

IO3: COLLECTING DATA

GENERAL AIM

Consider the data collection as a systematic process of gathering observations or measurements. Whether you are performing research for social or scientific purposes, data collection allows you to gain first-hand knowledge and original insights into your research problem. The intention is to introduce some facts about data collection in everyday life concerned SSI problems.

AIMS OF COLLECTING DATA

While methods and aims may differ between fields, the overall process of data collection remains largely the same. Before you begin collecting data, you need to consider:

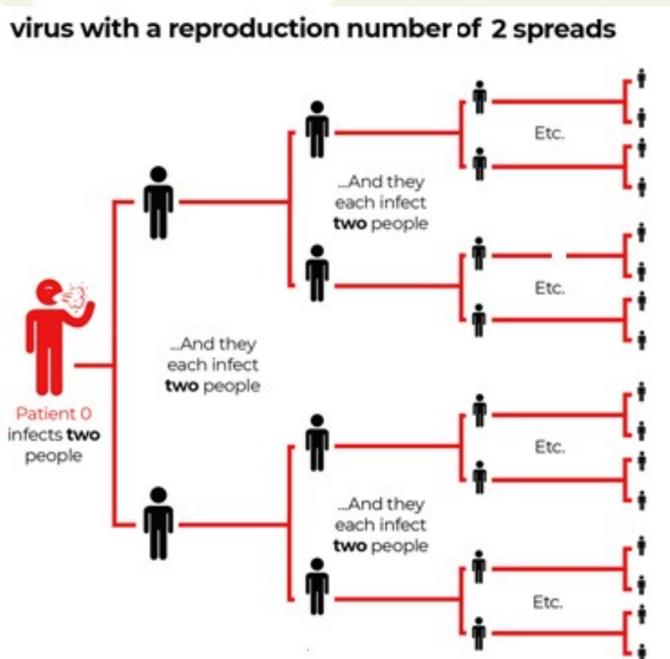
- The aim of the research
- The type of data that you will collect
- The methods and procedures you will use to collect, store, and process the data.

Focus			
- Describe program model - Define purpose	Collect data		
- Determine use/users - Determine key questions		- Identify sources - Select methods	Analyze & Interpret
- Select indicators - Determine design	- Pilot test - Set schedule	- Process data - Analyze	Use
	- Determine sample	- Interpret data	
		- What did you learn?	- Use decision making
		- What are the limitations?	- Determine next steps

COLLECTING DATA OF EPIDEMIC SPREAD

Societal issues with important connections to science such as COVID-19 are part of a broader class of problems known as Socio-Scientific Issues (SSI). Our team works to create science learning opportunities contextualized in SSI with the goal of helping students develop scientific literacy and ultimately becoming better prepared for responsibly negotiating complex challenges.

The system description: 1) Removals remain removals once they enter this category. Infectives either stay infectives or they become removals. 2) The model assumes that in each period there is a fixed part of infectives that become removals. We name this part "healing rate" h . 3) Susceptibles either become infectives or they remain susceptibles. They become infectives by making contact with an infected individual. The new infected individuals are calculated as a part of susceptibles depending on the "contact probability" p .



Purpose: In this activity, students use a mathematical model, programmed within a spreadsheet (Google Sheets), to explore viral transmission and exponential growth. It enables comparisons of viruses with different reproduction numbers (R_0) numerically and graphically. The activity challenges students to think through various implications of the model and to consider strategies for reducing R_0 for a virus and the associated impacts and viral transmission.

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