

## Human Prenatal Development Investigation 3 Key

Name: \_\_\_\_\_ Date: \_\_\_\_\_

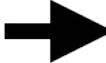
*Please use the back of this quiz if you need additional space.*

1. What is embryonic development? In your answer, describe what happens after fertilization. ***Embryonic development is the series of changes that occur after fertilization in which the single-celled zygote divides, grows, and organizes into a multicellular organism with specialized cells, tissues, and organs. (Accept answers that include division, growth, and increasing organization.)***

2. During early embryonic development, cells divide rapidly but later begin to specialize. What is this process of specialization called? ***Cell differentiation***

3. Why is this process essential for the formation of tissues and organs? Explain how different cell types contribute to the structure and function of the body. ***Cell differentiation allows cells to develop specific structures and functions. Specialized cells work together to form tissues and organs, each performing distinct roles necessary for the organism's survival and development.***

4. Which statement best describes the relationship between cell division and cell differentiation during early development? (circle one)

- A. Cells differentiate first, then divide
- B. Cell division and differentiation are unrelated
-  C. Cells divide first, then gradually differentiate
- D. Cells differentiate randomly during development

5. Why must embryonic development occur in an orderly, precisely regulated sequence? Explain what could happen if early developmental steps were disrupted. ***Each stage of development builds on the success of earlier stages. Disruptions early in development can affect many later processes, potentially leading to abnormal development or loss of function in tissues and organs. (Look for recognition of sequence, dependence, and cascading consequences.)***