Definition of ENTOMOLOGY

- The branch of zoology concerned with the study of insects
Definition of **FORENSIC ENTOMOLOGY**

- The use of the insects, and their arthropod relatives that inhabit decomposing remains to help investigations
- Broken down into 3 general areas:
  - Medicolegal
  - Urban
  - Stored product pests
What is Analyzed?

- Insects and their arthropod relatives

Types of cases:

- Homicide
- Child/Elderly neglect
- Single occupant car accident
- Aircraft crash
How the evidence is analyzed?

- Species succession
- Larval weight
- Larval length
- Accumulated degree hour technique
  - Investigators can use weather data for an area in which a body was found to calculate how much thermal energy insects have been exposed to in units called Accumulated Degree Hours. Investigators can then use their knowledge of insect life cycles to calculate how long the insects have been present on the body.
- Qualified forensic entomologist can also make inferences as to possible postmortem movement of a corpse
  - Some bugs show preference to indoors or outdoors
- DNA Technology
  - Determine insect species
  - DNA of human blood can be recovered from the digestive tract of an insect that has fed on an individual
Bugs solved the case:

- July 9, 1997, Kevin Neal reported his step-children missing.
- Two months later, two small human skulls and badly decomposed remains were found in a nearby cemetery.
- By studying the locations on the bodies where blowflies had laid their eggs, it was determined that the children had likely been asphyxiated.
  - Entomologists determined that egg-laying patterns would have been different had there been other wounds.
- Using climatological data and the life cycle of the blowflies on the children’s bodies, experts were able to calculate the earliest time the children had been dead.
- Neal argued that he could not have been the murderer because he was in jail for a short time after the children went missing.
- Entomologists concluded that the children were murdered before Neal’s incarceration. The state of Ohio convicted Neal of murder. He is currently serving a life sentence.
Important bugs in Entomology!

- 1. Blow flies
- 2. Flesh flies
- 3. House flies
- 4. Maggots
- 5. Beetles


