Identifying a Negative feedback System

WHAT YOU WILL DO:

Locate a negative feedback system in your everyday environment. Identify and analyze the elements of the system.

BACKGROUND INFORMATION:

A home heating system is an example of a system controlled by negative feedback. The flow of heat through a house is controlled to keep room temperatures at a steady level. The mechanism of control is a thermostat - a thin coil made of two different metals fastened together. Because the different metals expand and contract at different rates, the coil bends and unbends with changes in air temperature. The moving coil pushes on an electric switch that turns the heat source on or off.

The four elements of a negative feedback system are

1) the process that is controlled (in this case the flow of heat);

2) the feedback signal (here the measured air temperature)

3) the feedback mechanism (in this case the thermostat & switch);

4) the outcome (here a steady level of desired heat measured as a constant room temperature).

IDENTIFY A FEEDBACK LOOP

1) Find a system in your everyday life that you think is controlled by negative feedback. Describe this system.

2) List and diagram the parts of your proposed negative feedback system.

3) Identify the process that is controlled.

4) Identify the feedback signal.

5) Identify the outcome of the system.

6) Analyze a human body system that involves negative feedback. Are the same elements present in the body mechanism that were present in the heating system example? Diagram them in the same way.

7What do you think a positive feedback system would involve?. Provide an example of a positive feedback system in the body and briefly explain how it works.