

PIMP MY RIDE: TEACHER GUIDE

Subject: Earth Science
Grade Level: Middle School
Last Updated: August 28, 2007

Case Summary

Want to win a chance to have your car pimped out by MTV's Pimp My Ride? Determine the most common car color in your area and if everyone agrees, you may win!

Credits

This case was written by Yasmine McKenzie (teacher, Bethune Middle School, Atlanta, GA) and Jennifer J. Pokorny (PhD student, Psychology, Emory University, Atlanta, GA) fellows of the Emory University PRISM program (<http://www.prism.emory.edu>). Authors may be contacted at jpokorn@emory.edu

Learning Objectives

1. Students will be able to formulate a hypothesis
2. Students will practice the scientific method
3. Complete a lab report, including question, hypothesis, procedure, data and conclusions

Georgia Performance Standards

S6CS1. Importance of curiosity, honesty, openness, and skepticism in science
S6CS9. Scientific inquiry
S6CS6. Communication
S7C3. Computation/estimation

Assessment

Students will be assessed by completion of their self/peer evaluation, lab report and box chart (see grading rubric in the Student Materials).

Implementation Strategy

This case is designed to take place over two 60-minute classes. Students completed this activity early in the year (week 2) so they had little exposure to experiments and the scientific method.

Day 1 (60 minutes) –

- Students first read the flyer (5 minutes)
- Teacher walks them through each section of the box chart. In between explanations, the students work in pairs to fill it in while facilitators walk around and assist (15 minutes)
- Reconvene as a class and fill in each section more completely as a group (10 minutes)
- Hand out lab report and have students fill in the appropriate sections (5 minutes)
- Walk outside and make observations (20 minutes; 10 minutes walking, 10 minutes recording)
- Review making bar graphs (5 minutes)

Day 2 (60 minutes) –

- Review steps of the scientific method with their sponge question (5 minutes)
- Review yesterday's activity (5 minutes)
- Students calculate their results (10 minutes)
- Student complete their lab report (15 minutes)
- Students individually complete a bar graph of their findings (25 minutes)

Case Notes

What went well

As this was the students first experience with PBL and using a box chart, we guided them step-by-step through filling in the box chart. This allowed us to ask the students what the words/terms meant (e.g. hypothesis, facts) and to gauge what their knowledge prior knowledge was.

Facilitation during the time the students were filling out the box chart, particularly when writing down facts, was critical. The students were often sidetracked by the image of Xzibit and Pimp My Ride on the flyer and would write down things that they knew about the show, not information that was on the flyer. We definitely needed to guide them to what the flyer was about: that it was a contest, how one could win the contest, etc.

Other things that the students needed to be reminded about:

- difference between popular opinion and reality – students would say that one action plan would be to survey people as to what their favorite car color was (opinion), not what color car they owned (reality)
- difference between presented facts and prior knowledge – students would provide facts about Xzibit and the show, but they were not facts that were presented on the flyer nor relevant to the case.

Students needed some guidance on how to create a bar graph so we did demonstrate one on the board. We also wrote the guidelines on the board as to what was expected to be on the bar graph so students were aware of the grading criteria.

At the beginning of the 2nd day of class we reviewed the students' homework (reading from the textbook). Concepts that were discussed were: experiments, scientific method, independent variables, dependent variables, controls. The example we provided to the students was: I am interested in growing some tomatoes and I heard that plants grow better if they are played classical music instead of rap music. How would I test this? The students then provided the details of the experiment and everything that would need to be controlled (loudness of music, amount of sun, amount of water, planted at the same time, etc.) They also provided the dependent variable(s) we would be interested in (size of plant, number of tomatoes, size of tomatoes). Students were then able to use these concepts and apply them to the experiment that they conducted the day before.

What could be improved or changed next time

We didn't have each class fill in the action plan with all the ideas that were generated – we only had them fill in the one action plan that they carried out. Next time they should write down all the ideas that were brainstormed.

It was very hot outside (not entirely intolerable) but it made us realize that we didn't have a backup plan should the weather not allow the students to go outside to count the passing cars (e.g. raining). Therefore, there should be 1 or 2 alternative ways to have the students sample car colors if the weather is bad or the school is not near a busy enough street. Ideas we had were to sample the cars in the parking lot or to look on websites that state the number or percentage of cars sold of a particular color (<http://www.factmonster.com/ipka/A0855652.html>).

We ended up not having students complete self evaluations for this case since they primarily worked independently.

Resources

Biology4Kids (2009). Scientific studies: Scientific method. Retrieved August 15, 2009 from www.biology4kids.com/files/studies_scimethod.html

National Center for Ecological Analysis and Synthesis (2004). Kids do ecology: Data science. Retrieved August 15, 2009 from www.nceas.ucsb.edu/nceas-web/kids/experiments/scimethod/scimethod.html