Design a "Green" Island Project: Teacher's Guide

Materials Required:

- Markers/Crayons/Colored Pencils
- Calculators
- Posters or Butcher Paper
- Scissors
- Glue

Recommended Duration: 5 – 6 Days (assuming 60 minute class periods)

- **Day 1:**
  - Introduce the project – Read over the instructions & requirements as a class.
  - Have students choose their partners (I recommend having them work in pairs).
  - Allow students to begin working on the calculations on pages 2, 3, and 4 to determine how much carbon per person each choice generates.
- **Day 2:**
  - Students should complete the calculations they began on Day 1.
  - Students should begin to use the Brainstorm space on pages 2, 3, and 4 to start deciding what to include in their plan, keeping in mind that they must provide for 1,000 people while keeping their carbon footprint low.
  - If students are ready to 'lock in' their choices, they can start working on the business plan.
- **Day 3:**
  - Students should complete their business plan, including their final choices for what types of food, transportation, and power sources they will include on their island. As part of their business plan, they will use calculators to show evidence that they have provided for 1,000 or more people as well as determine how much carbon they will produce.
  - The other component of the business plan requires students to explain their choices in a paragraph consisting of at least five sentences. They should highlight how their choices make their plan strong.
- **Day 4:**
  - Students should work on their maps today. Their map will display the choices they made visually, using symbols to represent the types of food, transportation, and electricity.
  - Walk through an example with the students at the start of class. *If I chose to include 100 chickens on my island, do I need to draw 100 chickens? No. I can use a symbol, such as an egg, to represent chickens. AND I can say that 1 egg represents 10 chickens so that I don't have to draw 100 eggs.*
  - Have students complete the maps and legends in color.
  - Prompt your students to include things beyond their food/transportation/electricity choices. They will need to include homes for people to live in, stores, businesses,

etc. Give them freedom and encourage them to create an island that people will want to live on!

- **Day 5: Flex/Finishing Touches**
    - Use Day 5 to allow students to finish any incomplete components of their project. Some groups may need more time to finish their maps or complete the writing potion of the business plan.
    - Also have students create their final poster on this day. In my class, we cut out the island from the packet and glued them onto colored butcher paper. Students then added their legend, the name of their island, and their total carbon footprint to the island poster. They turned in this as well as their packet as their final project.
- **Day 6:**
    - The final day of this project is presentation day. Presentations could take multiple forms. Students could formally make a pitch in front of the class, explaining why their island best fits the criteria and is a desirable place to live. Students can also participate in a gallery walk. I chose the latter option. I had students walk around and place sticky notes on other groups' projects, including one thing they liked and one thing they would change about each island. At the end, I had my students vote on which island they thought best accomplished the task assigned to them.

Prerequisite Student Knowledge:

- Climate Change:
    - Global Warming
    - Greenhouse Effect: The link between carbon emissions and the rise in temperature
    - Human responsibility for carbon emissions
    - Carbon Footprint

Examples of exemplary student work: (attached)

Name of Island:

Dream Island

LEGEND

= 1 acre of fruit

= 1 acre of vegtables

= 4 houses

= 50 bike sharing

= 50 electric cars

= 50 wind turbines

= 1 amusment park

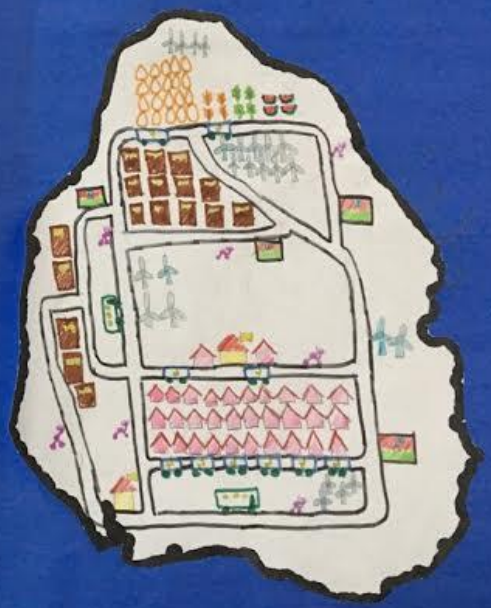
= vegtable market 1

Total Carbon Footprint:

1,120

Name of Island: S.M. BOSSES

LEGEND

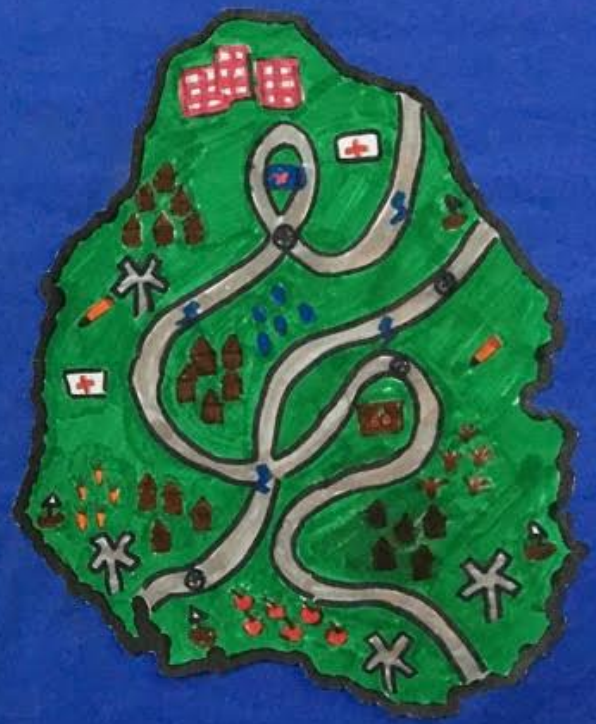


Total Carbon Footprint: 1138.02

LEGEND

- = 10 chickens
- = 1 acre of wheat
- = 1 acre of fruits
- = 1 acre of vegetables
- = 50 electric cars
- = 10 bicycle sharing stations
- = 25 wind turbines
- = 40 houses
- = road
- = grocery store
- = mall
- = business buildings
- = 10 wooden boats
- = Hospital
- = school

MAUNA ISLAND



Total Carbon Footprint:
1,159.6 tons