Using Technology in the Elementary Classroom
By Marilyn Western

Using Multiple Intelligences to Differentiate in the Elementary Classroom

Using technology in your classroom is a great way to 'differentiate' your instruction. One way to adjust teaching and learning is to address your students' multiple intelligences.

When I am researching a new topic for students, I gather as many resources as I can to present information in a variety of ways. With computers, cameras, software, and the Internet to add to your literature books, magazines, and encyclopedias, you have a diverse assortment of resources at your fingertips! The real trick is sorting through the 'pile' and locating just the right motivator for each student.

One way of doing this is to match resources with students' Multiple Intelligence. Start out by hosting a brainstorming session with students. They will quickly lead you to their preferred learning style, and offer you a vast assortment of teaching strategy suggestions. In this issue, you'll find technology-enhanced ways to expand your science curriculum and students' study of Space. Select several activities and watch your students take off!

Verbal/Linguistic

You know these students. They are the ones we tend to gear most of the day towards – the ones who learn by listening. They have a rich vocabulary (sometimes quite surprising!), can express themselves quite well through their writing and speaking, and enjoy talking to others.

You can capture their attention with cd or Internet-based interactive books or books on tape. These are the students that will do well in the official Recorder of Ideas position when you break students into small groups. They'll thrive in your word processing software – coming up with amazing stories, poems, letters and scripts for reader's theater or movies. You may want to consider 'publishing' the best of these on one of the online kids publishing sites. Give them the microphone and let them interview others – staff, grandparents, and other students – for a nice twist in research. If you have access to a video camera, these students will shine as story tellers, interviewers, and news reporters.

In a Space unit, offer students the chance to hear and/or see short videos by way of **United Streaming videos** http://unitedstreaming.com or **Brainpop** http://brainpop.com. Give them Space **word puzzles** (or have them make up their own at http://puzzlemaker.school.discovery.com or http://www.greeneclipsesoftware.com/eclipsecrossword). Linguistic kids would love to gather information about a planet or moon at **Astronomy for Kids** http://www.astronomy.com/content/static/AstroForKids and then create a Kid Pix movie – complete with recordings of themselves reading the slides. If you have a few **Alpha Smarts,** these kids can choose a planet and make a list of what you would need to be able to spend a day there, or brainstorm a list of words describing the Sun and write a poem using those words.

Logical/Mathematical

These number crunchers are great at problem solving and reasoning things out. They love to collect and manipulate information, whether it's from a science experiment, a survey, or Internet research.

Mathematical kiddoes will gravitate toward your spreadsheet software and have it figured out in no time. They'll proudly display their charts and be able to interpret them. Their sequencing skills will be honed if you give them a digital camera and tell them to put together a step by step set of directions for doing most anything. Introduce them to several real-time data web sites and stand back! Logical learners also love using calculators.

As part of your Space unit, make sure you give students an opportunity to collect data online at **The Nine Planets for Kids** http://kids.nineplanets to make their own spreadsheets and charts comparing the diameters of planets, their gravity, temperature, distance from the sun, and/or their composition. Encourage them to use your spreadsheet software to label maps of the planets, or record the explorations of the Mars

Rovers. Encourage students to create a Kid Pix slideshow illustrating the phases of the moon or the revolution of a planet around the sun.

Visual/Spatial

These students think in images. They learn best through color, design, and patterns. You'll recognize them by the doodles in the margins of their papers.

Kidspiration was probably invented by someone with Spatial smarts. Between the organization, color-coding possibilities, and the pictures/symbols available, your visual kids will think they've gone to heaven! Visual students also love to use paint programs and multimedia software, like **PowerPoint** or **Kid Pix**.

These kids will amaze you with their ability to create short Claymation movies illustrating the rotation / revolution of all of the planets (use **Claymation** software or **PowerPoint**). Or give them a set of Legos and have them create 'moon buggies'. They can take **digital pictures** of these models, insert into word processing software, and create an advertisement based on their models, complete with explanations for their particular vehicle accessories. They can also use Kid Pix to draw and compare proposed space colonies on each planet for a great slideshow.

Musical/Rhythmic

These students are quick to pick up auditory patterns. They love to have music playing as they study and often hum or sing to themselves. They can learn multiplication tables if they can sing them, tap them out, or whistle a melody. Give Rhythmic students a pair of headphones and they'll be singing aloud to your whole class! They are the hummers - the ones you're sure will end up on stage in the latest musical.

Musical learners would benefit from websites which let them create their own music or story cds that read the words with a musical background. Give them the words to a song you sing often in class and let them illustrate in Kid Pix, then record themselves singing the song as the slideshow plays.

Play **The Planets Suite by Holst** and let students choose a way to interpret the music for each planet via Kid Pix drawings, poetry, a brainstormed list of words, or an interpretive dance. Rhythmic students will be especially adept at comparing the various songs of the planets. Introduce your rhythmic students to **StarChild** http://starchild.gsfc.nasa.gov/docs/StarChild. Level 1 features an audio version and Level 2 contains short movies. Musical students would also enjoy working on a music 'video' – locating images for a PowerPoint slideshow to accompany a piece of 'space' music.

Bodily/Kinesthetic

Although these students tend to use their whole body to learn, computers can be a natural activity for these active kids. Using technology can give them a chance to manipulate screen objects to solve problems or create a product, practice their manual dexterity, and role-play online.

Get Kinesthetic kids involved in keyboarding, taking digital pictures, using computer microscopes or **Lego Logo** sets. **AlphaSmarts** were built for Kinesthetic kids – you can take them almost anywhere and have an instant recording device.

Locate **FunBrain** games http://www.funbrain.com for your Kinesthetic learners and they'll be happy (although your may have to indicate specific educational games for them to play). **FunSchool** http://www.funschool.com also has two cool space games for upper el kids – do a search for **Space Patrol** and **Space Watch**. If you have access to any of the Lego computer sets, these are the students that will be first in line to build! Have them create a **Lego Logo** Mars Rover and program it (just like the Real Thing!). These students could also team up with the Interpersonal kids to write and perform a short skit on life about a space shuttle or space station.

Naturalist

These students love the outdoors and learn from the environment. They learn by making comparisons of natural things and enjoy sorting & classifying.

Tech toys for Naturalist learners include digital cameras for taking pictures of the world around them, computer microscopes, and handhelds with probes to collect information. They are also good with databases and Venn diagrams.

Amazing Space http://amazing-space.stsci.edu/resources/explorations/index.shtml has several galaxy games that would spark the interest of your Naturalist students. Also, **NASA Kids** http://kids.msfc.nasa.gov has a great assortment of games that involve comparisons, matching, and sequencing. Naturalist students would also be good at collecting a month's series of moon phase digital photos (or you can 'cheat' a little and find them at **StarDate** http://www.stardate.org/nightsky/moon). These students would also enjoy journaling the adventures of the NASA's current space project – for example, the Mars Rovers.

Interpersonal

These students tend to understand and care about others and their feelings. They are very empathetic in their interactions with others and get along well with everyone. Interpersonal students love to teach others, join clubs, and help others solve problems.

Webquests are the top technology choice of interpersonal learners. They also would work well with online projects (such as **Global Schoolhouse** http://www.globalschoolhouse.org/pr) and email projects (http://www.epals.com).

In your Space unit, have students work with a partner to explore **Enchanted Learning** http://www.enchantedlearning.com/subjects/astronomy and create a Venn diagram (Kidspiration or your word processing software) comparing asteroids and comets or the sun, moon, & Earth. Or get a small group of kids together to create their own **PowerPoint Jeopardy** game to share with the class. Or help students research sun and/or moon myths, then write a play to illustrate them. What fun!

Intrapersonal

Intrapersonal kids can be self-motivating and in touch with their feelings. They are the ones who can really concentrate on something, no matter what is going on around them.

These students are good at setting goals, working toward them, and assessing their finished product. They are better at working on their own than in a group. Introduce them to Kidspiration and the concept of word processed journals.

Intrapersonal students would love to organize and work on an individualized project. Let them use **Kidspiration** to 'map out' information they've researched on the moons of various planets. Or collect information from **Space Trading Cards** http://amazing-space.stsci.edu/resources/explorations/trading to put into a classroom newsletter. Have them create a fictitious 'interview' with an astronaut with interesting questions & answers. These students may also be interested in writing and publishing a book for younger students based on their planet research.

Existential

These are the heavy thinkers in your classroom. They are able to look at the big picture or big issues. They do well with examining real life situations and their consequences.

Introduce students to the **Windows to the Universe** site http://www.windows.ucar.edu and guide them to the **Solar System Formation** page (**Beginning** version which is geared toward Elementary students). This would be great background for Existential kids. There is also a nice **Exploratour** available at this site with more detailed information. Give students a choice for reporting their findings – a slideshow, written story, diagrams.

One last suggestion – use **Rubistar** http://rubistar.4teachers.org to build a rubric for each activity. Make sure students understand their goal before they start their project. It's always nice to know WHERE you are going – especially in Outer Space!

Marilyn Western is a former member of the MACUL Board of Directors, an MTIP Scholar, and a Mt. Pleasant Public Schools 5th/6th grade computer lab teacher. Outside of the classroom, she has worked as the 1998-99 MDE Technology Using Educator on Loan, an Ameritech Technology Academy Instructor, and Technology Trainer for Gratiot Isabella RESD.