Lesson Title	Mississippi's Electricity: From Generation to Consumption
Length of Lesson	One (50 minute) class period
Created By	Will McBryde, Rob Thornton
Subject	General Science
Grade Level	8th grade
State Standards	8th: 1b, d (Inquiry); 2d (Physical Science)
DOK Level	DOK 3
DOK Application	Identify, Predict, Participate, Relate
National Standards	5-8: A (Inquiry); B (Physical Science)
Graduate Research Element	Applied geology and meteorology concepts to understand system that generates electricity using both renewable (i.e. wind, solar, water) and nonrenewable energy sources (i.e. nuclear, oil, coal).

Student Learning Goal:
MS 8th Grade:
(Inquiry) 1(b) Distinguish between qualitative and quantitative observations make inferences based on observations. (d) Analyze evidence that is used to form explanations and draw conclusions; 2 (d) Relate how electrical energy transfers through electric circuits, generators, and power grids, including the importance of contributions from Mississippi companies.

National Science Education Standards of Content 5-8:
(Inquiry - A) Abilities necessary to do scientific inquiry, Understandings about scientific inquiry; (Physical Science - B) Transfer of energy

Materials Needed (supplies, hand-outs, resources):
PowerPoint file (INSPIRE_McBryde_01.15.11_PP); laptop; projector; smartboard; access to internet

Internet Exercise Web Address: http://middleschoolscience.com/physics.htm

Lesson Performance Task/Assessment:
This lesson is an introductory lesson into electricity to inform students of basics for everyday life. Students will observe a PowerPoint presentation presented by the instructor. Questions will be asked throughout the PowerPoint to keep the students engaged. Inferences about how students are the future to Mississippi's energy industry will be made to excite the students about potential career opportunities. After the PowerPoint presentation the students will participate in Smart Board exercises via the internet using the web address listed in materials needed. The assessment will be done through student participation during the PowerPoint and Smart Board lesson.

Lesson Relevance to Performance Task and Students:
The PowerPoint presentation will help demonstrate to students how graduating from high school and college can lead to a career in energy industry. The PowerPoint presentation will also show the students how Mississippi is involved in the energy industry. The Smart Board activities will also reinforce these concepts.

Anticipatory Set/Capture Interest:
The Power Point presentation is designed to capture the student's interest and engage the students due to the relevancy of Mississippi's energy capabilities and production.

(Extra, not required: An activity using balloons can be used as a capture in order to visually show students static electricity. Simply rub the balloon on your hair or sweater in order to negatively charge the balloon. The balloon will be attracted to a more positively charged surface (i.e. wall). This activity works best on days with low humidity.)

Guided Practice:
The PowerPoint presentation on Mississippi's Electricity from Generation to Consumption will be guided. After which the Smart Board exercises will be done. There are four potential choices for Smart Board activities on the website, do one or all depending on time allotment.

Independent Practice:
Students will participate as a class to interact with Smart Board activities. The instructor will simply select a student to get up and use the Smart Board in front of the class. Having the students participate as a group causes discussions and inquiry because the whole class usually never agrees on one single answer.

Remediation and/or Enrichment:
Remediation- Individual IEP; PowerPoint will be made available to resource teacher;
Enrichment - Have students research a career in energy industry they would like to have.

Check(s) for Understanding:
Observe students during PowerPoint presentation. Observe students participation during Smart Board activities. Ask students questions.

Closure:
Question 1: Why should we care about renewable and non-renewable energy?

Question 2: What interests you about the energy industry?

Possible Alternate Subject Integrations:
Physics, Math

Teacher Notes:
This lesson could apply to all middle school grades. This lesson should excite the students about energy/electricity in the coming weeks since Mississippi is a producer and consumer. If the student chooses to have a career in the energy industry one day he/she can do that right here in Mississippi!