



Homeostasis and Feedback Mechanism

By: Amanda Martin

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Science
Grades 9–12



Introduction

Students will discover the meaning and elements of homeostasis. Students will work in groups to uncover how a specific feedback mechanism maintains homeostasis and create a presentation detailing their findings.

Learning Objectives

Students will plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis. ([Next Generation Science Standard HS-LS1-3 From Molecules to Organisms: Structures and Processes](#))

Materials Needed

- Journals
- Textbooks (optional)
- Laptops/computer access

Procedure

1. To begin the lesson, define and discuss homeostasis. Be sure to discuss the three elements of homeostasis: the receptor, the control center, and the effector. In addition, discuss feedback mechanisms and how they can be both positive and negative. Students will need to take notes during this discussion in order to be successful during the next activity. Students may also view [this excellent video about homeostasis](#) (view before use to determine that it is appropriate for your specific set of students).
2. Divide students into small groups (roughly 3-4 students per group). Each group should be given a feedback mechanism (see examples below). Groups will research their feedback mechanism through the use of textbooks and/or laptops to identify the receptor, the control center, and the effector for their specific feedback mechanism. Student research should show how the feedback mechanism maintains homeostasis.
 - Feedback Mechanism Examples:
 - Body temperature
 - Labor contractions
 - Blood pressure
 - Blood pH

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- Blood glucose levels
 - Sodium concentration
 - Blood gases levels
3. Using their gathered research, groups will create a short PowerPoint or Prezi presentation detailing the elements of their feedback mechanism that will be shared with their classmates. Groups may be given time to create their presentations during class. Presentations must use graphics to display the stages of the feedback mechanism, state how the mechanism maintains homeostasis, and label whether or not the mechanism is positive or negative.
 4. Groups will present their PowerPoint/Prezi to the class. It is important that students take notes on each feedback mechanism that is examined during this portion of the lesson. The teacher may use the information presented in a future test or quiz about homeostasis.

Evaluation

Feedback Mechanism Presentation Checklist

Groups detail the receptor, the control center, and the effector for their given feedback mechanism.	
Groups correctly identify how the feedback mechanism maintains homeostasis.	
Groups correctly identify the feedback mechanism as positive or negative.	
Groups use eye-catching graphics to catch the attention of viewers.	