

Name: _____

Blk: _____ Date: _____

Science 9 Notes on Sexual Reproduction Continued

Embryonic Development

Embryonic development is the early development of an organism - in humans, it is the first two months after fertilization

Stages:

End of the first week - ball of cells called **morula**

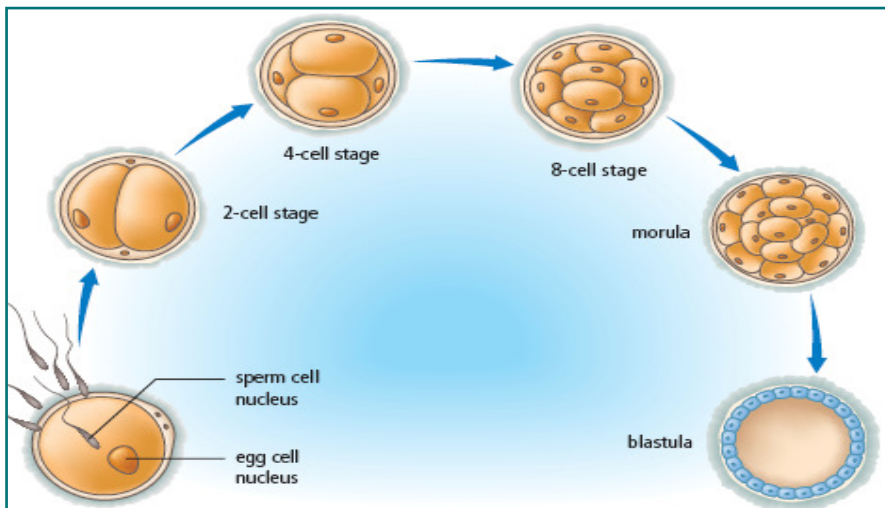
End of second week it is a hollow ball called a **blastula**

Cells at this stage are stem cells, and have the ability to develop into any kind of cell

In the next stage the embryo is known as a **gastrula** and develops

3 layers:

1. **ectoderm** (skin, nerves),
2. **mesoderm** (muscles, bones), and
3. **endoderm** (lungs, liver, digestive system lining)



Fetal Development:

The cell layers now differentiate into the organs and tissues of a baby - this is divided into 3 trimesters.

First Trimester (0-12 weeks)

Organ systems begin to develop and form.

Bone cells form.

Second Trimester (12-24 weeks)

Rapid growth from 12-16 weeks.



Third Trimester (24+ weeks)

Continued growth, especially of **brain**.

Fat begins to deposit at 32 weeks to keep baby warm at birth.



Sexual Reproduction Advantages and Disadvantages:

Advantages	Disadvantages
<ul style="list-style-type: none">• Very little energy required to find a mate (external fertilization).	<ul style="list-style-type: none">• More energy generally required to find a mate (internal fertilization).
<ul style="list-style-type: none">• Greater numbers of offspring can repopulate an area after a disaster (external fertilization).	<ul style="list-style-type: none">• Fewer offspring produced, so if the number of predators increases a population will decline (internal fertilization).
<ul style="list-style-type: none">• More protection is given to the embryo and more parental care is given to offspring (internal reproduction).	<ul style="list-style-type: none">• Gametes, embryos, and offspring are unprotected and are often preyed upon (external fertilization).
<ul style="list-style-type: none">• Offspring are genetically different from their parents, so they may survive new diseases or other threats that appear in a population.	