

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**