CARBON SINKS AND SOURCES

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

To explore how to reduce the impacts of climate change, we need to learn about carbon sinks and sources.

Carbon sink – any location, system, or process where carbon can be absorbed from the

atmosphere.

Carbon source – an activity that results in the release of carbon into the atmosphere.

**To reduce the impacts of climate change we need a combination of decreasing our carbon sources and increasing our carbon sinks.**

Princeton’s Carbon Mitigation Initiative at: <http://cmi.princeton.edu/wedges/intro.php>

* For each strategy listed on the website, identify whether the strategy is an example of a decrease in a carbon source or an increase in a carbon sink. Then identify the source or sink.

Efficiency







Fuel Switching



Carbon Capture and Storage







Nuclear



Wind



Solar







Biomass Fuels



Natural Sinks



Carbon Applet from University of Wisconsin Madison at:

<http://carboncycle.aos.wisc.edu/carbon-budget-tool/>

* Run the simulation keeping track of the following settings and outcomes:

|  |  |  |  |
| --- | --- | --- | --- |
| Simulation Settings/Results | Run 1 – current trends | Run 2 – improved trend | Run 3 – amazing improvement |
| Fossil Fuel Source – 2020 |  |  |  |
| Fossil Fuel Source – 2100 |  |  |  |
| Land Use Source – 2020 |  |  |  |
| Land Use Source – 2100 |  |  |  |
| Ocean Uptake – 2020 |  |  |  |
| Ocean Uptake – 2100 |  |  |  |
| Land Uptake - 2020 |  |  |  |
| Land Uptake - 2100 |  |  |  |
| Maximum CO2 PPM Reached |  |  |  |
| Ending CO2 PPM Concentration |  |  |  |
| Sketch of the shape of the CO2 Projection Curve |  |  |  |

* Which of your runs of the simulation would be the best for Earth? Why?
* Provide one example of a Fossil Fuel Source –
  + Land Use Source -
  + Land Uptake -