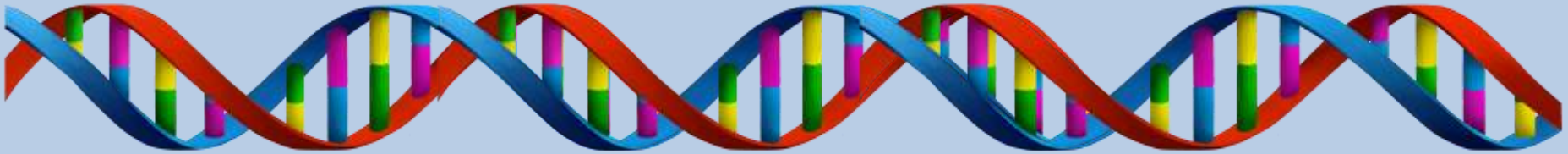
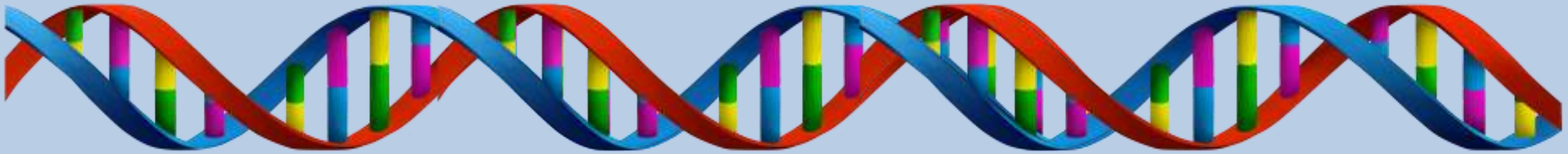


1. Why is ocean acidification happening?
2. In the 1940s a pesticide called DDT was widely used. This caused the bald eagle population to collapse. What kind of human impact is this?
3. I-90 cuts through Okanogan-Wenatchee National Forest. What kind of human impact is this?



Wildlife Bridge

Wildlife Bridge

Logistics

- Unit 3 Assessment
  - TOMORROW

Sustainable Development

- In response to climate change data the UN has come up with *Global Goals for Sustainable Development*

Sustainable Development

- **The goals must:**
  - ***Provide for human needs AND ecosystem services***

Sustainable Development

- If we wish to maintain Earth then resources must be used sustainably
  - We must continue to innovate and improve new solutions
  - Development practices must be flexible, to make urban areas more resilient to environmental change, stresses, and events

Logistics

- Review Objectives
- Free review/work time

Humans and Global Change

- Describe how human population size has changed over time:
- Explain why population growth rates differ among countries:
- Compare and contrast the ecological footprints of typical Americans to the global average:

Humans and Global Change

- Describe how human population size has changed over time: generally increased, but increased rapidly after the industrial revolution
- Explain why population growth rates differ among countries: culture, conflict, economy, politics, resources
- Compare and contrast the ecological footprints of typical Americans to the global average: typical American is up to 4x greater than global average

Humans and Global Change

- Describe the Anthropocene:
- Describe how human activities change the atmosphere and climate:

Humans and Global Change

- Describe the Anthropocene: "the age of humans" because of our huge impact on Earth
- Describe how human activities change the atmosphere and climate: Human activities release greenhouse gases, which change; temperatures, winds, clouds, precipitation, and severe weather events

Humans and Global Change

- Describe how atmospheric changes drive climate change and other changes in global systems:

Humans and Global Change

- Describe how atmospheric changes drive climate change and other changes in global systems:

  more greenhouse gases -> warmer -> changing climate -> less biodiversity in the biosphere -> disruption to cycles in geosphere/atmosphere/hydrosphere

Humans and Global Change

- Describe how human land use drives change in global systems:
- Describe the kinds of pollutants that drive of global change:

Humans and Global Change

- Describe how human land use drives change in global systems: habitat destruction and pollution (deforestation, habitat fragmentation, monocultures, acid rain, ocean acidification, biomagnification) leads to loss of biodiversity, disruption to cycles
- Describe the kinds of pollutants that drive of global change: CO_2 and methane

Humans and Global Change

- Describe evidence for climate change:
- Describe impacts of climate change:

Humans and Global Change

- Describe evidence for climate change: changing temperatures, more CO_2 in atmosphere, rising sea levels, melting ice caps
- Describe impacts of climate change:
  - changing precipitation = less water
  - changing seasons = less crops
  - changing sea level = less land

Humans and Global Change

- Describe the role of science in responding to global change:
- Describe the criteria for evaluating the sustainability of a development:
- Describe why innovation and resilience are important:

Humans and Global Change

- Describe the role of science in responding to global change: 1. recognize problem 2. gather data 3. change behaviors
- Describe the criteria for evaluating the sustainability of a development: provide for human needs, protect the environment
- Describe why innovation and resilience are important: innovation = new and better solutions, resilience = ability to withstand the changing environment

Humans and Global Change

- **REVIEW:**
  - **HUMAN IMPACT TABLE**
  - **DEMOGRAPHIC STAGES**
  - **AGE STRUCTURE DIAGRAMS**

Human Project

- You have two options for your presentation:
  1. Poster
  2. Slideshow
- It is due on NOVEMBER 26/27th
- You will be presenting in small groups
- Use the rubric

Human Project

- YOU SHOULD BE PUTTING YOUR PROJECT TOGETHER AND DECIDING HOW TO PRESENT

Human Project

- Goals for your solution:
  1. Realistic
     - Explain the logistics of how you will accomplish the solution
  2. Takes care of human needs
  3. Protects the environment