Daily Lesson Plan

Course Name:	
Unit Title: Radiation and the Human Body	**Day: 7 of 15**

Relevant NC Standard Course of Study Goal(s):

- EEn.2.2.1 Explain the consequences of human activities on the lithosphere past and present.
  - Explain ways to mitigate detrimental human impacts on the lithosphere and maximize sustainable use of natural resources.
- EEn.2.2.2 Compare the various methods humans use to acquire traditional energy sources (such as peat, coal, oil, natural gas, nuclear fission, and wood).
  - Compare the methods of obtaining energy resources: harvesting (peat and wood), mining (coal and uranium/plutonium), drilling (oil and natural gas) and the effect of these activities on the environment.
- EEn.2.7.3 Explain how human activities impact the biosphere.
  - Summarize ways to mitigate human impact on the biosphere.
- EEn.2.8.1 Evaluate alternative energy technologies for use in North Carolina
  - Critique the benefits, costs and environmental impact of various alternative sources of energy for North Carolina (solar, wind, biofuels, **nuclear fusion**, fuel cells, wave power, geothermal).

Specific Lesson Objectives

Students will understand:

- the environmental impacts and consequences of different energy uses
- some of the evidence for the multi-faceted arguments against nuclear energy use because of disaster-driven data, and how this data is used by pro and anti-nuclear energy groups

Students will know:

- the details of the nuclear disaster of the Chernobyl nuclear power plant in Pripyat, Ukraine
- an overview of how nuclear energy use functions and how uranium is mined to fuel plants

Students will be able to:

- read a case study to glean important information about nuclear energy disasters and specifics about the disaster at Pripyat

Key Vocabulary/Formulae for this Lesson

- nuclear fusion, sustainability, radioactivity, nuclear meltdown

Materials

- optional guided notes handout
- Nuclear Disaster project guidelines/rubric

Technology Needs

- PowerPoint (teacher)
- laptops or computer lab needed if students begin work on Nuclear Disaster Projects in-class

LESSON ACTIVITIES

Opening (Hook, Warm-Up, Anticipatory Set, Review, etc.)

Describe activity to elicit active involvement of students or refer to previous learning:
5 minutes: Warm-up: Students enter room and copy down essential question of the day and answer essential question. "List every activity you have done and will do today that will require the type of energy use which we discussed yesterday."

Procedure: Include all sections that apply to this lesson; combine as necessary.

Section	Time	What the Teacher will do:	What the Students will do:
Statement of Objective & Purpose	5 min	Teacher will ask students to share some examples of daily activities they will do which use energy which we discussed in our NC Energy Use lecture the day before. Teacher will ask students to share "how many earths" it would take to support their lifestyle.	Students will share examples of daily activities and their eco footprint calculations from homework.
Input, Modeling, & Check for Understanding	15 min	Review of Nuclear Power and nuclear radiation. Pose questions to students to focus on during their case study: What happens in a nuclear plant disaster? How frequent do these happen?	Students will review notes and listen to brief overview of nuclear energy and radiation.
Guided Practice	45 min	Teacher will explain directions for case study and break students into teams. Teacher will asign specific roles for each team member such as secretarial role (writing down key ideas in bullet form during team discussions), discussion moderator, and readers (students may decide to read parts of the case study out-loud and may move to a quieter part of the room to do so)	Students will listen to directions for Chernobyl case study and complete their roles within their teams during the case study. Students will work together to answer guided questions throughout the case study.
Independent Practice/ Homework		Teacher will assign brief article on the radioactive wolves/wildlife in Pripyat, Ukraine as a result of the Chernobyl disaster.	Students will read article and answer 2-3 brief questions on article for homework.

Assessment of Student Learning

How & when will you know that the students have learned this material?

Differentiation Strategies*		
How will you adjust aspects of the lesson to accommodate student READINESS?		
Struggling Students:	**Gifted/Advanced Students:**	**English Language Learners:**
How will you adjust aspects of the lesson to accommodate students' LEARNING PROFILES?		
How will you adjust aspects of the lesson to accommodate students' INTERESTS?		