

## 7. Unifying Themes in Biology



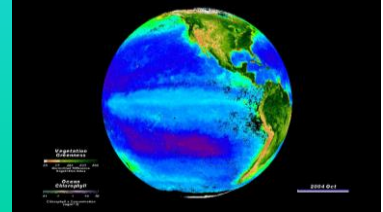
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## • Themes in Biology

= concepts or ideas which reoccur as we study Biology

### ○ Interdependence in Nature

- All forms of life on Earth are connected together into a **biosphere**, which literally means "living planet."



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### ○ Unity and Diversity of Life

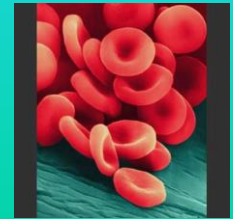
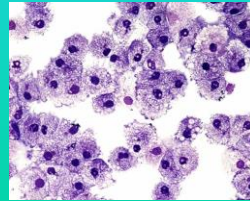
- All living things are fundamentally **alike** at the molecular level, even though life takes an almost unbelievable **variety** of forms.



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### ○ Cellular Basis of Life

- Organisms are composed of one or more **cells**, which are the **smallest units** that can be considered **fully alive**.



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### ○ Homeostasis

- Organisms must maintain a **relatively stable** internal environment by **responding** to their surroundings.
- This is done through **negative feedback**.



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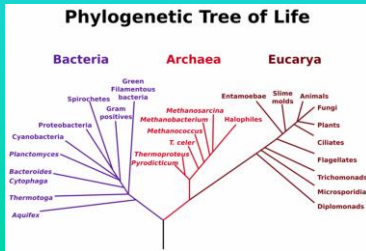
### ○ Information and Heredity

- **Genetic code** is common, with minor variations, to every organism on Earth.
- That information, carried in **DNA**, is copied and passed from parents to offspring.



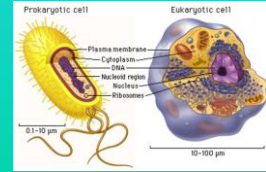
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- **Evolution**
  - In biology, evolution, or the **change in living things through time**, explains inherited similarities as well as the diversity of life.

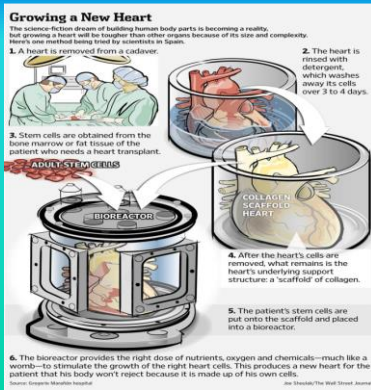


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- **Structure and Function**
  - Structures evolve in ways that make particular functions possible, allowing organisms to **adapt** to a wide range of **environments**.



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