

Name _____

CHAPTER 19 STUDY GUIDE

DEVELOPMENT

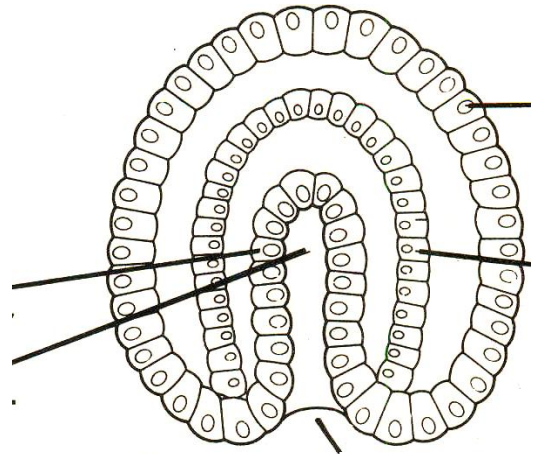
Section 19.1 Early Stages of Development

In your textbook, read about animal development - cleavage and morphogenesis.

Answer the following questions.

1. In what way is the beginning stage of development similar in all sexually reproducing animals?
2. What is a blastula?
3. What is the blastocoel?
4. What food source is available to a developing embryo?

Label the diagram at the right of gastrulation in a starfish. Use these choices: *mesoderm endoderm blastopore ectoderm archenteron*



In your textbook, read about animal development - neurulation, and twinning.

For each statement below, write true or false.

- _____ 11. The formation of the neural tube marks the beginning of the nervous system in the developing embryo.
- _____ 12. The brain and spinal cord develop from the neural tube.
- _____ 13. Cell division ends when differentiation begins.
- _____ 14. Fraternal twins develop from two different eggs fertilized by different sperm.

Section 19.2 Patterns of Animal Development

In your textbook, read about metamorphosis.

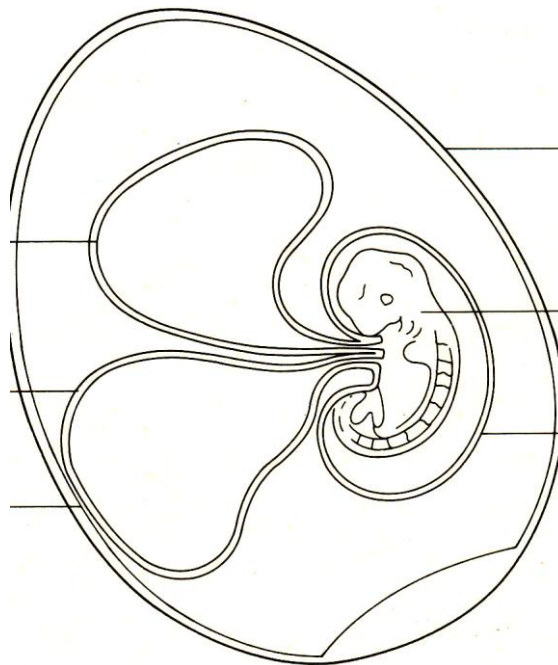
Complete each statement.

1. The larval form of the frog is called a(n) _____
2. Animals that develop outside the female go through a series of changes in body structure known as _____
3. The life cycle of the grasshopper has _____ stages of development.
4. The immature second stage in which a frog can live on its own is called the _____
5. After a period of active growth, the larva develops into a(n) _____
6. Gas exchange in the larval stage of frogs occurs in _____ pairs of _____.

In your textbook, read about the amniotic egg.

Label the diagram below of an amniotic egg. Use these choices:

egg shell amnion embryo allantois yolk sac chorion



Section 19.2 Patterns of Animal Development continued

In your textbook, read about internal development.

Circle the letter of the choice that best completes the statement.

14. Placental animals

- a. bear small, physically immature young.
- b. have no means of providing the embryo with food or oxygen.
- c. form internal tissue that provides food and oxygen to the embryo.
- d. trap carbon monoxide in the embryo.

15. The eggs of placental mammals are fertilized in

- a. the uterus.
- b. the oviduct.
- c. the cervix.
- d. the ovaries.

16. Pregnancy begins when

- a. an egg is fertilized.
- b. a zygote forms.
- c. the uterine wall thickens.
- d. implantation occurs.

17. The first membrane that forms around the embryo is

- a. the chorion.
- b. the amnion.
- c. the capillaries.
- d. the uterine wall.

18. Blood is transported between the embryo and the placenta by means of

- a. the amnion.
- b. the uterine wall.
- c. the umbilical cord.
- d. the mother's vena cava.

19. There is a separate placenta for each developing embryo, except for

- a. most fraternal twins.
- b. some fraternal twins.
- c. most identical twins.
- d. triplets and quadruplets.

Complete the statement.

20. Nutrients and oxygen diffuse from the mother's blood to the embryo's blood through the capillaries of the _____.

21. Carbon dioxide from the embryo is ultimately exhaled by the _____.

22. The blood supplies of the embryo and the mother do not actually _____.

23. The embryo's oxygen supply comes from oxygen taken in _____.

24. Besides food and oxygen, _____ and _____ also pass from mother to embryo.

Section 19.2 Patterns of Animal Development continued

In your textbook, read about birth.

Complete the table by checking the correct column(s).

Developin Fetus	1st Trimester	2nd Trimester	3rd Trimester
25. is nourished by the placenta			
26. can survive with special care if born prematurely			
27. begins to form eyes and ears			
28. triples its mass			

Determine if the statement is true. If it is not, rewrite the italicized part to make it true.

29. Labor begins with a series of *vaginal contractions*.

30. The amniotic sac bursts during labor, and *the ovaries* and the opening of the vagina dilate.

31. The fetus is pushed downward *in the uterus* as contractions become more intense.

32. The *positioning of the fetus in a head-down, face-up position* is called birth.

33. The stages *of labor* are dilation, expulsion, and afterbirth.

34. Afterbirth is the stage *of birth* in which the placenta is expelled.

35. The navel is the place where *the placenta* was attached to the mother's body.

36. *In amphibians, reptiles, birds, and mammals*, most differentiation is completed before hatching or birth.