

# **Think Like a Biologist**

# The Living Earth

- ❑ The Living Earth is California's new biology class.
- ❑ It combines traditional biology topics with some earth science topics.
- ❑ Learning will now be more hands on and scientific!
  - ❑ You will no longer simply memorize facts!
  - ❑ Now we will learn to think and act like scientists.

# What is Biology?

- ❑ Biology is the study of living organisms
- ❑ What is Science?
  - ❑ an organized way of using evidence to learn about the natural world.



# Why Study Biology?

- ❑ Two important reasons for studying Biology:
  1. Biology is relevant to our everyday experience
    - ❑ Medical advances
    - ❑ Addressing needs of growing human population
    - ❑ Challenges of decreasing rate of biodiversity
    - ❑ Biotechnology advances



# Why Study Biology?

## 2. Biology can be controversial

- Examples:
  - Dealing with endangered species?
  - Use of human fetal tissue in biomedical research?
  - Safety of irradiated foods?





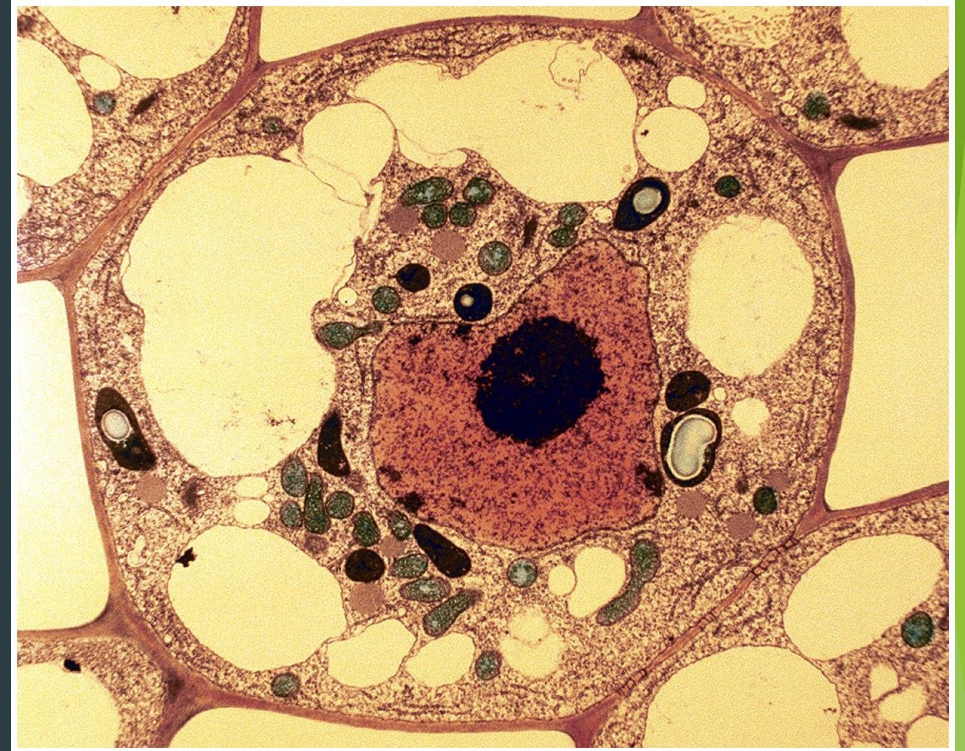
# What is Life?

- ❑ Living organisms:
  - ❑ Highly organized and complex.
  - ❑ Are composed of one or more cells.
  - ❑ Contain a blueprint of their characteristics.-- DNA
  - ❑ Acquire and use energy.
  - ❑ Carry out and control numerous reactions.



# What is Life?

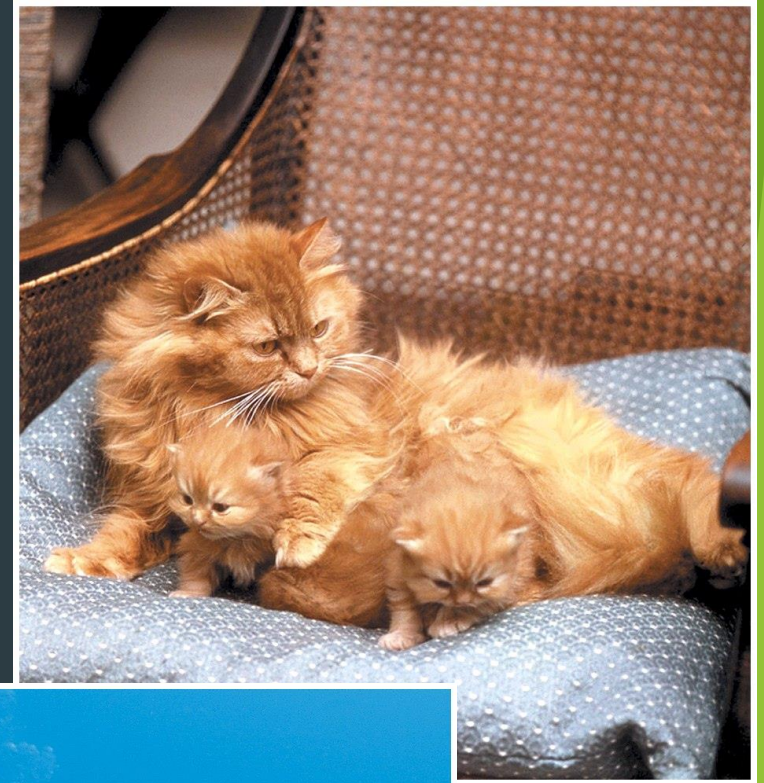
- ❑ Living organisms:
  - ❑ Grow.
  - ❑ Maintain constant internal environment.
  - ❑ Produce offspring.
  - ❑ Respond to environmental changes.
  - ❑ May evolve.





# Major Topics in The Living Earth

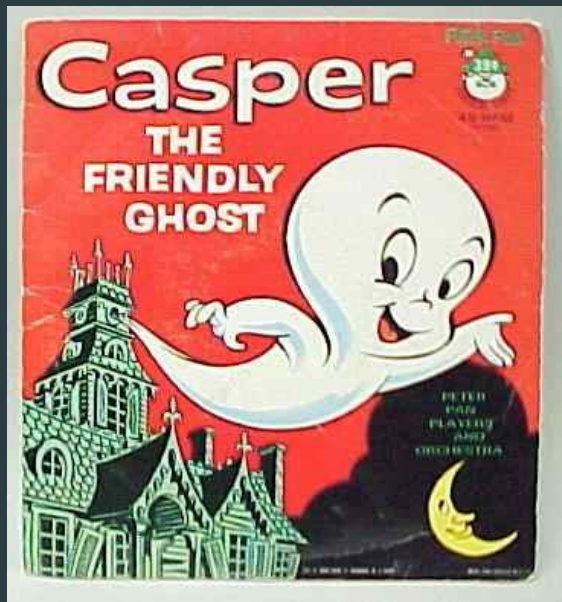
- ❑ Evolution
- ❑ Inheritance
- ❑ Cells
- ❑ Homeostasis
- ❑ Ecology
- ❑ Climate Change





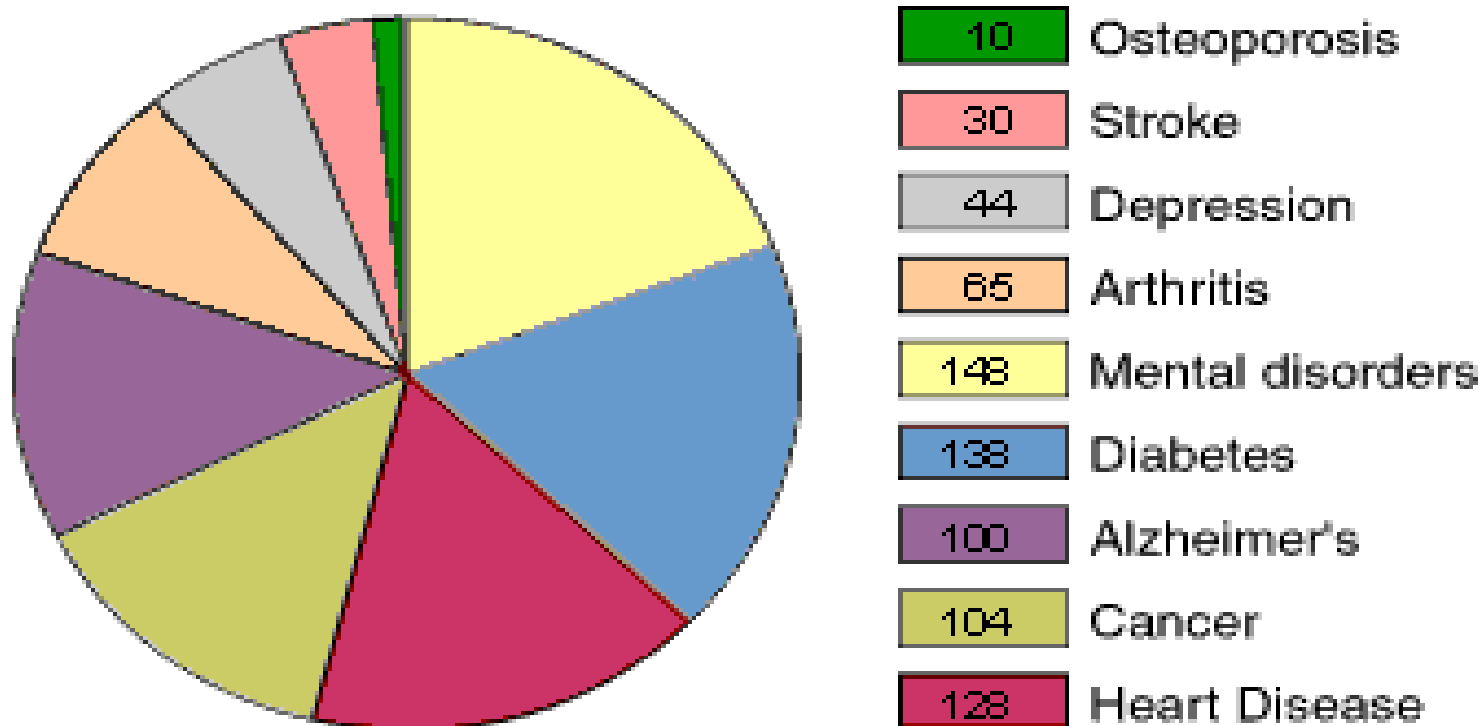
# The Goals of Science

1. Deals only with the natural world
  - ❑ The supernatural is outside the realm of science



## 2. Collect and Organize Information

**Estimated annual cost to the U.S. economy for several diseases**  
(dollar amounts in billions)



### 3. Propose explanations that can be tested





## 4. Summarizing

- ❑ SCIENCE is a body of knowledge that explains the natural world.

