

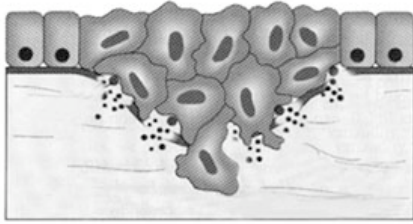
Lesson 4.8 Cancer and the Cell Cycle

Name

Date

Period

Engage



1. In the last class, we discussed some factors that could possibly contribute to the development of cancer. What are some of those factors?

2. What do those factors do to the body to cause cancer?

Explore I

View the *News Alert* videos with the class and use the information provided to identify what each video suggests is the cause of cancer and what evidence supports that claim.

| News Alert Video | Factor Proposed to Cause Cancer | Evidence |
|---------------------------------------|---------------------------------|----------|
| <i>Cancer and Chemical Poisons</i> | | |
| <i>Cancer and your Family History</i> | | |
| <i>Cancer and Radiation Exposure</i> | | |
| <i>Cancer and UV Light</i> | | |

Explore II

View the animations on the website with the class. Think about the information each animation presents, then write a one-sentence statement for each that summarizes what you learned.

Animation 1:

Cancer involves . . .

Animation 2:

Cell division normally is . . .

Animation 3:

Cell cycle regulation is accomplished by . . .

Animation 4:

Cancer-causing agents often . . .

Animation 5:

When damage occurs to genes that regulate the cell cycle . . .



Explain II

Review your notes from Explore I, then write a sentence that describes how our current understanding of cancer explains the role that each factor plays in causing cancer.

Cancer and Chemical Poisons

Cancer and Your Family History

Cancer and Radiation Exposure

Cancer and UV Light



Explain III

Answer the following questions by selecting the correct answer.

3. During the S phase of the cell cycle _____
 - a. the cell grows
 - b. the DNA is replicated
 - c. the cell divides
 - d. the nucleus divides
4. Proto-oncogenes _____
 - a. inhibit cell division
 - b. encourage cell division
 - c. kill cells
 - d. cause DNA to divide
5. Mutations are _____
 - a. substances that cause DNA to divide
 - b. substances that kill cells
 - c. substances that cause changes in DNA
 - d. substances that inhibit cell division
6. If a cell experiences a mutation in a tumor-suppressor gene then it will _____
 - a. divide less frequently
 - b. divide more frequently
 - c. causes DNA to break
 - d. causes DNA to stop dividing
7. Some chemicals are known to cause cancer (T or F)
8. It is best to be exposed to X-rays for as short a period a time as possible as it has been noted to cause lung cancer (T or F)
9. There is evidence that cancer can be transmitted from one family member to another by touching. (T or F)
10. There is strong evidence that links sun exposure to cancer. (T or F)
11. People of certain occupations have higher risks of cancer. (T or F)
12. The rates and timing of cell division in your body are not precisely regulated. (T or F)
13. Chemical messengers that pass between neighboring cells help keep the rate of cell division equal to the rate of cell death. (T or F)
14. The cell cycle clock integrates the mixture of signals the cell receives from its neighbors and determines whether or not the cell should move through each stage of growth and division. (T or F)
15. Mutations can result in uncontrolled cell division. (T or F)