**Climate Change**

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| **Causes** | | |
| **Greenhouse Gases** include: | How is the concentration of these gases increasing? | Draw and explain the greenhouse effect |
| **Coal, Oil, Natural Gas**   * account for \_\_\_\_\_\_\_\_% of all emissions | Use the Pie Chart to answer the question:  What are the top 3 contributors to CO2 emissions? | An increase in CO2 emissions have increased in the atmosphere since the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Livestock**   * produce \_\_\_\_\_\_\_\_\_\_\_\_\_(CH4), which accounts for \_\_\_\_\_\_\_% of greenhouse gasses. | Each molecule of methane is about \_\_\_\_ more harmful than a CO2 molecule.  Why is Methane emission a concern? | Explain what livestock have to do with climate change and why it’s considered “man-made.” |
| **Deforestation**  In the US forests occupy \_\_\_\_\_\_\_\_ acres, about 1/3 of the country’s total land area  How do trees help to reduce carbon in the atmosphere? (think back to photosynthesis!) |  | ***Use the map in the bottom right corner:***  Which areas of the world are losing the most forest?  How much forest loss is the United States experiencing? |
| **Landfills**  Traditional waste management techniques account for as much as \_\_\_\_\_\_ of greenhouse gas emissions. As the stuff we throw away breaks down, it leaks \_\_\_\_\_\_\_\_\_\_\_ back into the air. | Approximately \_\_\_ % if the U.S Greenhouse gas emissions are associated with the energy used to produce, process, transport, and dispose of the food we eat and the goods we use. | Use the diagram to explain how modern landfill practices actually make emissions worse: |
| **Human Population**  Describe the growth curve. Do you think we can continue at this pace of growth? | What does the human population have to do with climate change? | Draw a graph of human population growth: |

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| **Effects** |  |  |
| **Global Temperatures**  Earth's average surface temperature has increased by more than \_\_\_\_\_\_\_ since the 1880s. \_\_\_\_\_\_\_\_\_ of the warming has occurred in the last \_\_\_\_\_\_\_\_\_\_\_. | Explain the link between greenhouse gasses and temperature rise. | According to the figure, what areas are experiencing the highest temp. rise? Why might that be especially harmful? |
| **Sea Level** Explain why rising temperatures would lead to higher sea levels. | Why does the sea level rising only a few inches cause so much worry? | Approximately \_\_\_ % of the world’s population lives in low lying coastal areas |
| **Extreme Weather**  Describe the extreme weather events that are becoming more frequent: |  | Interpret and explain the information on the graph to the right: |
| **Ecosystems**  Summarize what changing climate is expected to do to animals who are adapted to their particular ecosystem: | How are coastal-ocean ecosystems expected to be affected? |  |
| **Human Health**  Summarize how human health is expected to be affected by climate change: | Explain which age-groups will be most “at-risk” as climate change sets in. | Explain how insects will become more of a problem for human health: |

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| **Solutions** |  |  |
| **Renewable Energy**  What is renewable energy and what makes it renewable? | Summarize the benefits of renewable energy: | From what source does most of the electricity come from in the U.S?  How do you expect this pie chart to change in 50 years? |
| **Transportation**  Summarize the EPA and DOT goals for passenger vehicles: | Using the figure, explain what has changed from 1974-2013 | Predict what environmentally friendly features cars will have in the future: |
| **Infrastructure**  Buildings worldwide contribute around \_\_\_\_\_ of all greenhouse gas emissions ( \_\_\_\_% in the U.S alone)  Why does an asphalt roof get warmer than a light-colored roof? | How would fixing and rebuilding highways help reduce emissions? |  |
| **Sustainable Agriculture**  How might buying locally grown food and organic (no fertilizer) food contribute to lowering carbon emissions? | Caption this picture: | What part can you play in a sustainable agriculture system? |
| **Reusing and Recycling** Summarize what is meant by “reduce, reuse, recycle.” | List three facts from the infographic that surprise you. | How might buying used goods help slow the release of carbon emissions? |