Names: _____ Period: _____

Design a "Green" Island Project

It is the year 2100 and a new island has been discovered that is completely untouched by humans. There is now a competition to decide who will be allowed to colonize the island and establish a society there. By 2100, climate change has become a very serious problem. The average global temperature is higher than ever before. Because of this, the Intergovernmental Panel on Climate Change (IPCC) has decided that whoever takes over the island must create the smallest carbon footprint possible. You and your group members must come up with a plan for how you would set up a new society on the island. You will present to the committee your plans for the island's food/agriculture, transportation, and power sources. *You must provide for **1,000** people on your island*. Remember, the groups that create designs that leave the smallest carbon footprint will win the committee's votes. When you design your island you should be creating an island that puts very little greenhouse gas into the atmosphere.

In this project you will…

1. Calculate how much carbon is produced by each option for food/agriculture, transportation, and electricity
2. Decide how to provide food, transportation, and electricity to 1,000 people on your island, keeping in mind your goal of maintaining a small carbon footprint
3. Create a map, including a legend, that is a blueprint for how you will use the land on your island
4. Present your plan to the committee

Essential choices you will need to make…

1. **Food & Agriculture: How will you feed your people?**
   - Will you allow farmers to grow crops (fruits and vegetables) on your island?
   - Will you allow farmers to raise livestock (cows, pigs, chicken) on your island?
   - Will you allow companies to set up plantations and factories to produce cheap food?
2. **Transportation: How will people get around the island?**
   - Will you allow people to own their own cars? What type of cars?
   - Will you rely mostly on public transportation? What type of public transportation?
3. **Electricity: How will you power homes and buildings?**
   - What methods will you use to provide electricity for the homes and buildings on your island

You will be graded on…

- **Business Plan**
  - Completed calculations
  - Finalized decisions
  - Food & agriculture, Transportation & Electricity descriptions in five quality sentences that explains how your choices will limit carbon emissions
- **Island Poster**
  - Map – colored
  - Legend – colored
  - Name of island & Total Carbon Footprint
- **Presentation**
  - Ability to clearly articulate your plan & reasoning behind your choices to the committee

Food & Agriculture

	Feeds this many people:	Carbon Footprint (per year):	Tons of Carbon/Person (Calculate!)
1 cow	10	10 tons of carbon	
1 pig	3	2 tons of carbon	
1 chicken	2	1 ton of carbon	
1 acre of wheat	50	0.5 tons of carbon	
1 acre of fruits	50	0.5 tons of carbon	
1 acre of vegetables	50	0.5 tons of carbon	
1 Doritos factory	500	1,000 tons of carbon	
1 Kraft factory	500	1,000 tons of carbon	

BRAINSTORM: Do the math!

Transportation

	Transports this many people:	Carbon Footprint (per year):	Tons of Carbon/Person (Calculate!)
1 gas-powered car	2	10 tons of carbon	
1 electric car	2	0.5 tons of carbon	
1 bike sharing station (holds 10 bikes)	10	0.1 tons of carbon	
1 train	100	200 tons of carbon	
1 subway car	100	150 tons of carbon	
1 bus	100	100 tons of carbon	

BRAINSTORM: Do the math!

Electricity for Homes & Buildings

Type of Power	Provides power for this many people:	Carbon Footprint (per year):	Tons of Carbon/Person (Calculate!)
1 power plant (uses coal)	100	500 tons of carbon	
1 wind turbine	10	1 ton of carbon	
1 solar panel	10	1 ton of carbon	

BRAINSTORM: Do the math!

Business Plan: Food & Agriculture

	Feeds this many people:	Carbon Footprint (per year):	Amount selected:	People Fed:	Tons of Carbon :
1 cow	10	10 tons of carbon			
1 pig	3	2 tons of carbon			
1 chicken	2	1 ton of carbon			
1 acre of wheat	50	0.5 tons of carbon			
1 acre of fruits	50	0.5 tons of carbon			
1 acre of vegetables	50	0.5 tons of carbon			
1 Doritos factory	500	1,000 tons of carbon			
1 Kraft factory	500	1,000 tons of carbon			
			TOTAL:		

Explain your choices below in **at least five** sentences.

Business Plan: Transportation

	Transports this many people:	Carbon Footprint (per year):	Amount selected	People transported:	Tons of Carbon :
1 gas-powered car	2	10 tons of carbon			
1 electric car	2	0.5 tons of carbon			
1 bike sharing station (holds 10 bikes)	10	0.1 tons of carbon			
1 train	100	200 tons of carbon			
1 subway car	100	150 tons of carbon			
1 bus	100	100 tons of carbon			
			TOTAL:		

Explain your choices below in **at least five** sentences.

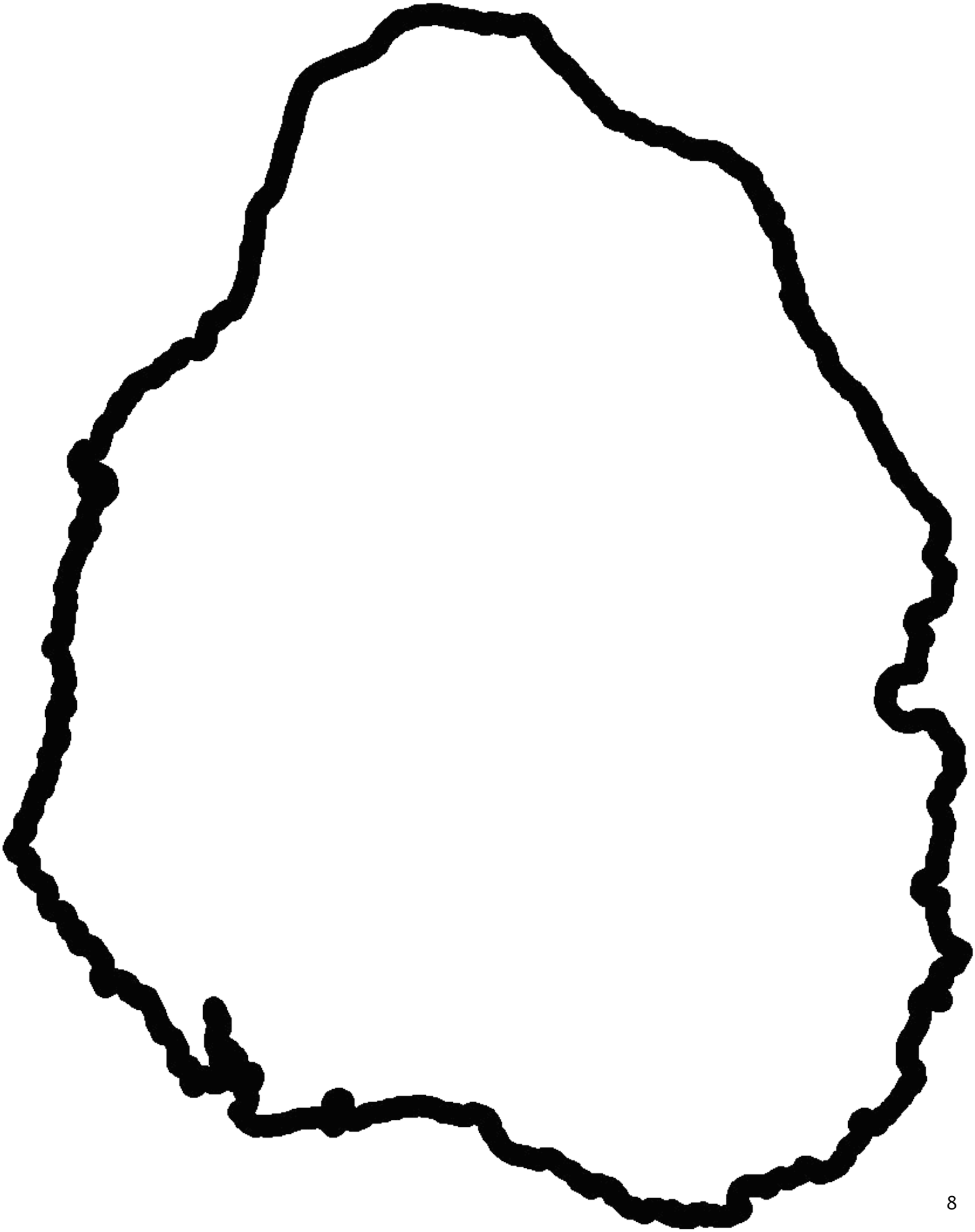
Business Plan: Electricity

Type of Power	Provides power for this many people:	Carbon Footprint (per year):	Amount Selected:	People provided for:	Tons of Carbon :
1 power plant (uses coal)	100	500 tons of carbon			
1 wind turbine	10	1 ton of carbon			
1 solar panel	10	1 ton of carbon			
			TOTAL:		

Explain your choices below in **at least five** sentences.

Calculate the TOTAL amount of carbon (including food, transportation, and electricity):

TOTAL CARBON FOOTPRINT: _____



LEGEND

Total Carbon Footprint:

Name of Island:

(Optional Extension)

Businesses: How will you regulate/monitor the actions of businesses?

- What will you do if companies want to build factories that pollute the atmosphere with greenhouse gases?
- What will you do if companies want to clear forests to build?
- What will you do if companies want to pay politicians to say that climate change isn't real?

(Optional Extension)

Education: How will you make the public inform the public about climate change?

- How can you educate children about climate change?
- How can you educate adults about climate change?