

**SYLLABUS PLAN FOR THE SESSION 2020 – 21**

**SUBJECT – ARTIFICIAL INTELLIGENCE**

**CLASS – VII**

MONTH	UNIT	SESSION/ACTIVITY/PRACTICAL	LEARNING OUTCOMES
APRIL	<u><b>INTRODUCTION TO AI - RECAP</b></u> <ul style="list-style-type: none"> <li>➤ What is AI?</li> <li>➤ Advantages/Disadvantages of AI</li> </ul> <u><b>APPLICATIONS OF AI</b></u> <ul style="list-style-type: none"> <li>➤ Use of AI in different fields</li> </ul>	<u><b>Basic Understanding of Artificial Intelligence</b></u> <ul style="list-style-type: none"> <li>➤ What are the data features needed?</li> <li>➤ Where can you get the data?</li> <li>➤ What are the sources of data?</li> <li>➤ How to visualize data?</li> <li>➤ How to read plotted data and generate inferences?</li> <li>➤ A Brief overview of different models available.</li> <li>➤ Importance of evaluating a model.</li> </ul> <u><b>TEACHABLE MACHINE – Google Experiment</b></u>	<ul style="list-style-type: none"> <li>➤ Understand the term Artificial Intelligence</li> <li>➤ Comprehend and differentiate between automation and AI</li> <li>➤ Realizing the scope and use of AI in various fields</li> <li>➤ Understanding the good and bad of AI</li> </ul>
MAY	<u><b>DOMAINS OF AI</b></u> <ul style="list-style-type: none"> <li>➤ Computer Vision</li> <li>➤ Natural Language Processing</li> </ul>	<u><b>Basic Understanding of the Domains of AI</b></u> <ul style="list-style-type: none"> <li>➤ AI GAMES – Thing Translator, Mystery Animal, Quick Draw</li> <li>➤ What is Computer Vision technology?</li> <li>➤ Why is it necessary to make machines make sense of what they see?</li> <li>➤ What is NLP?</li> <li>➤ Different applications that use NLP.</li> <li>➤ What are the types of data – Discrete / Continuous?</li> <li>➤ How can data be collected?</li> <li>➤ How to plot data and visualize it?</li> <li>➤ Reading basic graphs</li> </ul>	<ul style="list-style-type: none"> <li>➤ Relate, apply and reflect on the Human-Machine Interactions.</li> <li>➤ To identify and interact with the three domains of AI: Data, Computer Vision and Natural Language Processing through different games</li> <li>➤ Identify and recognize the use of computer vision technology, Natural Language Processing and Data Science</li> <li>➤ Understanding the types of Data</li> <li>➤ Organizing data in tabular form</li> <li>➤ Identifying Data Visualization techniques</li> </ul>
JULY	<u><b>DOMAINS OF AI</b></u> <ul style="list-style-type: none"> <li>➤ Data Science</li> </ul>	<u><b>Data Visualization –Age Apt COVID Data Plotting</b></u> <u><b>Case Study: Aarogya Setu App</b></u>	

**Subject Integration: Science /English / Maths**

<b>AUGUST</b>	<b><u>INTRODUCTION TO CHATBOTS</u></b> <ul style="list-style-type: none"> <li>➤ Chatbots</li> <li>➤ Types of Chatbots</li> </ul>	<b><u>Chatbots</u></b> <ul style="list-style-type: none"> <li>➤ What is a chatbot?</li> <li>➤ Types of chatbots</li> <li>➤ Identifying the different types of chatbots?</li> </ul> <b>Demo – Chatbot using IBM Watson</b> <b>Activity : Creating Entities for a chatbot for our school</b>	<ul style="list-style-type: none"> <li>➤ Understanding the technical aspects of chatbots</li> <li>➤ Identifying the type of chatbots by looking at the functioning and features</li> </ul> <b>Subject Integration: English</b>
<b>SEPTEMBER</b>	<b><u>MACHINE LEARNING</u></b> <ul style="list-style-type: none"> <li>➤ Supervised Learning</li> <li>➤ Unsupervised Learning</li> </ul>	<b><u>ML – Supervised, Unsupervised &amp; Reinforcement</u></b> <ul style="list-style-type: none"> <li>➤ Introduction to Machine Learning</li> <li>➤ Types of Machine Learning - Supervised, Unsupervised and Reinforcement Learning</li> <li>➤ Differentiating between different ML</li> <li>➤ Examples of Classification, Regression and different games</li> </ul> <b>Research Work: Making ppt on ML</b> <b>Paper Prototype on AI Game based on Reinforcement Learning</b>	<ul style="list-style-type: none"> <li>➤ Understand the concept of Machine Learning</li> <li>➤ Gain awareness about Machine Learning applications</li> <li>➤ Imagine and create a prototype of an AI Game</li> <li>➤ <b>Code using Mblock</b></li> </ul> <b>Subject Integration: English / Art</b>
<b>OCTOBER</b>	<b><u>MACHINE LEARNING</u></b> <ul style="list-style-type: none"> <li>➤ Reinforcement Learning</li> <li>➤ Differentiating between the three types of ML</li> </ul> <b><u>INTRODUCTION TO MBLOCK CODING</u></b>		
<b>NOVEMBER</b>	<b><u>AI PROJECT CYCLE FRAMEWORK</u></b> <ul style="list-style-type: none"> <li>➤ Problem Scoping</li> <li>➤ Data Acquisition</li> </ul>	<b><u>Basic Understanding of an AI Project Life Cycle</u></b> <ul style="list-style-type: none"> <li>➤ What are the data features needed?</li> <li>➤ Where can you get the data?</li> <li>➤ What are the sources of data?</li> <li>➤ How to visualize data?</li> <li>➤ How to read plotted data and generate inferences?</li> <li>➤ A Brief overview of different models available.</li> <li>➤ Importance of evaluating a model.</li> </ul> <b>Case Study : Water Conservation, Pollution</b> <b>Making a basic Decision Tree</b>	<ul style="list-style-type: none"> <li>➤ Understand the iterative nature of problem scoping for in the AI project cycle.</li> <li>➤ Foresee the kind of data required and sources of data.</li> <li>➤ Understanding the importance of data in each stage</li> <li>➤ Realizing the importance of each stage in building an AI Model</li> <li>➤ <b>Code using Mblock</b></li> </ul> <b>Subject Integration: Social Science/ Science / English / Maths</b>
<b>DECEMBER</b>	<b><u>AI PROJECT CYCLE FRAMEWORK</u></b> <ul style="list-style-type: none"> <li>➤ Data Exploration</li> <li>➤ Modelling</li> <li>➤ Evaluation</li> </ul>		
<b>JANUARY</b>	<b>AI PROJECT</b>	<b><u>Group Activity (Will be explained later)</u></b>	
<b>FEBRUARY</b>	<b>REVISION AND FINAL EXAMINATION</b>		

### Further Additions in the Syllabus (Post Covid Pandemic):

- Use of Sensors for Data Collection
- Working with Micro Controller
- Robotics and AI
- Python Coding
- Augmented Reality Games