

Serving the Community

Training Museum Educators to Meet Teacher Needs



The Institute of Museum and Library Services, an independent federal agency that grows and sustains a “Nation of Learners,” because lifelong learning is critical to success.

Serving the Community: Training Museum Educators to Meet Teacher Needs

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What is VAM?

Overview

With approximately 1000 members, The Virginia Association of Museums (VAM) brings together individuals and institutions of our Virginia museum community to further education and training, foster development, and to provide support for museums and museum staff.

Established in 1968, VAM gives cultural and historical sites around Virginia and the District of Columbia a forum to voice common concerns, share ideas, learn from each other, and grow stronger in the process.

Mission Statement

VAM is a non-profit, professional membership organization for museums and individuals associated with museums, primarily in Virginia and the District of Columbia, serving all museum disciplines. The Association provides education, information, resource and support services, facilitates communication among the institutions and individuals of its membership, fosters inclusiveness and serves as an advocate to governmental and other decision-making authorities on issues relating to museums.

History

Since the late 1950s Virginia's museum professionals have been getting together to share expertise, exchange exhibits, and collaborate on programs. As the group grew, it expanded its activities incorporating, for example, a Civil War Centennial Celebration, a magazine and additional meetings during the year for training and networking. Initially called The Virginia History Federation it was incorporated in 1968 to promote and support Virginia's historical museums and sites; one year later it was granted 501c (3) status by the IRS. In 1978, the organization became the Virginia History and Museums Federation to reflect a broader mission intended to include all museum disciplines. In 1980 the organization was renamed the Virginia Association of Museums to further establish its purpose in the education and support for all museums, cultural institutions and those dedicated to Virginia's museums.

Governance

VAM is governed by a twenty-member council. On this council are directors representing the six geographic regions of VAM membership (Northern Virginia, Central Virginia, Tidewater & Eastern Shore, Southwest & Blue Ridge, Mountain & Valley, and District of Columbia). Five directors represent the various disciplines of museums (Art, History, Historic Houses, Science & Nature, and Specialized Audience). Executive oversight is provided by five officers: a president, vice president for programs, vice president for planning and resources, secretary and a treasurer. There are three directors-at-large, and the past president. For a full list of current council directors, as well as current VAM staff, go to www.vamuseums.org.

What is IMLS?

Overview

The Institute provides leadership and funding for the nation's museums and libraries, resources these institutions need to fulfill their mission of becoming centers of learning for life crucial to achieving personal fulfillment, a productive workforce and an engaged citizenry.

Specifically, the Museum Services Act authorizes the Institute to support the following activities relating to museums:

- To encourage and support museums in carrying out their public service role of connecting the whole society to cultural, artistic, historic, natural, and scientific understandings that constitute our heritage;
- To encourage and support museums in carrying out their educational role, as core providers of learning and in conjunction with schools, families, and communities;
- To encourage leadership, innovation, and applications of the most current technologies and practices to enhance museum services;
- To assist, encourage, and support museums in carrying out their stewardship responsibilities to achieve the highest standards in conservation and care of the cultural historic, natural, and scientific heritage of the United States to benefit future generations;
- To assist, encourage, and support museums in achieving the highest standards of management and service to the public, and to ease the financial burden borne by museums as a result of their increasing use by the public; and
- To support resource sharing and partnerships among museums, libraries, schools, and other community organizations.

Mission

The Institute of Museum and Library Services is the primary source of federal support for the nation's 122,000 libraries and 17,500 museums. Its mission is to grow and sustain a "Nation of Learners" because life-long learning is essential to a democratic society and individual success. Through its grant making, convenings, research, and publications, the Institute empowers museums and libraries nationwide to provide leadership and services to enhance learning in families and communities, sustain cultural heritage, build twenty-first-century skills, and increase civic participation. For more information about the Institute of Museum and Library Services, visit www.imls.gov.

Additionally, the IMLS has some valuable resources on the subject of museum / school collaboration that you may want to explore. Descriptions and links to these follow (they can also be found in the web resources section at the end of this CD ROM):

- *Charting the Landscape, Mapping New Paths: Museums, Libraries, and K-12 Learning* (August 2004) www.imls.gov/pdf/Charting_the_Landscape.pdf
Description: On August 30-31, 2004 the Institute convened a conference and workshop examining the intersections of museums, libraries, and K-12 education. The resulting report captures the key issues that emerged at the workshop, highlights seminal project and partnership examples, and provides some common language around a vision for how museum/school/library collaborations can contribute to a learning society.
- *True Needs, True Partners*, 2002 www.imls.gov/pdf/m-ssurvey.pdf
Description: In its second study of museum-school relationships, IMLS found that the nation's museums commit more than a billion dollars and more than 18 million instructional hours every year to K-12 educational programs.
- *True Needs, True Partners* (1998) www.imls.gov/pdf/pubtntb.pdf
Description: A how-to guide for successful museum-school partnerships.

How did this project come about?

Overview

As in many other states, the introduction of Standards of Learning (SOL) requirements for Virginia's K-12 public schools has changed the relationship between schools and museums. Museum field trips have become more difficult for teachers to justify as they encounter increased pressure to concentrate on in-class instruction to address the SOLs.

With educational tours and field trips increasingly being eliminated from school system budgets, museums find they must deliver high quality programs that correlate with state and national standards to justify their value to area schools and continue to share their offerings with student groups. Museums must convince school systems that the more experiential learning process offered by a museum visit is a viable alternative to classroom instruction in meeting and exceeding state standards. Museums adopting this approach have seen increases in this important audience. However, many still struggle in this effort. We hope that this training tool will assist museums throughout Virginia interested in creating, revising, or improving their educational programming to better meet the instructional needs of teachers.

Background

For several years, VAM has seen requests for assistance in creating museum programs that address the SOLs appearing on workshop and conference evaluations and member surveys. VAM has held workshops addressing museum education and the SOLs in several locations (Staunton in June 2005, Leesburg in February 2006, and Richmond in February 2007) in an effort to address this need.

Although these sessions are helpful as an introduction to the topic, the reach and depth is not broad enough. We find the transfer of theory to practice has been a stumbling block for museum staff. These staff members often do not have academic training in education, let alone classroom teaching experience. Past mentorship training programs such as "*Project Mentor*" (1996-7) and "*Meeting the Needs of Rural Museums*" (2003-4) previously funded by IMLS have convinced us that working with a museum one-on-one has produced the greatest long-term benefit.

Therefore, VAM designed a pilot program offering technical assistance to Virginia museums on creating high quality, up-to-date educational programs that correlate the museums' offerings with Virginia's SOLs for grades K-12. VAM set aside part of its operational budget for an educational consultant to meet, consult with, and provide direct assistance to each of six museums for eight hours apiece. When an initial email was sent to members offering this opportunity, the response was overwhelming. Clearly, we had confirmed an area of need among Virginia's museums.

Overall, the pilot museums were very enthusiastic about having a centralized source of assistance with educational programming, particularly for smaller institutions without the staff support to create high quality programs linking to the SOLs. All of the museums that participated in the pilot indicated that they would be eager to see VAM's support for museum education programming be expanded.

CD ROM Training Tool

VAM is a firm believer in the value of providing customized, one-on-one consultations with individual museums. However, it would be difficult for us to reach everyone who needs assistance. Therefore, we conducted another survey and found high level of receptiveness among our members (88.2%) to receiving technical assistance in the form of both educational consultations and training tools. Small museums and historic houses, rural museums, and new museums are particularly eager for such guidance.

So, we at VAM decided the best way to address the need is to create a training mechanism which could stand in for the consultant and walk a museum educator through the process of creating or revising a museum program that addresses the SOLs. We successfully applied for a grant from the IMLS to accomplish the task of creating such a mechanism, and this CD-ROM is the result. It

is being distributed to museums throughout Virginia, made available for use by others as part of VAM's Resource Library, and to other museum service organizations throughout the country.

Background: The History of the Standards Movement The National Standards Movement

Virginia's movement towards statewide Standards of Learning occurred within the context of a larger, national standards movement begun in the early 1990's with the Goals 2000 program initiated by the U.S. Department of Education. This movement came in response to the Reagan administration's report entitled *A Nation at Risk: The Imperative for Educational Reform* – April, 1983. The following excerpt from the report identifies the "risk."

*"History is not kind to idlers. The time is long past when Americans' destiny was assured simply by an abundance of natural resources and inexhaustible human enthusiasm, and by our relative isolation from the malignant problems of older civilizations. The world is indeed one global village. We live among determined, well-educated, and strongly motivated competitors. We compete with them for international standing and markets, not only with products but also with the ideas of our laboratories and neighborhood workshops. America's position in the world may once have been reasonably secure with only a few exceptionally well-trained men and women. **It is no longer.**"*
- from *A Nation at Risk: The Imperative for Educational Reform* - April, 1983.

Catch phrases (Goals 2000, No Child Left Behind) attached to the national movement have changed over the years. However, the spirit of the standards movement has remained the same, born from the recognition that we need an educated workforce to remain globally competitive.

The Standards Movement in Virginia

As the nation began creating goals and standards for education, so did the states. Virginia's Standards of Learning program developed during the mid-1990's. The first SOL tests were administered to students in Virginia in 1998.

What are the Standards of Learning, and why did Virginia create these standards?

Standards of Learning set expectations for teaching and learning. They are statements of knowledge and skills that every child is expected to learn and use to solve day-to-day problems and become a productive citizen. The Virginia standards were developed with the assistance of thousands of parents, teachers, business leaders, college professors, and other educators.

While there are standards in many areas, the core standards describe what students are expected to know and accomplish in the following subjects:

- English
- math
- science
- history & social science (including geography, economics, and civics)
- computer technology

The SOLs are not intended to be an entire curriculum. They are intended to help teachers choose content and skills appropriate for their students. Teachers are encouraged to go beyond the standards in their instructional program and decide which teaching methods best serve their students.

Accountability & Consistency

The SOL program gives us a standard measure by which to gauge the progress of districts, schools, teachers, and students throughout Virginia. Since the first year of SOL testing in 1998, student achievement has increased in all subject areas, including double-digit increases on 20 of the 22 assessments administered during all eight years. These increases are reflected in an update on the Virginia Standards of Learning, *Raising Student Achievement*.

www.pen.k12.va.us/VDOE/VA_Board/RaiseStuAchieve.pdf

Additionally, standards ensure consistency in the curricula offered by public schools throughout the state. If a student moves from Northern Virginia to Hampton Roads, his or her new teacher

has the assurance that the student has learned certain skills and knowledge during the school years spent in another part of the state. A student, teacher, or parent can review the current SOLs at any time and find out what curricular milestones the student should have mastered, and what subjects and skills will be introduced at various levels.

How are the SOLs organized?

The organization of the SOLs is fairly standard (no pun intended). Each has a topic, SOL number, and an objective with descriptors. The objective is usually phrased with the wording "*The student will...*" The descriptors elaborate on the objective, specifying "*key concepts*" that **demonstrate** mastery of the standard. For example, science 4.2 is the fourth grade, second science SOL:

Force, Motion, and Energy

4.2 The student will investigate and understand characteristics and interaction of moving objects. Key concepts include

- a.) *motion is described by an object's direction and speed;*
- b.) *forces cause changes in motion;*
- c.) *friction is a force that opposes motion; and*
- d.) *moving objects have kinetic energy.*

You can find current Standards of Learning on the Virginia Department of Education's (DOE) website at www.pen.k12.va.us. To go directly to SOL listings organized by subject or grade level, go to www.pen.k12.va.us/VDOE/Superintendent/Sols/home.shtml. Once there, you can view all the SOLs that correspond to your program at the appropriate level for your target audience.

For example, if you are a science museum and are targeting a fourth grade audience, you simply select "science > grade four", and all of the fourth grade science standards will be displayed. While you are free to download the standards in Word (.doc) or Adobe (.pdf) format from the DOE website, it is wise to use the site itself when researching SOL information, as SOL numbers and descriptions do, from time to time, change and get updated. For example, history and social sciences standards are scheduled to be revised in 2008 (the site also includes a calendar of proposed changes to the SOLs). Using the site will ensure that you are viewing the most up-to-date standards as they are posted by the state. Additionally, you can review SOL resources (which include sample lesson plans, released test items, and curriculum frameworks) at www.pen.k12.va.us/VDOE/Instruction/sol.html.

Please note that while most of the SOLs are numbered and those numbers correspond to grade level (i.e., English 3.1 is the first SOL listed for third grade; math 5.4 is the fourth SOL listed for fifth grade), history and social sciences is an exception. There, school districts are given some flexibility beginning at grade four. For example, some systems teach Virginia Studies as a two-year program. Some teach Virginia Studies in fourth grade, followed by United States History, while others begin with U.S. History and move on to Virginia Studies in fifth grade. This is why these standards aren't identified by grade-level, but rather by content-based abbreviations:

- VS: Virginia Studies
- USI: United States History to 1877
- USII: United States History: 1877 to the Present
- CE: Civics and Economics
- WHI: World History and Geography to 1500 A.D.
- WHII: World History and Geography: 1500 A.D. to the Present
- WG: World Geography
- VUS: Virginia and United States History
- GOVT: Virginia and United States Government

"The History and Social Science Standards of Learning do not prescribe the grade level at which the standards must be taught or a scope and sequence within a grade level. The Board of Education recognizes that local divisions will adopt a K-12 instructional sequence that best serves their students. The design of the Standards of Learning assessment program,

however, requires that all Virginia school divisions prepare students to demonstrate achievement of the standards for elementary and middle school history and social science by the grade levels tested. The high school end-of-course Standards of Learning tests, for which students may earn verified units of credit, are administered in a locally determined sequence."

- from the preface to *History and Social Science Standards of Learning for Virginia Public Schools*, March 2001

Process vs. content standards

Certain skills taught in school are *process* skills. For example, learning to write is to learn a process. Some SOLs reflect students' development of core process skills throughout the school years. Other SOLs reflect mastery of academic *content*. These include topics such as world geography or ancient China, where standards are based upon students' mastery of certain knowledge. For both process and content standards, the grade level determines the level of expected mastery and the level of complexity at which material is presented.

While content skills can be more easily and obviously tied to a museum program (as it is usually focused on a content area and imparts knowledge), it is important to consider what process skills the students in your audience are mastering. This is important to ensure that your program is developmentally appropriate (you would never ask kindergarteners to write an essay or middle school students to trace words). It is also important to ensure that your program, while imparting content knowledge, supports its educational mission and that of the school system by encouraging mastery of important process skills.

These process skills are easily tied in to any museum program. Whether it involves asking the children to read a non-fiction description of a log building from colonial times, incorporating a journaling project, or asking students to make scientific observations and recording data, process skills are an important part of any lesson plan (see *the Lesson Planning section, within the chapter entitled Getting Focused on Educational Programming*).

An example of an SOL skill from sixth grade science that is *process*-based:

Scientific Investigation, Reasoning, and Logic

6.1 The student will plan and conduct investigations in which

- a.) observations are made involving fine discrimination between similar objects and organisms;
- b.) a classification system is developed based on multiple attributes;
- c.) precise and approximate measurements are recorded;
- d.) scale models are used to estimate distance, volume, and quantity;
- e.) hypotheses are stated in ways that identify the independent (manipulated) and dependent (responding) variables;
- f.) a method is devised to test the validity of predictions and inferences;
- g.) one variable is manipulated over time, using many repeated trials;
- h.) data are collected, recorded, analyzed, and reported using appropriate metric measurements;
- i.) data are organized & communicated through graphical representation (graphs, charts, diagrams);
- j.) models are designed to explain a sequence; and
- k.) an understanding of the nature of science is developed and reinforced.

An example of an SOL skill from sixth grade science that is *content*-based:

Force, Motion, and Energy

6.2 The student will investigate and understand basic sources of energy, their origins, transformations, and uses. Key concepts include

- a.) potential and kinetic energy;
- b.) the role of the sun in the formation of most energy sources on Earth;
- c.) nonrenewable energy sources (fossil fuels including petroleum, natural gas, and coal);
- d.) renewable energy sources (wood, wind, hydro, geothermal, tidal, and solar); and
- e.) energy transformations (heat/light to mechanical, chemical, and electrical energy).

An example of an SOL skill from Virginia studies (usually fourth grade) that is *process-based*:

Skills

VS.1 *The student will develop skills for historical & geographical analysis including the ability to*

- a.) *identify & interpret artifacts and primary & secondary source documents to understand events in history;*
- b.) *determine cause and effect relationships;*
- c.) *compare and contrast historical events;*
- d.) *draw conclusions and make generalizations;*
- e.) *make connections between past and present;*
- f.) *sequence events in Virginia history;*
- g.) *interpret ideas and events from different historical perspectives;*
- h.) *evaluate and discuss issues orally and in writing;*
- i.) *analyze and interpret maps to explain relationships among landforms, water features, climatic characteristics, and historical events.*

An example of an SOL skill from Virginia studies (usually fourth grade) that is *content-based*:

Colonization and Conflict: 1607 through the American Revolution

VS.3 *The student will demonstrate knowledge of the first permanent English settlement in America by*

- a.) *explaining the reasons for English colonization;*
- b.) *describing how geography influenced the decision to settle at Jamestown;*
- c.) *identifying the importance of the charters of the Virginia Company of London in establishing the Jamestown settlement;*
- d.) *identifying the importance of the Virginia Assembly (1619) as the first representative legislative body in English America;*
- e.) *identifying the importance of the arrival of Africans and women to the Jamestown settlement;*
- f.) *describing the hardships faced by settlers at Jamestown and the changes that took place to ensure survival;*
- g.) *describing the interactions between the English settlers and the Powhatan people, including the contributions of the Powhatan people to the survival of the settlers.*

*Note: In most cases, science and social studies SOLs that end in “.1” are process-based standards.

Museum programs that tap into appropriate process-based SOLs, and publicize those SOLs in all promotional program materials, have a great advantage when it comes to engaging the public school audience.

The Spiral Curriculum & Curricular Strands

“A curriculum as it develops should revisit ... basic ideas repeatedly, building upon them until the student has grasped the full formal apparatus that goes with them”

– from Jerome Bruner’s 1960 book The Process of Education

The idea illustrated above is widely accepted educational theory. As you familiarize yourself with the SOLs, you will find that they revisit the same content topics at increasingly complex levels throughout the school years.

You will see that SOLs are organized into *strands* that run through the K-12 curriculum. Use this information to determine what grade levels focus on your program topic, and what level of complexity is appropriate for students at different grade levels. This can be helpful for museum educators who do not have a teaching background.

For example, “*Force, Motion, and Energy*” is a strand within the science standards. This strand focuses on student understanding of what force, motion, and energy are and how the concepts are connected. The major topics developed in this strand include magnetism, types of motion, simple and compound machines, and energy forms and transformations, especially electricity,

sound, and light. This strand includes science standards K.3, 1.2, 2.2, 3.2, 4.2, 4.3, 5.2, 5.3, 6.2, and 6.3.

In summary, knowledge of how educational content is organized in a 'spiral' fashion and into strands within the SOL framework can assist the museum educator in an attempt to create developmentally appropriate programs on a single topic for a variety of grade levels.

Understanding School Culture

Who is my museum's audience?

As you consider creating an educational program that is targeted to a school audience, take the following into consideration: your institution's size, regional demographics, surrounding schools and school systems, and competition from other museums. These are factors that you cannot control but that may play a role in what kind of programming you choose to develop. For example, if your building can only accommodate 50 people at one time, and you find out that your county's school system only allows grade-level-wide field trips, you either will need to find another audience or find a way around the space restrictions (i.e., by using outdoor exhibit space and rotating groups in and out, or partnering with a nearby site to create a collaborative program where groups will be divided between the sites). Additionally, if you are a botanical garden but are located near a science center with a strong program on *parts of a plant*, you may want to focus on another niche, such as *weather and the planting season*. You want to specialize in an area that interests your audience and addresses a core SOL related to your museum's mission, but you also want to create a unique program that teachers seek out because it cannot be replicated elsewhere.

Different school districts have different procedures regarding their off-site programs. For example, in researching this, we found one district that keeps a 'master list' of pre-approved field trip sites. Teachers are given this list and must choose a site from the list. In another district, budget limitations allow teachers to choose field trips from only within a certain mileage radius of the school. Many school districts no longer allow individual class field trips but opt instead for a more economically efficient system of visiting sites in grade level groups, which many times average 125 students or more. Yet another district had a single point person designated to schedule all off-site trips for the entire district. This process was completed early in the school year. As you can see, it is critical for museums attempting to work with schools to learn local nuances to plan programs accordingly. For effective program planning, invest some time and energy learning your school system's structure and how it functions.

How can I build relationships within the school system I am targeting?

Learn the bureaucratic hierarchy of the school system or independent school you are targeting. Each school district functions differently, depending on the system's history and 'culture' as well as the needs of the population it serves. While some systems have multiple layers of bureaucracy in their central offices, with curriculum specialists serving various content areas and grade levels, others may be comparatively streamlined, with few layers of administration between the principal and the superintendent of schools.

To contact the school system you are targeting, access Virginia Department of Education's Educational Directory online at <http://www.pen.k12.va.us/VDOE/dbpubs/doedir/>. The time investment made in researching and building contacts can bear fruit in the form of a mutually beneficial, long-term relationship.

Once you determine how your district's leadership functions, these folks can help you identify instructional needs of the school system. A program that directly addresses a school system's needs is a win-win for the system and the museum. For example, we found both large (Virginia Living Museum) and small (Hampton History Museum) sites that regularly check with their district about science SOL test scores during their program-planning phase. This allows the sites to gauge where the district is focusing efforts on improvement. They can then plan a program that directly supports those efforts. This guarantees a willing audience, fulfills a community need, and meets the educational mandate of the school system and the museum's mission.

The following are examples of ways to engage and build relationships with educators:

- Hold a Teacher Open House (invite district administrators as well)
- Host a lunch and discussion on your site's educational mission for key educators / administrators in your area
- Give free passes for educators or have a "teacher discount day" at your site

- Pick up the phone, log on to the internet, or visit the district's central office with program materials
- Mail promotional materials to key curriculum specialists in your area
- Host teacher seminars or workshops (go online to www.vamuseums.org to view information about existing teacher seminars around the state)
- Be an exhibitor at teacher meetings and conferences
- Distribute 'freebies!' Teachers love free educational materials. These can even be made available online as .pdf files that teachers can download. This need not be an expensive endeavor.

Overall, how you reach out to area educators is not as important as simply taking an active role and reaching out in whatever ways you can.

Finally, consider alternatives. Contact independent schools and home school associations in your area, and build relationships there, too. Depending on the capacity and needs of your site, as well as other considerations, these audiences may be preferable to the public school system. You may find that an area private school gives teachers more flexibility and freedom to plan their own off-site experiences, or that a group of home schooling parents are willing to visit regularly throughout the school year to provide their children with an extended, in-depth experience. Both of these alternative audiences are also likely to visit in smaller groups, which may be crucial for some sites with limited space and staffing.

The 'packaging' of your educational program for these alternative audiences might take a slightly different form, based upon the fact that they place less emphasis on standards. However, these groups are aware of the SOLs and referring to the fact that your program supports Virginia's SOLs always adds credibility to your program materials. Again, any quality educational program is going to support the SOLs. Striving to support the state standards and striving to create quality educational programming are one-and-the-same.

To access private school information, visit the Virginia Council for Private Education at www.vcpe.org. To network among home schooling families, visit the Organization of Virginia Homeschoolers at www.vahomeschoolers.org.

Getting Focused on Educational Programming

What kinds of programs fit within our mission?

It is important to review and consider your museum's mission when planning your education programs. Your program should reflect the core of your organization's purpose. A program that does not reflect your museum's mission statement will have little relevance, and will mislead your audience as to what your mission really entails. This is particularly crucial if you are seeking a new audience that is not currently familiar with your site and what it has to offer.

What are the needs of area school systems?

When you contact a school or school system, find out their instructional needs. Perhaps the School Improvement Team at the school you are targeting has designated a curricular area to be an area of school-wide focus for the upcoming year. Or perhaps your local school district is striving to improve SOL scores in a particular area or grade level. Find out what instructional gaps your educational programming may help fill. This not only helps you focus in on an area of need and create a program that is bound to have an enthusiastic audience who will visit, but it demonstrates to area educators that you are committed to working as partners with them in the interest of quality education for the children in your community. All of this will help as you focus on the specific content and grade level(s) your program will target.

What extraneous issues need to be considered in program planning?

We have already mentioned issues to consider that lie outside your realm of control, such as regional demographics, competition from other sites, and site capacity. In addition to those, consider site-specific factors that may affect your programming choices. If you have a staff

member with experience as an upper elementary teacher, for example, you may choose to 'go with what you know' as far as identifying your school audience. A program that is planned carefully by taking into consideration factors such as the museum mission statement, area instructional needs, and strengths and limitations within the site will likely bear fruit as a strong and enduring offering for the community your museum serves.

How do we write lesson plans to guide our program?

When teachers approach a lesson, they sometimes ask themselves these three questions:

Where are the students going?

How are they going to get there?

How will I know when they have arrived?

This is a simple way to focus in on a goal or learning objective. When creating a lesson plan, keep in mind that the purpose of the plan is to facilitate the delivery of your program. It is not an exercise in and of itself. While some museum sites create a simple program outline to guide staff educators, other sites actually script their programs, so as to create consistency throughout and have complete control over content.

Regardless of what approach you wish to take, your lesson plan must begin with a clearly defined objective. If you have followed the advice in this training tool, you have probably already focused in on a curricular area, a state standard, and a core audience for your program. You are more than halfway to your learning objective! Simply stated, a learning objective is a measurable learning outcome. Many objectives are written in the following format: "*The student will demonstrate knowledge of*" While your learning objective must be measurable (after all, you need to know whether you have met your objective at the end of your program), your methods of evaluation will likely be more informal than that which the teacher uses in the classroom. We will discuss this further when we talk about assessment.

Once your objective is defined, think about the nitty gritty of how you will meet your objective with your students in the time you have allotted. The time factor is of particular importance to a museum program because the students cannot simply "finish up tomorrow." We will discuss pacing in more detail in another section, but throughout lesson planning, it should be kept in mind.

Most lesson plans will list materials needed after the stated objective. Then the plan moves on to the introduction (sometimes referred to as the *motivation*, or *anticipatory set*). No matter what you call it, this is the point in your lesson at which you engage your audience and grab their attention. It is also the point at which you communicate your objective to your audience in a way that will pique their curiosity. This launching point for your lesson is also a good time for you to establish expectations for student behavior.

After the introduction, your lesson plan will continue with a list of procedures, or activities, that students will complete in order to meet the stated objective. Think about including a variety of activities that allow students to move about, work independently and in groups, and to engage in hands-on discovery. You may also want to note on your lesson plan how much time you think each step in the procedure might take. Since time will be of the essence, be sure that each activity drives your students toward mastery of your stated objective. Maintaining a focus on that objective is a good way to focus on the 'meat' of your lesson.

Once you have planned your student activities, you should include two more components. One is an assessment or evaluation of learning objectives. The other is a closing segment. Unlike what might occur in a traditional classroom, the evaluation need not be a formal assessment and children need not complete a pencil and paper activity to satisfy this requirement. This is simply the juncture of your lesson where you gauge student learning. You may choose to do a quick oral 'quiz' to review what you have covered. You may choose to finish up with a short activity where

students answer questions in game show format. Or you may choose to go around the room and ask each child to state one thing they learned during their visit to your site. Regardless of how you choose to do it, this component of the lesson will help you wrap up your program and give you an idea of whether or not you met your objective.

Finally, what you have been waiting for. *Closure*. Yes, the last component in a lesson plan is actually called closure. This is simply the stage at which you think about how you are going to finish up. Just as the introduction or motivation leaves a lasting impression on students, so does the closing segment. End the lesson with a thoughtful question for students to think about as they leave your site, a final fascinating fact to consider, or a catchy rhyme to help them remember something about your lesson or your site. However you choose to end your lesson, think of it as another 'launching point.' You have imparted some knowledge and hopefully encouraged your students to find out even more. Now you are done and you are sending them back into their world armed with this wonderful new experience.

There are many lesson planning formats available to you. Each educator needs to find the format and style that helps him or her plan effectively. The following lesson planning template is designed to assist you in your program planning. Feel free to use it or not, or modify it to suit your particular needs.

For more information on lesson planning, explore the following resources:

- Education World Magazine's Lesson Planning Center at www.education-world.com/a_lesson/
- Powerful Lesson Planning: Every Teachers Guide to Effective Instruction, by Janice Skowron (2006)
- The Educator's Reference Desk - Write a Lesson Plan Guide at www.eduref.org/Virtual/Lessons/Guide.shtml
- The National Parks Service has a program entitled *Teaching with Historic Places*. This program offers ready-made lesson plans as well as a guide for developing lesson plans. This format may be helpful to those in historic houses. www.cr.nps.gov/nr/twhp/guide.htm

Creating & Packaging the Program for Teachers

At the pre-reservation stage, how will we market our program?

Create a brochure, flyer, or another marketing tool to advertise your program to teachers. Be sure to include a clear program title that directly reflects the program's main thrust or purpose. Include pictures or quotes that demonstrate the program's successes. Additionally, if your museum has a web site, put as much information as you can online. This reaches a broader audience and saves on printing costs. Here are three different examples:

- The Maier Gallery of Art at Randolph Macon Women's College has all their "Art and SOL" program information online: <http://maiermuseum.randolphcollege.edu/default.asp>
- The Virginia Living Museum has a 'Teacher's Corner' section on their website: www.thevlm.org/teacherscorner/index.php
- The Frontier Culture Museum has a simple and straightforward listing of all their student programs online: <http://frontier.vipnet.org/educationprogram.htm>

How do we write a good program description?

A good program description is concise, clear, and focuses on specific objectives that students will meet during the program. Be sure to include program objectives that are linked to the SOLs, and describe what activities the children will be engaged in during the program. It is helpful to review the wording of the core SOL that your program supports and use wording from that standard in your program description.

How do we correlate our program to state standards?

Using the Virginia Department of Education website, locate and identify the SOL that your program most clearly and directly supports. Communicate that primary SOL correlation in all your program materials and consider that core SOL topic when you name your program. **Avoid cutesy titles that may leave educators guessing as to your program's purpose.**

Once you have identified the core SOL, look for cross curricular ties by considering your whole program and all the activities within it. Identify the additional standards your program meets, and communicate these correlations in all of your program materials. Remember, the SOLs include both process skills and content standards.

The following example is purely hypothetical, but could be accomplished easily:

"Tools & Tobacco: Colonial Farms in Virginia" (for 4th graders)

Program Description: Students will visit a reconstructed 17th century farm where living history interpreters will demonstrate and involve the children in blacksmithing, weaving, and harvesting. Students will understand the importance of agriculture in Virginia's economy and the role of slavery, as well as the role of money, barter, and credit for a typical Virginia farmer.

VS.4 (the program's core SOL): *The student will demonstrate knowledge of life in the Virginia colony by:*

- *explaining the importance of agriculture and its influence on the institution of slavery;*
- *describing how European (English, Scotch-Irish, German) immigrants, Africans, and American Indians (First Americans) influenced the cultural landscape and changed the relationship between the Virginia colony and England;*
- *explaining how geography influenced the relocation of Virginia's capital from Jamestown to Williamsburg to Richmond;*
- *describing how money, barter, and credit were used.*

(Note: the program description borrows from the wording of the core SOL)

Cross-Curricular Correlations: math: 4.5, 4.6; science: 4.1, 4.4, 4.5, 4.8; English: 4.1, 4.3, 4.5.

In this hypothetical educational program, children will be asking and answering questions (English 4.1), and reading information about the farm (English 4.3, 4.5). In learning about the role of

money and barter in a farmer's life, children will perform some basic mathematics and estimation (mathematics 4.5 & 4.6). In touring the farm and observing the living history exhibits that include crops typical of a colonial farm, students will be making observations (science 4.1), learning about Virginia's natural resources (science 4.8), and studying plant life (science 4.4 & 4.5).

(Note: a museum program already includes components like those above; when the SOLs are correlated and the program is marketed specifically with the needs of Virginia schools in mind, its relevance becomes obvious and measurable through the SOLs.)

How do we use VAM's online SOL directory?

Don't forget to utilize VAM's SOL directory online at www.vamuseums.org. The Virginia Association of Museums offers as a member benefit access to the online directory. This database was created in 2001 to allow museums to post educational programs that support Virginia's standards, and to aid teachers in finding field trips that correspond with their needs. This is the only directory of its kind in the state.

The directory allows members to post museum information, educational program information, and SOL correlations. This information is searchable and viewable by anyone looking for an education program that supports the SOLs (teachers, principals, home school associations, etc.).

To utilize the directory to post and market your programs to teachers, log on to our website at www.vamuseums.org. Select "Teachers" from our button bar menu, then "SOL Directory." From there, you can add, edit, or delete your museum's SOL programs, as long as you are logged in as a member. This is an easy way to market your program to a broad audience.

How do we create a resource packet?

Once you have planned a program that supports the Virginia SOLs and developed some materials to advertise your program, it is time to think about what resources teachers and students need before visiting your site.

First and foremost, provide some background information on your site and its mission for the teachers and chaperones. Give the teachers an idea of what types of activities the children will be involved with. Emphasize any logistical considerations that teachers need to be aware of. For example, if your site does not have indoor facilities for the students to eat lunch (as many do not), be sure that teachers know that alternate plans need to be made in case of bad weather. You may want students to arrive at your site wearing name tags. Make your expectations of the teachers' and chaperones' roles clear in your resource packet. While some sites require that chaperones and teachers lead the students in completing certain activities, others allow visiting adults to take a less active role, simply assisting during transitions and 'down' time when students are not involved in activities. Additionally, reiterate information about the program in your teacher packet, including SOL information.

Many sites like to include a program evaluation in a teacher resource packet. Others choose to hand evaluations to teachers while they are onsite and collect them before the teachers leave. Either way, program evaluations can provide you with valuable information to help you improve your program, as well as great anecdotal feedback that you can use to further market your program to others.

When you create a teacher evaluation, ask questions about all facets of your program, including the print materials teachers received, the reservation process, the organization and knowledge of your staff, and the quality of the student program at the site. If you provide teachers with a packet of materials to use in their classrooms prior to the visit, ask which parts of the packet were particularly useful or not useful. If you are spending money on print materials, you want to ensure that they are being utilized. You may want to use a rating system for your evaluation so it can be filled out quickly and easily. While you want teacher comments, creating an 'essay style' evaluation may result in getting very few returned sheets from teachers. To encourage teachers

to return these evaluations, some sites collect them at the end of the field trip while the teacher is still on site. Others include a self addressed stamped envelope along with the evaluation so that teachers can easily drop the completed form in the mail. The following template can be customized for use by your museum, or you may wish to use it for reference.

In your pre-visit resource packet, you may want to consider including some student resources along with the teacher resources. Students who come to a site with some prior knowledge of the site and the subject matter have a heightened interest and are more motivated to find out about the topic at hand. Along with some content background (written at an appropriate reading level), a few pre-visit activities may better prepare the group for their visit. These need not be lengthy or complex. For example, you could ask students to create a simple K-W-L chart (recording what they already Know about a subject, what they Want to know, and then (after the visit) what they have Learned). The chart can get students talking about the topic at hand and thinking about their prior knowledge as well as what they are curious to learn about. A group that arrives with questions will give your program an interactive spark from the very beginning.

In addition to pre-visit activities, you may want to think about whether you'd like to provide your school groups with activities to complete after they visit. While this is certainly not a prerequisite for a successful program, it may extend student learning and allow the teacher to follow up in class and 'pull it all together,' putting the experience in context for the children. Post-visit activities can be structured to assess student mastery of objectives from the field trip, or may be an opportunity for the children to reflect on the experience in writing or through art work. There is a plethora of free activity ideas available on the internet. For starters, check out The Educator's Reference Desk at www.eduref.org.

Once the Kids are On-Site: Instructional Techniques

How can our museum staff prepare for the student audience?

Being ready when the kids come through the door is obviously a key component of a successful education program. For starters, there are some organizational items you may want to consider. If the children will need name tags, or will be working in small groups, for example, you may want to have the teacher bring the children with name tags already on, and ask the teacher to divide the children into groups that will work well together.

Once the children are gathered together on site, a short welcome and summary of the site is in order. Even if you do not choose to script the entire program for your educators, you may want to have a standard welcome and introduction that all the educators use. Taking time to write out this component of your program allows you time to think about what you really need to communicate to the teachers and the group as soon as they are on site (such as historical information about the site, and information about program times and lengths). You may want to consider your museum's procedures for small emergencies, such as when a student gets separated from a group. If there is a central meeting place or a certain procedure for students to follow, let them know upfront. (For example, *"Always stay with your group. But if you get separated, look for someone wearing a blue museum shirt like mine. Tell them the name of your school, and they will help you find your group."*)

If the group is touring your site prior to an educational program, you may want to consider giving the teachers and chaperones some tips on things to see and do while they are on their own. The museum should have instructional opportunities for those students who are not in class at any given time. These can be focus guides for students to complete as they view the exhibits, hands-on stations, or live interpreter interaction. This not only enhances the educational value of the visit, it serves an important "crowd control" function.

When the group has gathered for a program, begin by letting the kids know what to expect, as well as what you expect from them. If you want children to raise hands to be called on, let them know. If you use a certain signal to call for quiet or to bring the group back together, let them know. This is also a good time to be sure everyone knows where the restrooms and water fountains are located so that you don't find yourself giving directions in the middle of the program.

How do developmental stages play a role?

With young audiences, it is important for the adult presenter or educator to have a basic understanding of child development. While each child is unique in his or her abilities and intellectual development, there are certain 'universal' stages that children move through as they grow. For example, young children (under the age of about 9) interpret things literally. Starting off with a 'tongue and cheek' joke would fall flat with this age group (their brand of humor tends to be a bit more slapstick). Young children also have very firm ideas about what is fair, and tend to see things in 'black and white' terms, so to speak. Motor skills vary with individual children but are also developmental. Asking kindergarteners to create an intricately cut origami project is not practical. Fine motor skills increase with age. As you choose hands-on activities, consider this component of child development so that you do not frustrate, or bore, your audience.

Presenters need to be cognizant of children's limited vocabulary. Vocabulary used to good effect with second graders won't work so well with fourth graders and sixth graders will find it condescending. Young children can grasp big words but may need some explanation and help with pronunciation. A few new vocabulary words in a session are plenty if you want the children to grasp the meaning and essence of those words. So carefully choose what big words you incorporate in your program, and try to simplify your language so children can understand the concepts you are discussing without being distracted by unnecessarily difficult words. At the same time, it is important not to 'talk down' to a young audience.

Vocabulary books, such as the title below, can help you craft your language. They include lists of commonly used words and indicate the appropriate grade/reading level for each.

EDL Core Vocabularies In Reading, Mathematics, Science, & Social Studies by Stanford E. Taylor (1997)

The Virginia Department of Education has taken developmental stages into account in the creation of the SOLs. When you are visiting the DOE website at www.pen.k12.va.us/VDOE/CurriculumFramework/, you will find a *Curricular Framework* for each subject area. These frameworks identify what overall skills children are working on in various grade levels. If you are not familiar with the abilities of your target audience, it would be helpful to review these curricular frameworks to get an idea of their overall learning goals. For example, in history and social sciences, you can find *Essential Understandings*, *Essential Questions*, *Essential Knowledge*, and *Essential Skills* tied to each SOL at each level.

In English (which pertains to students' ability to communicate orally and through reading and writing), each curricular strand includes an overview of what children are able to do at a given grade level. For example, in the reading strand, the following excerpts were taken from the DOE's curricular framework:

At the kindergarten level, students will ... learn the concepts of print, basic phonetic principles, comprehension of stories, and letter identification skills through systematic, direct instruction, individual and small group activities, and time spent exploring and reading books....

At the second-grade level, students will ... use what they have learned about phonemes, decoding, rhyming words, onsets and rimes, contextual clues, and the structure of sentences [to decipher text]. Silent and independent reading will increase....

At the fifth-grade level, students will become increasingly independent readers of a variety of literary forms... They will begin to read text critically in order to examine implied relationships and understandings... and justify opinions about the text....

At the eighth-grade level, students will continue to develop appreciation of literature through the study of literary elements in classic and contemporary selections. They will describe themes and inferred main ideas, interpret cause-effect relationships, and draw conclusions....

Additionally, if you wish to extend your study into developmental stages and learning, consider the following titles:

How we Think, by John Dewey

Taxonomy of Educational Objectives, Benjamin Bloom, ed.

The Process of Education, by Jerome Bruner

The Psychology of the Child, by Jean Piaget

What do we need to know about learning styles?

In addition to having an understanding of developmental stages, it is important to consider differing learning styles. We all intuitively know that there are ways we learn best. Some like to listen, others need to see things written out. Still others prefer making diagrams to enhance understanding. Educational researcher and theorist Howard Gardner identified *Multiple Intelligences*, which he breaks down into seven different ways to demonstrate intellectual ability:

Visual/Spatial Intelligence: *These learners tend to think in pictures and need to create vivid mental images to retain information.*

Verbal/Linguistic Intelligence: *These learners have highly developed auditory skills and are generally elegant speakers. They think in words rather than pictures.*

Logical/Mathematical Intelligence: *These learners think conceptually in logical and numerical patterns making connections between pieces of information.*

Bodily/Kinesthetic Intelligence: *These learners express themselves through movement. They have a good sense of balance and eye-hand co-ordination.*

Musical/Rhythmic Intelligence: *These musically inclined learners think in sounds, rhythms and patterns. They immediately respond to music either appreciating or criticizing what they hear.*

Interpersonal Intelligence: *These learners try to see things from other people's point of view in order to understand how they think and feel. They often have an uncanny ability to sense feelings, intentions and motivations.*

Intrapersonal Intelligence: *These learners try to understand their inner feelings, dreams, relationships with others, and strengths and weaknesses.*

While knowing about learning styles and multiple intelligences is crucial for the educator who works with students over a long period of time and is charged with helping children learn in the best way possible, even an educator working with a group for a day can be aware of the different ways in which people learn. This can help you create a variety of activities that will engage any audience. For example, most of us are visual learners, so including plenty of objects and pictures will help students stay attentive and increase their understanding. Additionally, younger audiences are more apt to learn best with kinesthetic activities involving movement and hands-on discovery. We will discuss incorporating hands-on activities in a later section.

If you want to learn more about multiple intelligences and learning style, check out the following books by Howard Gardner:

[Art, Mind, and Brain: A Cognitive Approach to Creativity](#)
[Frames of Mind: The Theory of Multiple Intelligences](#)
[Intelligence Reframed: Multiple Intelligences for the 21st Century](#)

[How can we brush up on our presentation skills?](#)

No matter how you structure your program, inevitably there will be a portion where the educator is presenting material to the students. As you may know, children can be a tough audience. Having not mastered the nuances of etiquette, they have more important things than you, the museum educator, on their minds (like that light-up eraser that someone just dropped on the floor – it bounces!); additionally, they will tell you exactly what they think. But seriously, while working with children can be a joy, it can also be frustrating. So learn to roll with the punches. The following tips were gleaned from seasoned museum educators who have ‘been there’ and ‘done that’:

- Tell children what they can expect during your program.
- Tell them what you expect from them.
- Assess your audience from the get-go with a few simple questions. From these you can ascertain their level of knowledge about your topic as well as their attitude towards it.
- Use your body to communicate. Project yourself onto your audience with body language. If you are telling about something huge, make sure your body is helping you tell about it with arms outspread.
- Make eye contact with your audience. You are a stranger to the students who will visit your site. As you get to know them, they will feel more at ease if you look them in the eye.
- Bend down to the child's level to point and talk. Young children see different things from their height. By bending down, you'll see from their viewpoint, and you won't seem so imposing.

- Use your voice to its fullest. You may have one way of talking to make logistical announcements, while you may use a totally different voice when giving information.
- Never underestimate the power of the whisper. If students need to be re-focused and you are in a classroom-type of setting, try whispering *"If you can hear me, raise your hand."* A few students will, and the rest will wonder why. By the time you say it for the third time, the group will be quiet and listening. You can also use a whisper to emphasize (YES) important information in a *'let me let you in on a little secret'* kind of way. Changing the tone and volume of your voice can be a powerful tool.
- In addition to your body language and your voice, it is also important to be cognizant of facial expressions. If you are frustrated or worried, that will likely be showing up on your face (and in your voice and your body language). An upbeat, enthusiastic smile will go a long way towards making your audience feel at ease. Remember, your young audience does not know or care if your car broke down on the way to work, you are battling a head cold, or if you are just having a bad day. Additionally, putting a smile on your face and an upbeat tone in your voice may actually make you feel a bit better on your more challenging days.
- Good preparation is the key to confidence, which is the key to you being relaxed.
- To keep children's (or anyone's) attention, intersperse your material with 'spice' and a variety of stimuli, media and movement to maintain maximum interest.

How can we create an authentic experience for our audience?

Your site and collection are unique. They exist as a testament to either a time in history, a facet of culture, or a cross section of the natural world. So, a visit to your site is inherently a valuable experience that cannot be duplicated in a classroom or anywhere else. This experience is, more than anything else, the essence of what you have to offer your audiences.

"It is easier to understand the people of history when you can be in the spaces that they occupied, the spaces where they lived their lives....historic places give concrete meaning to our history and our lives as no spoken or written word alone can do.... This then gives the guardians of historic places special opportunities. They can engage the visitor's imagination and really teach lasting lessons."

- From the National Park Service's *Cultural Resource Management: Creative Teaching with Historic Places* (vol. 23, No. 8, 2000).

"...we need to offer experiences that cannot be found elsewhere or duplicated in the classroom. Observing the motions of the night sky in a planetarium, doing electrophoresis to examine DNA, exploring the life cycle of a butterfly in a butterfly atrium-all of these are strong reasons for a school group to visit the science center, especially if the experience can be modified to meet the needs of different grade levels and curricula...."

- From "The Field Trip Challenge: Finding Common Ground" by Dennis Schatz in *The Association of Science and Technology Center (ASTC) Dimensions*: Sept/Oct 2004

What is Constructivism, and how can it help our program?

To make the learning experience special and lasting, consider using constructivist teaching techniques. This educational jargon basically means that you want to think about how people construct meaning. The theory holds that learning builds upon what we already know, and that learning is more effective when a student is actively involved in the construction of knowledge, rather than when he/she is passively listening to a lecture. Furthermore, using such techniques creates an environment where students work primarily in groups and learning and knowledge are interactive and dynamic. To read more about this topic, check out:

In Search of Understanding: The Case for the Constructivist Classroom, revised edition, by Jacqueline Grennon Brooks and Martin G. Brooks (1999).

How can we create an experience that is hands-on?

In order to accomplish this, a program should engage the whole child, which means it should offer a hands-on component where the child can interact with the collection and the site in a very real way. A Chinese proverb says,

“Tell me and I’ll forget; show me and I may remember; involve me and I’ll understand.”

To get to true understanding and learning, children must be involved in an activity - mind, body, and soul. Hands-on learning is, simply, learning by doing. It is engaging in in-depth investigations with objects, materials, phenomena, and ideas and drawing meaning and understanding from those experiences.

So, in order to create hands-on activities, think about your site. Is your site a historic farm? If so, what chore, craft, or project did people have to perform on that farm that you could replicate with your school group? Could they churn butter? Dip candles? Use tools from the era? Or, perhaps your site is an art museum. If the students are going to be studying Cubism, perhaps their program could culminate in an art (and math!) class where they create their own Cubist pieces. If you are a science museum, you are probably set up for hands-on activities. Students should be experiencing natural phenomena and scientific principles firsthand in order to develop true understanding. As a museum, you have the equipment and setting not found in schools, so this is a unique opportunity for the student learner.

If your site is historic, and you cannot realistically allow children to handle one-of-a-kind artifacts, consider using reproductions, whether bought or made. You can usually find a way to reproduce historic clothing, tools, or games for children to handle and experience. You might find a volunteer with sewing skills willing to make some pint-sized, colonial-style clothing. Additionally, there are many companies that specialize in reproduction artifacts for this very purpose and can even customize these for your site.

Whenever you engage students in a hands-on activity, it is important that you run through the activity first yourself to ensure that the outcome is what you expect. Also, create very clear and concise step-by-step instructions for the children and review those instructions orally. You may want to demonstrate the activity before allowing the students to begin work. Think about your expectations for how materials should be distributed, handled, and cleaned up prior to beginning such an activity. Make expectations clear. Find easy ways to distribute materials and clean up leftovers, such as using sets of pre-stuffed plastic baggies that contain all the materials needed for one pair of students to complete one activity. Have small bins, trash containers, and paper towels at the ready when the activity is completed. Consider whether children will need to wash or sanitize their hands when they finish and how you will organize movement to and from the sink area.

When working with children, also think about incorporating all 5 senses in your program activities. The more modalities you engage, the more likely students are to get to a point where real learning takes place. Using music from the historical era to cue your audiences and let them know when it is time to move from one activity to another, or using the aroma of burning wood as they tour a working historical house, brings more authenticity to the experience and transports the audience to another time and place. Incorporating sensory elements into a program is an inexpensive way to add depth and dimension to your lesson.

How can we use the power of cooperative learning?

One additional strategy to consider when working with children is cooperative learning. Cooperative learning guides student interaction in a way that results in higher levels of cooperation and better learning. It is an extensive learning strategy intended to be implemented over time by teachers. However, museum educators can tap into this strategy to good effect as well. Consider the following tips:

- Working in pairs not only saves materials, it also provides students with a partner for their questions.
- Cooperative strategies are student-centered and collaborative. They take the focus (and the pressure) off of an adult presenter.
- Don't think of grouping children for an activity as an add-on to your program. It is simply one vehicle to use to help reach your objective.
- Communication that occurs among students working cooperatively leads to greater student involvement and increased learning.
- When students have to ask and answer questions among themselves about the topic at hand, their comprehension is deepened.
- Students feel 'safer' asking a question or giving an answer to a peer prior to raising his or her hand to share with an entire group. This cooperative strategy is called "*Think, Pair, Share.*"
- If you have groups reporting to the class, keep each presentation short and sweet. These always seem to take more time than you think, and remember that the rest of the class has to sit and listen to each presentation.
- Structure the activity so that tasks within the group are shared by all group members. It is helpful to assign each student a specific job that helps the group complete the task together.
- When grouping the students, the use of color-coded stickers can help with group and job identification.

The following is a resource that outlines the elements of cooperative learning for those who want to explore the subject more deeply. Additionally, David Johnson and Roger Johnson, and Dr. Spencer Kagan have conducted research on cooperative learning and written many books on the subject. Here are a few titles to consider:

Circles of Learning, 5th ed., by David and Roger Johnson and Edythe Holubec (2002)
Cooperative Learning: Warm-Ups, Grouping Strategies, and Group Activities, by David and Roger Johnson (1985)
Cooperative Learning, by Dr. Spencer Kagan (1993)
Reaching Social Studies Standards through Cooperative Learning, by Dr. Spencer Kagan (2000)
Reaching Science Standards through Cooperative Learning, by Dr. Spencer Kagan (2000)

How can we utilize questioning techniques that encourage higher level thinking from our audience?

Benjamin Bloom created a taxonomy for categorizing the kinds of questions that commonly occur in educational settings. It is helpful to have knowledge of different types of questions because the type of discussion you have with your group will greatly depend upon what questions you choose to ask. For example, asking a 'yes/no' question really does not facilitate discussion as the answer does not require explanation, clarification, or evaluation. When you formulate questions, take into account the group's age and developmental level, as well as your reason for asking a given question. Do you want to elicit opinions? Do you want to get information? Do you want the children to apply what they have learned to another situation? Your questioning techniques will follow from the learning objective you have set for your students.

The levels in Bloom's Taxonomy include: knowledge, comprehension, application, analysis, synthesis, and evaluation. Generally, the taxonomy progresses from simple to complex. The following are examples of question 'starters' you may want to use to elicit responses based upon these different levels.

To learn more, read Taxonomy of Educational Objectives, by Benjamin Bloom

Knowledge	What happened after...? When did...? Can you name the...? Describe the setting.... Tell which Can you locate the ...? Can you list...?
Comprehension	How would you classify...? How would you compare... to ...? Can you re-phrase the meaning...? What evidence supports your idea that...? In your own words, explain why...
Application	How would you use this....? Using what you have learned, how would you solve...? What other method could you use to...? If you could interview..., what questions would you ask? What would happen if...?
Analysis	How is... related to...? What motive would someone have to...? What is the relationship between ... and ...? What is the function of...? How do the different parts function...? Why do you think...?
Synthesis	What changes could you make to solve...? If you could improve..., how would you do it? What alternatives are available to...? How could you test for...? How would you construct a model to demonstrate...? Can you predict the outcome if...?
Evaluation	Can you prove/disprove...? Which would be better..., or ...? How would you rate...? How do these ideas compare? What is the value or importance of...? If you could recommend further action, what would it be?

Each question type has its function, and used properly, questioning techniques can elicit rich discussions and encourage deep thinking from students. The resource found at this link provides a more in-depth example of how to use questioning techniques.

When engaged in a class discussion where you are asking and answering questions with a group of students, remember that the child who is answering a question in front of a group (and for a relative stranger) is taking a risk. Reinforce correct answers with enthusiasm (“*That’s right!*” or “*Great!*”). Avoid negative responses to incorrect answers. Try asking a leading question that will help the student recall the correct answer. If that doesn’t work, a possible response might be “*It seems like that would be the case doesn’t it, but does someone else have different idea?*” Never respond by saying “*That’s wrong!*” It will only embarrass and discourage a child from participating. Always show appreciation for a child’s willingness to try and answer a question and leave him or her with dignity intact. For more on questioning techniques, try the following web resources:

- Article, from the Center for Development & Learning
www.cdl.org/resource-library/articles/highorderthinking.php
- An explanation of Higher Order Thinking, from Classroom Toolkit
www.classroomtoolkit.com/higher-order-thinking.html

- Formulating Questions for Higher Order Thinking
www.glc.k12.ga.us/passwd/trc/ttools/attach/bckgrnd/sep/qthigh.pdf

“Classroom” Management in the Museum

What time management issues should we consider?

Whenever you are working with children and on a strict time schedule, pacing is of utmost importance. It is even more important for an educator during a museum program because these children are off-site and cannot return if part of the program is not completed. Many educators, especially those not accustomed to working with student groups, fear extra, unstructured time at the end of a program. While it is good to have an activity or two ‘up your sleeve’ in case that occurs, usually the greater challenge is cramming everything you wanted to accomplish into the prescribed timeframe.

Firstly, know that, inevitably, there will be delays. Whether a traffic jam delayed the school bus, or another group using your classroom is running late, you can count on the unexpected. So be ready to adapt to last minute changes in schedule and always have ‘Plan B’ at the ready in case you find yourself with less time than anticipated. That said, good planning can eliminate many last minute crises. For example, as you plan your educational programming, you may want to consider allowing time for a self-guided tour prior to the formal educational program. This would allow some ‘wiggle’ room if a group were to arrive late. Having 45 minutes instead of an hour for a self-guided tour is much less of a ‘blow’ to the overall program than losing a quarter of your face-to-face instructional time with a group.

As we have mentioned, organization in your preparatory phase saves time during your instructional phase. Think about the following:

- entry and exit from a room - At the door to the program space, greet the group and give clear seating directions. (For example, *“I want the first person in line to go all the way to the end of the first row. The next person will take the very next seat until the row is full. Then, go all the way to the end of the second row.”*) Similarly, when it is time for a group to exit, give clear directions for lining up and officially hand control back over to the classroom teacher.
- material distribution – If you have a large group and you will be asking the children to each pick up a clipboard, for example, think about having three ‘stations’ where this will be done so that it runs more quickly and smoothly. Similarly, any materials you can organize prior to instructional time will save valuable minutes (and avoid last minute headaches). You can also utilize ‘bins’ at tables or at the end of rows so that materials can be passed along and put away quickly and easily. Also, be sure to have extras of everything: handouts, pencils, and other materials to keep things moving along.
- signals between educator & students – You may want to establish a simple, time-saving system at the beginning of your program, asking students to hold up their index finger if they need to use the restroom or their hand if they need assistance or wish to answer a question. Similarly, you may want to give students signals as well. For example, if you wish to address the class during a group activity, you may dim the lights briefly to get the students’ attention. This is a quick, quiet, and easy way to make announcements. Whatever you do, keep it simple and plan it ahead of time. Soon it will become second nature to you.
- write it out – If you are dividing a large group into smaller ones and rotating through different stations or activities, a written agenda / timetable can be helpful. That way, each teacher, chaperone, and museum educator can keep their group moving along in sync with the agenda.
- enlist their help – If you are on a strict time schedule, let the kids know ahead of time, and let them know how much time you will spend on each segment of the lesson. You will be surprised at how many ‘clock watchers’ you have out there. If that seems too much of a distraction, you can always ask one child or an adult from the group to give you a signal when a certain amount of time has elapsed.
- conduct a dry-run – This is especially important for hands-on activities and group work. These types of activities always take longer than expected. Invest the time upfront so that you find how much time an activity takes, and weed out any components that take up

more time than they are worth. Always consider the program objective; anything that takes up time but does not move the group toward meeting the objective is a waste of time.

During whole-group question-and-answer or discussion times, you will find that some children demand more than their fair share of your time. Remember that, while this is inevitable, you are in charge. Do not get stuck in a cycle of calling on the same child repeatedly while the rest of the group loses interest. If a determined child persists, express thanks for his or her willingness to contribute, but open the 'floor' to others who may have ideas to share. When asking questions, build in *'think time'* so that children who cannot process your question quickly can consider the question and what their answer might be. Some children see others' hands flying up and shut down because they conclude that they are 'too late.' Tell the kids upfront that after each question you ask, you are going to wait a full 20 seconds before calling on someone so they all have time to think (you will be amazed at how long 20 seconds feels at first). Do not accept any answers that have been called out. As soon as you do, the group gets the message that you do not really play by the *'raise your hand'* rule. If the children do call out, wait quietly and remind the students that you are looking for someone who is appropriately raising a hand.

Additionally, program pacing will change according to the age of the students. Younger students cannot walk, clean up, or process directions as quickly as your older audiences. Take this into consideration during your planning phase. When leading a discussion with younger children, you may find that their answer does not necessarily correlate to your question. Kindergarteners will raise their hand at any opportunity and, when called on, will tell all about visiting their grandma or something else completely unrelated to the discussion. In these situations, you will have to kindly redirect their attention back to the subject at hand so that your group does not lose focus and precious time.

Finally, know that your time management skills will improve with experience. Over time, you will develop a rhythm and be able to better anticipate times when you need to cut a segment of an activity short or add to an activity to make your lesson go like clockwork.

What space management issues should we consider?

Some space management issues have been addressed in other sections. For example, having stations set up to avoid students clogging an area where they pick up materials is both a time and space management technique. Your students will likely be moving around different areas of your site. Let students know upfront what behavior you expect as they move about. Be explicit with students about what they can and cannot touch in your exhibit areas. Keep in mind that students visiting your site on a field trip will be a bit excited and 'wound up.' While this enthusiasm can help your audience stay motivated during your program, it can also encourage kids to forget some of the rules that they normally live by in school, such as walking quietly from one area to the next. It is your job to remind them about appropriate behavior while visiting your site.

Determine a specific location where school groups should gather before their program. Have an educator or guide meet the group at that location. Do not leave the group idle at a meeting place for long as it will not take long for students to begin wandering and lose their focus. Ask teachers and chaperones to help organize their students by giving the adults specific instructions. (For example: *"Please ask your students to form a single file line starting at the..."*) Escort the group to the instructional area or classroom to avoid chaotic group movement through your museum. To help prepare students for a formal learning experience, remind them that they are about to enter a classroom. Likewise, when dismissing the group from the classroom, remind them how you expect them to move on to their next activity, whether it be back to their buses or on to a self-guided tour.

You may want to consider breaking up larger groups into two or three smaller ones. One group can experience your site on a self-guided tour, another can experience a guided demonstration, while yet another engages in your 'classroom' educational program. Then the groups rotate so

that all students complete all available activities. This is especially important for smaller sites to consider. When you plan such a program, be sure that the educators involved and the teachers and chaperones know exactly when and where they should meet for the different segments of the program. Since each group's successful experience depends on the others' organization and punctuality, tell groups ahead of time where they should be throughout their visit. Meeting places and transitions should be carefully thought out to avoid high traffic chaos and overall confusion. As mentioned, a written agenda distributed to all adults for such 'rotations' can be very helpful.

Additionally, when scheduling school groups, be sure that you do not overbook on days when you might have more general visitors than usual, such as on the opening day of a new performance or exhibit. Advanced planning and communication among staff members can help counter these types of scheduling conflicts.

What techniques can we use when misbehavior occurs?

At this point, you are well on your way to a quality educational program that offers a variety of relevant activities that take into account different learning styles, engage the senses, and allow students to work independently and as part of a group. You have planned your time and space so that your program runs like a well-oiled machine. Therefore, you have probably avoided over 90% of discipline problems. So why do you need to think about misbehavior occurring during your program? Well, because at times children misbehave. So this list of a 'baker's dozen' tips should help you keep your audience on track so that the program you have spent so long perfecting does not derail.

1. Don't keep them guessing. As mentioned previously, always let students know:
 - a.) what to expect from the program, and
 - b.) what you expect from them. Keep your expectations high.
2. Be consistent. Do what you say you will do. NEVER threaten a consequence that you are not prepared to deliver.
3. Make eye contact with your students. Move about and use your proximity to students to help refocus students and maintain control.
4. Use signals and quiet reminders. Use the least amount of 'disciplining' necessary to regain control.
5. Be prepared to re-direct and re-focus students using questioning techniques. Offer choices when appropriate.
6. Use positive reinforcement. Say, for example, "*I really love the way this group is working so effectively together. I can see that their experiment is moving along very well...*" Your students want to please you and to be successful.
7. Don't spend too much time talking; be sure that your program is planned in such a way that students have the opportunity to move around and have a variety of experiences.
8. Be fair. Children are attuned to fairness.
9. If you have to discipline a child, do it discreetly. Never do so from across the room.
10. Always remember the 'golden rule.' Even if you have to deal with a child with discipline problems, leave the child with his or her dignity.
11. Know when to ask for help. The teacher knows the student better than you do. Perhaps an emotional disability is the cause of the misbehavior. If you sense that you are 'in too deep,' it is okay to call upon the teacher or a colleague for help.
12. Keep your sense of humor. Sometimes you can redirect a situation best with a little well placed levity. Also, for bad days, it's always better to be able to look back and laugh.
13. Finally, remember that good organization and planning will avoid the vast majority of behavior problems from occurring at all. So relax.

Finally, for those of you who wish to explore the topic of classroom management further, here are five titles to consider:

Classroom Management Strategies: Gaining and Maintaining Students' Cooperation, by James S. Cangelosi

Elementary Classroom Management: Lessons from Research and Practice, by Carol Simon Weinstein, Jr., Andrew Mignano

One-Minute Discipline: Classroom Management Strategies That Work, by Arnie Bianco

The Key Elements of Classroom Management: Managing Time and Space, Student Behavior, and Instructional Strategies, by Joyce McLeod, Jan Fisher, Ginny Hoover

Winning Strategies for Classroom Management, by Carol Bradford Cummings

What alternative educational programming formats should we consider?

In this final section, we will touch upon alternative educational programming options for museums who want to offer a variety of formats to their school audiences, as well as for museums where a site visit by a large group is impractical due to staffing or size constraints. These alternative program formats can be appealing to school districts that may have cut funding for field trips or are located in more remote areas where transporting large groups of children for a field trip is logistically impractical. Also, they tend to be less costly than field trips, are much easier to plan and coordinate, do not require chaperones and other special arrangements, and allow the teacher to offer an experience in her classroom that she normally would not be able to offer.

There are several models currently in place throughout the museum community for alternative educational programming. Many museums have outreach programs where an educator brings items from the museum's collection (or reproduction artifacts) and conducts activities with students in their classrooms. This can range from a lesson on historical life with an emphasis on domestic tools to a chemistry experiment demonstrating chemical reactions between different substances. Educators may choose to arrive in costume (and not just for historical types of presentations). One group of educators we interviewed conduct art lessons at area schools and dress in the style of the era and culture about which they are teaching. Some careful planning and creativity on your part can make your outreach program motivating for students and valuable for teachers.

Even if your museum is not yet prepared to create a full-fledged outreach program, complete with pre-planned lessons and activities, you may consider offering a 'speaker's bureau' with expertise on various topics. This could be particularly effective at the middle and high school levels.

Still other museums collaborate with local theatre companies or arts departments at local universities to deliver historical or biographical plays to students. The museum staff provides expertise in the production of the play, props and costumes, and follow-up activities for teachers to use with their students. Additionally, a museum educator attends the production and leads a question-and-answer session about the historical time period afterward. Children come up to the stage and try on costumes or demonstrate an activity using a tool from the time period. Think about this type of collaboration as you plan your alternative programming. Particularly for the museum constrained by budget and personnel, a well-planned partnership with another cultural organization can make the impossible possible.

The types of outreach programs we have discussed thus far are actively managed; educators from the site conduct the program and work directly with students. While such interaction is optimal for effective programming, you may also consider building in elements to your educational offerings that are more 'self-serve' in nature for teachers and school systems. Such programs are used by large sites to reach a broader audience and meet high demand for programming as well as by smaller sites that may not be able to accommodate groups of schoolchildren or may have limited staffing resources to provide on-site programs.

These programs may include 'trunk' or 'kit' types of offerings where an educator from your site creates lesson plans related to your collection and mission and stocks the kits with everything necessary to teach these lessons. The kit may include consumables for a science experiment, reproductions of artifacts from your site, historical documents, slides, videos, photographs, historical costumes, or craft supplies for children to create a project using a certain artistic technique. At NASA's teacher institute in Greenbelt, Maryland, teachers can even check out actual moon rocks and an astronaut's space suit for use in their classrooms!

Check-out kit programs also allow you to distribute promotional materials related to your site and exhibits. You may want to include stickers, bookmarks, brochures, coupons, or schedules of events for distribution to students after their program. That way, you can reach the families of your student audience who will hopefully visit and discover all your site has to offer.

Although these programs are easier to coordinate and schedule than those where the students visit your site, think about how you will handle the logistics of such a program. The following are questions to consider prior to putting a lending program together:

- How will you advertise the program?
- What procedures will you use for scheduling the lending periods?
- Will there be any fee charged to schools for using the kits?
- If a kit is checked out by a school, can more than one teacher use it before it is returned, or will it need to be re-stocked after each class has used it?
- How long can a school keep your kit?
- Will there be a late fee if it is not returned on time?
- How will the kit be transported between your museum and the school?
- Will you include an inventory and ask teachers to 'sign off' that everything is intact once they are finished with your kit?
- What procedures will you have in place for when items go missing or get damaged?
- Who at your museum will take inventory of kits and re-stock them when necessary?

Online Educational Programming

Still other alternatives to on-site, outreach, and kit programs exist. The internet allows your site to reach a worldwide audience. Consider putting educational materials online and publicize your electronic offerings in all of your promotional materials. This can be as simple as placing educational guides online for teachers by posting .pdfs that include lesson plans, historical background descriptions, children's stories, photographs, or activity sheets for teachers to reproduce. This is an inexpensive way to add a component to your educational programming and expand your audience. Just think, a school group in England studying the colonization of America could download the lesson plans from your historical plantation site and use them in the classroom!

If you have the technical means to take your online programs a step further, you may choose to create interactive activities where students 'explore' your site virtually. For example, one site in Virginia allows students to 'excavate' artifacts in a virtual archaeological dig. Still others have students clicking and dragging historical tools to match photographs of the settings in which those tools were used. There is no limit to the creative elements that can become part of a 'virtual' museum visit.

The WebQuest Model

In addition to stand-alone interactive web activities, you may want to take your online programming a step further and utilize an instructional model called the WebQuest. A WebQuest is an inquiry-oriented activity in which most or all of the information is drawn from the Web. WebQuests encourage analysis, synthesis, and evaluation and are designed so learners focus on using information rather than looking for it. The model was developed in 1995 at San Diego State University by Bernie Dodge with Tom March, and its use has grown over the years.

There are certain instructional elements built into WebQuests that allow students to move through stages of a lesson and stages of learning independently. The following are common to most WebQuests:

- An introduction that sets the stage and provides some background information.
- A task that is doable and interesting.
- A set of information sources needed to complete the task. Many linked resources are embedded in the WebQuest, pointing to information on the World Wide Web. Information sources might include web documents, experts available via e-mail or realtime conferencing, searchable databases on the net, and books and other documents physically available in the learner's setting. Because internet resources are linked, the learner is not left to wander through webspace.

- A description of the process the learners should go through in accomplishing the task. The process should be broken out into clearly described steps.
- Some guidance on how to organize the information acquired. This can take the form of guiding questions, or directions to complete organizational frameworks such as timelines, concept maps, cause-and-effect diagrams, or story boards.
- A conclusion that brings closure to the quest, reminds the learners about what they've learned, and perhaps encourages them to extend the experience into other domains.

Some other non-critical attributes of a WebQuest include these:

- WebQuests are most likely to be group activities, although one could imagine solo quests that might be applicable in distance education or library settings.
- WebQuests might be enhanced by wrapping motivational elements around the basic structure by giving the learners a role to play (scientist, detective, reporter), simulated personae to interact with via e-mail, and a scenario to work within (for example, *"You've been asked by the Secretary General of the UN to brief him on what's happening in sub-Saharan Africa this week."*)
- WebQuests can be designed within a single discipline or they can be interdisciplinary.
Source: San Diego State University

For more information on WebQuests, visit www.webquest.org/ and <http://bestwebquests.com>.

Videoconferencing

Videoconferencing technology allows two or more people at different locations to see and hear each other at the same time. In addition, it is often possible to share computer applications such as Internet pages, library catalogs, documents, or software. This rich communications technology offers new possibilities to connect with schools for formal instruction (courses, lessons, and tutoring), for a guest speaker or expert, project collaboration, and community events. With a little creativity, new technologies such as this can be harnessed and utilized to create truly unique learning experiences.

Podcasts

Podcasts are an inexpensive way to use new technology to get your educational message out to a broad audience when you can't get them into your museum for a formal school program. The software to make podcasts is free, and all it takes to create a good podcast is having a good story to tell. Podcasts are typically less than 10 minutes in length, so you have to plan your message well, and break it down into "bite-sized" pieces. This short format also lends itself to a format where you provide activities (perhaps on a .pdf or interactive) and combine the two, using the podcast to convey information and the interactive element as a follow-up activity.

Once you have created your podcast, you will need an RSS feed to upload it to your website, or get it listed in one of the many podcast directories available online.

To download free podcast software, go to:

<http://audacity.sourceforge.net>

For more information on uploading podcasts, go to:

http://podcasting.about.com/od/uploadyourpodcast/Upload_Your_Podcast.htm

For some good podcasts, check out the following websites:

www.history.org/media/podcasts.cfm

www.museumpods.com/

www.podtrip.com/english.html

Conclusion

As your museum considers its educational mission and the programming used to fulfill that mission, it is our hope at VAM that the materials included in this training tool have been helpful. By considering and understanding your school audience, learning how the Virginia SOLs have come about and how they are organized, planning for your program by taking into consideration educational 'best practices' and utilizing tried and true instructional strategies, your program will evolve into one that benefits and enriches your community and informs the next generation of citizens.

In closing, the following quotes are intended as a reminder of the importance of your educational mission and the trust placed in museums by the public:

*"... while just over half of those surveyed said that they trusted college professors to **tell the truth about history**, and just over a third trusted high school teachers, almost 80% **had faith in museums**. To the general public, the material culture of the past seems more trustworthy than the secondary literature of history."*

- from the National Park Service's *Cultural Resource Management: Creative Teaching with Historic Places* (vol. 23, No. 8, 2000).

"We value our community resources, especially the museums for their ability to serve as a bridge from the textbook to real world applications as demonstrated by their exhibits. Thank you."

- from comments after speaking at a VAM workshop (Jan. 2007), from Dr. Patricia J. Johnson, Assistant Superintendent for Curriculum and Instruction, Hampton City Schools

Web Resources

Note: The following URLs were valid and active as of the time of the CD-ROM production. While some of these sites may offer products and/or services, and/or contain advertisements, VAM is in no way endorsing such products and services. The following organizations and resources were simply those that we deemed potentially helpful for museum educators at the time this CD-ROM was created.

Virginia

The VA Academy of Science www.vacadsci.org/

The Academy's purpose is to establish and maintain an association of persons and organizations interested in science and scientific research in all of its branches; to solicit financial and other support; to cooperate with educational institutions, industries, and state agencies in fostering an interest in scientific matters, in promoting scientific investigations and in spreading knowledge of the sciences; to provide a forum for the presentation and discussion of papers on scientific subjects and facilities for their publication; to provide opportunities for the cooperation and fellowship among its members; and generally, in doing these things, to benefit not only its own members, but to promote the civic, agricultural, academic, industrial, and commercial welfare of the people of Virginia.

VA Association for the Gifted www.vagifted.org/

The Virginia Association for the Gifted supports research in gifted education and advocates specialized preparation for educators of the gifted. The association disseminates information, maintains a statewide network of communication, and cooperates with organizations and agencies to improve the quality of education in the Commonwealth of Virginia.

VA Association of Health, Physical Education, Recreation, & Dance www.vahperd.org/

VAHPERD is a professional association of educators that advocate quality programs in health, physical education, recreation, dance and sport. The association seeks to facilitate the professional growth and educational practices and legislation that will impact the profession.

VA Association for Supervision and Curriculum Development <http://virginia.ascd.org/>

The Virginia Association for Supervision and Curriculum Development is dedicated to providing resources and services to involve and influence educational decision makers in promoting quality instruction for lifelong learning.

VA Association of Elementary School Principals www.vaesp.org/

The mission of the Virginia Association of Elementary School Principals is to provide timely service at a reasonable cost and to promote the building level administrator as the key provider of education at the building level in realizing the attainment of intellectual, emotional, and physical success of each child, teacher, and partner within the school community.

VA Association of School Superintendents <http://vass.edschool.virginia.edu/>

The Virginia Association of School Superintendents (VASS) is a professional organization dedicated to the mission of providing leadership and advocacy for public school education throughout the Commonwealth of Virginia.

VA Association of Secondary School Principals www.vassp.org/

The mission of the Virginia Association of Secondary School Principals is to assist school principals and assistant principals in providing leadership to their schools and communities for the purpose of improving the education of Virginia's youth.

VA Association of Teachers of English www.vate.org/

The Virginia Association of Teachers of English Language Arts (VATE), a state affiliate of the National Council of Teachers of English (NCTE), is dedicated to excellence in the teaching of English and language arts. Membership is open to all Virginia English teachers and anyone in the state dedicated to the advancement of the English and language arts curricula. VATE keeps its members on the cutting edge of the teaching profession, offering a clear vision of English

education, innovation in instructional methods, and opportunities to connect with others who share the vision that English teachers lay the foundation for our culture.

VA Council for Private Education www.vcpe.org/

VCPE oversees the accreditation of private schools in Virginia, and provides a statewide network for communications and cooperation among private elementary and secondary schools, and among private schools and state and local governments and other agencies and organizations.

VA Council of Teachers of Mathematics www.vctm.org/

The purpose of the Virginia Council of Teachers of Mathematics is to stimulate an active interest in mathematics, to provide an interchange of ideas in the teaching of mathematics, to promote the improvement of mathematics education in Virginia, to provide leadership in the professional development of teachers, to provide resources for teachers and to facilitate cooperation among mathematics organizations at the local, state and national levels.

VA Department of Education www.pen.k12.va.us/

- Raising Student Achievement: A Standards of Learning Update from the Virginia Department of Education www.doe.virginia.gov/VDOE/VA_Board/RaiseStuAchieve.pdf

VA Education Association www.veaweteach.org/

The VEA is comprised of 56,000 people, from everywhere in Virginia, voluntarily associated together to improve children's success in school and to upgrade the profession of teaching.

The Organization of Virginia Homeschoolers www.vahomeschoolers.org/

VaHomeschoolers is an effective association of individuals, families, and Virginia-based homeschool organizations and businesses. VaHomeschoolers promotes and protects the interests of Virginia homeschoolers through information and representation.

VA Middle School Association www.vmsa.org/

The Virginia Middle School Association allows educators to grow professionally, and be better informed about middle level issues in Virginia.

VA PTA www.vapta.org/

The Virginia Congress of Parents and Teachers, better known as the Virginia PTA is a volunteer child advocacy association working for all children and youth in the Commonwealth of Virginia.

VA Professional Educators www.virginiaeducators.org/

VPE is a state partner of the Association of American Educators. AAE and VPE have been serving Virginia teachers for over a decade, and now represent over a thousand members across the Commonwealth.

VA School Boards Association www.vsba.org/

The mission of the VSBA is to provide member boards with services, training and advocacy so that they may exercise effective leadership in public school governance on behalf of public education for all children in the Commonwealth.

VA State Reading Association www.vsra.org/

The mission of the Virginia State Reading Association is to lead in the promotion of literacy through collaboration, advocacy and professional development and to further the mission and goals of the International Reading Association.

National

American Educational Research Association www.aera.net/

The American Educational Research Association (AERA), a national research society, strives to advance knowledge about education, to encourage scholarly inquiry related to education, and to promote the use of research to improve education and serve the public good.

Association for Supervision and Curriculum Development www.ascd.org

The purpose of the Association shall be to promote excellence and equity in education for the success of all learners. Objectives and activities of the organization shall be dedicated to improving learning, teaching, and leadership.

Institute of Museum and Library Services (IMLS) www.imls.gov

- *Charting the Landscape, Mapping New Paths: Museums, Libraries, and K-12 Learning* (August 2004) www.imls.gov/pdf/Charting_the_Landscape.pdf
Description: On August 30-31, 2004 the Institute convened a conference and workshop examining the intersections of museums, libraries, and K-12 education. The resulting report captures the key issues that emerged at the workshop, highlights seminal project and partnership examples, and provides some common language around a vision for how museum/school/library collaborations can contribute to a learning society.
- *True Needs, True Partners, 2002* www.imls.gov/pdf/m-ssurvey.pdf
Description: In its second study of museum-school relationships, IMLS found that the nation's museums commit more than a billion dollars and more than 18 million instructional hours every year to K-12 educational programs.
- *True Needs, True Partners* (1998) www.imls.gov/pdf/pubtntb.pdf
Description: A how-to guide for successful museum-school partnerships.

National Academy of Sciences www.nasonline.org

The National Academy of Sciences (NAS) is an honorific society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for the general welfare.

National Archives (Education Page) www.archives.gov/education/

The site, called the Digital Classroom, is the National Archives' gateway for resources about primary sources, activities and training for educators and students.

National Center for History in the Schools <http://nchs.ucla.edu/standards>

The National Center for History in the Schools has created national K-12 standards for the teaching of social studies and history.

National Council of Teachers of English www.ncte.org

The National Council of Teachers of English has created national K-12 standards for the teaching of English.

National Council of Teachers of Mathematics www.nctm.org

The National Council of Teachers of Mathematics has created national K-12 standards for the teaching of math.

National Parks Service www.nps.gov

The National Parks Service website has a vast array of information and includes sub-sites on Cultural Resources (www.cr.nps.gov) as well as Nature and Science (www.nature.nps.gov). Additionally, National Parks Service: Teaching with Historic Places (www.cr.nps.gov/nR/twhp/index.htm) includes a vast array of resources for educators working in historic settings.

- *Teaching with Historic Places* <http://crm.cr.nps.gov/archive/16-2/16-2-all.pdf>

- *Creative Teaching with Historic Places*
<http://crm.cr.nps.gov/issue.cfm?volume=23&number=08>

National Standards for Arts Education <http://artsedge.kennedy-center.org/teach/standards.cfm>

The standards were developed by the Consortium of National Arts Education Associations, through a grant administered by The National Association for Music Education.

U.S. Department of Education www.ed.gov

The U.S. Department of Education was created in 1980 by combining offices from several federal agencies. Its original directive remains its mission today — to ensure equal access to education and to promote educational excellence throughout the nation. The site also hosts the Education Resources Information Center at <http://www.eric.ed.gov/>.

- Goals 2000 Fact Sheet <http://www.ed.gov/G2K/g2k-fact.html>
- *A Nation at Risk: The Imperative for Education Reform*
<http://www.ed.gov/pubs/NatAtRisk/index.html>
- Math Now: Advancing Math Education in Elementary and Middle School
<http://www.ed.gov/about/inits/ed/competitiveness/math-now.pdf>
- Helping Readers Achieve and Succeed
<http://www.ed.gov/nclb/methods/reading/strivingreaders.pdf>
- No Child Left Behind is Working
<http://www.ed.gov/nclb/overview/importance/nclbworking.pdf>
- Nation's Report Card Shows Continued Progress: Achievement Gap Continues to Narrow as Student Population Becomes More Diverse
<http://www.ed.gov/nclb/accountability/achieve/report-card.pdf>
- Non-Public Education: A Vital Part of U.S. K-12 Education
<http://www.ed.gov/nclb/choice/schools/onpefacts.pdf>

Other Web Resources

The Center for Development & Learning www.cdl.org

Education World www.educationworld.com

The Educator's Reference Desk www.eduref.org

WebQuest Portal www.webquest.org/

Teacher Created Materials www.teachercreated.com

Ed Helper www.edhelper.com

Education Week: News & Information about Education www.edweek.org

EduHound www.eduhound.com

National Storytelling Network www.storynet.org

Suggested Reading

A Handbook for Classroom Management That Works, by Robert J. Marzano, Barbara B. Gaddy, Maria C. Foseid, Mark P. Foseid, Jana S. Marzano (ASCD, 2005)

Art, Mind, and Brain: A Cognitive Approach to Creativity, by Howard Gardner (1984)

Beyond Discipline: From Compliance to Community, 10th Anniversary Edition, by Alfie Kohn (ASCD 2006)

Circles of Learning, 5th ed., by David and Roger Johnson and Edythe Holubec (2002)

Classroom Management Strategies: Gaining and Maintaining Students' Cooperation, by James S. Cangelosi (2007)

Cooperative Learning, by Spencer Kagan (1993)

Cooperative Learning: Warm-Ups, Grouping Strategies, and Group Activities, by David and Roger Johnson (1985)

Discipline with Dignity, by Richard Curwin and Allen Mendler (ASCD 1999)

EDL Core Vocabularies In Reading, Mathematics, Science, & Social Studies by Stanford E. Taylor (1997)

Elementary Classroom Management: Lessons from Research and Practice, by Carol Simon Weinstein, Jr., Andrew Mignano (2006)

Frames of Mind: The Theory of Multiple Intelligences, by Howard Gardner (1993)

How we Think, by John Dewey (1910)

In Search of Understanding: The Case for the Constructivist Classroom, revised edition, by Jacqueline Grennon Brooks and Martin G. Brooks (ASCD 1999)

Intelligence Reframed: Multiple Intelligences for the 21st Century, by Howard Gardner (2000)

Learning on Display: Student-Created Museums That Build Understanding, by Linda D'Acquisto (2006)

**Notation: This is an interesting concept that could make for an excellent long-term partnership between a museum and a school group.*

One-Minute Discipline: Classroom Management Strategies That Work, by Arnie Bianco (2002)

Powerful Lesson Planning: Every Teachers Guide to Effective Instruction, by Janice Skowron (2006)

Reaching English/Language Arts Standards through Cooperative Learning, by Kagan, S., Kagan, M. & Kagan, L. (2000)

Reaching Mathematics Standards through Cooperative Learning, by Kagan, S., Kagan, M. & Kagan, L. (2000)

Reaching Science Standards through Cooperative Learning, by Kagan, S., Kagan, M. & Kagan, L. (2000)

Reaching Social Studies Standards through Cooperative Learning, by Kagan, S., Kagan, M. & Kagan, L. (2000)

Research-Based Strategies to Ignite Student Learning: Insights from a Neurologist and Classroom Teacher, by Judy Willis (ASCD 2006)

Taxonomy of Educational Objectives, Benjamin Bloom, ed. (1956)

Teaching Tips: 105 Ways to Increase Motivation and Learning, by Spence Rogers (1999)

The Key Elements of Classroom Management: Managing Time and Space, Student Behavior, and Instructional Strategies, by Joyce McLeod, Jan Fisher, Ginny Hoover (ASCD 2003)

The Process of Education, Revised Edition by Jerome Bruner (2006)

The Psychology of the Child, by Jean Piaget (1969, 2000)

Winning Strategies for Classroom Management, by Carol Bradford Cummings (2000)

Serving the Community: Training Museum Educators to Meet Teacher Needs was made possible by a generous grant from the Institute of Museum and Library Services.



The Institute of Museum and Library Services, an independent federal agency that grows and sustains a “Nation of Learners,” because lifelong learning is critical to success.

The Virginia Association of Museums produced this training tool with the assistance of Widener Consulting LLC and Cinebar Productions. Working with VAM staff and an Advisory Council made up of teachers and museum professionals, Widener Consulting compiled and drafted the training tool, while Cinebar Productions produced the tool on CD ROM. Please see the bios below for more information about those involved in this project:

VAM Staff:

Margo Carlock, Executive Director, Virginia Association of Museums

Executive Director of VAM since 1994, Margo Carlock directs planning, marketing, program production and evaluation; develops and manages the annual operating budget and raises funds; prepares grant requests; oversees membership recruitment and retention; and advocates for the needs of Virginia’s museum community. She serves as Chair of the Virginia Cultural Network, steering committee member of the National Alliance of State Museum Associations, board of the Southeastern Museums Conference, as well as the Virginia Society of Association Executives. Prior to VAM, she was Assistant to the Director of the Missouri Division of Aging, and a Foreign Service officer with the U.S. Department of State. She has a BA in history and a MA in history and museum administration from Southern Illinois University, and attended the Graduate School of Business at the University of Chicago. Margo lives in Midlothian, Virginia with her husband and two teenage sons.

Jennifer W. Thomas, Program Director, Virginia Association of Museums

Jennifer has been with VAM for over 6 years, developing and implementing professional development workshops and programs for museum staff across the state. Prior to her current position, Jennifer worked as Director of Public Programs for the Valentine Museum, and as Director of the Saratoga County Historical Society in New York. In both positions, she planned and taught educational museum programs for all ages. Jennifer is a graduate of American Studies program at the College of William & Mary in Williamsburg, Virginia. She also holds a graduate degree from the Winterthur Program in Early American Culture from the University of Delaware. Jennifer lives in Richmond with her husband and two dogs. In her free time, Jennifer enjoys ballroom dancing.

Advisors:

Laura Farrell, Teacher, St. Catherine’s School, Richmond, VA

Laura is a history teacher with St. Catherine’s School in Richmond with 10 years of teaching experience in various settings and content areas. Laura has a BA in Government from the College of William and Mary and a Master’s of Education from the George Washington University in Washington, DC. She lives in Richmond with her husband and two children.

Pam Gerner, Fourth Grade Teacher, Mountain View Elem., Loudoun Co., Purcellville, VA

Pam is a fourth grade teacher with Mountain View Elementary in Purcellville with 15 years of teaching experience from kindergarten to fifth grade. Pam received her BS in Elementary Education from Utah State University, Logan, Utah, and her Masters in Instructional Technology from George Mason University, Fairfax, VA. Pam lives in Purcellville with her husband and five children.

Christine Lewis, Director of Education, Virginia Living Museum

Active in the field of science education for over 27 years, Mrs. Lewis supervises the development and delivery of all museum education programs including formal science programs for grades pre-K through 12, and graduate level teacher training courses. In addition to writing environmental science articles on a

variety of natural history topics, Mrs. Lewis also acts as a consultant on museum program development. The Virginia Living Museum is a large natural history museum and environmental education institution in southeastern VA.

Bill Obrochta, Director of Education, Virginia Historical Society

Bill supervises school programs and tours, develops curricular materials for teachers, and organizes conferences, seminars, workshops, open houses, and other programs for students, teachers, and out-of-school adults across the state. In 1974, he graduated from the University of Richmond with a BA in history, returning to earn his MA in history in 1985. Bill taught fifth grade in Richmond for four years before joining the staff of the Virginia Historical Society in 1984. He worked as an archivist in the Department of Archives and Manuscripts. In 1990, he was named the Historical Society's first education director. In addition to his work activities, Bill serves on the council of the Virginia Association of Museums. He is also a member of the Richmond "Go Read" committee. Bill lives in Richmond. He is married, has three daughters, and two grand children.

Contractors:

Cinebar Productions

Cinebar is an award-winning, Virginia-based, full-service video production company working projects from concept to final duplication and distribution. It specializes in documentary-style video productions and has done a number of orientation videos and other projects for Virginia museums as well as museums, other nonprofits and corporate clients throughout the country. Cinebar provided production services for this training tool, including media selection and design, production treatments, script-writing, video recording, music and other sound, voice-over talent, graphics, and stock footage/image acquisition for video clips used in the CD ROM.

Heather Widener, Owner, Widener Consulting LLC

Involved in education for over 15 years, Heather has worked at the federal, state, and county levels and has taught elementary school in Maryland and Virginia. Heather has worked on crafting standardized testing questions and has scored standardized tests. Heather began Widener Consulting LLC in 2004 to support her freelance projects developing curriculum and training presentations. Heather has been working with VAM since 2004, acting as publications coordinator and occasional SOL consultant. Heather used her writing skills and educational background to compile and draft the content of the CD ROM. Heather holds a BA in Language and Literature from St. Mary's College of Maryland and an MAT in Elementary Education from the Johns Hopkins University in Baltimore. Heather works from her home in Glen Allen, is married, and has three little boys.