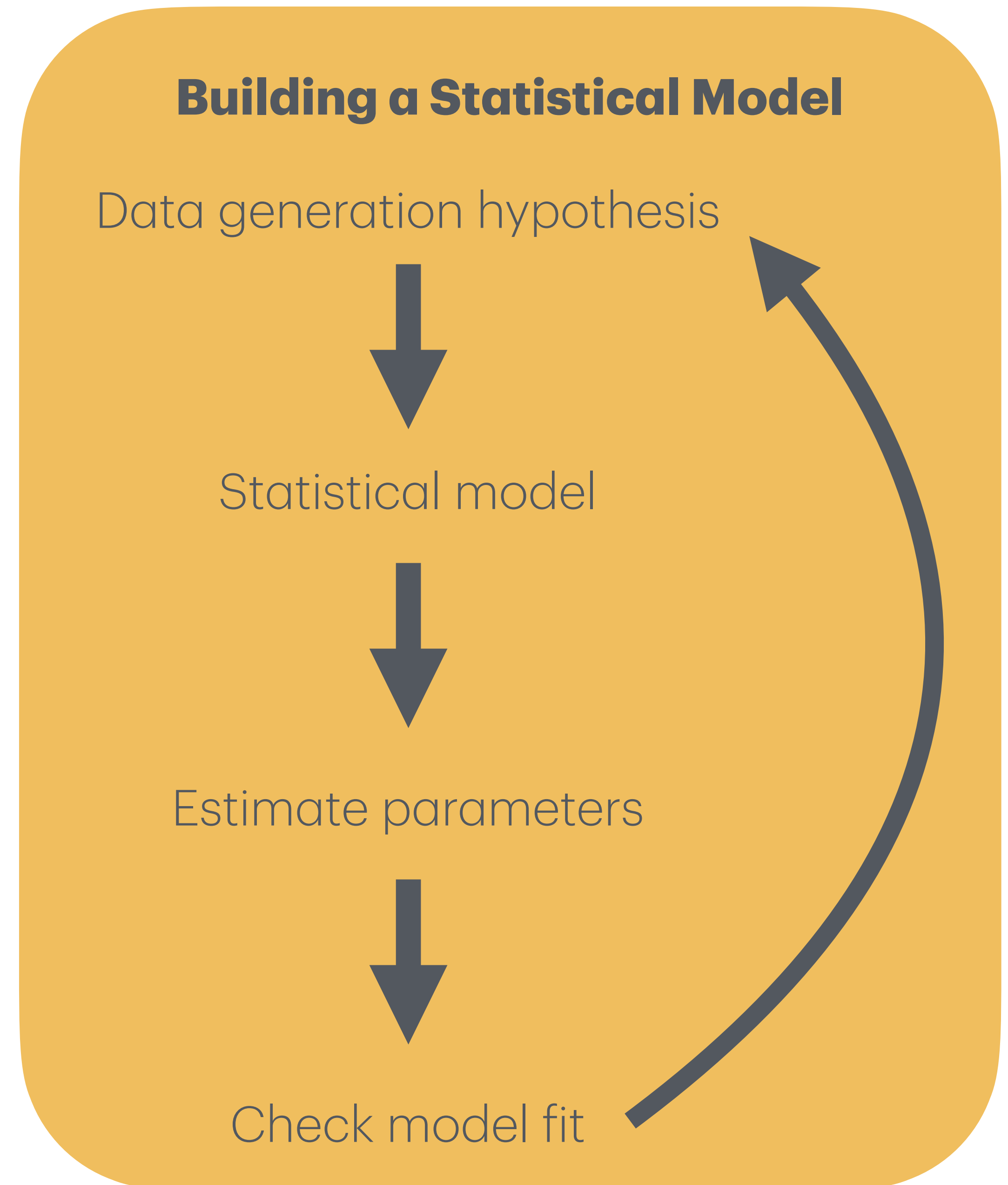# The basic model
Our hammer

- Our model must:

  - Define a relation between observations and parameters

  - Create a probabilistic description of the system we are studying

  - The description should capture the aspects of the data we are interested in!

Building a Statistical Model

Data generation hypothesis

↓

Statistical model

↓

Estimate parameters

↓

Check model fit

Probability definitions
Crash course

- We can express the probability of some variable as:

  - $P(y)$: Read as the "**probability of y**"

- If the distribution of x depends on some parameters, we use the conditional probability:

  - $P(y|x)$: Read as the "**probability of y given x**"