**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**NASA DATA on GLOBAL CLIMATE CHANGE**

Use the NASA global climate change website, <http://climate.nasa.gov/>, as your source to answer the following questions.

**VITAL SIGNS OF THE PLANET**Use the left/right arrows to scroll through the information tabs at the bottom of the page.   
CLICK TO EXPAND on each tab to explore more information.

**CARBON DIOXIDE**• Carbon dioxide parts per million in the atmosphere is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

• Carbon dioxide levels in the atmosphere are at their HIGHEST in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ years.  
• Tell two human activities that result in the release of CO2 into the atmosphere.

1.

2.

**GLOBAL TEMPERATURE**• The 10 warmest years in the 136-year record all have occurred since \_\_\_\_\_\_\_\_\_\_\_\_.

• The year \_\_\_\_\_\_\_\_\_ ranks as the warmest on record.

**ARCTIC/LAND ICE**

• Tell one fact about how arctic or land ice is changing on the planet.

**SEA LEVEL** • The global average sea level has risen how much over the past 100 years?  
  
**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**LOOK IN THE FACTS tab at the top of the page and choose CAUSES.**  
**CAUSES OF CLIMATE CHANGE**

• List 5 gases that contribute to the greenhouse effect.  
 1.  
 2.  
 3.  
 4.  
 5.

• List several processes and activities that cause carbon dioxide to be released into the atmosphere.

1.  
 2.  
 3.

• What is the Intergovernmental Panel on Climate Change?  
  
  
 • What did this panel conclude regarding the increase in temperature over the past 50 years?

**LOOK IN THE FACTS tab at the top of the page and choose EFFECTS.**DESCRIBE 5 consequences of climate change  
 1.  
  
 2.  
  
 3.  
  
 4.  
  
 5.

Pick two regions in the United States and list impacts of climate change to that region.

REGION; \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

REGION: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**LOOK IN THE FACTS tab at the top of the page and choose EVIDENCE.  
EVIDENCE OF CLIMATE CHANGE**LOOK AT THE GRAPH.   
For centuries, the level of CO2 has never been above \_\_\_\_\_\_\_\_ parts per million (ppm) until recently.

SEA LEVEL RISE:  
Global sea level rose 17 cm or \_\_\_\_\_\_\_\_\_\_\_ inches in the past 100 years  
  
.GLOBAL TEMPERATURE RISE:  
 15 of the 16 warmest years on record have occurred since \_\_\_\_\_\_\_\_\_\_\_.  
  
SHRINKING ICE SHEETS:  
Greenland lost 150-250 cubic kilometers (\_\_\_\_\_\_\_\_\_\_\_\_\_ cubic miles) of ice per year between 2002 and 2006, while Antarctica lost about 152 cubic kilometers ( \_\_\_\_\_\_\_\_ cubic miles) of ice between 2002 and 2005.

EXTREME EVENTS  
The number of record high temperature events in the United States has been \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and   
the number of record low temperature events has been \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ sinze 1950.

OCEAN ACIDIFICATION

Acidity of surface ocean waters has increased by \_\_\_\_\_\_\_\_ percent since the Industrial Revolution.  
The amount of CO2 absorbed by the upper layer of the oceans is increasing by about \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ tons per year.

**LOOK IN THE FACTS tab at the top of the page and choose QUESTIONS (FAQ)**

1. Explain the difference between Global Warming and Global Climate Change
2. Explain the Greenhouse Effect.

1. What evidence do we have that supports the statement that the sun is NOT causing global warming?

1. Read the answer to “Is it too late to prevent climate change?” and write a sentence or two on your thoughts/reaction to the answer.

1. Responding to climate change will involve a two-tier approach including mitigation and adaptation.   
   EXPLAIN THE FOLLOWING TERMS   
    MITIGATION:

ADAPTATION

1. What’s NASA got to do with climate change? Tell 2 facts you learned from the answer to this FAQ.
2. How do scientists know what the greenhouse gas and temperature levels were hundreds of thousands of years ago?
3. If all of the Earth’s ice melts and flows into the oceans, what would happen to the rotation of the planet?