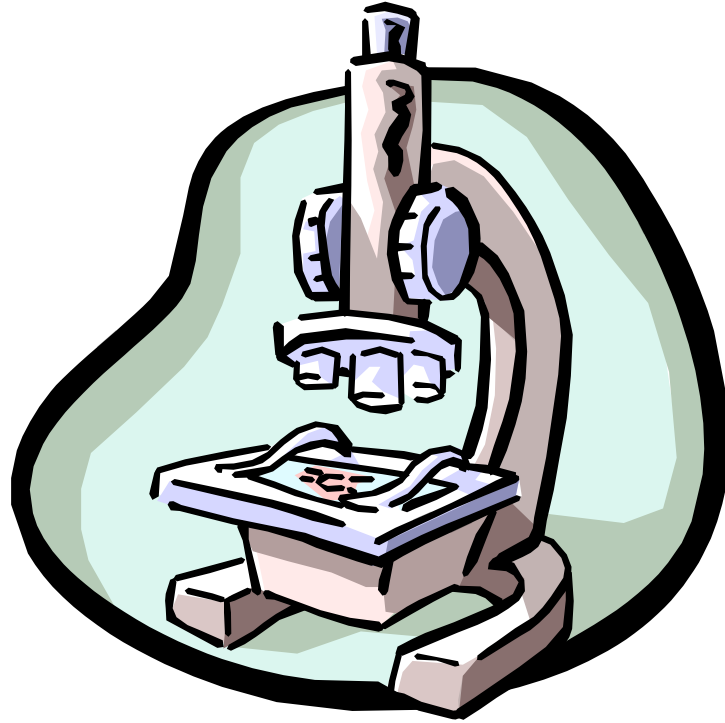


How Do I Teach Science to Children?



A WebQuest for

Elementary Education 363
Teaching Science in the Elementary School

Designed by

Leigh K. Smith
leigh_smith@byu.edu

Based on a template from The WebQuest Page: <http://webquest.sdsu.edu/>

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Introduction

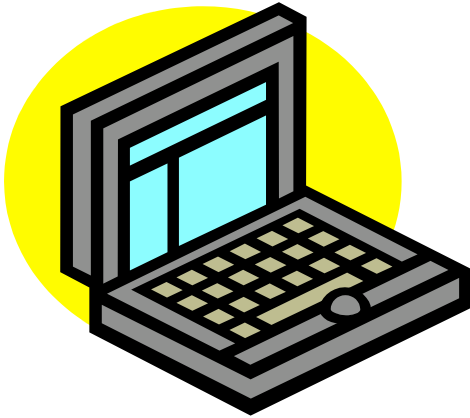
Have you thought about what your interviews for employment might involve? Much of your teacher preparation thus far has focused on classroom management, teaching and learning theory, and teaching literacy to children. Perhaps you have been advised that principals often emphasize these issues during the interview. However, available positions in elementary schools today often focus on your ability to effectively teach specific content areas. Indeed, teams of teachers often elect to “team teach” or departmentalize within grade level and you might be assigned to teach a particular subject, such as science, health, or social studies to all of the children at that grade level. Have you thought seriously about teaching science to children? How do you think science should be taught? What do others think about teaching and learning science? What particular kinds of theoretical, instructional, or organizational issues are attached to teaching this discipline? As a beginning teacher, you might be hired based on your knowledge about science instruction and how you might actively engage children in learning science.

What is involved in effectively teaching science in elementary schools? What do you need to know about science and science instruction to provide children with quality science learning experiences?



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The Task



Your task is to explore some of the web-based literature about science and science teaching and learning. Then create a graphic organizer of your choice in Microsoft Word illustrating what you have identified to be the key issues involved in acquiring an understanding of science education in the elementary schools and teaching science effectively to children *and the relationships between those issues*. In other words, what kinds of things will you be expected to attend to as you plan a course of study for the children you will teach?

You will need to be prepared to participate in a classroom discussion about what you have found and will also need to print out your graphic organizer poster size and prepare it for display in class.



Process



To accomplish this task you will do the following:

1. First, you will be assigned to a team of 3 or 4 students.
2. Each team of students will review some of the web literature regarding science and science instruction. Some suggested sites have been provided below, although these represent only a small sample of what is available on line.

(**Hint:** You might decide to “divide and conquer” by distributing the following web sites among your group. In other words, it isn’t necessary for **each** of you to review **all** of the sites. Share what you learn and collaborate as you construct your final project.)

<http://educ.queensu.ca/~science/elemsci.html> (explore the resources available at this site—i.e., lesson plans, current issues, etc.)

<http://www.usoe.k12.ut.us/curr/science/> (click on any of the grade levels under “Core Resources” and explore the resources available)

<http://www.towson.edu/csme/mctp/Essays.html> (how children learn, constructivist theories of learning, etc.)

<http://www.nap.edu/books/0309053269/html/75.html> (assessment in science education)

<http://www.lis.uiuc.edu/~chip/teach/resources/science.shtml> (inquiry, classroom environment, methods, etc.)

<http://www.nap.edu/readingroom/books/nses/> (*National Science Education Standards*)

<http://www.ncrel.org/sdrs/areas/issues/content/contareas/science/sc400.htm> (science literacy, standards, etc.)

<http://www.carolina.com/tips/NSS.asp> (standards, science and technology, etc.)

http://books.nap.edu/html/inquiry_addendum/ (inquiry, assessment, etc.)

<http://www.project2061.org/tools/sfaaol/chap1.htm> (nature of science)

<http://www.education.cortland.edu/~kleine/eportfolio02/teaching/literatureproject/lit inquiry projects.html> (integration)

<http://www.quackwatch.com/01QuackeryRelatedTopics/science.html> (nature of science)

<http://www.inventamerica.com/> (inventioneering)

<http://www.soinc.org/> (Science Olympiad)

<http://www.isd77.k12.mn.us/resources/cf/> (science fairs)

<http://www.imaginarylinesinc.com/didyouknow.shtml> (gender issues and science)

<http://science.kennesaw.edu/~thowick/Beckyppt/> (integration)

3. Identify the topics or issues related to teaching and learning science that seem to appear repetitively.
4. Identify the knowledge and instructional issues related to each of those areas.
5. Review the following web site that describes different types of graphic organizers

<http://www.graphic.org> or, more specifically:
<http://www.sdcoe.k12.ca.us/score/actbank/torganiz.htm> or:
<http://www.graphic.org/goindex.html>

6. Discuss your findings within your group and together create a graphic organizer in Microsoft Word (or Inspiration—It is available in the technology lab) to illustrate the results of your investigation. Remember, a graphic organizer is a visual way of showing ideas and the relationships between them.
7. Print out your graphic organizer poster size and prepare it for display. (For some of you, this may involve pasting or taping pieces of paper together to create the whole graphic organizer as a poster.)

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Evaluation

% of points	Number of Points	Quality of Work
100	10	Exemplary. (A/A+). All aspects of the work complete above the minimum level specified. Well-organized and/or well written. Thorough, creative, neat. Evidence of careful planning and clarity of presentation.
90	9	Very Good. (A/A-). One or more of the above elements missing or of lesser quality.
80	8	Well Done. (B). The assignment was completed at the minimum level specified.
70	7	Acceptable. (C). One or more of <u>minimum</u> level expectations missing or of lesser quality. Most aspects of the assignment were attended to with effort that indicates completion as opposed to careful attention to quality.
60 or less	Less than 7	Not acceptable. (D or below). Many aspects of the assignment missing or completed at a sub-standard level.

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On the following page you will find a copy of the evaluation sheet that will be used to grade your efforts.

Webquest Group Assignment
How do I Teach Science to Children?
Graphic Organizer
Evaluation

Names _____

Requirements:

1. Identify the topics or issues related to teaching and learning science that seem to appear repetitively.
2. Identify the knowledge and instructional issues related to each of those areas.
3. Review the web sites provided that describe different types of graphic organizers.
4. Discuss your findings within your group and create a graphic organizer in Microsoft Word (or using Inspiration if you have access to it) to illustrate the results of your investigation. Remember, a graphic organizer is a visual way of showing ideas and the relationships between them.
5. Print out your graphic organizer **poster size** and prepare it for display. (This will likely involve pasting or taping pieces of paper together to create the whole graphic organizer as a poster.)

Group Score _____/10

Conclusion



As a result of this WebQuest experience, you have been exposed to a small sample of the vast amount of knowledge we have about what science is and the instructional possibilities for helping children learn about science and become excited about what you do in science in your class.

You have probably also started to wonder how we are going to cover all the information in our semester class. We aren't because that is an impossible task. However, we **are** going to learn a foundation of information and we are going to learn **HOW** to answer our own questions about teaching science as they arise. Please keep a record of the web resources you used during this investigation and continue to add new ones (both electronic and print) as you encounter them throughout the semester.



