Carbon Cycle NetLogo Simulation- Analyzing Questions

These questions related to the Carbon Cycle NetLogo simulation tool. Discuss them as a team and then provide clear answers individually on this worksheet. Remember we are trying to answer answer the essential question, “What factors are causing the increase in ocean CO2?”

1. There are 5 variables you can change by moving the toggle switch:

Variable 1: Emissions

Variable 2: Percent forests cleared yearly

Variable 3: Calcium shelled organisms

Variable 4: Planting new forests

Variable 5: Adding ocean photosynthesizers

What role does each of the above play in moving carbon through the environment?

Emissions:

Deforestation:

Calcium Shelled Organisms:

Planting New Forests:

Ocean Photosynthesizers

1. Describe the data that are being presented by the two graphs:
2. Graph 1: Atmospheric and Ocean surface carbon levels
3. Graph 2: Ocean pH over time
4. After running a few simulations do you see evidence of a relationship between atmospheric carbon and ocean carbon?
5. What other relationships do you see? Explain.

5. What conclusion(s) can you make about the effects of increased atmospheric carbon levels on the ocean carbon levels. Be sure to provide data from your simulations as evidence to support your ideas.