Science is a method
not a body of knowledge or facts!

Process:

1. Observations or measurements

2. Observes pattern

3. Makes a Hypothesis - simplest to explain pattern

4. More measurements to test hypothesis

5. Refines hypothesis

6. Repeat process

Extraordinarily well tested hypothesis become Laws or theories
Example: Planetary motions

1. Ancients observed the sun, moon and stars

2. Made simple model: Ptolemy’s model of revolving crystalline spheres

3. Problems! Observations didn’t match theory perfectly

4. Discarded because of Copernicus, Kepler, Galileo and Newton.

5. Created and tested new hypothesis

6. Einstein revised Newton’s laws
   • Newton could not have known about problems.
   • Newton laws work for $v \ll c$ and small masses.