Abstract

Students are given the opportunity to learn about different careers. Using a scientific problem solving method learned in class, students will also be shown how different problems are solved by different careers.
PART I: Participants and Setting

School
Park Middle School

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PART II: Activity

Name of Activity
Careers and Problem Solving

Activity Timeframe
Over a two month period timeframe

Science/Math Standard
8.1 Unifying Concepts and Processes
Unifying concepts and processes helps students think about and integrate a range of basic ideas which builds an understanding of the natural world.

8.2 Science as Inquiry
Science as inquiry requires students to combine processes and scientific knowledge with scientific reasoning and critical thinking to develop their understanding of science.

Activity Description (equipment used, activity steps, time required, etc.)
This activity intends to assess the students thoughts about the skills needed to use and do science. Students will learn the processes of doing and using science. They will also use these processes and other scientific knowledge to relate how science is used in different careers (including science careers). Students will realize that they use these processes of science in many ways and that scientists display many different personality types. One class period (40 – 50 minutes) will be used to assess which skills are needed to use and do science and to allow the students to explain what makes a successful person. Science teaching processes that are used to help with questions and problems will be an ongoing process throughout the year. Relating how science processes are used in different careers will take about 20 – 40 minutes per career presented.
The students were given a problem-solving diagram to use with each presented career. They were asked to describe the careers in the center as the speakers explained their jobs. Students were asked how the career used different parts of the problem solving process as the guest speakers described a common problem they encountered in their careers and the steps they took to solve them.

The guests were asked to describe what they do in their career and to explain the processes or steps they use when they have to solve a problem. Student questions should be encouraged.

Post-assessment: I plan to have the students take their original sheets and add to them the skills needed to do science and to list careers that use science. I hope to get students interested in possible careers for themselves.

**Activity Design Rationale (Include pre-assessment and data)**

I had the students list or describe what they considered to be a successful person. Pre-assessment also involved asking the students to make a list of what skills scientists need, characteristics and jobs of scientists, and other jobs which use science skills.

I also needed to know if the students had the skills needed to do science. I had the students do an inquiry project in order to give them a problem solving experience. This gave me an idea of where they were with their knowledge of problem solving steps and processes of science.

Based on the needs of the students (problem solving skills include situation, information, restatement, outcome, management, investigation, and others), I intend to make a chart of skills used in science processes. Using the chart, I hope to give the students opportunities to use the various skills and help them realize which ones they already use.

The students will then be given the opportunity to gather information from people in different careers. They will be asked to compare skills and how they are used in the different careers. Different means including, video, Internet search, career fairs and personal interviews, may present careers. I hope to have the students match up the skills they have used with different careers that are scientific in nature or use science and math.

Many of the students have the mind set that they can not be successful at careers that use science or even do science in the classroom. I asked them to define success so that I could be sure I understood their idea of a career and of a successful person. From these answers, I will refine my invitations of people holding different careers. I hope to show diverse careers held by a diverse group of people so that the students can make a connection between these people and themselves and to show that science processes are used in many job types, not just those labeled as scientific.
Sample of Expected Student Experience(s)

(I am trying to attach this; I will let you know when I do.)

PART III: Assessment

Description of Assessment Used

Have the students make a chart listing the characteristics, skills and jobs that use science. Also have the students give a description of a role model and/or what makes a person successful.

Students have added to the list of guest speakers by requesting people to come and talk about specific careers. Some students comment on the thought they had about people actually succeeding after leaving our school. They were surprised to talk to successful Park graduates.

Overall Evaluation of Activity

I believe that this activity has merit in its goals. I think that it was only partially successful. Most of the students are more aware of how problem solving is part of careers. They have not really related to how they can succeed by using problem solving in any career.

Collected Student Data (include representative examples of student work that supports the evaluation)

What would you do differently if you were to repeat this activity?

The students need to have more input in the careers they want to see and hear about.

How can the activity be extended to increase the amount of inquiry?

The students could use the skills they listed as a class and try to find careers that use those skills. I could have the students interview different professionals and present their findings to the class in a career fair or other displays.