

TOK Knowledge Framework (Scope, Perspectives, Methods & Tools, Ethics)

Methods:

- * Data collection from infection rates
- * statistical analysis & modelling
- * Testing predictions against real data.

TOK: Math knowledge is constructed through logical reasoning & evidence.

Perspectives:

Scientists → focus on biological accuracy.
Government → use it for policy decisions.

Public → Scary or Confusion.

Economist → Consider economic impacts of lockdowns.

TOK: Different stakeholders interpret the same model differently.

Exponential Growth

Suppose a virus spreads, so that each infected person infects 2 more people per day.

$$N(t) = N_0 \cdot 2^t$$

Where

N_0 = Initial number of infected people

t = time in days

$N(t)$ = Total infected after t days

Scope

The exponential model help us understand "how fast diseases spread".

TOK: Math allows us to describe & predict real world patterns.

Tools:

- * Computer simulations
- * Graphing Calculators or softwares
- * Math Formulas & algorithms.

TOK: Tools shape how knowledge is created & understood.