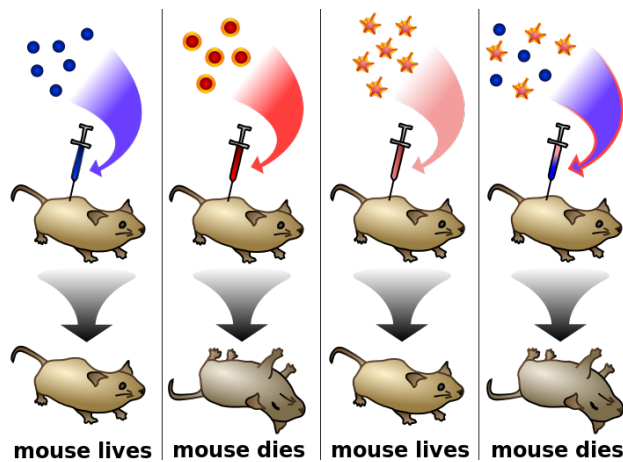


## CONCEPT: DNA DISCOVERY

- It took many years for DNA to be discovered as the source of genetic information
  - Protein, not DNA, was first thought to be the \_\_\_\_\_ molecule for genetic information (1900s)
    - Proteins have 20 amino acids = more combinations, DNA only had 4 bases
  - **Oswald Avery** showed that DNA was the genetic material of bacteria (1940s)
    - Injected mice with two bacteria (a noninfectious, and dead infectious type) – but mice became infected
    - Showed that nucleic acids were the reason for the conferred infectivity
  - **Hershey/Chase** showed that DNA was the genetic material of viruses (1950s)
    - Used radioactively labeled *bacteriophages* (viruses that infect bacteria)
    - Differentially labeled protein and DNA and followed which was transferred to bacteria - it was the DNA
  - James **Watson** and Francis **Crick** discovered the \_\_\_\_\_ (1953)
    - Provided an explanation for how genetic information is stored, replicated, and inherited

### EXAMPLE: Model of the Avery experiment



## PRACTICE:

1. Which of the following was not a crucial experiment that led to the knowledge that DNA was the source of genetic information?
  - a. Oswald Avery's experiments with bacteria and mice
  - b. Watson and Cricks discovery of the DNA double helix
  - c. The Hershey/Chase experiments with bacteriophages
  - d. Barbara McClintock's experiments with maize (corn)
  
2. Which of the following scientists discovered that DNA was the genetic material in viruses?
  - a. Oswald Avery
  - b. Hershey/Chase
  - c. James Watson
  - d. Francis Crick

3. Which molecule did scientists believe was the source of genetic material first (before DNA)?
- a. Protein
  - b. RNA
  - c. DNA