

Embryology Worksheet
Biology 100C

1. An organism's development is largely determined by:
A. **the genome of the zygote**

B. **organization of the cytoplasm of the egg cell**

2. The main function of fertilization is the joining of a sperm cell and an egg cell forms a single cell called a zygote.

3. Another key function of fertilization is activation of the egg.

4. Why can the development of a sea urchin tell us something about our own development?

Sea urchins are deuterostomes and therefore their early development is similar to development in vertebrates

5. What is the "acrosomal reaction"?

The acrosomal reaction involves the rupture of the acrosome and the release of hydrolytic enzymes that allow the acrosomal process to penetrate the jelly coat of the egg.

6. What is the "acrosomal process"?

A structure that allows for the binding of the sperm cell to a receptor on the Vitelline membrane of the sea urchin egg

7. Where is the "vitelline membrane" located in relation to the plasma membrane of the egg?

The vitelline membrane is external to the plasma membrane of the egg.

8. The "acrosomal reaction" leads to:

the fusion of sperm and egg plasma membranes and the entry of a single sperm nucleus into the egg