AP Biology Cell Communication Comic Strip Project

Learning Objectives:(Choose 3-4 to include in comic)

A- Describe the ways that cells can communicate with one another.

B- Explain how cells communicate with one another over short and long distances.

C- Describe the components of a signal transduction pathway.

D- Describe the role of components of a signal transduction pathway in producing a cellular response.

E- Describe the role of the environment in eliciting a cellular response.

F- Describe the different types of cellular responses elicited by a signal transduction pathway.

G- Explain how a change in the structure of any signaling molecule affects the activity of the signaling pathway.

H- Describe positive and/ or negative feedback mechanisms.

I- Explain how negative feedback helps to maintain homeostasis.

J- Explain how positive feedback affects homeostasis.

Terms and Connections (Use at least 10 terms and details within the comic strip)

This project will reference multiple chapters from the textbook including 11, 35, 38, 39 40, 43, 45, and 48.

Comics (Rubric)	3	2	1
Headings / Key Ideas	3-4 Learning Objectives are included and are easily visible using color, text size, or other features	2 Learning Objectives are obvious in the comic	1 Learning Objective or none, may be present but not obvious
Character Design	2 characters with a variety of expressions and poses	1-2 characters with little variety of expressions	1-2 characters
Details and Terms	10 scientific terms related to your topic are included	5-9 terms and details are included	1-4 details are included
Connections	Most terms are connected in a relevant way	Some terms are connected in a relevant way	Very few connections
Sketches/Creativity	Images. Color. Layout shows evidence of thought and effort. Comic is easy to follow and neat.	Images, color and layout show effort but somewhat disjointed, inaccurate, or difficult to follow	Little evidence of effort, terms are just thrown together, minimal sketches.
Presentation time	4.5-5 minute	Over/under by 1 minute	over/under by 2 minutes

Presentation Timeline

Monday January 13	Tuesday January 14	Wednesday January 15
Plasmodesmata between plant cells allow material to be transported from cell to cell	Immune cells interact by cell-to- cell contact, antigen presenting cells (APCs), helper- T cells, and killer T-cells	Morphogens in embryonic development
Plant Immune Response	Neurotransmitters	Cytokines regulate gene expression to allow for cell replication and division
Ethylene levels cause changes in the production of different enzymes allowing fruits to ripen/ Ripening of fruit	Insulin/ Blood sugar regulation by insulin and glucagon	HOX genes and their role in development
Quorum sensing in bacteria/ Use of chemical messengers by microbes to communicate with other nearby cells and regulate specific pathways in response to population density	Human growth hormone	Apoptosis
Mating pheromones in yeast trigger mating gene expression	Thyroid hormones	Lactation in mammals
Testosterone/ Expression of the SRY gene triggers the male sexual development	Estrogen	Onset of labor in childbirth

pathway in animals		
		Epinephrine stimulation of glycogen breakdown in mammals