**Biology STAAR Review Stations**

**Day 2**

**Category #1 Cell Structure and Processes (5.A, 5.B, 5.C, 5.D)**

5.A describe the stages of the cell cycle, including deoxyribonucleic acid (DNA) replication and mitosis, and the importance of the cell cycle to the growth of organisms;

5.B examine specialized cells, including roots, stems, and leaves of plants; and animal cells such as blood, muscle, and epithelium;

5. C describe the roles of DNA, ribonucleic acid (RNA), and environmental factors in cell differentiation;

5. D recognize that disruptions of the cell cycle lead to diseases such as cancer.

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|  | **5.A** | **5.B** | **5.C** | **5.D** |
| **Interactive Quizzes** | **Mitosis and Cytokinesis**  <http://glencoe.mcgraw-hill.com/sites/0078802849/student_view0/unit2/chapter9/section2/self-check_quizzes-english.html> | **Plant and Animal Cells**  <http://www.proprofs.com/quiz-school/story.php?title=plant-and-animal-cells-quiz_1> | **Cellular Reproduction**  <http://glencoe.mheducation.com/sites/0078802849/student_view0/unit2/chapter9/chapter_test_practice-english.html> | |
| **Graphic Organizers** | **Cell Cycle and Mitosis Graphic Organizer**  See handout | **Plant Specialized Cell Foldable**  See handout | **Cell Cycle Regulation Concept Map**  [**http://www.classzone.com/cz/books/bio\_09/resources/htmls/interactive\_review/bio\_intrev\_ch05.html**](http://www.classzone.com/cz/books/bio_09/resources/htmls/interactive_review/bio_intrev_ch05.html)  See handout | |
| **Virtual Labs** | **Determining time spent in different phases of the cell cycle**  [**http://www.biology.arizona.edu/cell\_bio/activities/cell\_cycle/cell\_cycle.html**](http://www.biology.arizona.edu/cell_bio/activities/cell_cycle/cell_cycle.html) | **Virtual Stem Cell Lab**  <http://virtualstemlab.com/stemcell.html> | | **Virtual Lab: Cell Reproduction**  [**http://glencoe.mcgraw-hill.com/sites/dl/free/0078802849/383933/BL\_23.html**](http://glencoe.mcgraw-hill.com/sites/dl/free/0078802849/383933/BL_23.html) |
| **Vocabulary** | **Cell Cycle Flashcards**  [**http://quizlet.com/8674960/cell-cycle-flashcards-flash-cards/**](http://quizlet.com/8674960/cell-cycle-flashcards-flash-cards/) | **Specialized Cells Flashcards**  <http://quizlet.com/5857764/specialized-cells-flash-cards/> | **Cell Differentiation Vocabulary**  **See handout** | **Disruptions to the Cell Cycle Picture Vocabulary**  **See handout** |
| **Video Clips** | **Cell Cycle Video**  <http://www.educreations.com/lesson/view/cell-cycle-b5a/2385579/?s=hTlM8x&ref=appemail> | **Cell Specialization Brain Pop Video**  <http://glencoe.mcgraw-hill.com/sites/dl/free/0078802849/164155/00035805.html>  **Specialized Cells and Tissues Video**  <http://www.youtube.com/watch?v=I8uXewS9dJU> | **Why RNA is Just as Cool as DNA**  <http://www.youtube.com/watch?v=0Elo-zX1k8M> | **The Cell Cycle and Cancer**  [**http://www.youtube.com/watch?v=lpAa4TWjHQ4&feature=youtu.be**](http://www.youtube.com/watch?v=lpAa4TWjHQ4&feature=youtu.be) |

**5.A, 5.B, 5.C, 5.D Critical Thinking Questions**

**Write answers in your notebook!!!!!!**

1. How does mitosis compare to meiosis (**5A**)?
2. What are the characteristic changes of mitosis (**5A**)?
3. What are the characteristic changes in meiosis (**5A, 6G**)?
4. How are cells specialized to carry on their function (**5B**)? Why are all cells not the same?
5. What is the composition of DNA (**5C**)?

6. How is genetic information carried by DNA (**5C**)?

1. Discuss how a cell may become cancerous (**5D**).

**5.B Plant Specialized Cell Foldable**

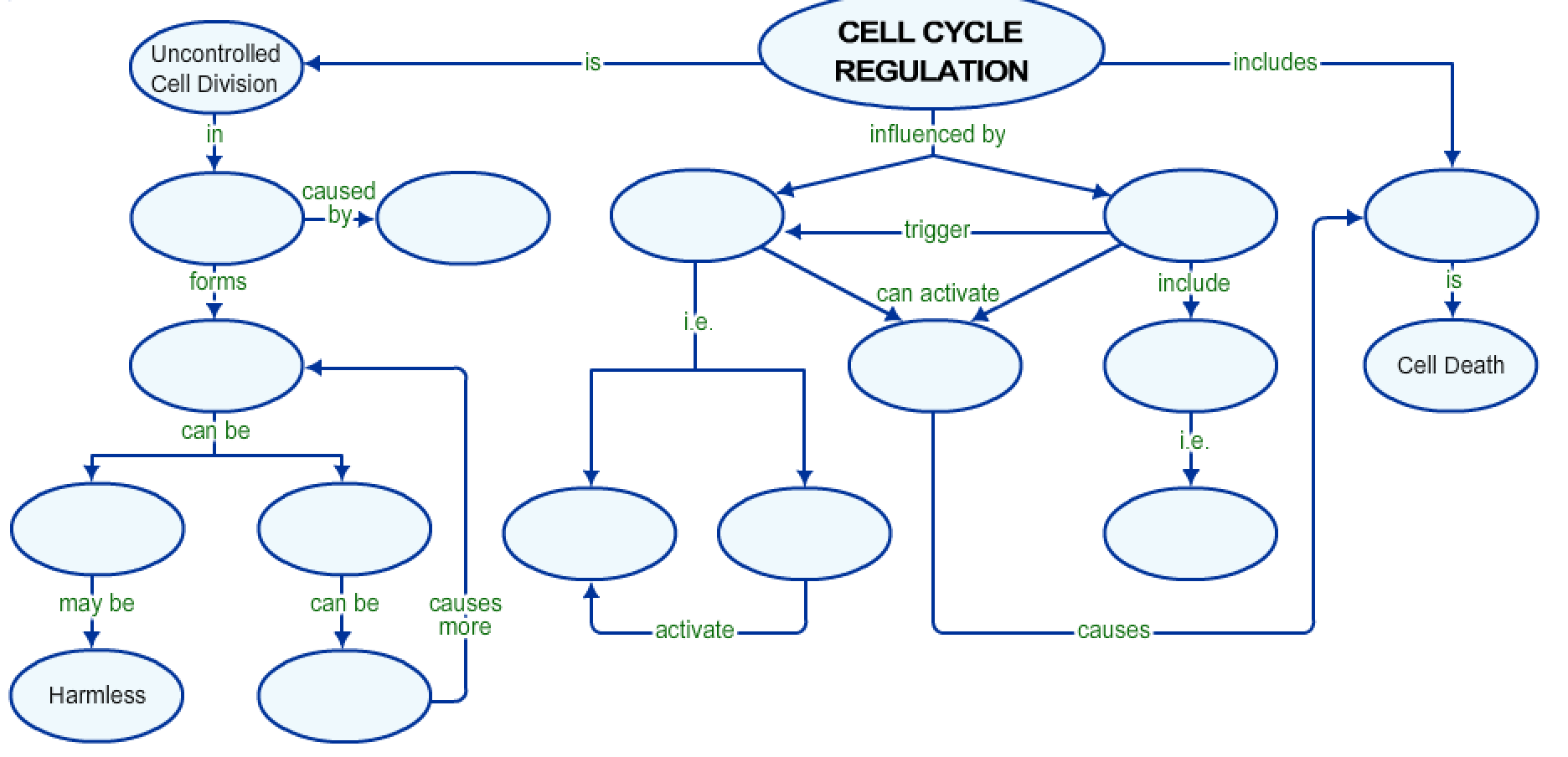
Use the online lecture link for assistance:

<http://www.mhhe.com/biosci/genbio/maderinquiry/lecture/lecture9.html>

Fold line Fold line

|  |  |  |
| --- | --- | --- |
| **Plant Structure** | **Function** | **Illustration** |
| Leaves |  |  |
| Stems |  |  |
| Xylem |  |  |
| Phloem |  |  |
| Roots |  |  |
| Flowers |  |  |

**5.C, 5.D Cell Cycle Regulation Concept Map**



Word Bank

Cancer

Apoptosis

External Factors

Internal Factors

Cyclins

Metastasized

Carcinogens

Tumors

Self Destructive Enzymes

Messages

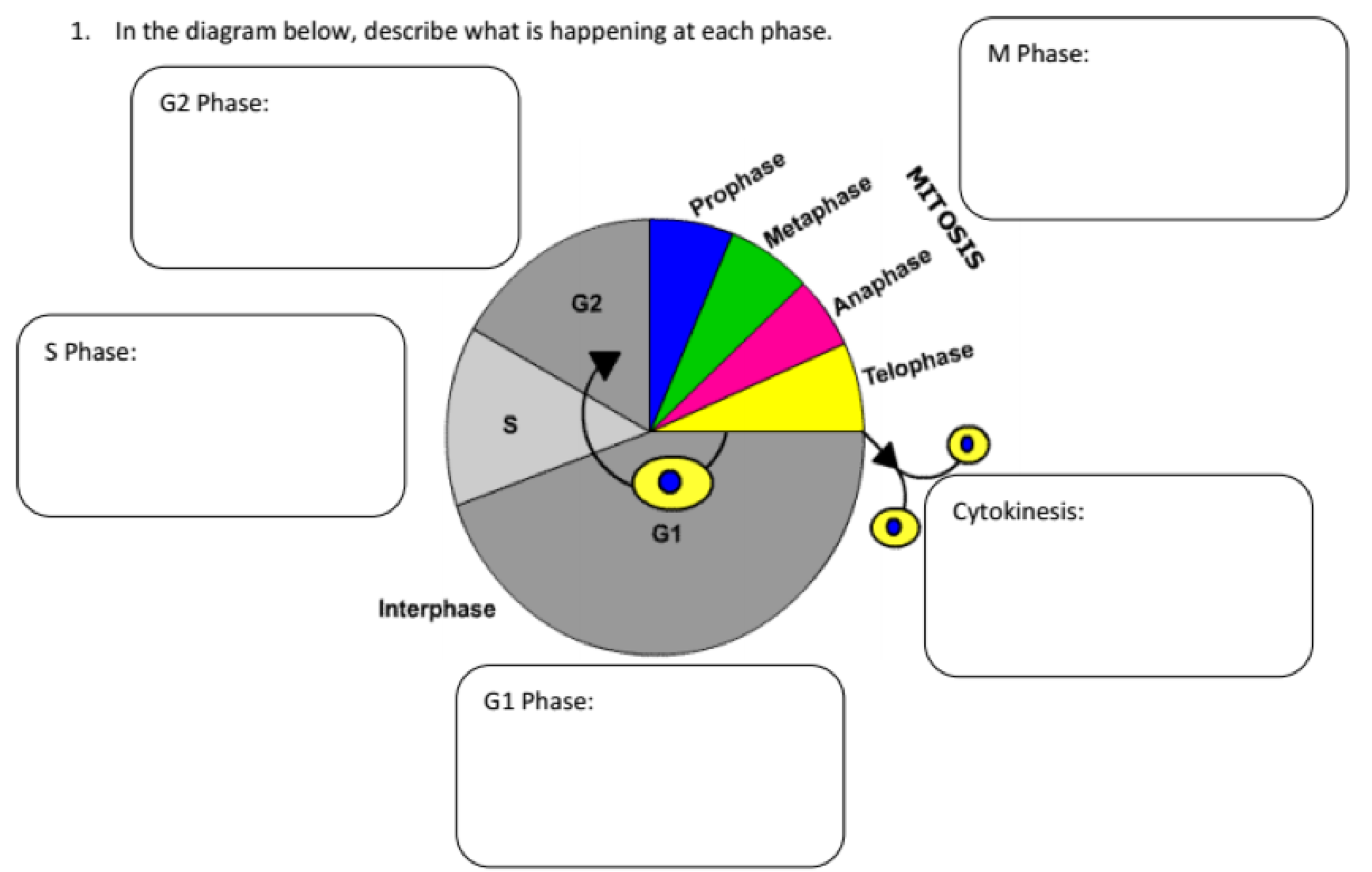
Growth Factors

Kinases

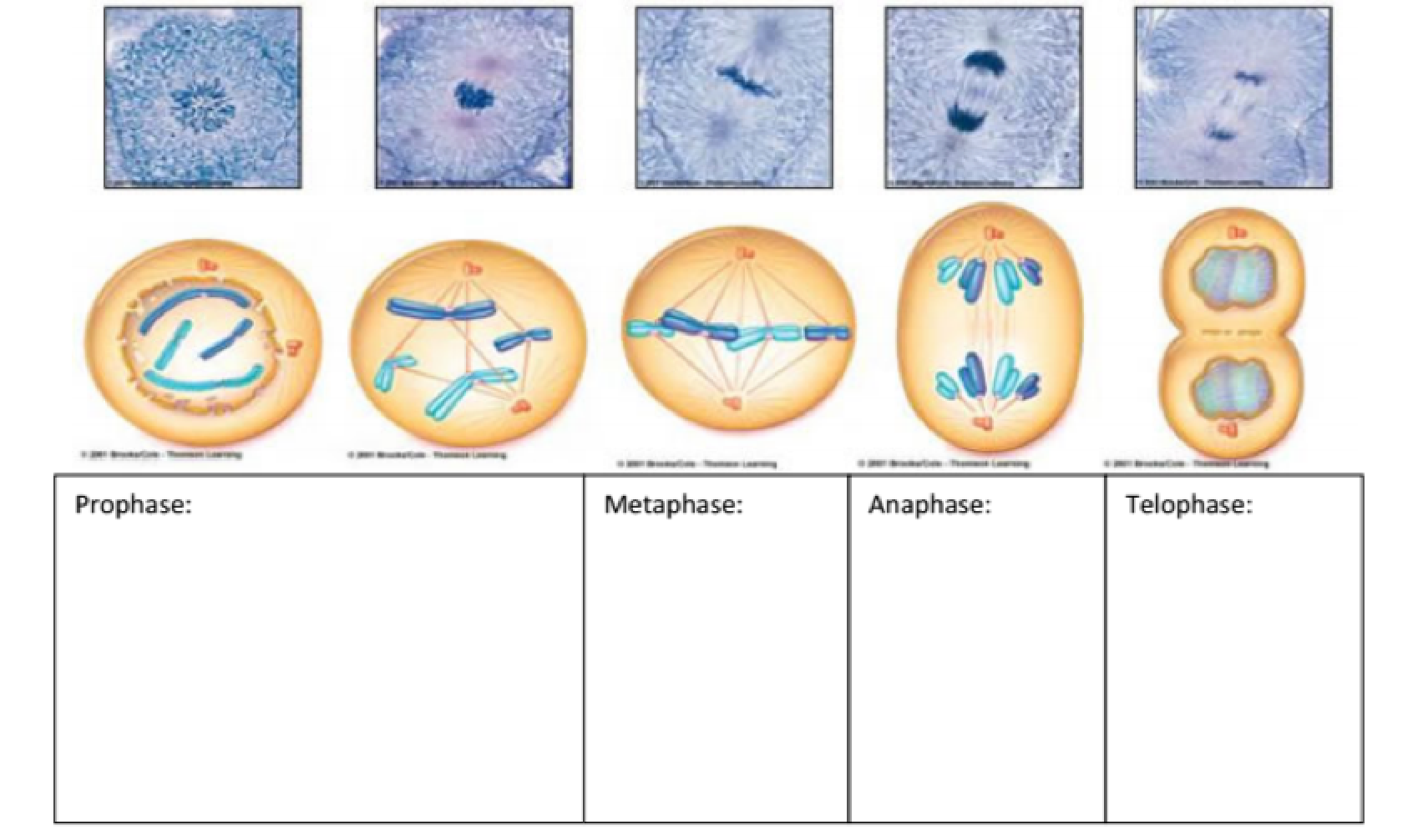
Malignant

Benign

**5.A Cell Cycle and Mitosis Graphic Organizer**



Match the appropriate pictures to the correct phase of mitosis



**5. C** **Cell Differentiation Vocabulary**

|  |  |
| --- | --- |
| **Cell differentiation** | The process of generic embryonic cells becoming specialized cells. |
| **Gene expression** | The specific combination of genes that are turned on or off (**expressed** or **repressed**), and this is what dictates how a cell functions. |
| **Importance of cell differentiation** | Cells need to have different structures because they have different functions |
| **DNA replication** | The process in which the DNA sequence is  copied to form an additional DNA molecule |
| **Stem Cell** | A “blank” cell that can be turned into a variety of different types of cells found in the body |
| **RNA** | The biomolecule classified as a nucleic  acid and composed of nucleotides; genetic  material in a single helix form |
| **Mutation** | Any change in the sequence of DNA; may result in the production of incorrect proteins and lead to malfunctions in the processes of the organism |

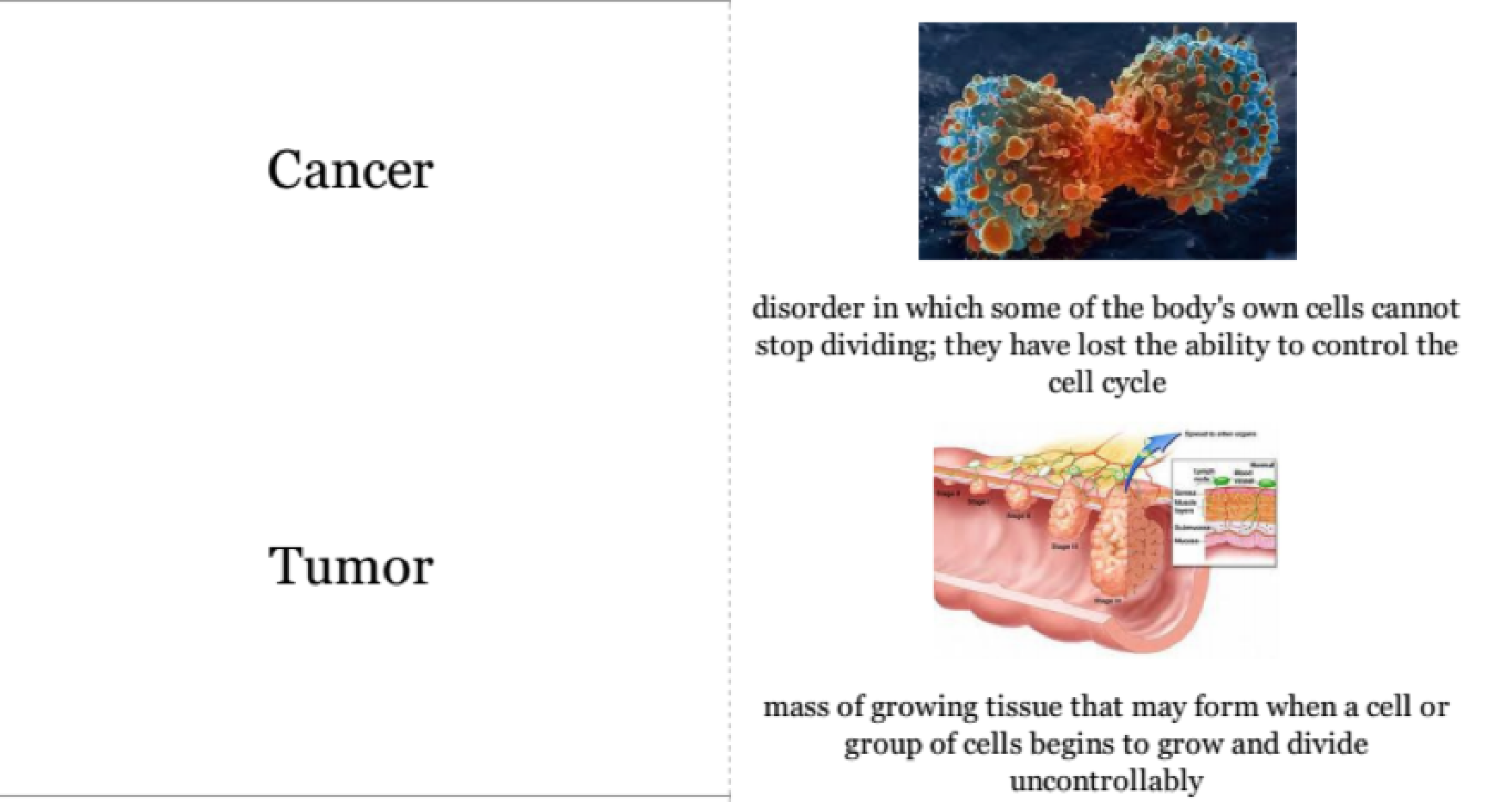
5.D Disruptions to the Cell Cycle Picture Vocabulary

Radiation 

Energy sent out as particles or

waves; used in the treatment of

cancerous tumors





Chemotherapy 

The treatment of disease by use of chemicals; can selectively destroy cancerous tissue