Name: _____ **Date:** _____

Answer Key: When Robots Join Our Classroom: A Kindergarten AI Design Lab

Synthesize knowledge of sensor input and decision-making to design and evaluate how helpful machines process information in a school environment.

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1. If you want to build a robot that helps put away toys, what is the FIRST thing the robot needs to 'see' using its camera?

Answer: B) The difference between a toy and a shoe

To complete a multi-step task like tidying, an AI must first use image recognition to categorize objects correctly so it only picks up the toys.

2. True or False: If we give a robot a thousand pictures of kittens, it will eventually understand how to bark like a dog.

Answer: B) False

AI models rely on specific data; they only learn to recognize or mimic what they have been trained on through specific datasets.

3. Imagine an AI that helps a chef. To make a 'decision' to stop cooking, the AI needs to check a ___.

Answer: B) Sensor for heat

Complex AI reasoning requires input from sensors (like heat or timers) to decide when a task is finished or if it is safe.

4. You are teaching a robot to recognize a 'Circle.' If the robot thinks a square is a circle, what is the best way to help it learn?

Answer: C) Show it many more examples of circles and tell it 'No' for the square

Machine learning involves a feedback loop where providing more varied data and corrections helps the 'neural network' refine its accuracy.

5. True or False: A robot that plays music when it hears you clap is using its 'ears' (microphone) as a sensor to start an action.

Answer: A) True

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Sound recognition is a form of AI input where the machine 'hears' a specific pattern and triggers a pre-programmed or learned response.

6. When a robot learns to move through a maze without hitting walls, it is practicing ___.

Answer: B) Problem-solving

Navigation involves multi-step reasoning: detecting an obstacle, evaluating paths, and choosing the best route to reach a goal.

7. If we want an AI to create a beautiful new drawing of an 'Alien,' what does it need to see first?

Answer: C) Thousands of drawings of space and creatures

Generative AI creates 'new' art by synthesizing patterns it has learned from a massive library of existing images and shapes.

8. True or False: An AI can feel 'happy' or 'sad' just like a person when it finishes a job.

Answer: B) False

AI mimics human intelligence through math and data, but it does not have biological feelings or consciousness.

9. A smart fridge that tells you when the milk is gone is using ___ to help your family.

Answer: B) Data and patterns

Practical AI applications work by recognizing specific patterns (like a shelf becoming empty) and communicating that information.

10. Why would a robot guard dog need to know the difference between 'the mailman' and 'a squirrel'?

Answer: A) So it knows whether to bark or ignore them

Effective AI must categorize information to make the correct 'logic' choice; different objects require different responses based on the AI's goal.