Lesson Title	Climate Change
Length of Lesson	1 day (50 minutes)
Created By	Hannah Box
Subject	Earth and Space Science
Grade Level	7^{th}-8^{th}
State Standards	Eighth Grade (4d)
DOK Level	DOK 3
DOK Application	Construct, investigate, critique
National Standards	5-8: F: Science in Personal and Social Perspectives
Graduate Research Element	Solar cells are made of Si crystals. One way that compounds are characterized is through growing crystals.

Student Learning Goal:

State Standards Eighth Grade:
(4d) Research the importance of the conservation of renewable and nonrenewable resources, including (but not limited to) Mississippi, and justify methods that might be useful in decreasing the human impact on global warming. (DOK 3)

National Standards: 5-8: F: Science in Personal and Social Perspectives:
Science influences society through its knowledge and world view. Scientific knowledge and the procedures used by scientists influence the way many individuals in society tink about themselves, others, and the environment. The effect of science on society is neither entirely beneficial nor entirely detrimental.

Materials Needed (supplies, hand-outs, resources):

PowerPoint, cricket kit for each student

Lesson Performance Task/Assessment:

The students will learn about climate change, sustainable energy, and then be able to construct their own solar powered device.

Lesson Relevance to Performance Task and Students:

The students will learn about climate change. They hear about global warming from the news and conversations, but they will better understand what this term means. The students will then learn about the types of actions they can take to help such as using sustainable energy. Solar power is one example of sustainable energy and they will have a chance to build something solar powered and watch it work.

Anticipatory Set/Capture Interest:

http://www.epa.gov/climatechange/basicinfo.html#climate101video

Guided Practice:

Teacher will go over the basics of climate change, sustainable energy, and the chemistry involved in solar panels. (powerpoint)

Independent Practice:

Students will build their own solar powered crickets and take them outside to see them in action.

Remediation and/or Enrichment:

Remediation: Individual IEP. Have students make a list of the ways they can reduce reuse and recycle in their households

Enrichment: Have students break into groups of 3-4 and research local companies that use green technology or produce green technology. Have each group present their findings to the rest of the class.

Check(s) for Understanding:

Can you think of any potential problems from using solar panels?

Do you think any illnesses are related to green house gases?

Based on what you know about the atmosphere and greenhouse gases, can the U.S. effect other parts of the world?

Closure:

Students will have a better understanding of what climate change is and how it could affect them. They will be aware of ways to help fight against climate change using sustainable energy. They will take home a cricket built by them that runs on solar power.

Possible Alternate Subject Integrations:

Chemistry: Chemistry problem solving.

Astronomy: Solar panel use in space (international space station)

Teacher Notes:

epa.gov/climatechange/

Crickets:

http://www.amazon.com/OWI-Frightened-Grasshopper-Kit-Powered/dp/B000QX3NYG

http://www.dhgate.com/mini-solar-powered-cricket-toy-100-pcs-lot/p-ff8080813455f87901346b9ed63a07f0.html