What is a System

This activity describes what is a system of ordinary differential equations.

Systems of differential equations come up because nature is complex. Most systems of interest in science and engineering are made of many interacting components with multiple relationships. Each component must be represented by a variable and, in the context of differential equation, each has to be modeled by a separate equation.

To introduce the concept of a system of ODEs, let's consider the *Lotka-Volterra predator-prey model*, describes two animal species in the wild, traditionally referred to as "rabbits" and "foxes". The following assumptions are made about the two populations and their interactions:

Learning outcomes:
Author(s):