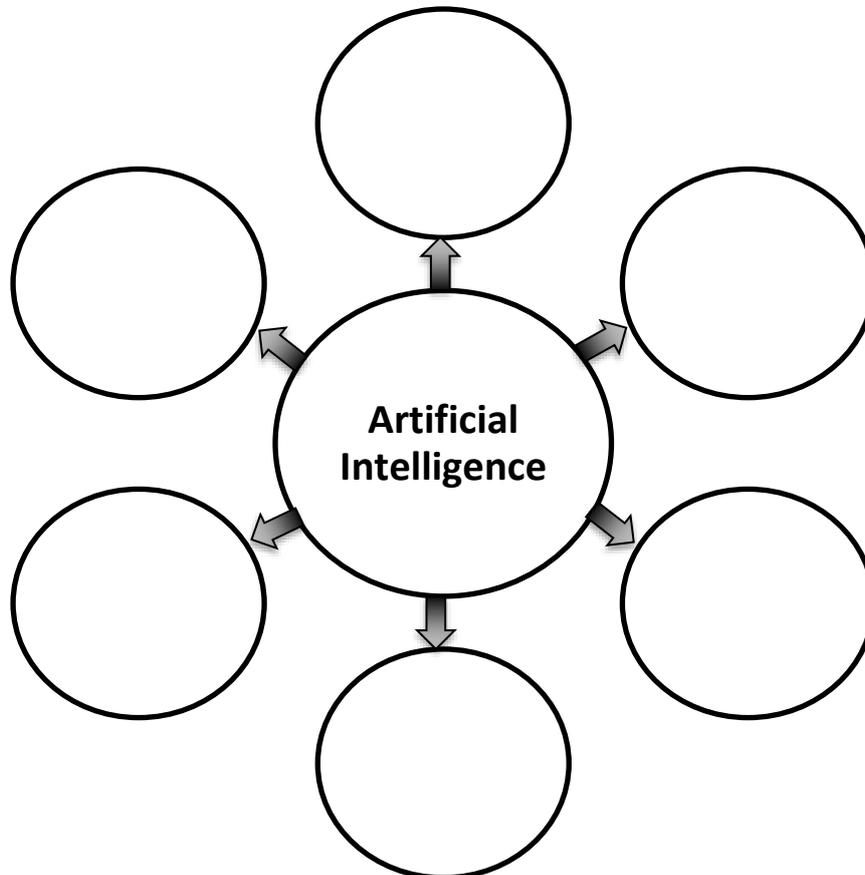
AI is a form of intelligence; a type of technology and a field of study.

AI theory and development of computer systems (both machines and software) are able to perform tasks that normally require human intelligence.

Artificial Intelligence covers a broad range of domains and applications and is expected to impact every field in the future.

Overall, its core idea is building machines and algorithms which are capable of performing computational tasks that would otherwise require human like brain functions.

How do you think Artificial Intelligence can help you as you go about your daily life? Fill in your ideas below:



Dream Smart Home

Session Preparation

Logistics: For a class of 40 Students. [Individual Activity]

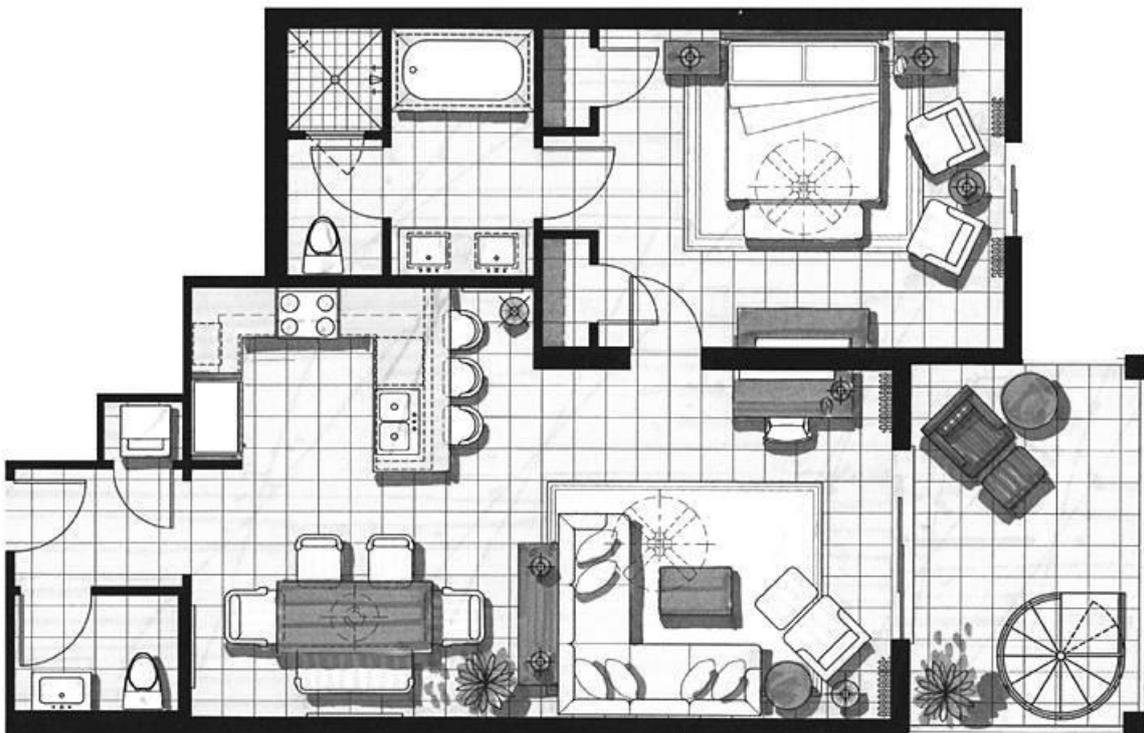
Materials Required:

ITEM	QUANTITY
A4 Sheets	40
Sketch-pens	40

Purpose: Icebreaker activity to get the students excited towards the AI curriculum.

Say: *“We want to get to know you better. Home is where your heart is. Your home will always be the place for which you feel the deepest affection, no matter where you are. Draw a floorplan of your dream home. Does it have a swimming pool... or does it have a place for you to indulge in your favourite hobby... Or if you like gardening... Do you have a garden indoors or outdoors? Imagine you can look down from above at all the spaces in your dream home. What does it look like? Draw it out!”*

Congratulations! You have just won the opportunity to design your Dream Home!

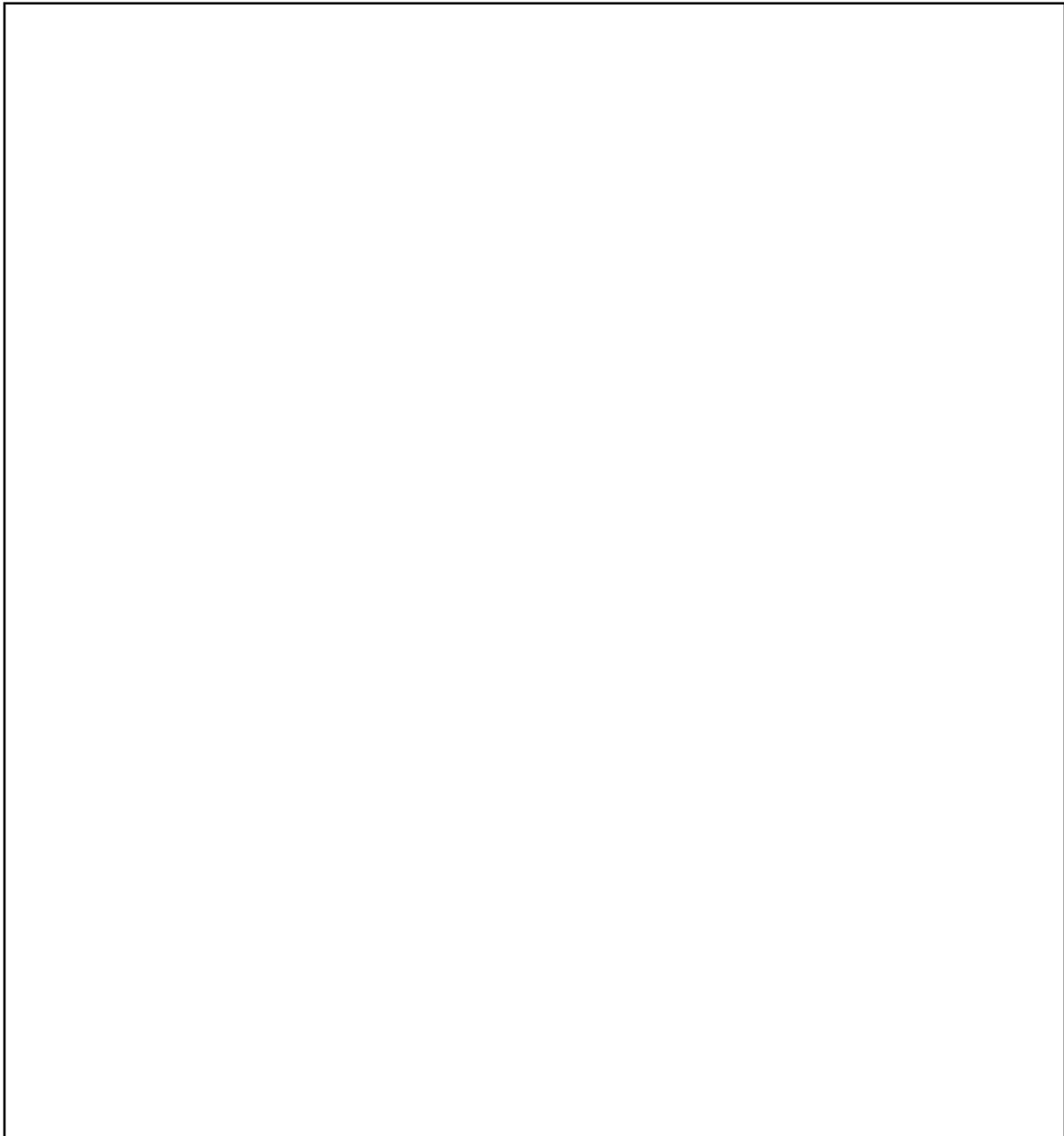


If you could design your home, what would your ideal home look like? Would it have some unique features other than the existing Drawing Room Kitchen Bedrooms etc.? Would it have a swimming pool? A garden - indoors or outdoors? A hobby corner? What if your home could follow all your commands? What are the luxuries that you can include?

Design a layout of a floor plan of your dream smart home.

Include any gadgets or devices that you think will make it unique or “smart”.

Floor Plan of My Dream Smart Home



Activity – Game Time

Session Preparation

Logistics: For a class of 40 Students [Pair Activity]

Materials Required:

ITEM	QUANTITY
AI Game Clues	20
Computers	20
Headphones (With Microphone)	20
Webcams	20

Resources:

Link for Game 1 (Rock, Paper and Scissors): <https://www.afiniti.com/corporate/rock-paper-scissors>

Link for Game 2 (Mystery Animal): <https://experiments.withgoogle.com/mystery-animal>

Link for Game 3 (Emoji Scavenger Hunt): <https://emojiscavengerhunt.withgoogle.com/>

Games are an integral part of our culture. People across the world participate in different kinds of games as a form of social interaction, competition and enjoyment.

The basic principle of every game is rule setting and following the rules.



Write down three rules in the given spaces you would set before playing any games?

Rule 1

Rule 2

Rule 3

Purpose: The purpose of this section is to expose students to the 3 domains of AI (Natural Language Processing, Computer Vision and Data for AI).

Brief: [Pair Activity] Students will go through three AI games in the form of a challenge. The link for each challenge will be printed on small slips and given to the students one after the other. They have to finish all the three challenges within an hour.

Game Descriptions:

Rock, Paper & Scissors: A game based on Data for AI where the machine tries to predict the next move of the participant. It is a replica of basic rock, paper and scissors game where the machine tries to win ahead by learning from the participant's previous moves.

Mystery Animal: A game based on Natural Language Processing where the participant has to guess the animal by asking maximum 20 questions to AI. The animal randomly gets selected for each game by AI and the machine replies in either yes or no.

Emoji Scavenger Hunt: A game based on Computer Vision where the machine initiates the game by showing an emoji. The participant is expected to show a similar object in-front of the camera while the machine keeps on guessing what is being shown to it.

When to intervene?

Rock, Paper & Scissors: Ask the students to see how does the machine react if they 1. Make moves in a specific pattern, 2. Make moves randomly.

Mystery Animal: Ask students to figure out basic characteristics of the animal by asking questions like "Can you swim?", "Are you a carnivore?", "Are you a mammal", etc.

Emoji Scavenger Hunt: Ask them to try new things like drawing the emoji on paper and showing it to the machine.

Say: *"We are going to get serious now! You are challenged by an eccentric data scientist, to solve 3 challenges he designed. You have 60 mins before he inserts a virus in every electronic device in the world! We will work in groups of 4-5 < group Students now >. Whether you are ready or not, the countdown is going to start now! Grab a seat in front of the computer and start your challenge. [Pass every group a mission card]"*

The AI Game Challenge –

Guess what.....?

- ❖ Here are some visuals that will help you guess the games you are going to play, You have 10 seconds to guess and write the name of the games below:



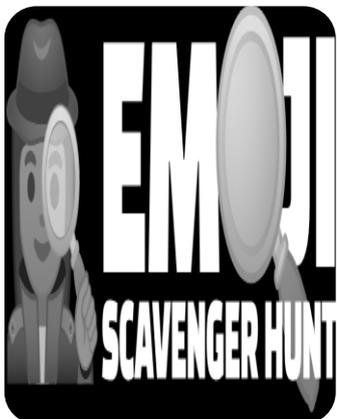
Guess the game.

Have you tried it before?



Guess the game.

Have you tried it before?



Guess the game.

Have you tried it before?

Pair Activity:

Team up with a partner and let the challenge begin!

- **Game 1: Rock, Paper and Scissors** *(based on Data)*

Write three things you learnt from the game?

List the different sources from where you can collect data?

- **Game 2: Mystery Animal**

(based on Natural Language Processing - NLP)

Mention three things you understood about the game?

What is Natural Language Processing?

- **Game 3: Emoji Scavenger Hunt**

(based on Computer Vision – CV)

Did you face any difficulty while playing this game?
How did you overcome this?

What is Computer Vision?

Let's Discuss

Why should these three games be relevant for AI awareness?

Group Activity: Reflect and Analyse:

Session Preparation

Logistics: For a class of 40 Students [Individual Activity]

Materials Required:

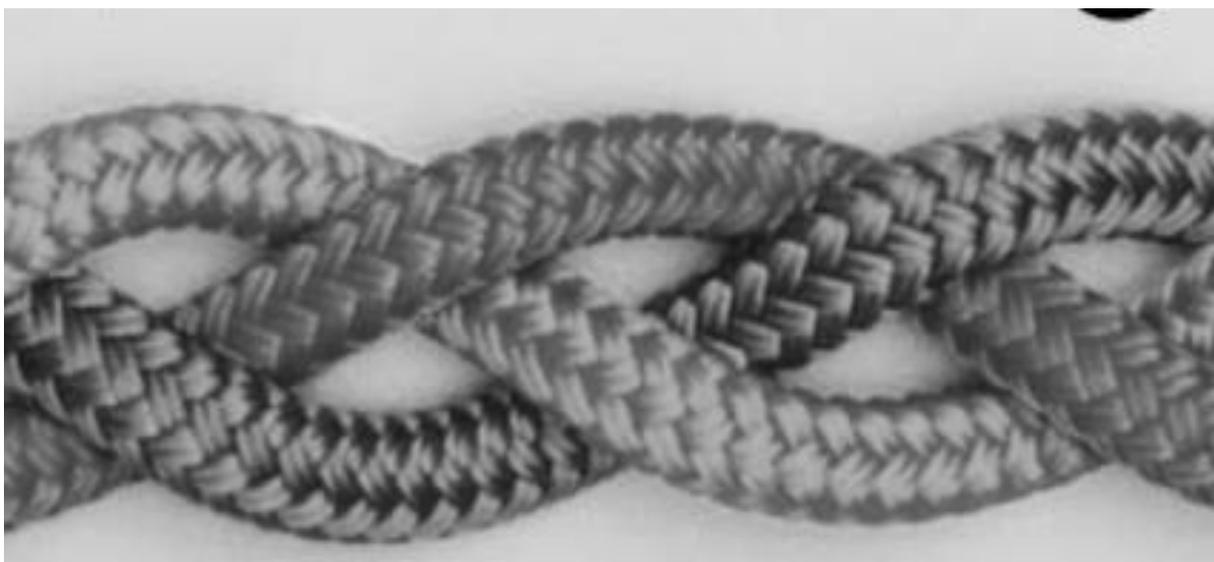
ITEM	QUANTITY
Three Different Coloured Strands of Thread (50 cm each)	40 each colour

Purpose: To understand how three AI domains are inter-related to each other.

Students will get to know that even if these three domains of AI – Natural Language Processing, Computer Vision and Data for AI are quite distinct from each other, they together constitute the concept of Artificial Intelligence.

Take three different colour strands and work them into a braid. See how long your braid can become within 30 seconds!! Ready? Go!!!

Let's understand: To understand AI we draw an analogy from the three strands in a braid. One is the Data strand, the second is the Natural Language Processing strand and the third strand is the Computer Vision. They all together constitute the concept called Artificial Intelligence.



Quiz Time: AI Quiz

Session Preparation

Logistics: For a class of 40 Students [Pair Activity]

Materials Required:

ITEM	QUANTITY
Computers	20

Brief:

The following are questions for the quiz. You can either go for a Pen/Paper Quiz or you can visit any open-sourced, free, online portal; one of which is Kahoot, and create your quiz there.

For Kahoot: Got to <https://kahoot.com/> and create your login ID on it. Then, add your own kahoot in it simply by adding all the given questions into it. Once created, you can initiate the quiz from your ID and students can participate in it by putting in the Game pin.

Quiz Questions:

1. Which one of the following is an application of AI?
 - a. Remote controlled Drone
 - b. Self-Driving Car
 - c. Self-Service Kiosk
 - d. Self-Watering Plant System
2. This language is easy to learn and is one of the most popular language for AI today:
 - a. C++
 - b. Python
 - c. Ruby
 - d. Java
3. Which of the following is not a stage in the AI Project Cycle:
 - a. Problem Scoping
 - b. Data Acquisition
 - c. Data Exploration
 - d. Prototyping
4. This field is enabling computers to identify and process images like humans do:
 - a. Face Recognition
 - b. Model-view-controller
 - c. Computer Vision
 - d. Eye-in-Hand System
5. What does NLP stand for in AI?
 - a. Neutral Learning Projection
 - b. Neuro-Linguistic Programming
 - c. Natural Language Processing
 - d. Neural Logic Presentation

6. This is a program that allows the computer to simulate conversation with a human being:
 - a. Speech Application Program Interface
 - b. Chatbot
 - c. Voice Recognition
 - d. Speech Recognition
7. This is a system of Programs and Data-Structures that mimics the operation of the human brain:
 - a. Intelligent Network
 - b. Decision Support System
 - c. Neural Network
 - d. Genetic Programming
8. Where is Decision tree used?
 - a. Classification Problem
 - b. Regression Problem
 - c. Clustering Problem
 - d. Dimensionality Reduction
9. What does model. Add (dense(32, input_shape=(784))) do?
 - a. It adds an input layer
 - b. It adds a hidden layer
 - c. It adds an output layer
 - d. It adds a dense layer
10. How excited are you about this AI curriculum?
 - a. Very Excited!
 - b. A bit excited
 - c. Same as always
 - d. Not excited at all

AI Quiz (Paper Pen/Online Quiz)

Quiz to be conducted by the facilitator/teacher.

Activity: Letter to Future Self

Session Preparation

Logistics: For a class of 40 students [Individual Activity]

Materials Required:

ITEM	QUANTITY
A4 Sheets	40

Purpose: To capture students current mood and thoughts about their future with AI

Say: *"I would like you to put on your reflective cap and write a letter to your future self. What do you want to tell yourself or remind yourself?"*

Imagine the world in 2030 and write a letter to your future self. Be sure to mention things that you think your future self would probably be doing and experiencing in daily life.

Place _____

Date _____

Dear _____,

It feels a little strange to be writing a letter to my future self, but it's also rather exciting!



At present I am very interested in _____ and am sure this is a hobby that has proved beneficial and I am now a skilled _____.

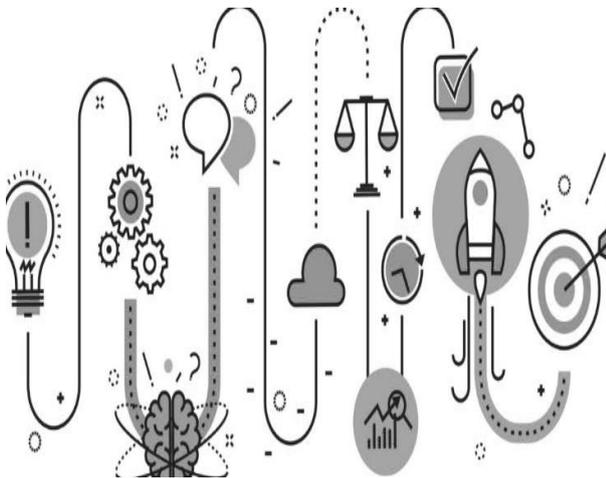
So tell me have things changed a lot? Do we still have a lot of _____?

Has Artificial Intelligence proved to be _____?

You must be so used to _____ while we struggle to _____.

Is our Pet _____ doing well or have you replaced it with _____?

Ha! Ha! It's so much easier, right?!



How is your preparation for the new job?
Must be really nice to be _____.

Have you changed the _____?

Am sure things have turned out well for you in 2030. Great _____!

It's been nice writing to you _____.

Hope this letter brings back old memories...

Sincerely,

.....

1.2 Relate

Facilitator Guide

Title: Relate	Approach: Activity
Learning Objectives: <ol style="list-style-type: none">1. Students gain an awareness of where Artificial Intelligence is relevant in their lives.2. Practice storytelling using an open source AI tool.	
Pre-requisites: Basic computer literacy	
Learning Outcomes: <ol style="list-style-type: none">1. Gain an awareness of where Artificial Intelligence is relevant in their own lives2. Practice storytelling using an open source AI tool.	
Key-concepts: <ol style="list-style-type: none">1. Smart Homes and Cities2. Interactive Story Writing	

Share your ideas about Smart Home and write them down in the box?



Floorplan Activity :

Session Preparation

Logistics: For a class of 40 Students

Materials Required:

ITEM	QUANTITY
Computer	1
Projector + Screen	1

Resources:

Link for Smart cities video: <https://www.youtube.com/watch?v=eRMiKt81nAE>

Link for Smart Home video: <https://www.youtube.com/watch?v=1CajaUoI3vU>

Purpose: To recap what was done previously so that the students can see a transition in the content. It also helps them relate to AI, starting from their own lives.

Say: [Video 1] *“Today we are going to explore smart city and smart homes! Do you think our city is smart? Why and why not? Do you think it is going to become smarter? Why and why not? You can play a part in building this smart city you call home! I am going to show you two videos. The first one is about smart cities.”*

[Video 2] *“Now, I am going to show you another video. This is a home tour of a smart home. Observe what are the smart elements when you watch the video. [Watch Video] What did you see? What do you like? Is this what your house would look like? What more do you wish it had? What would your house need? (more country-culture-need specific)”*

Let the students look at the concepts of Smart Cities and Homes and ask them to make considerable changes in the floor plans they made in the Excite Session. Let them add some new features or functionalities to it which could be related to the idea of a Smart Home.

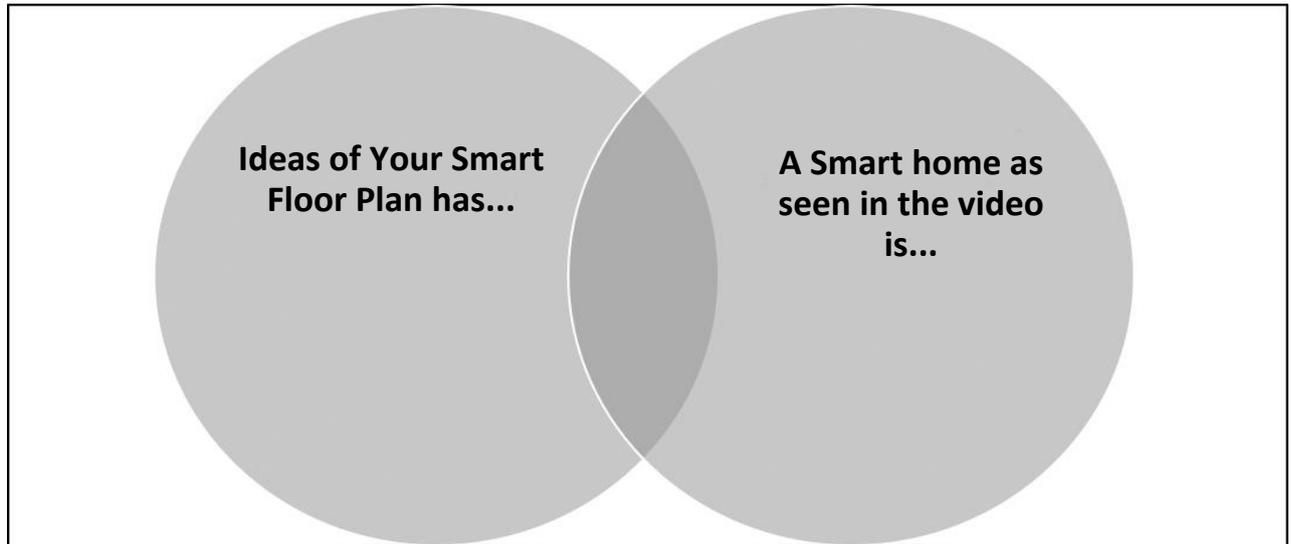
Revisit the Floor plan you created for your smart home in UNIT 1- Excite.



Watch the videos showing the concept of a Smart City and a Smart Home.

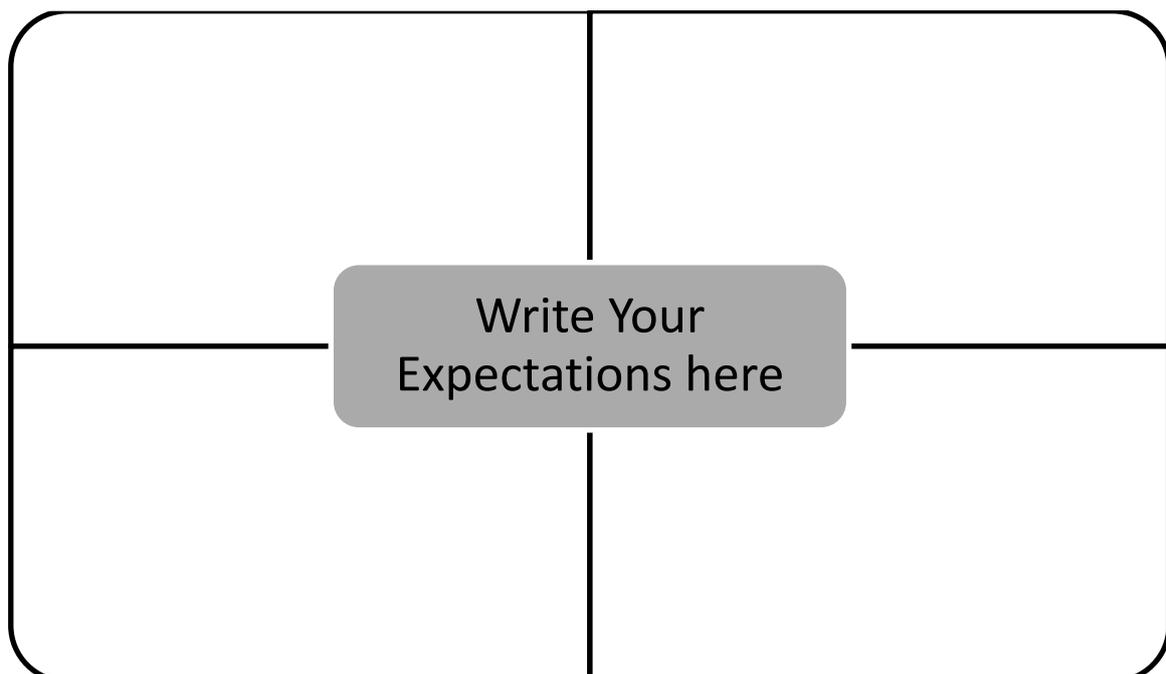
Link for Smart cities video: <https://www.youtube.com/watch?v=eRMiKt81nAE>

Link for Smart Home video: <https://www.youtube.com/watch?v=1CajaUoI3vU> After watching these videos, compare them with the smart Floorplan you created and fill up the Venn diagram.



Redesigning:

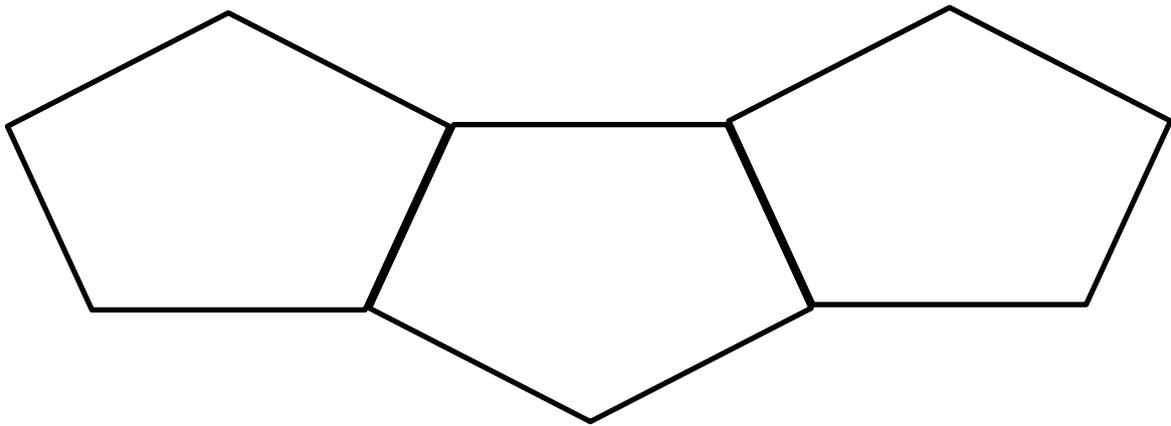
Take a relook at your floor plan and redesign it to make it an effectively Smart home. You may like to list your expectations of a Smart home before you start redesigning.



Redraw your new Smart Floor Plan here:



Identify what new things you have added to make your dream home “smart”?



Creating a Story: Are you a good Storyteller?

Session Preparation

Logistics: For a class of 40 students [Pair Activity]

Materials Required:

ITEM	QUANTITY
Computers	20
Headphones (With Microphone) [optional]	20

Resources:

Link to install Story Speaker extension for Story Speaker:

<https://chrome.google.com/webstore/detail/story-speaker/ohfibfhfbhknfdkipjdopbnegkbkpij>

Introduction to Story Speaker:

<https://www.youtube.com/watch?v=wsrzvYYvhH8&feature=youtu.be>

Link to read more about Story Speaker:

<https://docs.google.com/document/d/1hFrBtsBbF2LoZ1FFpXEH7L6fWH1lj24W1-itXnKSXK8/edit>

Basic Template of Story Speaker: https://docs.google.com/document/d/1rXPSayQVVQ-T5cWlhxPbOCC2UJEZTbVWkxqOnC_RnDE/edit?usp=sharing

Purpose: To capture students current mood and thoughts about their future with AI

Say: “What we are going to do now, is to work together to build an interactive story which you can play with your classmates later.”

“This is the video about Story Speaker. [Watch Introduction to Story Speaker Video] [Reiterate main points] First, you have to log in to google docs. Then, have to download the Story Speaker add-on to your google document. You can use the basic template to create the story. Write a story to explain your dream house to your classmates.”

Story Speaker Brief:

The Story Speaker extension can be accessed with docs.google.com. After signing in on Google, and opening google docs, go to Add-Ons and choose Story Speaker. A dialog will open. Ask the students to click on Basic Template and work on the same after understanding how it works.

When to intervene?

Ask the students to play Basic Template once and see what is happening. Ask them to keep checking the story while they write. It helps in writing an error-free story.

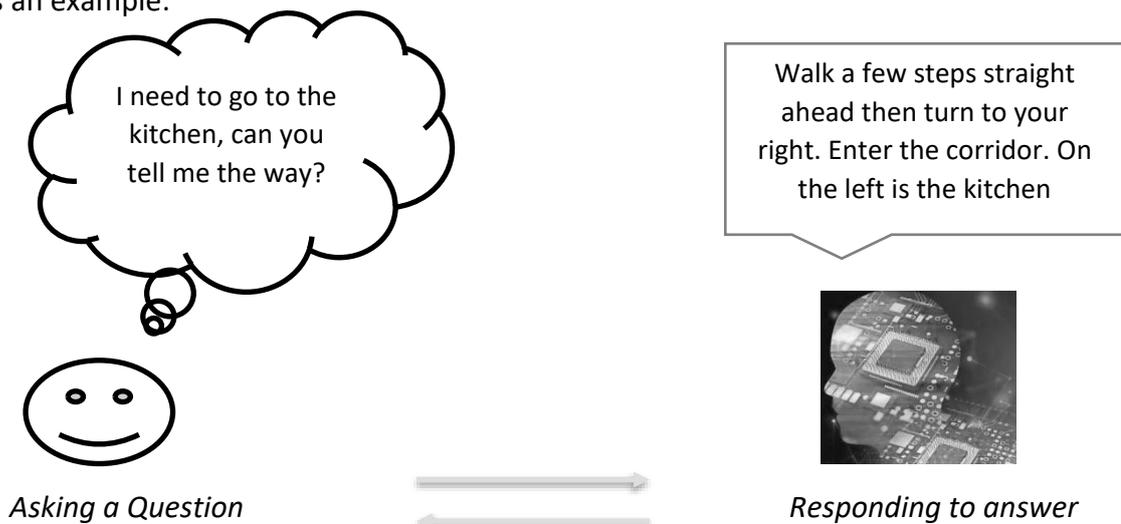
Troubleshooting Tips:

Issue	Possible Reason	Solution
Story Speaker displays error when Students tries to test run.	Indentations are either not done or are inappropriate.	Check through the story and ensure that there is proper indentation for each of the text section.
	Statement with no further forking miss [[END]]	Add [[END]] to the statement where you wish the story to end.
	Fallback missing	In the end of Story, put a Fallback section (Read the instructions)

Do you like listening to stories? How about being a creative writer?

Using your floor Plan as a base for your story, use the **Story Speaker** extension in Google docs and write a story. Ensure that you give/write specific instructions in your story that enables the story speaker to respond back with an answer.

Here is an example:



Title: Conversing with Story Speaker



Now it's your turn to create a story using the Google Extension of Story Speaker for Google Docs.

START HERE

Link for the basic template of Story Speaker:

https://docs.google.com/document/d/1rXPSayQVVQ-T5cWlhxPbOCC2UJEZTbVWkxqOnC_RnDE/edit?usp=sharing

Reflection Time:

How was the activity? You can write in the space and tick the given bubbles to describe the activity:

The activity was

.....

I learnt that

.....

I would

.....

The easy part was

.....

The difficult part was

.....

1.3 Purpose

SUSTAINABLE DEVELOPMENT GOALS

Facilitator Guide

Title: Purpose	Approach: Interactive Session + Game
Summary: Students will gain an awareness about the 17 Sustainable Development Goals and will be able to relate to them in order to think of solving them.	
Learning Objectives: <ol style="list-style-type: none"> 1. Appreciate the complexity of social issues 2. Be able to determine where AI solutions would be appropriate 	
Learning Outcomes: Identify leverage points which are appropriate for achieving SDGs using AI solutions.	
Pre-requisites: Basic computer literacy	
Key-concepts: Sustainable Development Goals	

Warm up Activity:

Take a look at the pictures and try to give the theme of each picture: you have 5 minutes.



1

2

3



4

5

6



7



8



9



10



11



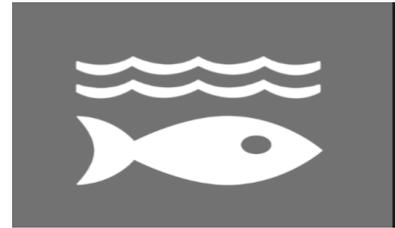
12



13



14



15



16



17

These themes will help you to reflect on the following questions:

Are you committed to work for making the world a better place?

.....
.....
.....

Can you play a role in helping or supporting work in the following areas and other areas that contribute to well-being of the planet and people? (Tick the appropriate box)

Removing poverty

Clean Water

Clean Energy

Good Health care

Preventing Hunger

Equality of Gender

Others (Please Mention)

Take a look at these pictures and answer :

Do you think that you are also responsible in making this world a better place or are you satisfied with the things happening around you?



What thoughts and actions of yours will help to make the world a better place?



Write your thoughts here

Write the actions you will take...



This world is the home for life of people, plants and animals. The materials and resources that the planet provides helps us to sustain life. In order to build a better world for everyone it is important that we take care to conserve, preserve and protect our Shelter and the life of those in this world. The Member States of the United Nations have agreed to achieve 17 Sustainable Development Goals (SDGs) by 2030.

Go Goals:

Session Preparation

Logistics: For a class of 40 Students [Group activity – Group of 5 max]

Materials Required:

ITEM	QUANTITY
Go-Goals Game Board	8
Go-Goals Instruction Manual	8
Go-Goals DIY Dice & Token Kit	8
Go-Goals Question Cards set	8
Glue	8
Scissors	8
Sketch-pens	80

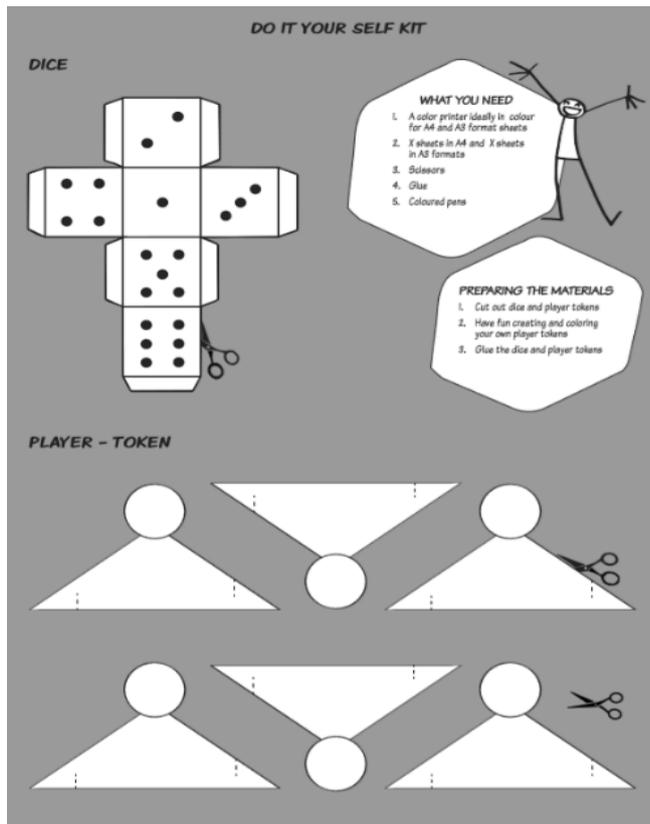
Resources:

Link to Download Go-Goals Game Material: <https://go-goals.org/downloadable-material/>

Purpose: To gain an understanding of social issues through a board game about the Sustainable Development Goals (SDGs).

Say: *“I want you to think: Who is your favourite superhero? Why? We are going to design a game token that represents your favourite super hero!”*

Token & Dice DIY:



Let your imagination flow and make your own tokens for the Go-Goals Game! Think of your favourite Superhero or your favourite Cartoon character and draw it on your token. Cut it out, shape it, and win the Game!

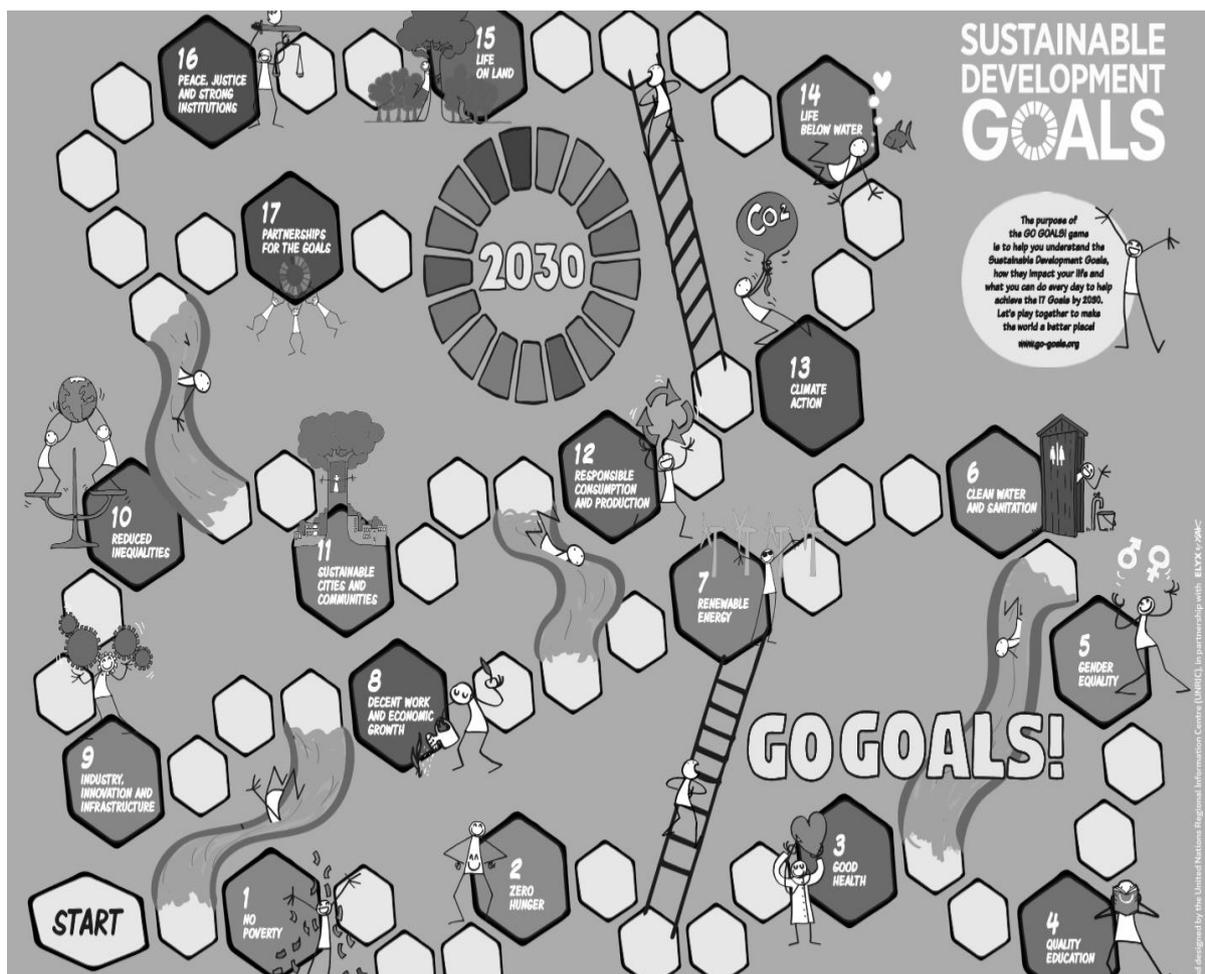
You can also make your own dice using the DIY kit! Just cut it out, fold it and paste it!

Great! You are all set to begin!

Go-Goals Board Game

Purpose: To gain an understanding of social issues through a board game about the Sustainable Development Goals (SDGs).

Say: "We are ready to play a game called Go-Goals! We will learn more about Sustainable Development Goals and how people are using AI to solve some of the world's problems. This is what your game board looks like. We are going to play in groups of 5. Have you played Snakes and Ladders before? This game is very similar to Snakes and Ladders. Players advance the number of spaces by rolling a single dice. If a player lands at the bottom of a ladder, they can immediately climb to the top. If a player lands at the top of the slide, they immediately move to the bottom of the slide. If a player lands on SDG goal field (1-17), they will draw a card corresponding to the goal number. Another player will read the card question. A correct answer from the card drawer will allow the player to roll the dice again. The first player to arrive on '2030' is the winner. Let's Play!"



1.4 Possibilities

Facilitator Guide

Title: Possibilities	Approach: Self-paced Workshops
<p>Summary: Students will explore the emergence of Artificial Intelligence (AI) jobs in various fields such as healthcare, security, education, agriculture, entertainment, service and transport. They will then make a Job Advertisement of the Future to present their findings.</p>	
<p>Learning Objectives:</p> <ol style="list-style-type: none"> 1. To showcase local case studies of people using AI for good or working in the AI field 2. To gain awareness on the skill sets needed for jobs in the AI field 	
<p>Learning Outcomes:</p> <ol style="list-style-type: none"> 1. Describe how AI has been affecting jobs in various industries 2. Identify skill sets needed for jobs in the AI field 	

Pre-requisites: Nil

Key-concepts:

1. AI for social impact
2. Skills required for AI-related jobs

Group Activity:

Session Preparation

Logistics: For a class of 40 students [Group Activity – Group of 4]

Materials Required:

ITEM	QUANTITY
Computers	10

Resources:

Research Template – Provided in Student Handbook.

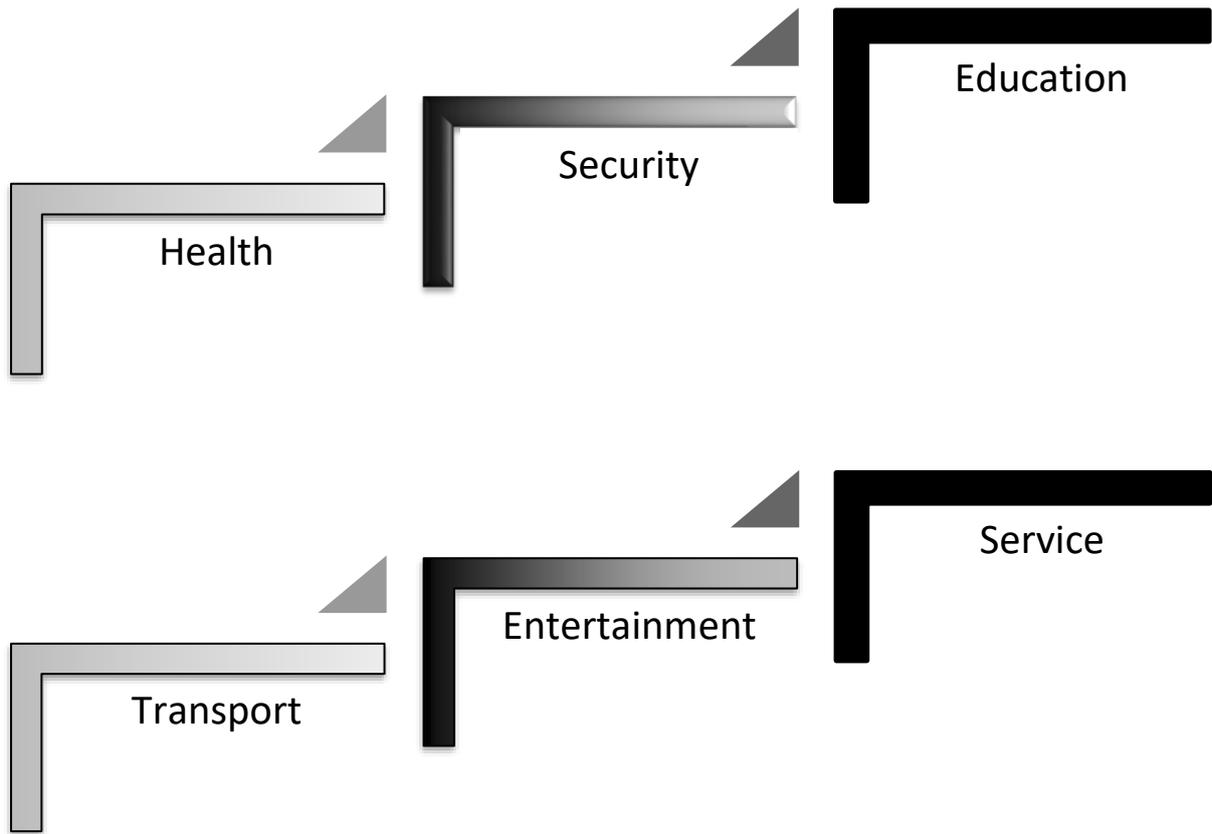
Purpose: To inspire students by local examples of AI application in their community, to create a summary of their findings in a form of a future Job Advertisement and share it with other teams.

Say: *“Today’s goal is to uncover what are the future skills and jobs that all of us will be involved in as AI advances. This research can be used to help us decide what we want to learn to be ready for these jobs. As there are numerous jobs that will be created due to AI, we will conduct this research in teams! Each team will be given a theme, some guiding resources and laptop to research on AI-related jobs. The themes include **Health, Security, Education, Entertainment, Service, Transport.** You will search for current and emerging trends in employment and fill in the Research Template given in the handbook. The company can even be a start-up, big organisation or community project.”*

Make even number of teams and divide give one theme to two teams. For example, if you have 10 teams, divide any 5 themes giving same theme to two teams. This will help in the activities of next modules.

Put your Research Skills in action:

Here are a set of themes – you will be getting one theme out of these to work on in a group of 4. Research on the given theme and find out various organisations incorporating AI in your theme sector. Also, look at the skill-sets required for such jobs today. With this, try to analyse what skill-sets would be required 10 years down the line?



Use the space below to fill in whatever you have found out regards the theme given to your group:

Industry Vertical/Theme
Empty space for notes
Empty space for notes

<p>What are the names of the organisations in our country working around this theme?</p>	<p>Write briefly what they do.</p>
<p>1.</p>	<p>1.</p>
<p>What kind of skill sets (Look at both soft skills and technical skills) are they interested in their new hires possessing?</p> <p>Consider: Would the skills sets required still be the same after 10 years?</p>	

Soft Skills	Technical Skills
Soft Skills (10 years later)	Technical Skills (10 years)

What are the ethical concerns revolving around the theme? (Keywords: AI ethics, AI bias, AI Access, AI privacy)

Topic

Examples

Sources: Provide Website Links

Title of Article

Website Link

Poster Making – Job Advertisement for 2029!

Session Preparation

Logistics: For a class of 40 Students [Group Activity – Groups of 4]

Materials Required:

ITEM	QUANTITY
A3 Sheets	10
Sketch-pens	40
Old Newspapers	20
Magazines	20
Scissors	10
Glue	10

Purpose: To inspire students by local examples of AI application in their community, to create a summary of their findings in the form of a future Job Advertisement and share it with other teams.

Say: *“Now, on the basis of the research you have made, make a ‘Future Job Ad’ (think 2029 - ten years later). Your Job Ad should include information about the company that is hiring and what kind of skills that they are looking for in their employees. Share the reasons why you chose this job or jobs. Be creative about the Job Ad that you are creating. Remember it is something from the future. What jobs will be relevant 10 years from now? I am excited to see what you will come up with! Let’s begin.”*

Ask students to make a Poster for a Future Job Advertisement in which they need to mention what job are they recruiting for and what skill-sets do they expect in the candidate. Ask them to make the poster as creative as possible. It should be futuristic and should talk about the period 10 years in the future.

Here’s what you have to do:

- Search for current and emerging trends in employment to make a Future Job Advertisement.
- The job description is for a job which will exist ten years from now, i.e. the current date.
- To help you , the job advertisement must include the following information.

Information about the hiring company

Required Skills -
Vital, Essential And Desirable Skills

Is the company a
start up?

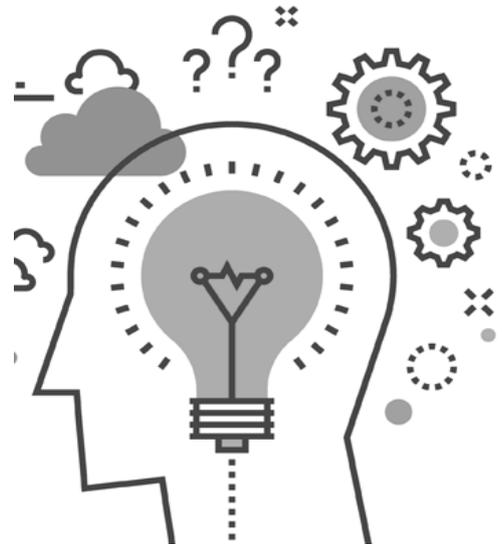
Is the company a big
organisation?

Is this a community
Project?

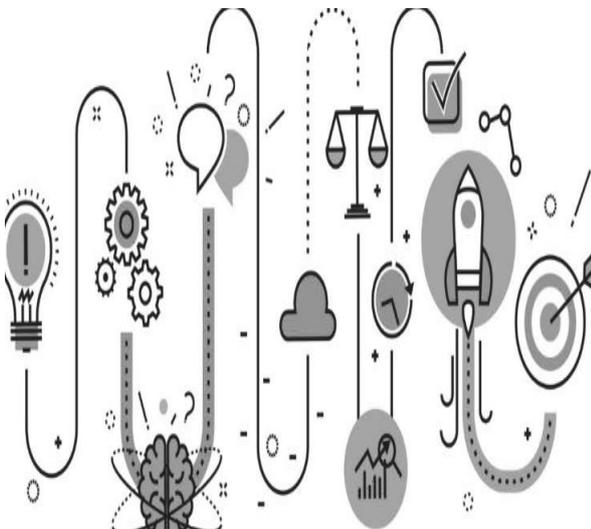
Share the reason why
you chose this job or
jobs?

Analysis:

List the kinds of futuristic job opportunities that would be available for you?



Write the skills you will require to do these jobs?



Make a Job Advertisement for the Future here:

A large, empty rectangular box with a black border, intended for creating a job advertisement for the future.

Now be ready to share your ideas!



1.5 AI Ethics

Facilitator Guide

Title: AI Ethics	Approach: Discussion & Debate
Summary: Students will participate in a debate to gain awareness of the ethical concerns regarding Artificial Intelligence (AI).	
Learning Objectives: <ol style="list-style-type: none">1. Gain awareness of ethical concerns about AI2. Critically think about the cost and benefits of AI technology	
Learning Outcomes: <ol style="list-style-type: none">1. Describe some ethical concerns of AI with respect to inclusion, bias and privacy2. Be able to evaluate the cost and benefits of AI technology	
Pre-requisites: Nil	
Key-concepts: AI Ethics	

Activity: Recapitulation

Complete the following sentence:

The three things we did in the previous module are:

- 1
- 2
- 3

Activity – Watch the video AI for Good.

Purpose: To introduce Students to the topic of AI Ethics.

Say: *“Let’s watch the AI for Good Video to introduce the big questions around AI Ethics”*

Session Preparation:

Logistics: For a class of 40 students

Materials Required:

ITEM	QUANTITY
Computer	1
Projector + Screen	1

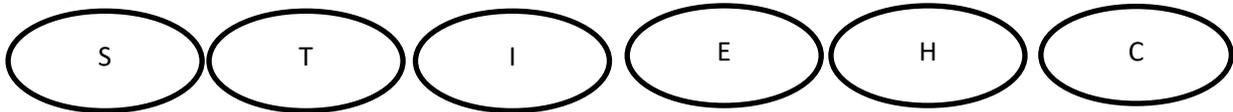
Link for Video: <https://www.youtube.com/watch?v=vgUWKXVvO9Q>

Now, answer these questions:

What have you understood from the video?

What are your learnings from it ?

To get a clue of the theme of the discussion; unscramble the word given below:



.....

What in your understanding does this mean?

.....
.....

BALLOON DEBATE:

Session Preparation:

Logistics: For a class of 40 students [group activity – groups of 4]

Purpose: To introduce the concept of ethics (bias, access, privacy) in AI and its complexity.

Say: "We are going to debate about the boon and bane of various AI applications in the different industries you researched about. This will be a 4 v 4 debate. As you know, each theme has been given to two different teams. Now one team out of these two will be in affirmation with AI applications in their theme while the other one will be against AI applications in the same theme. The debate will go theme by theme wherein each member of the team will get a minute to speak. The first speaker of the affirmative team will start the debate after which the first speaker of the rebuttal team will put their points. In this manner, each speaker will get a minute to speak and finally one team will be chosen to be thrown out of the balloon debate depending upon how convincing their points were. The speaker who speaks more than a minute will get his team disqualified. You will get 15 minutes to prepare your points. And your time starts now!"

Imagine there are two families of four people out for a ride in a hot air balloon. Suddenly the balloon starts to move towards the earth instead of staying airborne. To stabilize it, one family needs to take the parachute and go out of the balloon or else it will come crashing down.

Who should be thrown out of the hot air balloon?

