

Module Plan: The Mathematics of Understanding Disease

Estimated: 50 minutes

Time	Activity	Materials Needed
5 min	Introductions: <ul style="list-style-type: none"> • Welcome students & provide overview of the session • Overview of Disease Modeling 	Powerpoint Slide: Overview of Session
7 min	Outbreak in a Cup Activity (in groups of 2-3)	Powerpoint Slides: Directions Red and white beans Cups Paper and pencil
5 min	Groups Pair & Share	Powerpoint Slides: Questions (Share!)
5 min	Class Discussion	Powerpoint Slides: Mathematical model & A more complicated disease model
3 min	Intro to Malaria	Malaria Powerpoint Slide
5 min	Introduction to Gapminder	Powerpoint slides: Introduction slides to Gapminder Gapminder.org “200 years that changed the world” video
10 min	Gapminder: Impact of Water Sources on Malaria Outbreaks	Gapminder desktop app on computers Exploring Gapminder handout
10 min	Exploring Gapminder: <ul style="list-style-type: none"> • Ask students to experiment with changing the x and y axis to further explore the impact of Malaria on countries. 	Gapminder desktop app on laptops Exploring Gapminder handout
5 min	Closure: <ul style="list-style-type: none"> • What interesting trends did you notice? • What questions do you have about using mathematics to understand diseases? 	Powerpoint slide: optional final slide about malaria