

Name: _____ Date: _____ Period: _____

Living Environment

Vertebrate Reproduction and Development

I. Aquatic vertebrates: (fish and amphibians)

- fertilization and development is _____ (in the water)
- lay many eggs with no parental care



Most amphibians undergo _____ (a change in body form during development)

II. Terrestrial vertebrates:

(a.) *Reptiles:* fertilization occurs _____.

- lay many eggs with little parental care



(b.) *Birds:*

_____.

- lay few eggs with much parental care

(c.) *Mammals:* _____.



- _____ development in placental mammals
- _____ development in marsupials and monotremes

Placental mammals: young develop _____ have a birth or naval cord

Marsupial mammals: young develop _____.
exs. kangaroo, opossum

Monotremes: egg laying mammals

ex. _____.



Internal Mammalian Development

Uterus (womb): organ in the female where the _____ and the embryo implanted.

Placenta: organ that _____ attaches the embryo to the inner wall _____ (a maternal and embryonic tissue).

** Gas & food exchange is accomplished between the mother and the embryo by

_____ through the placenta. No direct blood link exists between the mother and the fetus.

Umbilical cord: attaches

-- contains 2 arteries and a vein (embryonic tissue).

Amnion -- contains fluid which _____ (mechanical or physical) injury.

Mammary glands -- _____
_____.



Afterbirth: discharge of the

hours)

after birth (1/2 to 2



Embryonic Development

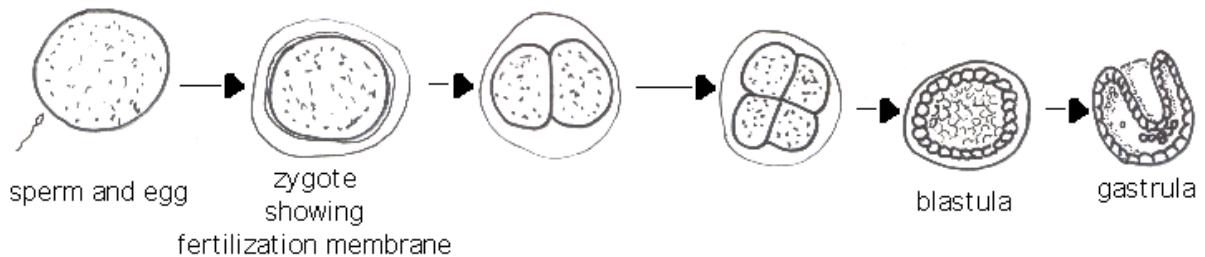
Cleavage:

_____ until the blastula stage is reached – NO INCREASE IN THE SIZE OF THE ZYGOTE-- since mitosis forms these cells, each cell formed will have the same genetic information

1. *Fertilized ovum* -- 2 -- 4 -- 8 -- 16 cell stages

2. Blastula:

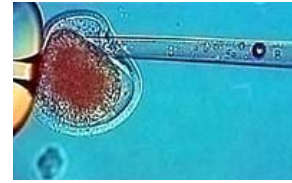
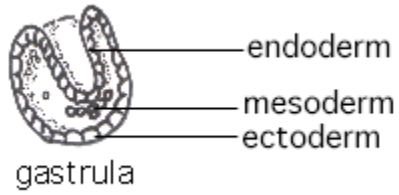
_____.



3. Gastrula:

_____.

** Cell differentiation begins to occur after gastrulation.



*** The gastrula gives rise to the _____ or embryonic layers of the body.

--Stem cell research studies this stage!!!

ectoderm (outer layer): _____

mesoderm (middle layer): _____

endoderm (inner layer): _____

Growth involves both an increase in cell numbers and cell size.

What are two risks to the embryo?

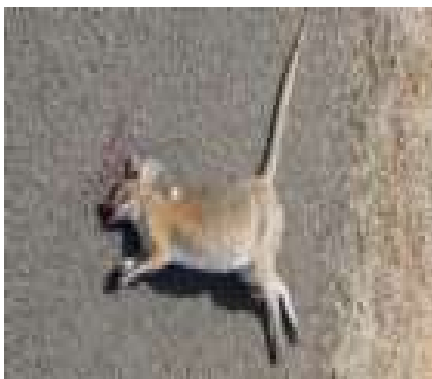
1. _____

2. _____

Aging: _____

_____.

-- caused by both heredity & environment



Death:

