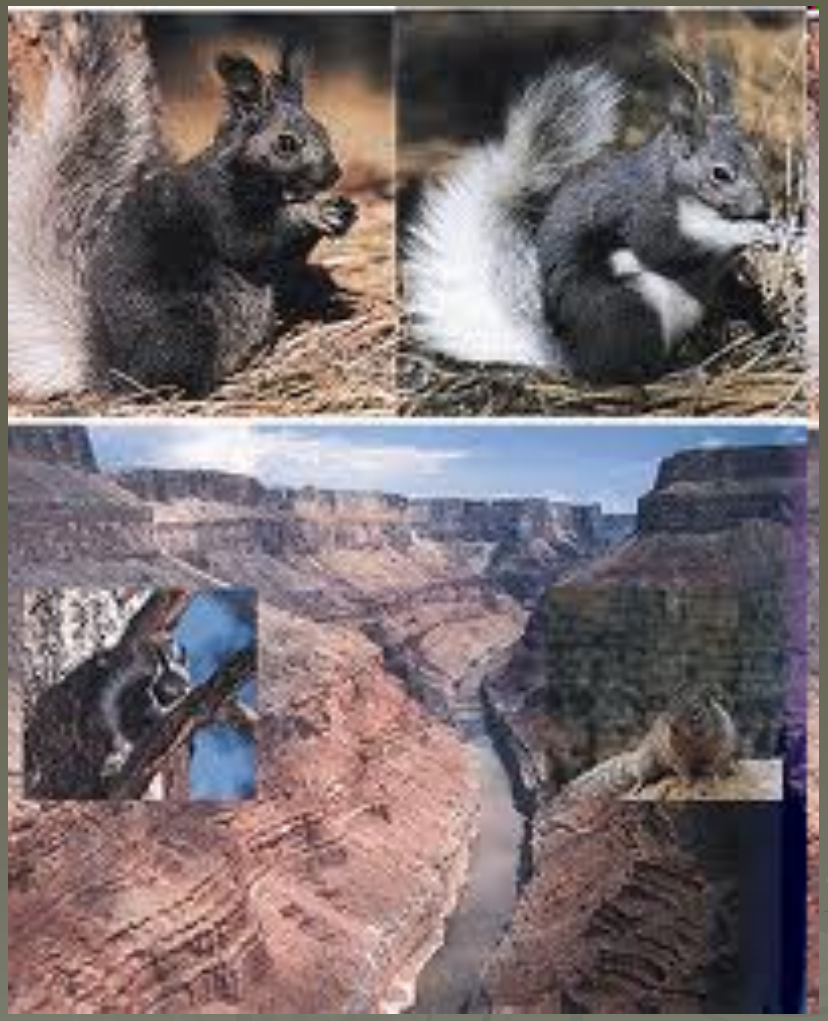
# Chapter 16-3: The Process of Speciation

Essential Questions:

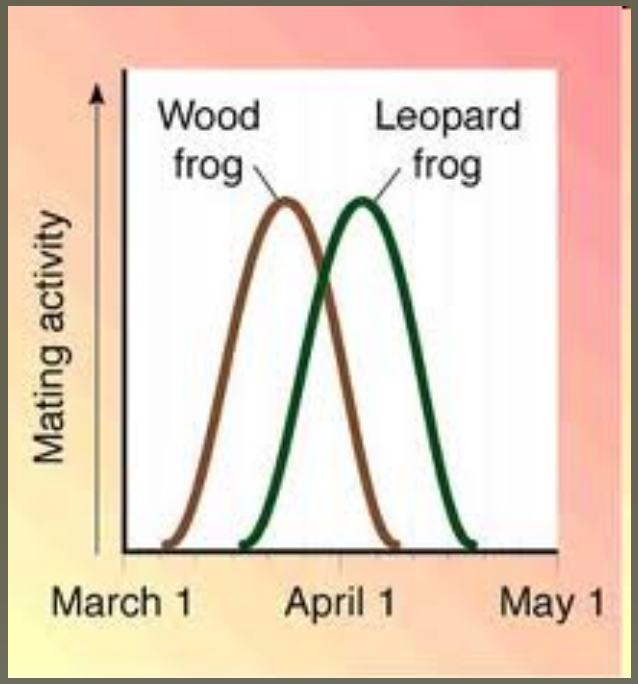
- What factors are involved in formation of new species?
- How did the process of ***speciation*** in Galapagos finches occur?

- Isolating mechanisms-reproductive isolation
  - Behavioral isolation
    - 2 pops. capable of interbreeding but behavioral differences prevent
    - Ex: courtship rituals, bird songs

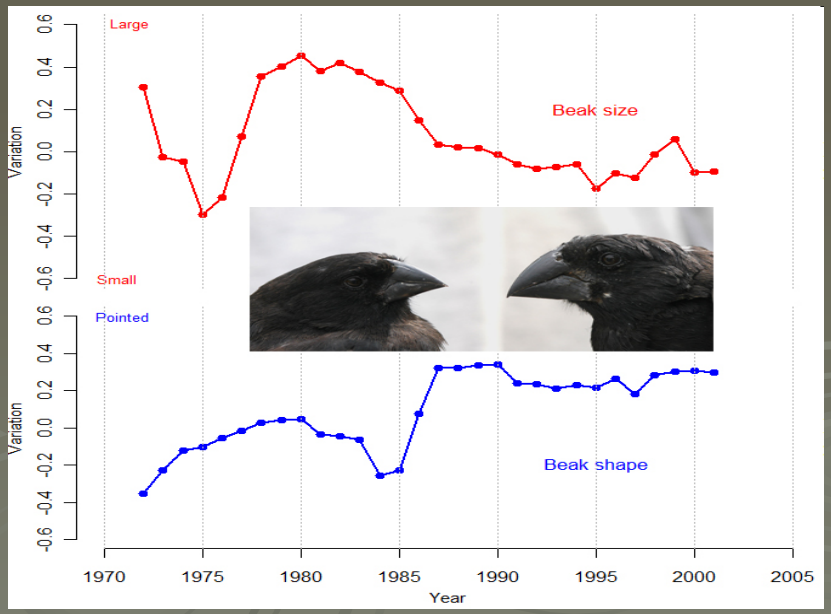
- Geographic isolation
  - Barriers (rivers, mountains, etc.) prevent interbreeding



- Temporal isolation
  - 2 pops. mate/reproduce at different times




- Testing natural selection in nature
  - Galapagos: researchers test Darwin's finch hypothesis
    - Variation: documented lots in finch pop.
    - Natural selection
      - when food became scarce, researchers *observed* larger-beaked birds survived in greater numbers
      - over time, ave. beak size in pop. increased (directional selection)



- Rapid evolution
  - changes in food supply caused measurable fluctuations in finch pop. phenotypes in a 30-year period
  - Darwin predicted very slow & gradual evolution

- Speciation in Darwin's finches
  - see p. 410, Fig. 16-17 in text