

SPOTLIGHT ON TECHNOLOGY INTEGRATION

- *BMRSD STYLE* -



With computer labs in each of the five schools, practically every classroom with an on-line computer, supplies of digital cameras, LCD projectors, scanners, network printers, extremely rich and helpful District and school websites, and technology integrators available to assist throughout the District, BMRSD has attempted to put a quality network together to help our teachers integrate technology into their daily teaching.

Computers are being increasingly seen as a tool - a tool to help teachers teach what they already teach, but in new, exciting ways. The District, through in-service courses, technology newsletters and the technology integrators, encourages all teachers to use the various computer resources to enhance their lesson planning.

Many teachers in our District incorporate computers and computing into their teaching. We don't have to look far to see wonderful examples of technology integration at all grade levels and subject areas in the District. The following are a few case studies - BMRSD's own teachers who have been willing to share their technology integration methods and practices (many of them in their own words). These ideas serve

as models for all of us to read, think about, and possibly add to our own teaching.



Linda Porter

MES Grade 3

I created a unit using several aspects of technology based on the Iditarod dog sled race. We used the website from Scholastic as a basis – it contained an interactive map of the race as well as lots of connections. The children all chose a racer after studying their bios and then we did daily updates using the latest info from the Internet. We plotted their progress on a map in class, as well as found out all sorts of background information. One day, the students did a scavenger hunt using the web to answer questions that I had prepared.

At the same time, we were also reading two books about dog sled racing and the Arctic area. The children, with the help of Mr. Lancisi, designed posters advertising a dog sled race downloading pictures from the Internet. They also did research on different arctic animals using different websites that I had found, and later typed their arctic animal books.



Sandra Hrezuck

AFM Grade 5 and 6

Grade 6: Science, Chapter 12 - Weather, was completed totally using technology. With assigned topics, students used the Internet to research them. They they used Works to

compose short reports. They could cut and paste drawings or photographs to enhance their work. Sandra Wynacht then composed a webpage. Oral presentations were then given and some students used the LCD as part of their presentation.

Grade 5 & 6 Math: Use spreadsheets as part of teaching chapters on graphs and charts.

Grade 5 Social Studies: Used the Internet to research early explorers for information to prepare individual posters.

Grade 5 reading and Language: Used the thesaurus in Microsoft Word and Works in study of adjectives to expand for overused adjectives and also to explore more colorful language.

We used Fun Brain to practice learning countries and capitals of South America and to study figurative language “Painting Idioms”.

The Internet was useful in preparing a bulletin board for Black History Month. Word processing of reports is a constant presence in our work.



Rob A. Ferreira

BMRHS Physical Education/Health

DISCRETE BODY COMPOSITION TESTING FOR THE CLASSROOM

Within my Health/Wellness Nutrition Unit this year, students learned how to determine their approximate body fat composition all within the click of a mouse! Determining and measuring a healthful physical self goes beyond stepping on the bathroom scale. It involves knowing and understanding personal body composition coupled with a diet and exercise plan to achieve it.

Body fat composition testing can be achieved several ways. Hydrostatic weighing and caliper skin fold tests are some of the more known methods to name a few. For our class, girth ratios were used. Regardless, body fat testing is usually accomplished one on one with a doctor or trainer because it is a very personal matter. Consequently, measuring body fat is a double-edged sword. It is important to understand and know, yet conventional methods are not discrete friendly for a high school classroom.

Behold! Various web sites on the Internet have made it possible to bring this discrete matter into the classroom for hands on learning, yet all the while, keeping it discrete and personal. They do this by using calculators to compare ratios of body measurements as they pertain to gender, age or height.

After having the site added to the student's Health and Nutrition resource link (by John Morocco) on the BMRHS web site, students were instructed to find, at home, their specific required body measurements needed for the lab. Students were then able to use the gender appropriate calculators on the site to punch in their required measurements for an approximate body fat percentage measurement.



Linda McGill

JFK Grade 3

I have used the LCD projector in my class. I use it at the beginning of the year to introduce my students to programs we will be using in the computer lab, i.e. Microsoft Works Tools, MathBlaster, SuperSolvers Outnumbered. It is an easy way to show all the students at one time those programs they will be using on the computer in the classroom or in the lab.



Roy Liard

BMRMS Physical Education/Health

This is what I have done so far at BMR with the Internet....

Class work... In my health class I have used the Internet to research various diseases, I have used it for lessons with various health topics including fitness, consumer health, diet concerns, smoking and alcohol.

In physical education we used a calorie counter and sites about games, fitness and injury prevention.

Professional work... I have found sites to help gather more background material for my health / wellness lesson plans.

I developed the Home Page for the BMR Middle School Department of Physical Education.... (http://www.bmrsd.net/middle_school/staff_webpages.htm)

This is an excellent way to make contact with students, parents and officials. On the page are many sub pages that list class rules, curriculum, standards used, units of study and other curriculum information. There is no end to the communication that can be done on the site.

I have also listed BMR Middle School at highwired.com. I plan to use this site to upload my entire health curriculum next year. This will allow me to post my notes for parents, students and other professionals to see and use. This site would allow me to post a lesson from my home if I were say sick for the day ... an emergency lesson plan for the day.... Classes would just need access to the computer lab for the day.



Lynn Price

MES Art

As I look back on all of my years of teaching one thing seems to stand out and that is the use a computer in the Art Room. I was sure a computer would help me in my classroom. However, I had no idea of what a wonderful tool this machine would be.

Teaching Art to elementary students has always been exciting. It is fairly easy to motivate this age group. But, having really fine examples to show the children has not always been easy. Therefore, most of visual aids were made by myself. This has always been a great tool to help get the little ones started. But, there were always times that I

needed a specific example. Needless to say that just wasn't always available to me or the student. Then, one wonderful February day in 1999 my teaching style changed.

It didn't take long for me to discover the world of computer photographic sites. That was the beginning of a whole new world of teaching for me. To say the children enjoyed this new method would be an understatement. It opened a whole new world of visual motivation in my class.

I still do my demonstration for the learning skills. but we start many classes looking at a wide range of images. This has given the student real examples to help stimulate their imaginations and it has certainly done that. The work the children are producing is far beyond my expectations.

The use of the computer is very exciting to me and I know that, that feeling is felt by my students, which in turn stimulates their creativity. I have use my computer in teaching about Kachina Dolls and the 5th graders could actually to real Kachina Dolls on line. This seems to really bring the projects to life for the children. I have taught symmetry to pre-schoolers by teaching a lesson on butterflies using the computer to bring up images of real butterflies. We sit and talk about the image in front and within a short time they begin to see that whatever is on one side matches the other. I certainly don't think that my 3 and 4 year olds know what the word symmetry means but it is the beginning of learning about symmetry. I can go on and on about how the computer has helped and changed my teaching. But for me having taken the challenge to learn to use the computer has been the biggest accomplishment.

Mr.Lancisi and I have started discussing ideas for next year.



Joan DuRocher

MES Grade 5 and 6 Science

I use technology in several ways:

1. Bringing the portable projection computer into the classroom so that an entire class can look at the same thing at the same time while we discuss. For example, prior to taking students out to do cloud observations and identification, we looked at a series of cloud sites.
2. Using one of the programs on the computers in the lab that goes along with a unit of teaching. For example, I use Odell Down Under with my biome unit – ocean section

– to reinforce the concept of food chains and webs. Also I use Operation Frog when doing a short end-of-the-year mini-unit teaching about frogs and where they fit into the animal kingdom.

3. I use my classroom computer and the WeatherNet (http://www.bmrtd.net/student_resources/weather.htm) to provide information on local weather conditions – temperature, barometer, wind speed, and direction – before going out for cloud observation and identification. We then try to predict the weather.
4. I download ideas and lesson pieces that I then use with my classes. For example, for a Space unit in grade 5, we used some information and photos of asteroid Eros.
5. I prepare lessons for my students to work on in the computer lab. Each student will be given a copy of the sites for the class and exactly what they need to accomplish. Some include questions that must be answered, others merely direct the students through the site. We may not always get through everything that I have on the sheet, but I like to have more than enough for the class period to accommodate faster students.



Anne Cignoli

MES Grade 2

I applied for and received a BMR School Committee Challenge Grant to purchase AlphaSmart portable keyboards. We used these keyboards throughout the day: to collect and organize information in all subject areas, to implement process writing skills, to be used on field trips to maintain daily log of their day, and to help with fine motor skill development. These keyboards have been useful to both the gifted students in my class as well as those with occupational therapy/fine motor needs and other students identified with disabilities and weaknesses in other areas.

This project has stimulated students' visual and tactile skills, as well as peer-tutoring, language and cooperative learning opportunities. An infrared printer is used with these portable devices to enhance the children's work. We have been able to show the children how technology impacts them directly, to show students what tools can be used to accomplish a task, and to connect the curriculum to the Massachusetts Curriculum Frameworks. For all the students, they have made a difference in the way that they learn.



John Royce

AFM Grade 5 and 6 Math and Science

I have utilized technology in my Grade 6 mathematics classes in a unit using Spreadsheets and Word Processing. The students gained skill in obtaining, graphing, and performing statistical analysis on data. At the same time, they enhance their computer skills using the software and hardware available to us. Technology made the difference in the excitement it generated with the students. Student understanding, motivation, and performance were enhanced by using the computer to carry out this lesson. By combining mathematical objectives with computer literacy, the sum of the two was greater than any value both areas could offer separately.

I also sign up for and use the LCD projector in my classroom to utilize Inspiration software. We do brainstorming, idea mapping, and outlining as a group and the kids love it.

Thanks to Sandy Wynacht, I have also started using Microsoft Powerpoint with the students. They did a very good job with presentations on the Holocaust. They actually got into it very easily because of their familiarization with MS Word.



Mark Campopiano

BMRHS English Department

Here is an activity using the Internet you can complete in a block period. It involves researching, note-taking, and presenting. It was used in a grade 9 class.

1. **RESEARCHING:** When starting a new literature unit with my ninth graders, I break the class into 5 groups of 4 or 5 and assign each one a topic which serves as a starter for the new unit. For example, before reading the short stories “A Mild Attack of Locusts” by Doris Lessing and Jessamyn West’s “The Pacing Goose,” students are given topics of *locusts*, *army worms*, *the Zambezi River*, and *the lifestyle and dress of Quakers* – all aspects of the two stories.

After designating a “bus driver,” we take a field trip to the computer lab in C202. Each group situates itself so that all members are occupying a row of computers. A team manager monitors the group by assuring each person finds a different source on the group’s topic (avoiding overlapping of information) and only prints a concise article germane to the topic. When all members of each group have contributed to the search (with an article, picture, map, etc.) the class boards the “bus” and heads back to B205 for the next step in the activity: note-taking.

2. **NOTE-TAKING:** The quickest way to pull interesting facts from a source is to highlight the article. Students have been previously taught how to be selective in their highlighting. When each one has his “notes” taken, the group, led by the manager, goes through the collated material again eliminating overlapping of facts. After fifteen minutes of highlighting and condensing, each group is ready to present a brief discussion of their topic.
3. **PRESENTING:** The manager, when her group is called upon to present, will introduce her peers and direct them in the presenting of their information complete with pictures and other “artifacts” from their internet search. The presenting is informal and may spill into the next class session.



This activity uses several styles of learning and empowers the students to complete the task. The teacher is now free to facilitate, while the students gather the material to present. Students are benefiting from monitored use of the Internet – all of which starts from the BMR webpage. They are working collaboratively during their researching and note-taking, and are gaining confidence within their larger peer group when presenting to the class. The role of manager changes each time the class attends a “field trip” and having a student “driving the bus,” is a nice change of routine for everyone.



William Marrocco

BMRHS Art Department

Here is a brief account of how I have implemented the use of the computer into the Visual Arts curriculum.

First...the computer is available to students by request for use as a research and/or writing tool during their stay in the art room.

Assignment 1: We use the computer, in one particular drawing assignment, as a tool for enhancing original student artwork, i.e.: drawings...no clip-art here.

- **The student creates a line drawing.**
- **Traces the drawing with a black marker.**
- **Scans the drawing to disk.**
- **Enhances the drawing in PhotoShop.**

Assignment 2: The advantage of on-line service has served the student well in an Anthropology/Sculpture assignment in the Ceramic curriculum.

- **Students research an ancient culture in the print section of the Media Center.**
- **Students then select a sculpture from a primitive culture of their choice.**
- **Students compare their choices and substantiate their research on-line.**
- **Students replicate the chosen sculpture to scale.**
- **Students write an I-Search paper on their findings.**

Assignment 3:

- **Students photograph each other using the digital camera.**
- **Students print their image.**
- **Students grid their image.**
- **Students reproduce their image to scale in the style and/or medium of their choice.**

These are actual assignments ...they work!



Special thanks to our teachers who have shared their technology integration practices and ideas. Feel free to contact them for more specifics. Anyone wishing to share their own tips and techniques of technology integration is invited to send them along to Brad Monroe, Sandra Wynacht, Ken Lancisi or John Morocco.