Name _____

Question the Author - Understanding AI Systems

Read the passage carefully. Then answer the two multiple-choice questions. After that, complete the *Question the Author* activity, where you write thoughtful questions to deepen your understanding.

How a Self-Driving Car AI Works

A self-driving car uses several parts of an AI system working together. The **input stage** begins with data collected from sensors, cameras, radar, and GPS. These devices allow the car to "see" the road, detect lane markings, recognize traffic signs, and notice nearby vehicles or pedestrians.

The **processing stage** involves advanced algorithms, often powered by deep learning models, that interpret this sensor data. The model predicts what objects around the car are likely to do - for example, whether a pedestrian will keep walking or stop, or whether another car will merge into the lane. Based on these predictions, the AI system makes decisions about speed, direction, and braking.

The **output stage** is the car's actual movement: steering, accelerating, or slowing down. Every second, the car adjusts its actions in response to changing conditions.

Finally, there is a **feedback loop**. Data from test drives, human driver interventions, and performance reports are used to improve the system. Over time, feedback helps refine the AI's ability to recognize complex situations, such as unusual weather or unpredictable human behavior. Without this feedback, the self-driving car would not continue to improve its safety and reliability.

Multiple Choice Questions

1. What type of data is used as input in a self-driving car AI? _____

A. Translations of sentences
B. Sensor, camera, radar, and GPS data
C. Ratings from users
D. Internet search results

2. What role does feedback play in a self-driving car AI?

A. It makes the car move faster.
B. It helps refine and improve the AI's decision-making abilities over time.
C. It tells the AI which route to choose each trip.
D. It replaces the need for input sensors.

Question the Author - After reading the passage, write **3 thoughtful questions** you would ask the author about the AI system: **Clarifying**, **Challenging, and Extending Question**