CLASSIFYING LIFE
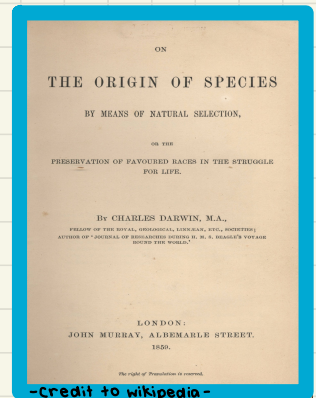
- due to the large variety of species, it is important to have a method to classify them
- grouped by similarities
- TAXONOMY : branch of biology that names/classifies species
- 3 domains of life
    - bacteria
        - most diverse
        - classified into many kingdoms
    - archaea
        - live in hostile/extreme environments
        - classified into many kingdoms
    - eukarya
        - has 3 kingdoms
            - Kingdom Animalia : multicellular organisms that consume other organisms (we belong here)
            - Kingdom Plantae : multicellular photosynthetic land plants
            - Kingdom Fungi : absorb nutrients from environments (mushrooms)

INTRO TO DARWIN + NATURAL SELECTION

- Charles Darwin was an English naturalist who published one of the most influential book on evolutionary history in 1859
    - Book title: *On the Origin of Species by Means of Natural Selection*
- Concept of "Darwinism" was born

ON

THE ORIGIN OF SPECIES

BY MEANS OF NATURAL SELECTION,

OR THE

PRESERVATION OF FAVOURED RACES IN THE STRUGGLE
FOR LIFE.

By CHARLES DARWIN, M.A.,

FELLOW OF THE ROYAL, GEOLOGICAL, LINNEAN, ETC., SOCIETIES;
AUTHOR OF "JOURNAL OF RESEARCHES DURING H. M. S. BEAGLE'S VOYAGE
ROUND THE WORLD."

LONDON:
JOHN MURRAY, ALBEMARLE STREET.
1859.

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-Credit to Wikipedia-

- 2 key points
    1) descent with modification = succession of species from common ancestor ---> species change over time –> new species
    2) natural selection = evolutionary mechanism
   - Darwin made 3 main observations
   1) indiviuals in populations have a variety of traits (genetic)
            2) populations are capable of producing more offspring than environment can support
            3) organism are "made" for their environments (adaptation) Ex. Polar bears have thick white fur to keep warm and camouflage
    - natural selection : nature/enviroment picks particular traits that allows the organism adapt and to achieve the highest reproductive success

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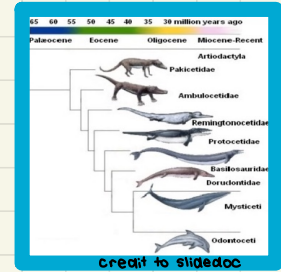
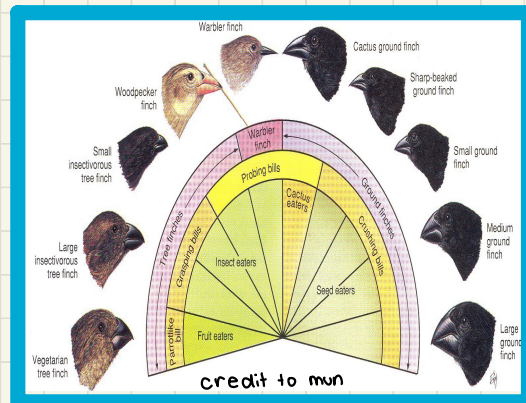credit CK-12
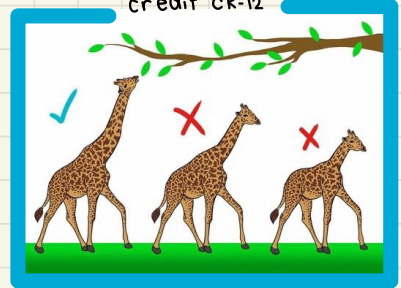
credit national geographic

DARWIN'S FINCHES

- Galápagos finches are an example of evolution that Darwin studied
- one common ancestor
- finches migrated to other islands
- began to adapt to new environments over many generations–> change in beak shape/ size
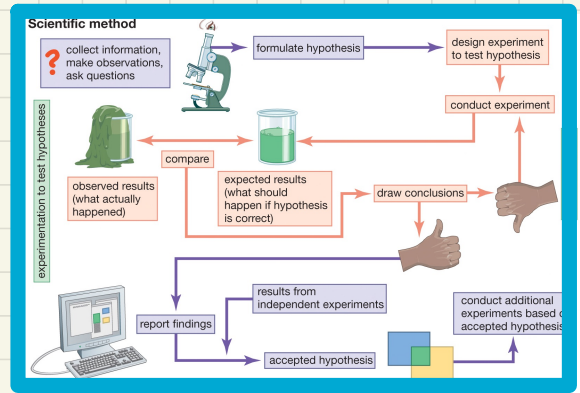

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THE SCIENTIFIC METHOD

- science revolves around making inquiries
- scientific method : procedure to acquire knowledge

      1) observation : record observations as quantative or qualitative data

      2) Question

      3) Research

      4) Hypothesis = testable answer to observations based on data

      5) Experiment = test of prediction

      6) Test hypothesis = accept/reject hypothesis

      7) Conlcusions

      8) Share findings
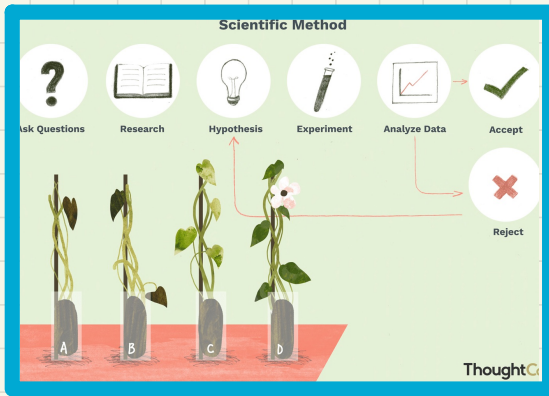
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