

## Learning Activity for Module 1 – Introduction to Genetics 1

**Purpose:** This learning activity introduces students to the terminology associated with genetic/genomic foundational concepts and provides a first look at the concepts fundamental to the modules that follow. By the end of this online learning activity, students will have familiarity with foundational genetic/genomic concepts and be able to correctly identify the definitions of the basic terminology.

**Why:** Nursing students, as well as college biology students in general, struggle with the complex language associated with genetic and genomic foundational concepts (Ward, 2017). As a strong grasp on the terminology is essential for mastering the fundamentals and being able to move into a deeper understanding of how the knowledge is applied to nursing practice and being able to confidently explain concepts to patients, students will be presented an opportunity to learn genetic/genomic technology, begin to understand basic genetic/genomic concepts, and create strategies to help them remember the terminology as they move forward with the course.

### Activity Outline

1. Provide written instructions or create an introductory video introducing the activity, relevance to future learning, and importance of a solid understanding of the foundational concepts.

#### Sample instructions:

*You have been learning genetic/genomic terminology all week and now it is time to solidify that learning by designing your own activity!*

*Your task this week is to create an activity that helps you and other students remember the key concepts and terminology that you have been reading about this week. You can create a crossword puzzle, mnemonic, word match, or another type of activity that will help your learning. After you are done, post your creation in the Week X Discussion board.*

*Links to puzzle making resources and a great video about designing crossword puzzles for the New York Times (it even has hidden puzzles contained in the video!) are posted below.*

*I encourage you to be creative and really engage with the material. The concepts we have covered are essential for our discussions during the rest of the course and having a strong grasp on these concepts will be important when you are answering your patients' questions about precision health!*

2. Provide online or text resources that define key genetic/genomic concepts

#### Example online resource:

National Human Genome Research Institute's (NHGRI) talking glossary of genomic and genetic terms: <https://www.genome.gov/genetics-glossary>

3. Have students prepare an activity of their choice (ex. Crossword, mnemonic, drawing) to help them remember key concepts and the terminology associated with key concepts. Students can share their resource on an LMS discussion board.

Resources to help students create an activity:

How to create a crossword puzzle in Excel:

<https://youtu.be/RJf9EAld8LU?si=DpqEjNuqh2B2DXh2>

Match-up Maker and other puzzles: <https://www.theteacherscorner.net> (click on "Printable" on the left column to see puzzle options)

Criss-cross puzzle maker: <https://puzzlemaker.discoveryeducation.com/criss-cross>

Fun video on how to create a crossword puzzle from a New York Times crossword puzzle constructor: <https://youtu.be/aAqQnXHd7qk?si=eXmq7OmzwypzUlu0>

4. Optional: Ask students to try out at least one resource created by another student and provide feedback on how the resource impacted their learning.

## References

Ward, L. (2017). Using Biology Education Research and Qualitative Inquiry to Inform Genomic Nursing Education. *Nurse Educator*, 42 (6), 303-307. doi: 10.1097/NNE.0000000000000378