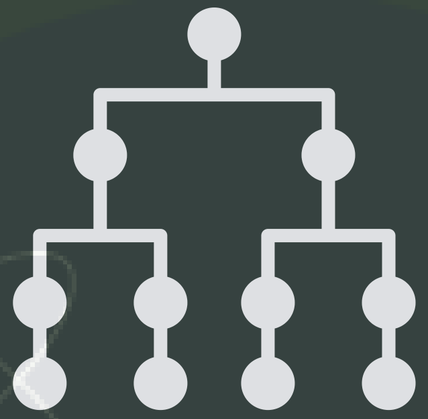
# CH. 1: INTRO TO BIOLOGY

# LIFE IS ORGANIZED INTO EMERGENT PROPERTIES:

BIOSPHERE ⟶ ECOSYSTEM ⟶
COMMUNITY ⟶ POPULATION ⟶
ORGANISM ⟶ ORGAN SYSTEM ⟶
ORGAN ⟶ TISSUE ⟶ CELL ⟶
ORGANELLE ⟶ MOLECULE ⟶ ATOM



STRUCTURE AND FUNCTION ARE CORRELATED AT ALL LEVELS OF BIOLOGICAL ORGANIZATION.

CELLS CAN BE EITHER PROKARYOTIC (LACKING NUCLEUS) OR EUKARYOTIC (DNA-CONTAINING NUCLEUS & MEMBRANE-BOUND ORGANELLES).

# THEME: INFORMATION ENCODED IN DNA

Genetic information is encoded in the nucleotide sequences of DNA molecules.

**Sequences of DNA called genes express the traits.**

# THEME: ENERGY AND MATTER

# ENERGY FLOWS THROUGH ECOSYSTEMS.

Producers convert sunlight into chemical energy used by organisms.

Light from sun ⟶ chemical energy.

# THEME:
# INTERACTIONS

AS ORGANISMS INTERACT WITH PHYSICAL FACTORS IN THEIR SURROUNDINGS, THEY IMPACT OTHER ORGANISMS AROUND THEM.

Ex. Muscles and nerves in your hand working while texting on a phone.

# EVOLUTION IS THE PROCESS OF CHANGE THAT HAS TRANSFORMED LIFE ON EARTH, ALSO ACCOUNTS FOR THE UNITY AND DIVERSITY OF LIFE.

Reason for evolutionary adaptation.

# BIOLOGISTS CLASSIFY SPECIES IN DOMAINS.

The 3 Domains: Bacteria, Archaea, Eukarya.

NATURAL SELECTION WAS PROPOSED BY DARWIN AS THE MECHANISM BEHIND EVOLUTIONARY ADAPTATIONS OF DIFFERENT POPULATIONS.

SCIENTIFIC INQUIRY IS WHEN OBSERVATIONS ARE MADE, INCLUDING COLLECTING DATA AND USING INDUCTIVE REASONING TO DRAW GENERAL CONCLUSIONS.

DEDUCTIVE REASONING IS USED TO MAKE PREDICTIONS THAT CAN BE USED TO TEST HYPOTHESES.

CONTROLLED EXPERIMENTS
⟶ DEMONSTRATE EFFECT
OF ONE VARIABLE.

SCIENTIFIC THEORIES ARE BROAD IN SCOPE.

TECHNOLOGY IS A METHOD/TOOL THAT HELPS SCIENTIFIC KNOWLEDGE BE APPLIED TOWARDS A SPECIFIC GOAL FOR SCIENTIFIC RESEARCH AND PROGRESSION IN SCIENCE.