

Welcome to Part Two: Stocks and Flows

PLEASE SEAT YOURSELVES in every other row so the NINJAs and instructors can circulate easily among you.

Today's Agenda

Today we'll reflect on Project 1 and kick off the second part of the course, introducing compartment models, stock-and-flow diagrams, the domain of epidemiology, and other concepts from Chapter 11.

Project 1 Reflection

What things learned from Project 1 do you want to carry with you into Project 2?

Compartment Models and Stock-and-Flow Diagrams

Draw the key components of the SIR model and label the stocks, flows, and valves.

Work with a partner and determine whether the following possible model components are stocks, flows, or neither:

- The population of the world
- The number of educated adults in a country
- The number of U-238 atoms in a nuclear reactor
- The fraction of battery charge remaining in a laptop battery
- The power being consumed by a laptop
- The speed of a runner
- The kinetic energy of a bullet
- The number of barrels of oil imported by the U.S. each year
- The biomass of scallops in the Georges Bank fishing area
- The number of minke whales harvested worldwide each year
- The reproduction rate of minke whales (number of babies per adult per year)
- The electric current passing through a wire (i.e., the number of Coulombs of charge passing a given point per unit time)
- The amount of water in a bathtub
- The number of liters of water per second flowing out of a faucet
- The rate of temperature change in a room (degrees C per second)

TimeFrames

What is a TimeFrame object and what are stored in its index, columns, and values?

Reflection Questions

Who is your new instructor? What lessons about teaming overlap with our reasons for rotating instructors?

Next Steps

Before class on Tuesday, please do the following things:

- ☐ Write your name here: _____
- ☐ By tonight: Scan this worksheet and submit it on Canvas.
- ☐ By Monday night: Read Chapter 12 and take the Chapter 12 reading quiz on Canvas.
- ☐ Read and run the Chapter 12 notebook.
- ☐ Enjoy Indigenous Peoples' Day on Monday.
- ☐ Meet in the STUDIOS on Tuesday.