INTRO TO NANOTECHNOLOGY AND BIOSENSORS
5E Inquiry Lesson Plans - Grades 7-12
Lesson Plan #2: Intro to Nanotechnology & its current uses!

ENGAGE: Get out a meter stick. Have students volunteer all the prefixes for the unit of measure – “meter.” You may have to fill in some of the blanks, depending on which level of students you are working with. The complete list is in the PowerPoint under the explain phase.

EXPLORE: Ask students to speculate on the meaning of the word “nanoscience” and “nanotechnology.” Speculate on ways in which it is likely to affect scientific research. Does anyone know of a product that has come from this research? List student responses on one side of the board or overhead.

EXPLAIN: Give the slide show on PowerPoint showing how small “nano” is and the products created using nanotechnology. Tell the students to be thinking about which product they are most interested in so they’ll be prepared for the next step of the lesson plan.

EXPLORE: Have students pick one product to work on. The teacher could facilitate this by using several different methods. One method would be to have a sign for each of the 10 products taped to the wall at different locations around the room. Have the students get up and go to the sign which they are most interested in. The teacher may need to reassign some students to equalize the teams. For example, if there are 30 students in the classroom and we have 10 products, then they will need to group into teams of three. Explain that if there are already 3 people at a location, they need to find another location.

Give each group a poster board and make markers available for them to create a poster on their product. Take them to the computer lab to do internet research. Their goal is to make a poster telling us more about their product, the company that makes it, and where the company’s current research is heading. What did the company do on a nano-scale to create the product? All work on computer will need to be done today, as tomorrow students will present their findings and poster to the class.

EXPLAIN: Student presentations. Each group should get no more than 3-5 minutes. Be sure students are aware of presentation protocol, such as: introducing each member of the team, the product they’ve researched and the company that creates the product. Calculate out the time needed for presentations and put presentations at the end of the class period. Then at the beginning of the class period students can refine their poster and their presentation.

EVALUATE: Present the rubric you want to use prior to student’s working on their poster. A sample rubric could be: Aesthetics – 5pts, Presentation protocol – 5 pts, Use of graphics – 5pts, Detail & preciseness of explanation – 5pts, participation of each member – 10 pts. Total points possible for this sample rubric is 30 points! Attached is a sample evaluation sheet you could use.