

Lesson Plan #2

Application of AI in Work and Entrepreneurship



SAINT

HANDS ON INTRODUCTION TO ARTIFICIAL
INTELLIGENCE IN PRIMARY EDUCATION
USING MINECRAFT

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REFERENCED DOCUMENTS

ID	Reference	Title
1	2022-1-FR01-KA220-SCH-000087794	SAINT Proposal
2		

APPLICABLE DOCUMENTS

ID	Reference	Title
1		
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Lesson Plan: Application of AI in Work and Entrepreneurship

Grade Level: Primary (Ages 9-12)

Subject: Computer Science / Technology

Learning Goals:

1. Understand the basic principles of AI and its applications in work and entrepreneurship.
2. Examine real-life examples of AI in various industries.
3. Apply acquired AI knowledge in practical settings, such as the Minecraft environment.

Session 1: Introduction to AI and Its Role in Work and Entrepreneurship (45 minutes)

Objective:

- Students will understand the concept of AI and how it is applied in various work environments and entrepreneurial ventures.

Activities:

1. Introduction (5 minutes):

- Start the session by providing a clear definition of AI. For instance, you can describe AI as a branch of computer science that aims to create machines that mimic human intelligence. This could include tasks such as learning from experience, understanding language, recognizing patterns, and making decisions.
- Discuss the purpose of AI, explaining that it's used to automate tasks, improve efficiency, make predictions, and help humans make informed decisions.
- Provide examples of how AI is used in different work scenarios. For instance, AI can analyze large amounts of data to uncover trends and patterns, which can be used for business decision-making. In customer service, AI chatbots can handle basic inquiries, freeing up human agents to handle more complex issues. In online retail, AI algorithms can analyze a customer's browsing and purchasing history to recommend products they might be interested in.

2. Discussion: Role of AI in Work and Entrepreneurship (10 minutes):

- Discuss the ways in which AI can improve efficiency and productivity in the workplace. For instance, AI can automate repetitive tasks, freeing up workers to focus on more strategic and creative tasks. AI can also analyze data more quickly and accurately than humans, leading to faster, data-driven decisions.

- Talk about how entrepreneurs are using AI to create innovative solutions and services. These might include AI-driven health diagnostics, personalized learning platforms, predictive maintenance services, and more.
- Present a few examples of AI-powered startups or innovative solutions. These could include companies like PathAI (which uses AI for pathology), Knewton (which uses AI for personalized learning), or SenseTime (which uses AI for facial recognition technology).

3. **Minecraft Activity (25 minutes):**

- Guide the students to design and build a simple AI-powered shop in Minecraft. This shop should have an automated cashier (using command blocks) that can calculate total costs and receive payments.
- Once the students have built their AI-powered shops, lead a discussion on how this activity mirrors the real-world use of AI in retail and entrepreneurship. Discuss how real-world equivalents might use AI to manage inventory, recommend products, or provide customer service.

4. **Wrap-up (5 minutes):**

- Recap the session by emphasizing the importance of AI in work and entrepreneurship. Discuss how understanding and leveraging AI can lead to more efficient operations, innovative products and services, and competitive advantage.
- Preview the next session, which will involve a deeper exploration of how AI is used in specific industries. Encourage the students to think about industries they're particularly interested in and how AI might be used in those industries.

Materials Needed:

- Minecraft Education Edition
- Computers with internet access

Session 2: Case Studies of AI in Different Industries (45 minutes)

Objective:

- Students will explore specific case studies of AI in different industries such as healthcare, finance, and transportation.

Activities:

1. Introduction (5 minutes):

- Explain the purpose of the session: to explore AI applications in various industries.
- Identify the specific industries to be focused on in the session: healthcare, finance, and transportation.
- Give a brief overview of how AI is currently used in these industries, for instance, AI algorithms are used to diagnose diseases in healthcare, robo-advisors are used in finance for making investment decisions, and self-driving cars in transportation use AI for navigation and safety.

2. Discussion and Group Activity: AI in Different Industries (20 minutes):

- Start by discussing a case study for each industry:
 - ❖ Healthcare: Explain how AI is used in diagnosis, such as using machine learning algorithms to detect cancer in medical images.
 - ❖ Finance: Discuss how robo-advisors use AI to analyze large amounts of financial data, helping users make informed investment decisions.
 - ❖ Transportation: Discuss how self-driving cars use AI for perception, decision-making, and control, enabling them to navigate safely and efficiently.
- After discussing each case study, break the students into small groups and assign them an industry. Their task is to brainstorm another potential application of AI in their given industry. For example, a group assigned to healthcare might suggest using AI to predict disease outbreaks based on public health data.
- Allow time for each group to present their ideas. Encourage questions and comments from the rest of the class.

3. Minecraft Activity (15 minutes):

- After the group presentations, instruct students to represent their chosen AI application in Minecraft. For instance, the group that suggested using AI to predict disease outbreaks could build a model of a public health centre with AI servers.

- Encourage creativity and allow students to use Minecraft in a way that best represents their idea. The goal is to visualize their concept, making it more tangible and understandable.

4. **Wrap-up (5 minutes):**

- Summarize the main points from the session. Reinforce the idea that AI has diverse applications across many industries, and that these applications have real-world impacts.
- Highlight some of the ideas presented by the students during the group activity, praising creativity and thoughtfulness.
- Preview the next session by explaining that they will be creating an AI-based entrepreneurial project. This will take the concepts they've learned and apply them in a practical, business-oriented context.

Materials Needed:

- Minecraft Education Edition
- Computers with internet access

Session 3: Creating an AI-Based Entrepreneurial Project (45 minutes)

Objective:

- Students will apply their understanding of AI by creating an AI-based entrepreneurial project in Minecraft.

Activities:

1. Introduction (5 minutes):

- At the start of the class, give a brief introduction about the purpose and significance of the day's activity.
- Explain that the students will be using their knowledge of AI to create an entrepreneurial project in Minecraft. This will allow them to combine their understanding of AI and their creativity in a practical context.
- Highlight the importance of entrepreneurship in today's technological world and the increasing role of AI in various industries.
- Clarify that their projects should be innovative and serve a purpose or solve a problem in a unique way using AI.

2. Planning and Designing the Project (20 minutes):

- Divide students into groups and instruct each group to brainstorm an idea for an AI-based project that they can create in Minecraft. This could be anything from an AI-based robot to a smart city if it uses AI and solves a problem.
- Each group should then design their project, focusing on the problem it solves, the purpose of their AI, how it would function, and what it would look like. They should also consider the resources they will need in Minecraft to build their project.
- Encourage them to be creative and think outside the box and remind them to keep their project within the capabilities of Minecraft and the time limit.
- Ensure each group has a clear understanding of what they want to create before they start building in Minecraft.

3. Minecraft Activity (15 minutes):

- Once the planning and designing phase is complete, each group should start building their AI-based project in Minecraft.

- They should use their design as a guide and work together to create their project. It's important that they manage their time effectively to ensure they finish within the allotted time.
- As they are building, encourage them to test and modify their project as needed to ensure it works as intended.

4. **Project Presentations (5 minutes):**

- After the Minecraft activity, each group will present their project to the class. They should explain the problem their AI solves, the purpose of their AI, and how it functions.
- Encourage them to demonstrate their project in action, if possible, and discuss any challenges they faced and how they overcame them.
- At the end of their presentation, allow time for questions and comments from the class. This promotes discussion and peer learning.
- Congratulate the students on their hard work and creativity and emphasize the skills they've used and developed during this activity, such as teamwork, problem-solving, and technical skills.

Materials Needed:

- Minecraft Education Edition
- Computers with internet access
- Presentation materials as needed