

Name \_\_\_\_\_

## The Remarkable Journey of Water and Nutrients: How Plants Absorb Vital Elements

### Open-Ended Response Questions

1. Explain the journey of water from the soil into the plant, including the role of root hairs, the root cortex, and xylem vessels.
2. Discuss the importance of nutrient absorption by plants and how it contributes to their growth and development, considering the role of essential nutrients like nitrogen, phosphorus, and potassium.
3. Describe how environmental factors such as soil moisture levels and nutrient availability can affect the process of water and nutrient absorption by plants, and propose strategies for optimizing uptake under different conditions.
4. Reflect on the significance of the plant's ability to regulate water and nutrient absorption, considering its importance for plant survival and adaptation to changing environmental conditions.

