

Embryology: The Development of a Multicellular Organism

Have you learned about Mitosis & Meiosis?

If you have, you might ask yourself:

Why meiosis? What is the point of this process that splits nuclear DNA in half to form haploid cells? How is the full complement of DNA, the diploid state, restored?

Remember that every multicellular organism started out as a single-celled zygote!

You might wonder:

From where did that zygote come? How does a complex, multicellular organism with diverse, dedicated organs and tissues come from a single cell?

Let's explore cell division and development.

I. Embryo development: Mystery Organism

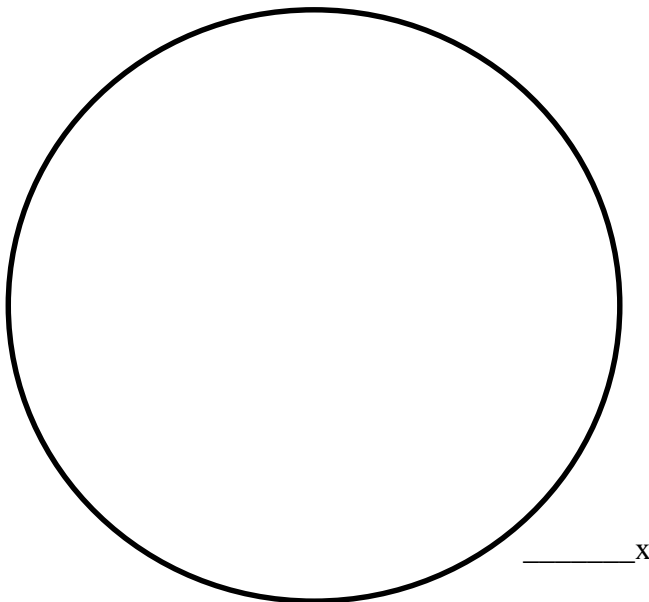
Your instructor will place embryos at 2-3 stages of development along with slides and coverslips at the front lab bench.

- Place samples of these on the slides provided and examine them with the compound microscope. Choose the magnification that allows you to see the most detail and write down what total magnification you chose.
- Draw what you see below.
- Label any structures that you recognize (at least two).
- Describe what you see.
- Your job is to determine the type of organism into which they will develop and put them in the correct sequence.

1. Which jar did you examine first? _____

Draw & Label:

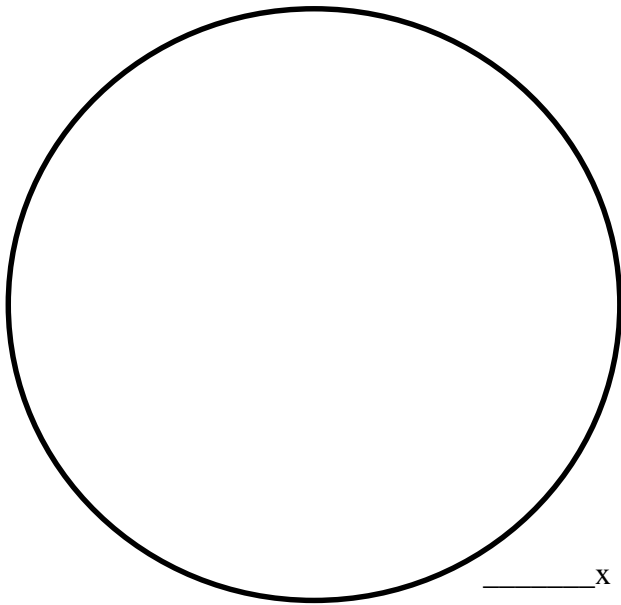
Describe:



2. Which jar did you examine second? _____

Draw & Label:

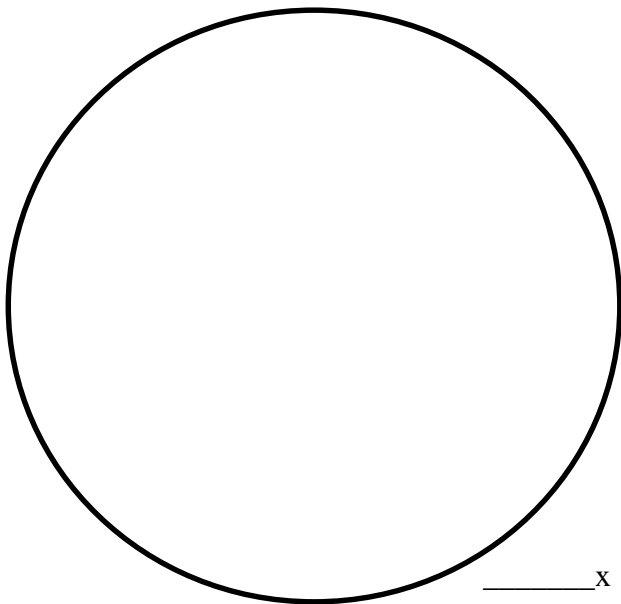
Describe:



3. Which jar did you examine third (if available) ? _____

Draw & Label:

Describe:



4. Put the stages in order.

a. Which jar do you think is the earliest in development? Why?

- b. Which jar do you think is second in development? Why?
- c. Which jar do you think is last in development? Why?

- d. What major differences do you see between the developing organisms in these jars?

5. What type of organisms is this and how do you know?

6. What is the most interesting thing that you saw in this exercise?

If we have time, let's watch a video of this organism developing: <http://youtu.be/RD0hpjxbB18>