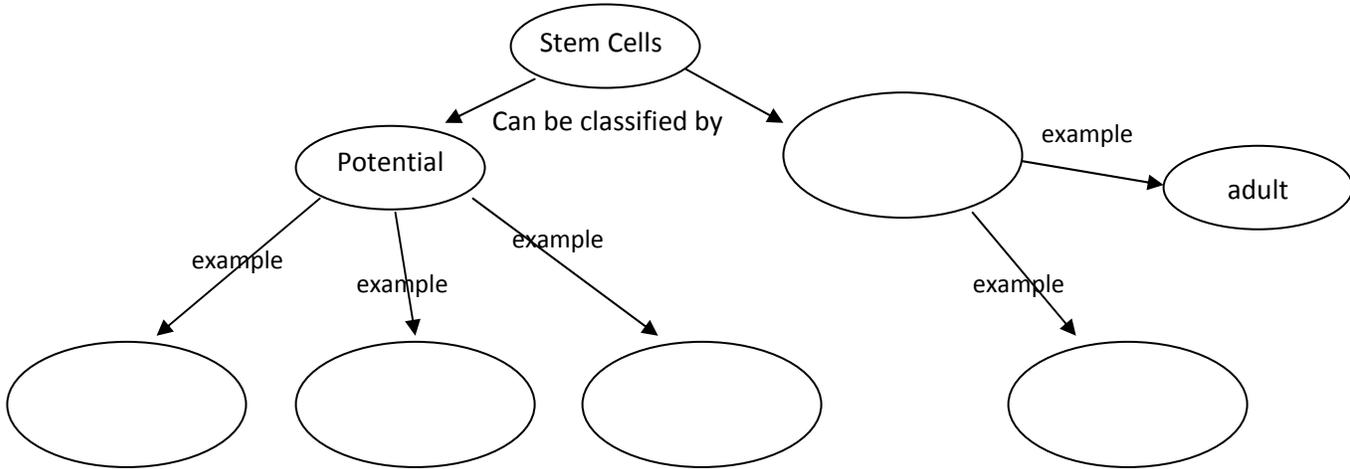


# Stem Cell Review Worksheet

Stem cells can develop into different cell types.  
 Complete the concept map below, about stem cell classification, using the following words:  
 origin, embryonic, pluripotent, totipotent, multipotent.



1. List the three identifying characteristics of stem cells

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

2. What is cell differentiation?

\_\_\_\_\_

\_\_\_\_\_

3. Write the following words in order from the largest structure to the smallest structure: cell, organ, organ system, organisms, tissue.

\_\_\_\_\_ → \_\_\_\_\_ → \_\_\_\_\_ → \_\_\_\_\_ → \_\_\_\_\_

4. List one advantage of using adult stem cells and one advantage of using embryonic stem cells.

Adult Stem Cells:

\_\_\_\_\_

\_\_\_\_\_

Embryonic Stem Cells:

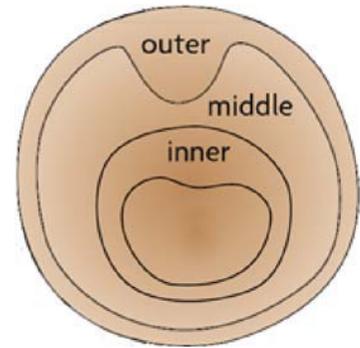
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# Quick Self-Quiz

\_\_\_\_\_ 1. What develops from the middle layer of a vertebrate embryo?

- a) brain and spinal cord
- b) bones, muscles, and kidneys
- c) digestive organs
- d) outer layer of skin



\_\_\_\_\_ 2. Which of the following is correctly arranged from smallest to largest?

- a) Tissue, cell, organ, organ system.
- b) Organ, cell, organ system, tissue.
- c) Organ system, organ, tissue, cell.
- d) Cell, tissue, organ, organ system.

\_\_\_\_\_ 3. What determines how a cell in an embryo will differentiate?

- a) The amount of nutrients it receives.
- b) When it was formed in the embryo.
- c) Its location within the embryo.
- d) The kind of parent cell that produced it.

\_\_\_\_\_ 4. What term describes the kind of stem cell that can grow into all cell types in the body?

- a) Totipotent
- b) Pluripotent
- c) Multipotent
- d) Adult stem cell

\_\_\_\_\_ 5. Which is not a characteristic of stem cells?

- a) Can develop into all cell types after they become specialized
- b) Divide and renew for long periods of time
- c) Remain undifferentiated in form for long periods of time
- d) Can develop into specialized cell types

\_\_\_\_\_ 6. Which of the following is a direct result of a normal cell's ability to express only certain genes?

- a) Cells can become totipotent.
- b) Cells can grow and reproduce.
- c) Cells can mutate and adapt.
- d) Cells can differentiate and specialize.