



Climate Change and the Textile & Apparel Industry Module

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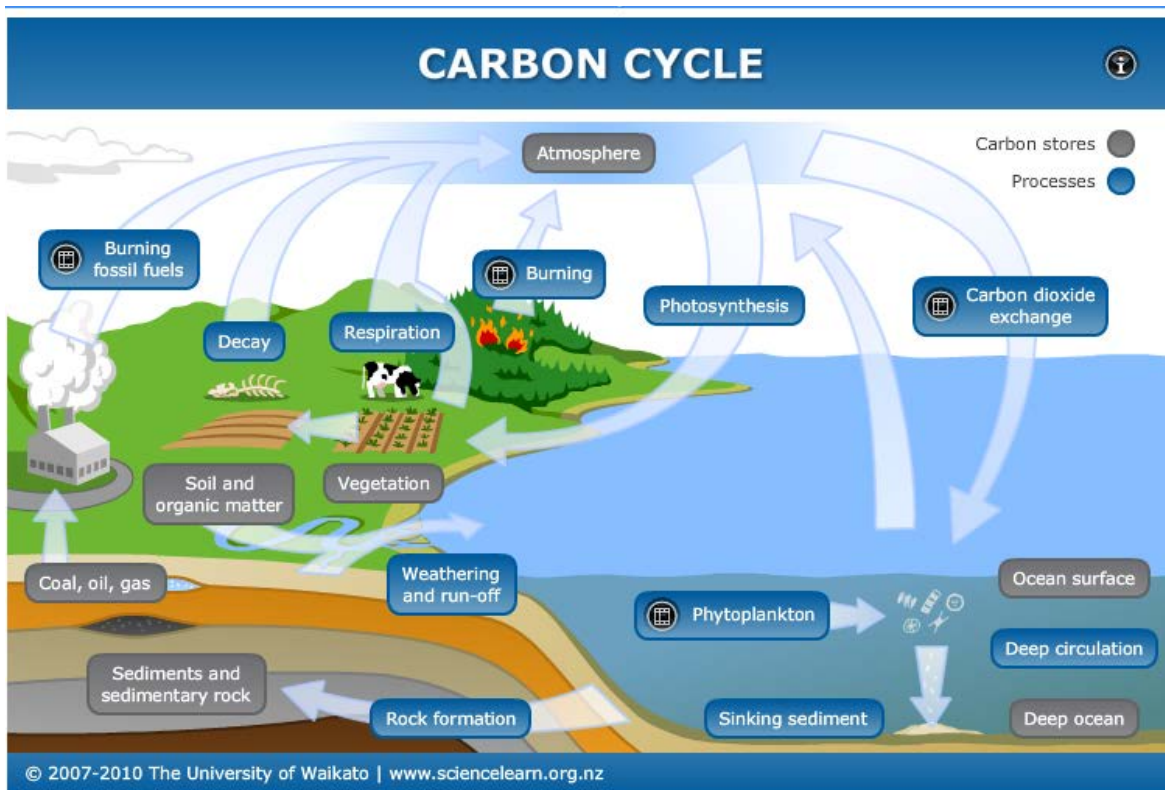
POGIL Activity 2: The Carbon Cycle (How does the carbon cycle influence climate change?)

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Model 1: The Carbon Cycle and the Law of Conservation of Matter

Law of conservation of matter: Matter is neither created nor destroyed, but it can change form.



1. List the 7 carbon stores as shown in Model 1.

2. List four processes that release carbon in the form of carbon dioxide into the atmosphere.

3. Describe the difference between a *carbon store* and a *process* as shown in Model 1.

4. Describe a path for carbon to reach the soil after a fossil fuel is burned.

5. The carbon cycle consists of both long term (thousands of years) and short term processes that change the form of carbon. List:
 - a. Two long term processes

 - b. Two short term processes

6. Describe why the figure in Model 1 called a carbon "cycle".

7. Given the Law of Conservation of Matter do you expect that there would be any overall loss or gain of carbon in the Carbon Cycle? Explain your reasoning.

8. Even though overall there would be no gain loss of carbon in the carbon cycle, what imbalance causes more carbon in the form of carbon dioxide to be retained in the atmosphere? Explain your reasoning. Individually, answer this question and write a few sentences justifying your response. When everyone in your group has finished this question, compare your answers and write the group's response in the box below your individual answer.

