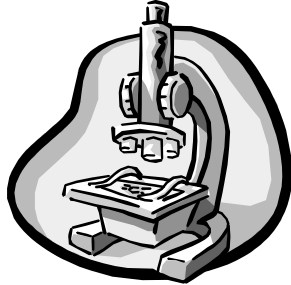


Science 10-Biology

Activity 14

Worksheet on Sexual Reproduction



10

Name _____

Due Date _____

Show Me Hand In

Correct and Hand In Again By

NOTE: This worksheet is based on material from pages 367-372 in Science Probe.

1. *Sexual reproduction* requires _____ parents, and their offspring are _____ genetically identical to the parents or usually to _____

2. Sexual reproduction requires specialized cells that are used only _____

3. What is meant by a *karotype*? _____

4. Most human cells contain _____ chromosomes or _____ pairs.

5. The members of each pair of chromosomes are similar in appearance and made up of the same genes. They are said to be _____

6. What is meant by a *diploid cell*? _____

7. Are most human cells diploid? _____

8. In *sexual reproduction*, _____ parents provide chromosomes for the offspring.

9. The first cell of an offspring has two cells. Where do these cells come from?

10. Turn to page 355. What is shown in the picture? _____

11. Now, turn back to page 369. Explain why, in sexual reproduction, the “specialized reproductive cells” of parents can only have *half* the number of chromosomes of their normal cells. _____

12. In sexual reproduction the specialized reproductive cells are called _____
13. What is meant by *haploid*? _____

14. Are *gametes* **haploid** or **diploid**? _____
15. Human gametes contain _____ chromosomes each. When two gametes unite, the resulting cell would have _____ chromosomes, and would therefore be (*diploid or haploid?*) _____
16. The process that divides the nucleus and reduces the number of chromosomes by half is called _____
17. The cytoplasm divides by a process called _____
18. The process of *meiosis* produces four new cells called _____
_____.

Before you proceed with this worksheet, log on to a computer and view the following animation of meiosis: To get to the site, open up Mr. Colgur's Science 10 Web page, scroll down to "Biology" and in the right column find "Meiosis Animation . Click this to view the animation. Use the "Back" button to go back to the web page each time.

The sites is also listed here if you want to go directly to it:

http://www.biology.arizona.edu/cell_bio/tutorials/meiosis/page3.html

Now, go back to page 369 and 370 and answer the following questions:

19. Before meiosis starts, during interphase, what do the chromosomes do?

The result of this is shown on the first diagram on the left on page 370. The cell that originally had 4 chromosomes (2 "large white ones" and 2 "small black ones"),

now has _____ *pairs* of chromatids. Each pair is still joined together at the

20. In the space below, draw the four phases of MEIOSIS I. Write a short explanation to show what is going on during each phase. (See top of page 370)

21. In the space below, draw a diagram showing the four stages of MEIOSIS II. Give an explanation for what is happening during each of the stages. (See the diagram on the top of page 371)

22. Look at the four resulting “daughter” cells at the end of meiosis II. Each cell contains _____, chromosomes - a single “large” one and a single “small” one.

These daughter cells are called sex cells or _____.

23. Each gamete has only _____ the chromosomes of a “normal” cell of the individual.

24. In order to form a new organism, two gametes must _____

25. In *sexual reproduction*, the two gametes that unite usually come from

_____ parents.

26. The mature *male* gamete is called the _____
 (plural _____) or (*shorter word*) _____.
27. The mature *female* gamete is called the _____
 (plural _____)
28. Which is usually larger, the male gamete or the female gamete? _____
29. Which one is able to move around more? _____
30. The process of the two gametes meeting successfully is called _____.
31. The sperm and the ovum both contain _____ the chromosomes of a normal cell.
 When they meet, their nuclei fuse together so that the new cell contains _____
 _____ number of chromosomes as a normal cell.
32. The new cell that forms when a sperm and ovum unite is called a _____.
33. The *zygote* is the first cell of a new _____.
34. The zygote divides again and again by the process of _____.
35. Once a zygote begins to divide, it is called an _____.
36. Can plants reproduce sexually? _____
 What carries the sperm cells to the ova when plants reproduce sexually? _____

37. What are *hermaphrodites*? _____

 Give an example of a species which is a hermaphrodite. _____

38. Can earthworms fertilize their own gametes? _____.

If they could, how would the offspring compare to the parent? _____.

This would make the process more like _____ reproduction.

39. In what type of animals does fertilization occur *externally*? _____

40. Where does the embryo develop in birds? _____

41. Where does the embryo develop in mammals? _____

42. *Sexual reproduction* is more complicated than *asexual*. What do you think the main *advantage* of sexual reproduction is to the survival of a species. _____
