**Global Carbon Fluctuations**

The activity has been created as part of *The Habitable Planet* series by *Annenberg Learner*.

Click [**HERE**](http://www.learner.org/courses/envsci/interactives/carbon/index.php) to open the Carbon Lab overview. Follow the links at left to navigate the activity. Use the data tables below to input your data and respond to the questions found throughout the activity.

**LESSON 1**: **CARBON CYCLE - DATA TABLES**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Step 1** | Gaseous Carbon | Ocean Water | | Fossil Fuels | | Biosphere Gaseous Carbon | |
| To Year | Atmosphere | Ocean Surface | Deep Ocean | Oil and Gas | Coal | Soil | Terrestrial Plants |
| 2010 |  |  |  |  |  |  |  |
| 2060 |  |  |  |  |  |  |  |
| 2110 |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Step 2** | Total Carbon Emissions | Gaseous Carbon | Ocean Water | | Fossil Fuels | | Biosphere Gaseous Carbon | |
| To Year | Smokestack | Atmosphere | Ocean Surface | Deep Ocean | Oil and Gas | Coal | Soil | Terrestrial Plants |
| 2010 |  |  |  |  |  |  |  |  |
| 2020 |  |  |  |  |  |  |  |  |
| 2030 |  |  |  |  |  |  |  |  |
| 2040 |  |  |  |  |  |  |  |  |
| 2050 |  |  |  |  |  |  |  |  |
| 2060 |  |  |  |  |  |  |  |  |
| 2070 |  |  |  |  |  |  |  |  |
| 2080 |  |  |  |  |  |  |  |  |
| 2090 |  |  |  |  |  |  |  |  |
| 2100 |  |  |  |  |  |  |  |  |
| 2110 |  |  |  |  |  |  |  |  |

|  |
| --- |
| **Responses to questions** |
|  |

|  |
| --- |
| **Notes** |
|  |

**LESSON 2: CURB EMISSIONS - DATA TABLES**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step 1** | Gaseous Carbon | Ocean Water | | Biosphere Gaseous Carbon | |
| To Year | Atmosphere | Ocean Surface | Deep Ocean | Soil | Terrestrial Plants |
| 2010 |  |  |  |  |  |
| 2060 |  |  |  |  |  |
| 2110 |  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Step 2** |  |  | Gaseous Carbon |  |
| To Year | Net Deforestation Rate | Fossil Fuel Percent Increase | Atmosphere | Deep Ocean |
| 2010 |  |  |  |  |
| 2060 |  |  |  |  |
| 2100 |  |  |  |  |

|  |
| --- |
| **Responses to questions** |
|  |

|  |
| --- |
| **Notes** |
|  |

**LESSON 3: FEEDBACK EFFECTS - DATA TABLES**

|  |  |  |  |
| --- | --- | --- | --- |
| **Step 1** |  | Biosphere Gaseous Carbon | |
| To Year | Net Deforestation Rate | Soil | Terrestrial Plants |
| 2010 |  |  |  |
| 2070 |  |  |  |
| 2090 |  |  |  |
| 2110 |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Step 2** |  | Tundra  Melt Rate | | Gaseous Carbon | Ocean Water | | Fossil Fuels | | Biosphere Gaseous Carbon | |
| To Year | Net Def. Rate | 1/6 | 1/12 | Atmos. | Ocean Surface | Deep Ocean | Oil and Gas | Coal | Soil | Terrestrial Plants |
| 2010 |  |  |  |  |  |  |  |  |  |  |
| 2060 |  |  |  |  |  |  |  |  |  |  |
| 2110 |  |  |  |  |  |  |  |  |  |  |

|  |
| --- |
| **Responses to questions** |
|  |

|  |
| --- |
| **Notes** |
|  |