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Acid Rain

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Generic Lesson Plan Template

You should submit this form in addition to any computer generated files/documents/models to your group folder on Angel. Please create a .zip file and upload the group of files as a single archive.

Name:Bonnie Bush
Grade level(s)/Subject taught:9 Env. Science
Objectives: The student will be able to: Describe what acid rain is State what causes acid rain Explain why acid rain is harmful Describe what is being done about acid rain and what we as individuals can do

Please provide a rich **one-page, single-spaced**, description or a *vision* of your best thinking on a way or ways you might teach the planned lesson. (approximately ½ page for the teacher role, ½ page for the student role). Also, construct a tentative rubric that you might use with your students (see example)

Items to include in your lesson plan: (Choose your discipline/concepts from your own area).

1. *Write* the Mathematical Concept or "key idea" that modeling will be used to teach: (e.g. Students use mathematical modeling/ multiple representation to provide a means of presenting, interpreting, communicating, and connecting mathematical information and relationships)

and/or…

1b. *Write* the Science Concept or "key idea" that modeling will be used to teach: (e.g. Organisms maintain a dynamic equilibrium that sustains life).

Acid precipitation affects plant and animal life globally.

Materials:

"…a rich **one-page, single-spaced**, description or a *vision* of your best thinking…"

Prompts:
1. How will you assess the prior knowledge of the student?
2. How will you begin the lesson?
3. What are the teacher and students doing every 5-10 minutes? (Teacher Actions and Student Actions
4. How will you assess the learning for the lesson?

Using_____ I plan on having my students…
(software / modeling package(s)

Using the software/modeling package from NSDL on Acid Rain, I plan on having my students first share what their perception of acid rain is, since it's a common term and we all think we know what we're talking about when we say it. Arriving at an acceptable definition and a discussion about what pH is, then I would ask them "Where does acid rain come from". In this discussion, we would also have to identify what fossil fuels are, some chemistry about what happens when burning occurs and what weather patterns affect the travel of the particulates. There would be some note-taking and definitions. As we discuss these topics, the software could be shown intermittently to reinforce the information shared. Then the students would identify specific ways that acid rain affects us and what is or could be done about those affects. To evaluate the lesson, students could break up into groups and write a rap about what acid rain is doing to our earth, create a drawing of the process of acid rain creation and/or pretend they are part of an activist group and they have a 3 minute spot on a radio show to tell an important message about acid rain. For homework, there are some word searches and a crossword puzzle that come with the NSDL package.

Example: "I was thinking about beginning the class on [modeling X] by using the overhead to ask students what they know about X. From this brainstorming session, I might ask them to get into groups and discuss one or more of the ideas they gave me. After about ten minutes, I would have the students give their ideas on X and write them down on a transparency so they would be able to see them for the entire hour. From here, I would provide a 10 to 15 minute demonstration of the basics of using _____modeling software. I would use an conceptual example that they would find familiar with such as getting a cold and how it is transmitted. From here, I would have students at the computer stations using a prepared guide or tutorial to get them started on basic software usage. I expect that is a short time a number of students would "catch on" rather quickly and be able to help others. ……………... By the third lesson, I suspect that most would be well on their way to development of their own or small group models using the _____software. My plan of assessment would probably be a group model so they would gain more confidence in using the software in a meaningful way. After the second or third lesson, I would ask them to choose from a list of thematic or topic areas that fit the software nice and develop a model using the technology. As a product, I may have partners share their model and describe to other small groups how it works. The rubric I design would be general at first so that I might see what kinds of the products the student were capable of creating. From the prototypes, I would hone my rubric to make the modeling product as challenging as possible without making it too difficult." Etc…