**SCIENCE 10 – CLIMATE CHANGE – ITS CAUSES AND EFFECTS**

**A jigsaw approach**

(Mrs. Lockwood)

Topics (taken from the IRP) : How natural phenomena affects climate (A)

How human activities can influence climate (B)

How climate change affects natural systems (C)

How climate change has impacted the world (D)

Ways we can minimize the impact of climate change on the

world (E)

Instructions for a one period library lesson:

1) The teacher assigns students to a heterogeneous group of five-six . Each group

Member is assigned a letter from A-E (stronger students get the more difficult topics

i.e. “A”) and a number (1-5/6).

2) Students individually complete their worksheets and rank the findings of their research

with 1 being the influential and 5 being the most influential.

3) Everyone with the same lettered worksheet gets together to share answers and to compare rankings. Students generate a master list of questions and answers, assigning them a point value and submit them to the teacher, who will later compile them into a

jeopardy game (<http://jeopardylabs.com/> ) for review.

The questions need not have only one correct answer.

Sample questions: What are ways to reduce the use of fossil fuels?

How do volcanoes affect the earth’s temperatures?

4) Students with the same number then get together. i.e. A3 gets together with B3, C3, D3, and E3. They share answers and fill in each other’s charts at the back of the sheet.

**SCIENCE 10** - CLIMATE CHANGE JIGSAW (A) Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Describe how natural phenomena affects climate   eg. changes in the earth’s orbit (Coriolis effect), volcanic eruptions, El Nino and La Nina, solar variations.

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| --- | --- | --- |
|  | NATURAL PHENOMENON | HOW IT AFFECTS CLIMATE |
|  | Coriolis effect |  |
|  | Volcanic  eruptions |  |
|  | El nino |  |
|  | La nina |  |
|  | Solar  variations |  |

**SCIENCE 10** - CLIMATE CHANGE JIGSAW (B) Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Describe how climate can be influenced by human activities  eg. greenhouse gases, depletion of ozone layer, etc.

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| --- | --- | --- |
|  | HUMAN ACTIVITIES AFFECTING CLIMATE | HOW IT AFFECTS CLIMATE |
|  | Greenhouse gases |  |
|  | Depletion of the ozone layer |  |
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|  |  |  |
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**SCIENCE 10** - CLIMATE CHANGE JIGSAW (C) Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Describe how climate change affects natural systems  eg.  shrinking of the permafrost region, effect on glaciers, oceans, etc.

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| --- | --- | --- |
|  | NATURAL SYSTEM AFFECTED BY CLIMATE CHANGE | HOW ARE THEY AFFECTED? |
|  | Shrinking of permafrost region |  |
|  | Effect on glaciers |  |
|  | Effect on oceans |  |
|  |  |  |
|  |  |  |

**SCIENCE** **10** - CLIMATE CHANGE JIGSAW (D) Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Describe the impact of climate change on people and places around the world.  Eg. flooding, droughts, etc.

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| --- | --- | --- |
|  | WHERE AND WHEN | HOW HAS CLIMATE CHANGE AFFECTED HUMANS? |
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**SCIENCE 10** - CLIMATE CHANGE JIGSAW (E) Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Describe ways we can minimize the impact of climate change on society.

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| --- | --- |
|  | WAYS WE CAN MINIMIZE THE IMPACT OF CLIMATE CHANGE ON SOCIETY |
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WORK WITH GROUP MEMBERS TO COMPLETE THIS SHEET.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| How natural phenomena affects climate | How human activities can influence climate | How climate change affects  natural systems | How climate change has impacted the world | Ways we can minimize the impact of climate change on the world |
| Coriolis effect - | Greenhouse gases - | Shrinking of permafrost region - |  |  |
| Volcanic eruptions- | Depletion of the ozone layer - | Effect on glaciers |  |  |
| El Nino - |  | Effect on oceans - |  |  |
| La Nina - |  |  |  |  |
| Solar variations - |  |  |  |  |