# Assignment Summary

For this assignment, you will create a visual representation of positive and negative feedback mechanisms and predict the causes or effects of changes in these mechanisms. Your presentation will include a graphic organizer describing two feedback loops you have researched and a diagram of each feedback loop.

Background Information

A feedback mechanism is a system in which an organism maintains its internal conditions and responds to stimuli that occur both internally and in the outside environment. The purpose of feedback mechanisms is regulation of biological processes. Feedback mechanisms can be either negative or positive.Negative feedback mechanisms maintain homeostasis, which is the tendency to maintain a stable, relatively constant internal environment. Negative feedback loops function to counteract a change, thereby bringing the body back to the set point that was out of balance. Positive feedback mechanisms help the body reach some sort of biological goal. In positive feedback loops, the system acts to enhance a response that was triggered after exposure to the stimulus.

# Assignment Instructions

For this project, you are expected to submit:

1. A completed version of this guide. Remember to include the following as you work on your project:
* A completed graphic organizer about a positive and a negative feedback mechanism.
* A diagram of each feedback mechanism.

**Step 1: Prepare for the project.**

1. Read through the guide before you begin so you know the expectations for this project.
2. If there is anything that is not clear to you, be sure to ask your teacher.

**Step 2: Conduct research.**

1. Choose one positive and one negative feedback mechanism to research from the following options:

Negative feedback: Blood glucose concentration; Blood osmolarity; Body temperature

Positive feedback: Lactation; Labor; Fruit ripening

1. Complete the graphic organizer provided below with information from your research on each feedback loop.

**Step 3: Create a diagram for each feedback loop.**

1. In the section below, draw a diagram for the positive feedback mechanism that you researched.
2. Then draw a diagram for the negative feedback mechanism that you researched.
3. Title your diagrams with the biological process shown and label if it is positive or negative feedback mechanism.
4. Include labels to describe each part of the diagrams. The following terms should be included as part of the diagrams and labels: stimulus, and response with description of the response pathway.

**Step 4: Make a prediction.**

1. Predict the effects of increasing and decreasing stimulus in each of the feedback processes by answering the questions in the **Written Analysis** section below. Use reasoning and evidence to support your prediction.

**Step 5: Evaluate your project using this checklist.**

If you can put a check in each box below, you are ready to submit your project.

* Did you research a positive and a negative feedback mechanism?
* Did you complete the graphic organizer about the feedback mechanisms that you researched?
* Did you complete a diagram for each feedback mechanism?
* Did you include a title for each diagram?
* Do your diagrams include labels to describe what is happening in the feedback mechanism?
* Did you include stimulus and response in your diagrams?
* Did you answer the questions in the **Written Analysis** section, including a description of the function of each item shown in your drawing?

**Step 6: Revise and submit your project.**

1. If you were unable to check off all of the requirements in the checklist, go back and make sure that your project is complete. Be sure to save your project before submitting it.
2. Submit your written analysis to your teacher. Make sure your name is on it.
3. Congratulations! You have completed your project.

|  |  |
| --- | --- |
| Positive Feedback Loop | Negative Feedback Loop |
| Biological Process:Stimuli:Response(s):Why This Is Positive Feedback: | Biological Process:Stimuli:Response(s):Why This Is Negative Feedback: |

|  |
| --- |
| Diagram of Positive Feedback Loop |

|  |
| --- |
| Diagram of Negative Feedback Loop |

Written Analysis

1. Predict the outcome if the stimulus is increased in the positive feedback loop you researched.
2. Predict the outcome if the stimulus is decreased in the positive feedback loop you researched.
3. Predict the outcome if a condition gets farther away from homeostasis.
4. Predict the outcome if a condition gets closer to homeostasis.