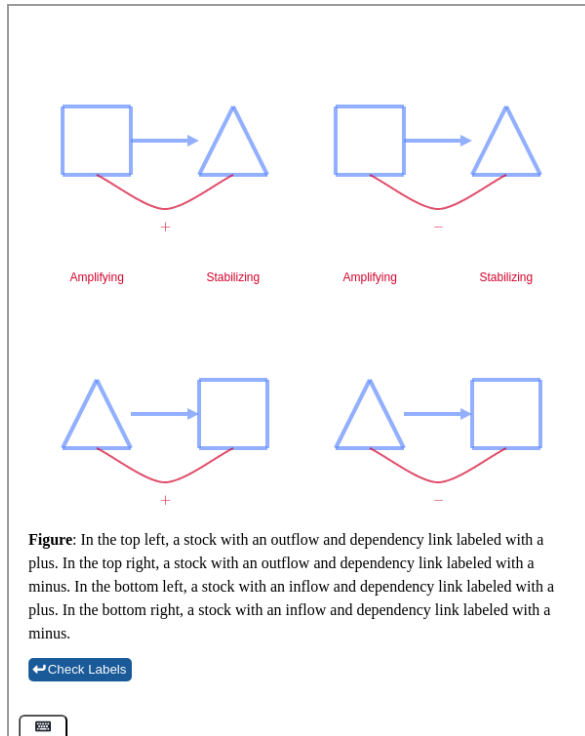


# 1 Feedback Loops

Let's practice distinguishing between amplifying and stabilizing feedback loops. Below is a diagram containing the four general possibilities for feedback loops. Move the labels to label each as "amplifying" or "stabilizing". Record your final answers on the diagram in your portfolio.

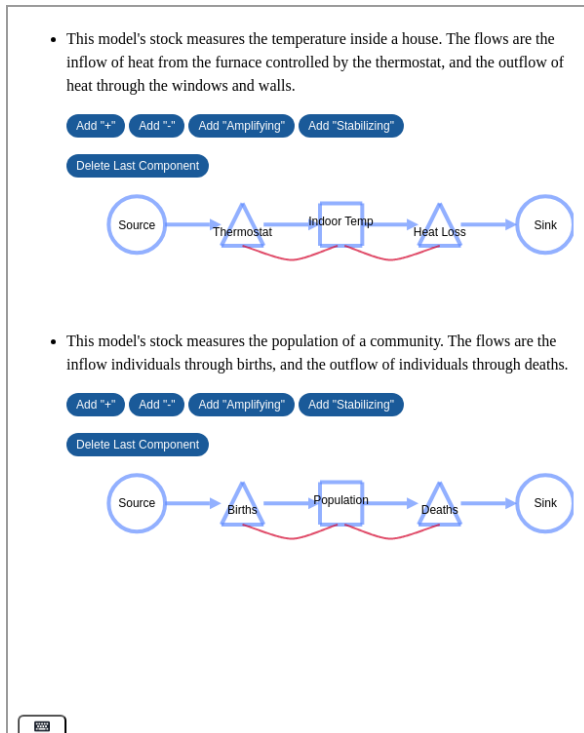


## 2 Feedback Loops in System Diagrams

Let's practice identifying feedback loops in a few more models. For each stock-flow model below, work in your group to

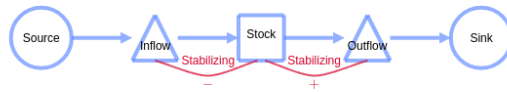
- Label each dependency link with a “+” or “−”, depending on how you think the stock impacts the flow rate.
- Label each feedback loop as “amplifying” or “stabilizing”.

Use the interactive as needed if it is helpful to visualize what you are labeling.



### 3 Stock Behavior with Stabilizing Feedback

Let's practice translating a system diagram with stabilizing feedback loops to a line graph describing the stock's behavior over time. The general system diagram has the following form:



**Figure:** A system diagram which contains one inflow and one outflow, both of which are part of stabilizing feedback loops.

Work in your group to answer the following questions.

1. How does an increase in the stock's value affect the net flow? Fill in the blanks below to help reach a conclusion.

As stock increases, the inflow rate .

As stock increases, the outflow rate .

Since  $\text{net flow} = \text{total inflow} - \text{total outflow}$ , as stock increases, the net flow rate .

[Check Work](#)

2. On paper, sketch a possible line graph which represents how the net flow changes as the stock value changes. Be sure to label your axes.
3. Use the line graph you sketched above to discuss the stock's behavior over time using at least three different initial values for the stock. Translate your descriptions to line graphs with axes labeled "Stock" and "Time".
4. After your group has completed the above tasks, view the graphical solution provided below. In what ways is this solution similar to yours? In what ways is it different?

[💡 Stabilizing Feedback Loops \(click to open\)](#)

