



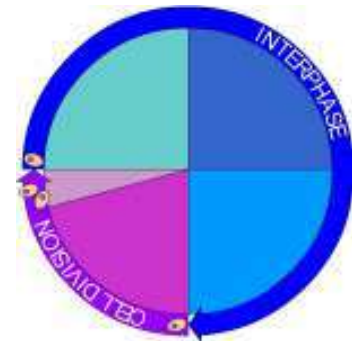
Part 1: Catching Some Killer Rays

Sheena had always liked to lie out in the sun. She just wasn't happy unless her skin was a golden brown color. Even in the winter, she insisted upon removing the cold white appearance of her skin. "I've got to get to the tanning bed!" would be her weekly slogan. Towards the end of her senior year in college, Sheena began to notice a strange black spot on her back. It had not been there a few years ago, and it seemed to look a little different everyday.

Sheena decided to show this strange black mark to her doctor. He diagnosed her with malignant melanoma, a serious form of skin cancer. Her doctor described "Melanoma" as a disease of the skin in which cancer (malignant) cells are found in the cells that color the skin (melanocytes)." He further explained that the first step in treatment is the removal of the melanoma, and the standard method of doing this is by surgical excision - cutting it out. If the cancer has spread, then chemotherapy will be necessary.

Sheena's head was spinning. She knew she needed a minute to digest the information just given to her. Before Sheena made any decisions, she decided to do a little research. Much of the information that Sheena found centered upon the cell cycle. She remembered taking biology in high school, but couldn't recall anything about the cell cycle. She decided to investigate a little further.

1. Define cancer.
2. What is the cell cycle?
3. What is the process of cell division called?
4. What is the period of growth between cell divisions called?
5. Using the following terms (mitosis, G1, G2, S, and cytokinesis), complete the Cell Cycle



6. Complete the following chart by explaining what happens to the cell and the chromosomes during each phase:

Cell Division	Mitosis
	Cytokinesis
Interphase	G1
	S
	G2



Section 1: Factors Reported to Be Associated with Cancer Read/watch the *News Alert* items and use the information provided to identify what each item suggests is the cause of cancer and what evidence supports that claim.

Link: http://science.education.nih.gov/supplements/nih1/cancer/activities/activity2_videos.htm

News alert	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>		

Section 2: Building an Explanation for the Cause of Cancer

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

Animation links: http://science.education.nih.gov/supplements/nih1/cancer/activities/activity2_animations.htm

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 . . .