**Activity 2**

**What is Carbon?**

**Grade Level:** 5-8

**Time:** 45-60 minutes

**Learning Intention:** We are learning what carbon is and how it is released into the atmosphere.

**Objective:** Students will analyze information on carbon from the informational video*: Global Warming. It’s all Carbon.*

**Prior Knowledge:** Students should have some prior knowledge about climate, atmosphere, and photosynthesis. You may want to take a few minutes before the lesson begins to briefly review these concepts in a class discussion.

**Overview:** In this activity, students are presented with five, 3-5 minute episodes about carbon in the atmosphere and global warming. Students will use a RAN (Reading and Analyzing Nonfiction) chart.

**Materials Needed:**

* Internet Access
* Projector or Individual computers
* Copies of RAN chart or science notebooks

**Success Criteria:** We will know we are successful when we can explain what carbon is and describe how it is released into the atmosphere.

**Activity:**

1. Begin class by handing out the Carbon Cycle RAN chart or having students copy it into their notebook. Explain that today you are beginning a new unit on global climate change. Tell students what the essential question to this unit of study is: “What role do humans play in global climate change?” In order to understand global climate change we have to understand what causes global climate change. Carbon is one element that seems to have a large impact on climate change.
2. Instruct students to fill in the first column of the chart with things that they think they know about carbon. Reassure students that there is no right or wrong answer and that anything they have heard or can think of would be appropriate. Students may do this activity alone or with partners if collaboration is needed to elicit ideas. After a couple of minutes of brainstorming, elicit ideas from students and write on the board or make a transparency and use an overhead projector. Begin by modeling how students should fill out the chart. Then give them time to do more on their own.
3. Explain that in the second column, students should write whether or not the videos gave information that verified or confirmed what they knew. The third column labeled, misconceptions is where students may write information that contradicts or challenges the ideas that they previously had. Explaining what a misconception is to the students may be valuable. The fourth column is where students write new information that they understand about carbon, things that they never knew before. Encourage students to fill out these columns as they watch the videos.
4. After each short episode, ask student the following questions to review their understandings of the concepts and give appropriate time for students to add information to the RAN charts.

Episode 1 <http://youtu.be/ypbb9Zi5Tao>

* What are some things that are made of carbon?
* What ability does carbon have?

Episode 2 <http://youtu.be/cOJ3MUpDrfI>

* How is carbon energy stored?

Episode 3 <http://youtu.be/Q9u8vM8YjeU>

* What are some ways that carbon energy is released?

Episode 4 <http://youtu.be/EvphJO8VKlc>

* What happens to carbon dioxide in the air?
* What happens when there is too much carbon dioxide in the air?

Episode 5 <http://youtu.be/M0D5YHVMk8A>

* In light of all of this new information on carbon, what questions do you have or what might you be wondering about?
1. At this time, students should complete their RAN charts. You may want to take student responses to model how that chart should be filled out.

**Closure:** Review the success criteria with the students. Ask students to share their explanations of what carbon is and how it is released into the atmosphere.