

**BLASTULA**

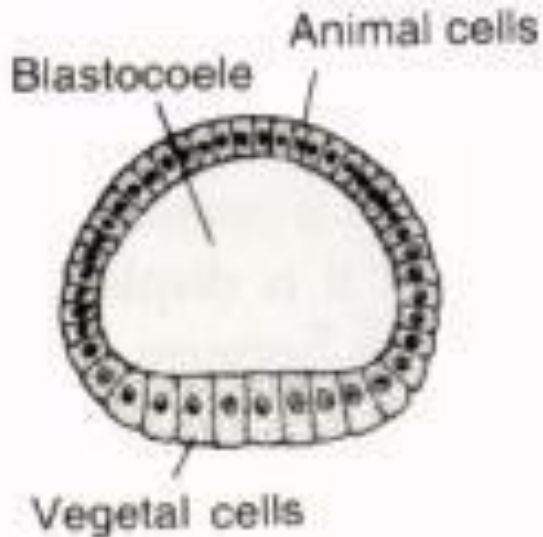
- Blastula is a hollow sphere of blastomeres surrounding a cavity.
- The cavity of blastula is called blastocoel.
- The process of formation of blastula is known as blastulation.
- Blastula -32-64 cell stage

# DIFFERENT TYPES OF BLASTULA

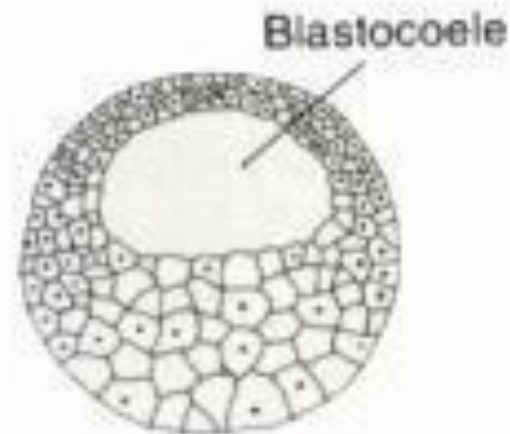
- The blastula of various groups of animals differs in form and structure depending upon a variety of factors such as the size of the amount and distribution of yolk etc. The following categories of blastulae have been recognized in different groups of animals

# Coeloblastula

- It is a hollow blastula containing a large spacious blastocoel.
- The blastocoel is filled with a fluid containing mucopolysaccharides.



Microlecithal egg  
Amphioxus  
Holoblastic cleavage

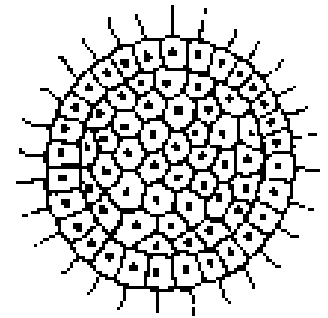


Mesolecithal egg  
Amphibians  
Holoblastic cleavage

- The blastula resulting from **holoblastic equal cleavage**, as in the case of echinoderms and amphioxus, is called **equal coeloblastula** .
- The blastoderm is single layered.
- **Holoblastic unequal cleavage**, as in frog, results in **unequal coeloblastula**.
- It has a blastocoel displaced towards the animal pole and a multilayered blastoderm.

# Stereoblastula

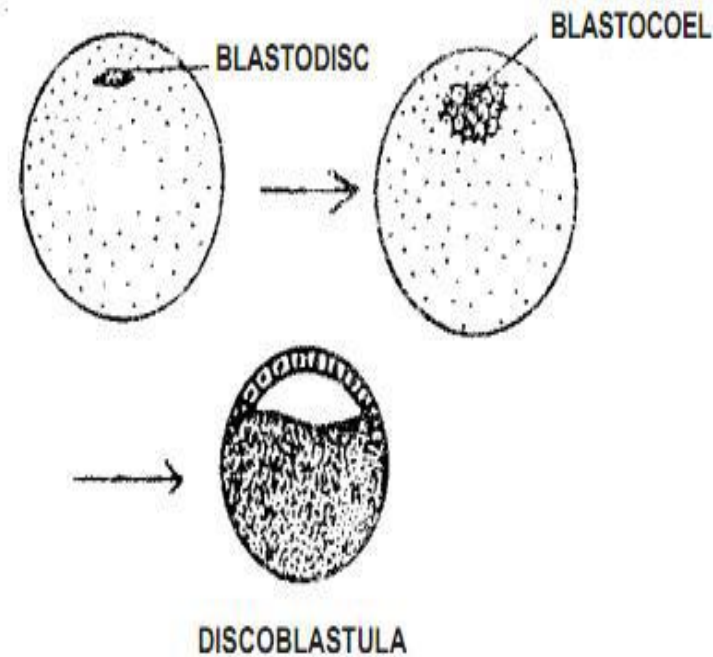
- This type of blastula is composed of an aggregate of larger sized and relatively lesser number of cells without or with extremely small blastocoelic space in the centre.
- Stereoblastula occurs in a variety of animals such as insects, some worms like *Nereis*, mollusks like *Crepidula*, gymnophionan amphibians and certain fishes.



Stereoblastula

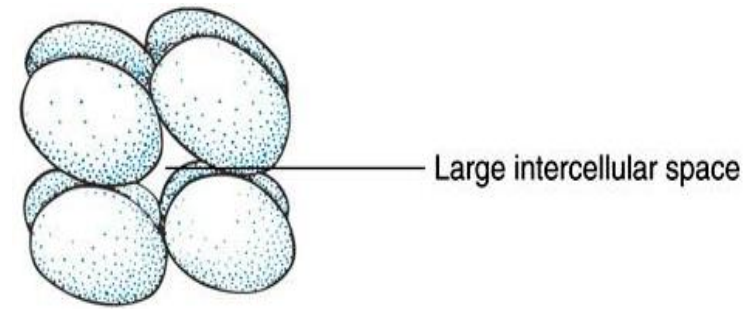
# Discoblastula

- Discoblastula consists of a disc-shaped mass of blastomeres overlying a large yolk mass.
- This blastula is the result of meroblastic discoidal cleavage as in most fishes, reptiles and birds.
- There is no blastocoel, instead a slit like cavity called subgerminal cavity appears in between the blastoderm and the yolk mass.

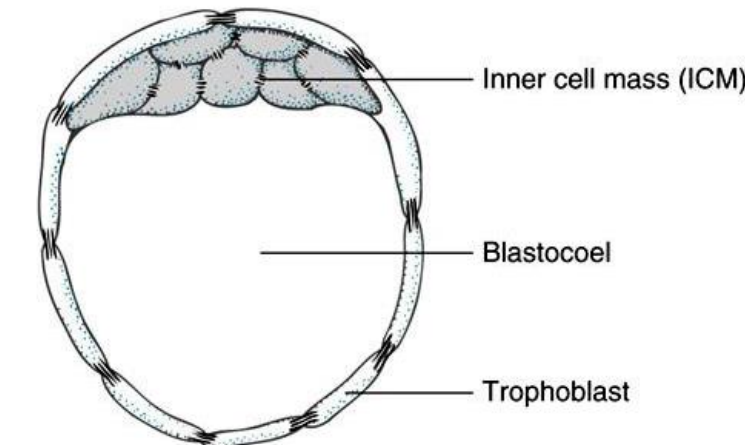
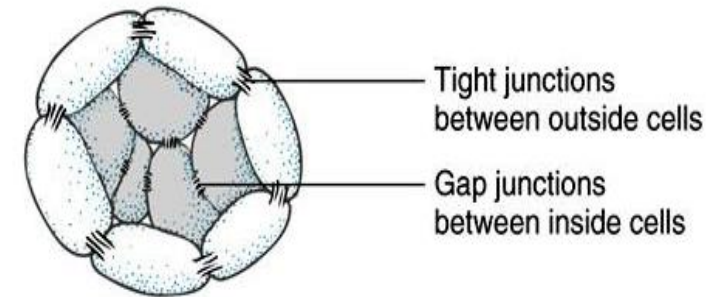


# Blastocyst

- It is the blastula stage of mammals;
- It consists of a hollow spherical vesicular blastula, containing an inner cell mass at the animal pole.
- The embryo proper develops from the inner cell mass.
- The outer single layer of cells which encloses the blastocoel is called the trophoblast.
- The trophoblast establishes relations with uterine wall and helps in nutrition of the developing embryo



(a) Early 8-cell stage





# Periblastula

- A stage in the embryonic development of most arthropods having centrolecithal eggs.
- The periblastula is a vesicle whose wall consists of one layer of cells and whose cavity is filled with unbroken yolk.
- It forms as a result of the superficial segmentation of the egg.

# Fate Map

- Fate map is t













































