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ABSTRACT

This document was written to help teachers understand how to implement standards in a professionally rewarding way. The essay describes how to refine curricular, instructional, and assessment decisions, and it provides selective reviews of standards' content areas. It addresses some of the basic questions that teachers ask, such as "What am I trying to teach?" and "Why am I teaching this?" The guide discusses benchmarks in standards and the importance of collaboration and technology in instituting standards. It looks at how standards can enhance professional growth by providing a body of professional knowledge that unifies teachers and enhances the sharing with colleagues of ideas and concerns. It discusses what standards mean for students, the role of the individual teacher and the standards teams in preplanning, and how planning practices are developed over time and are influenced by school policies and by what happens in the classroom on a daily basis. The guide emphasizes that standards are not to be used explicitly to determine curriculum and that standards should not be applied serially. It explores strategies for integrating curriculum and standards and offers some instructional strategies--such as inquiry teaching, cooperative learning, and discussion--to implement these strategies. (RJM)

EA

The Standards

Teacher

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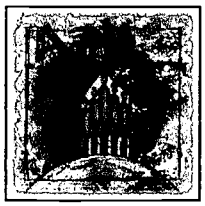

Standards for Excellence in Education

The Standards Teacher

by Donna Hammer

CBE
COUNCIL FOR BASIC EDUCATION

An Independent Voice for Educational Excellence

A national advocate for high standards in K-12 education

The Standards Teacher

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Teachers and Educational Reform

As teachers, many of us have been confronted with educational reform initiatives designed to fix or improve our classrooms, schools, and student test scores. Sometimes the suggested reforms are radical and exciting; the ideas seem on target with what we believe will improve public education. Yet more often than not, there is no realistic plan for implementation and the call for action is quickly forgotten. Other times, we clearly disagree with the validity of the reform effort, or even worse, we do not fully understand it and are forced to use a guide that is too general and confusing.

At the same time, most teachers agree that serious changes need to be made in our educational system and that if anyone can make them happen, teachers can. Therefore, if a reform initiative is going to be effective, it must be realistic and must respect teachers. The national standards are meeting such criteria by presenting a holistic view of education reform that values the professional knowledge and abilities of teachers. In fact, standards have grown out of nearly a decade of effort, with teachers and professional education organizations at the center of the action.

Within the national discussion on developing and implementing education standards, teachers have made important contributions. Yet, many teachers are still uncertain about how standards will affect their teaching. *The Standards Teacher* offers guidance on the standards from the perspective of a teacher by suggesting concise and practical information about how teachers can put standards to work in their classrooms.

We hope that after reading this document, you will have a better sense of how to implement standards in a professionally rewarding way, one that guides and refines your curricular, instructional, and assessment decisions. The Council for Basic Education's Standards for Excellence in Education content standards are found in a companion volume. Here, we will selectively review, across the content areas, the functional aspects of standards that bear on curricular and pedagogical decisions.

Those Recurring Questions

As much as we value professional autonomy, we want to know that the decisions we make as teachers are consistent with and valued by the teaching profession at large. Teachers who have taught one year or twenty years seem to ask the same questions, questions that highlight the lack of unity in our profession:

What am I trying to teach?
What is the point of this lesson? I have taught this novel for six years, and each time I really don't know exactly what the students are getting out of it. I know they enjoy the characters and the plot, but I'm not sure what real knowledge or skills they are learning.

Why am I teaching this?
The longer I teach, the more I question why I'm teaching this content. I know the district thinks it is important, but I'm not sure it has anything to do with the present or future lives of these students.

Are other schools addressing the same material?
I recently talked to another teacher in our district, and she said they are not teaching the same things we are in math. She said their students don't have to memorize all the block patterns in any grade. I wonder if we are the only school in the district still teaching this material.

Are these kids really the right age for this?
I think of myself as a good teacher, but I am frustrated with my lack of success when it comes to teaching content. Do my students have low skill levels or are they the wrong age to be learning this content? I have heard arguments supporting both views. How can I make informed decisions about what to teach?

How do I know if I am an expert?
I wish guidelines existed that are respected and adhered to by everyone in and out of our profession. That way, we can know if we are doing a good job and perhaps even be recognized for it. Some days I think I am expert; other days I feel overwhelmed by some new plan our school has for changing the way we run our classrooms.

Questions such as these motivated teachers, parents, professional organizations, communities, and policymakers to come together to develop standards. The following sections address these issues by offering practical strategies for teachers working to implement standards.

Standards in Our Schools

Standards are clearly stated expectations of what students should know, both in knowledge and process, across the liberal arts curriculum if they are to be functional members of society. In other words, standards are far-reaching learning outcomes that include expectations for knowledge and skills, often referred to as declarative and procedural knowledge, respectively. Therefore, as we discuss implementing standards, keep in mind that standards are operationally distinct from curriculum, instruction, and assessment. Specifically, curriculum, instruction, and assessment are the mechanisms by which standards-based outcomes are achieved.

Furthermore, standards are written relatively broadly to allow teachers the flexibility to address the needs and learning styles of all students, so that both equity and excellence can be achieved in every classroom.

Benchmarks

Inherent in the standards are the benchmark grades (fourth, eighth, and twelfth), at which times students are expected to have mastered a specified set of outcomes. Key to implementing standards-based education is an understanding that all teachers at all grade levels must be working toward these outcomes. The success or failure of students reaching the benchmarks is not the sole responsibility of those teaching the fourth, eighth, and twelfth grades.

Collaboration

Nor are teachers alone responsible for achieving standards-driven reform. Therefore, as you plan for standards, consider how students, colleagues, parents, and communities will contribute to your instructional goals. As we discuss later, team building within your school and with parents and your community contributes to productive planning and a smooth, well-supported implementation of standards.

Technology

Technology resources, such as education software and hardware, e-mail, the World Wide Web, CD-ROMs, and videos, provide exciting opportunities for meeting standards-based outcomes in all disciplines. Using technology gives

students real-world experiences with the tools of education and the workplace. In addition, students benefit by having access to a vast array of information and interactive learning situations. Technology provides teachers with access to up-to-date resources on standards and opens up opportunities for innovative teaching.

What Standards Mean for Teachers

As teachers, we know that teaching is not a generic process. On a daily basis our creativity and individuality are crucial to student success. The standards recognize, trust, and support teachers' professional expertise by placing curricular, instructional, and assessment choices in our hands.

Professional Growth

Standards provide teachers with a body of professional knowledge that unifies the teaching profession. Most important for teachers, however, is that standards provide a nationally recognized basis from which we can grow professionally.

As life-long learners, teachers can use standards as a guide to determine in which areas they are already experts and in which areas they can continue to improve their knowledge and practices. In turn, teachers can make more informed decisions about how they spend their money and time in search of useful education. An additional component of the continuing education process is standards-guided introspection and self-assessment.

Share Ideas and Concerns with Colleagues

Standards provide teachers with a forward-thinking framework within which to participate in ongoing dialogue about how to improve student learning. However, standards are only the basis for the dialogue. In order to keep the conversation alive and continuing, innovative forms of communication, including the Internet, must be sought and used.

With nationally implemented standards, we can be confident that, as our lives change and we move to other districts, cities, or states, the expected learning outcomes for our students and professional outcomes for ourselves will be consistent. While we may have to adjust to a new school and adopt new curricula, the job will be easier because we will know what we are teaching and why we are teaching it.

What Standards Mean for Students

Built into standards is the belief that all students can learn. That is why national standards include specific, grade-appropriate expectations for all students across the curriculum and across the country. Standards assume students can take an active role in the learning process and those students who do so learn better. However, standards do not assume that all students know how to stimulate their natural inquisitiveness in an academic setting without the professional guidance of a teacher.

Therefore, at all grade levels we must use teaching strategies that prompt students to take an active role in learning. Active learning requires students to take on increasing amounts of academic responsibility by making choices and decisions about their learning. Simultaneously, students must learn to value the learning process and know how to acquire knowledge by becoming aware of how they learn. Metacognitive awareness requires students to think about their own learning through exercises designed by teachers.

All of this can seem overwhelming, especially in light of the time, energy, and creativity needed to do what teachers already accomplish in the classroom. It need not be overwhelming, though. There are places to start, and resources at hand, to move step by step into a standards-driven focus for your classroom.

Pre-planning

The Individual Teacher

A practical way to begin the process of integrating standards into your teaching is by looking for similarities and differences between the learning outcomes you have already established and the standards for your subject and grade level. If you do not have a set of learning outcomes, adopting standards will give you a professionally responsible framework for purposeful planning. In the meantime, use your curriculum and lesson plan book to help you gauge which standards you may already be implementing and which standards need to be added. As you go through this process, ask yourself, "What am I trying to teach?"

When you find similarities, examine your goals, objectives, instructional strategies, and assessments to make sure that they fully meet the expectations

of one or more standards. Work to include depth as well as breadth in your curriculum. For example, check to be sure that all parts of your lessons are aligned with one or more standards. (Lessons need not be confined to a single standard; often it is more effective to teach towards more.) You may find that you want to adjust the teaching strategy or assessment—or both—to help you meet the expectation of the standard. If so, the instructional and assessment strategies sections of this document will help guide those important decisions.

Do not get discouraged if you discover differences between what you do and what the standards require. Remember that the texts, topics, and activities of your best lessons do not have to be discarded because the learning outcome is not a standard. What is needed is a replacement of the existing learning outcome with a standards-based outcome and a thoughtful rethinking of how and why your favorite lessons can be restructured to integrate standards effectively.

Standards Teams

School-wide standards teams should be organized to help develop broad connections between school philosophies and curricula and standards-based outcomes. You may want to organize a team within your grade or discipline or join a team to meet with parents. Implementing standards involves taking a multidisciplinary, multi-grade-level approach to teaching. Therefore, the responsibility of the teams is to coordinate curriculum and content coverage within and across the disciplines and grades, as well as to share ideas and concerns about standards. Team members can provide valuable feedback to colleagues. Moreover, as standards teams develop, they can create a set of criteria or rubrics to gauge the success of school-wide standards.

Planning

Planning practices are developed over time and influenced by school policies and by what happens in the classroom on a daily basis. Planning can be frustrating and time-consuming when we are unsure about what we are teaching.

Standards make planning more efficient and enhance creativity by reducing the time spent determining what to teach, why to teach it, and deciding whether the lesson is appropriate for the grade level. In this section, we hope that the strategies suggested spark new ideas and connections between standards and your planning

and instructional practices. Clarification of what standards are *not* designed to do will give insight into how standards can guide strategic, effective planning decisions about instruction and curriculum.

Standards are not to be used explicitly to determine curriculum. Instead, standards provide guidance for curriculum choices appropriate for the particular group of students being taught, the realities of the school environment, and the needs and expectations of the community. Some of your approaches to teaching a resource class may differ from your approaches to teaching an honors class, yet both groups can still reach the same standards. Similarly, the challenges you might face when teaching in a school with a migrant population are different from the challenges you might face when teaching in a school with a very stable population. Yet, students in both environments can work toward learning the same content, to the same high levels.

Standards are not to be viewed as a set of discrete curricular components, each representing a unit of class time. Across and within the disciplines, implementing standards will require varying amounts of instructional time. Some will take less time, some will take more, and several can be worked toward at once. As a general rule in planning your lessons, you will need to adjust your timing accordingly. Remember, though, that you should not multiply (number of standards) x (unit of time) to determine what can be accomplished in a semester or a year.

Standards are not be applied serially. Students may be working on meeting more than one content standard at a time. For example, in a particular lesson you may wish to integrate a science standard with a math or writing standard, or possibly all three. Or you may see advantages in combining several components of the arts standards as you prepare your class for a performance.

Standards do not exclude local content. In fact, they are explicitly designed to allow for integration of locally relevant content. For a lesson on changes in the earth's surface, a teacher in Hawaii may choose a curriculum related to volcanoes and island formation, while a teacher in Southern California may wish to teach about earthquakes and plate tectonics. Similarly, teaching about local history is an important part of achieving history standards. You may want to have your students study how the history of their region or country of origin has influenced United States history.

Integrating Curriculum and Standards

In many schools curriculum is prescribed, with varying amounts of choice for materials and instruction. We may feel bound by curriculum and find that it dictates the learning outcomes of our lessons. We may also find that goals for learning outcomes we develop do not fit well with the curriculum. Therefore, we may not fully achieve any outcomes because we cannot reconcile these problems.

Curriculum is a means through which standards-based outcomes can be met. Use standards to provide a content-based focus to integrate your ideas and creativity with the curricular requirements of your district and the individual characteristics of your students. With national standards in place, you take the lead in determining which parts of the curriculum effectively meet outcomes and how you develop these parts. When needed, a strong case for a new curriculum can be made when curriculum is not clearly aligned to standards.

As you choose curriculum to implement standards, make sure it is appropriate for the developmental level of the students, relevant to students' interests, and coordinated with other components of the curriculum and standards.

Instructional Strategies

Instructional strategies link curriculum to standards. Of the many effective instructional strategies teachers use, performance-based strategies are particularly useful because they empower students to demonstrate their understanding of concepts and principles and their ability to apply skills and knowledge. Moreover, performance-based strategies support active learning and metacognitive development.

As you review the instructional hints below, reflect on methods of instruction you are familiar with or use. Keep in mind that these suggestions are a starting place. Experiment with these strategies or combine them with lessons you have already developed or want to design. Vary instructional strategies and activities in order to meet the learning needs of all students. Incorporate topics and ideas across standards, both within a content area (e.g., graphing and geometry within mathematics) and across several content areas (e.g., integrating language arts, history, and science within a lesson).

Instructional Techniques

Active learning. Standards-based outcomes are best achieved when students are actively involved in learning.

- Emphasize student-centered as opposed to teacher-centered activities.
- Construct activities that develop minds-on and hands-on problem-solving skills.
- Use coaching and facilitating strategies.
- Give students academic responsibility by allowing them to make choices about curriculum and assessment; however, start small—giving up control can be difficult.
- Hold students accountable for their learning by having them create and follow criteria for the process and product of lessons.

Authentic learning. Standards-based outcomes include expectations for knowledge and skills that can best be learned when students see the purpose of the task and how it relates to their lives concretely or abstractly.

- Emphasize meaningful activities that have real-world relevance and utility.
- Choose tasks that represent real-world problems in authentic contexts by using examples and analogies to which students can relate.
- Use information drawn from student backgrounds, interests, ideas, and interpretations to create authentic tasks. Be cautious, though. Teachers should not pry, and students should not feel forced to reveal private information.
- Require students to make observations of authentic problems outside the classroom by having them use their school, home, and community as resources.

Instructional Strategies That Promote Active and Authentic Learning

Inquiry teaching. Inquiry teaching supports students' independent thinking by allowing them to discover their own solutions. The purpose and design of inquiry learning can be derived from standards-based outcomes. Inquiry lessons are developed around a set of steps or procedures, a perplexing situation, data gathering, hypothesizing, and analyzing the discovery and inquiry process.

Cooperative learning. Cooperative learning is an effective strategy for implementing standards-based outcomes because students assume active roles and take responsibility for their own learning by working together in mixed-ability teams. Assessment can be the process or product or both of the group or individual. The role of the teacher is to facilitate group interaction, progress, and outcomes.

Discussion. Classroom discussion techniques foster students' use of their own knowledge and histories when constructing meaning. In large or small group discussions, students learn how to formulate and analyze questions. Teachers facilitate students' independent thinking by using guided questioning techniques.

Role playing. Role playing is an experience-based learning process that leads students to find ways to solve problems and understand their role in social interactions. In role playing, an authentic problem is posed, acted out by students, and discussed in terms of process and outcome.

Workshops. The workshop model allows students to work at their own pace and make choices about curriculum and assessment while meeting specific goals. Journal writing is often a key component of workshops that promotes daily articulation of thoughts, processes, and reflections.

Mini lessons. Mini lessons are five- to ten-minute lessons that provide guidance to students as they construct meaning. Mini lessons can explain how to use a resource or model a strategy to help students reflect on the process of learning.

Setting Instructional Goals

Without goals, standards are unattainable. Long-term, short-term, and daily goals translate standards into a plan for action that structures and motivates teaching and learning. Goals aid the implementation of standards by guiding sequence and aligning instruction, activities, and assessment. In addition, setting goals enhances classroom management and student success because students know what is expected of them.

As you plan and modify goals individually and in standards teams, include the following general hints to help align standards with existing goal-writing practices and to create new goals. Use standards to help improve creative ideas you have already developed but which have not been implemented as successfully as you

wanted. Keep in mind that goals must be clearly identified—they are not implicit in the content or activities.

Long-term goals. Standards take the form of long-term goals as planning for the year begins. Written in general terms, standards-based goals guide short-term goals and daily lessons. When developing long-term goals,

- identify curriculum, instruction, and assessment strategies that meet standards;
- align curriculum, instruction, and assessment with each other and standards;
- identify instructional and material resources;
- identify opportunities to use technology;
- incorporate methods for activating prior knowledge (linking old knowledge to new knowledge);
- create structures for declarative and procedural knowledge that identify standards; and
- identify goals for professional growth.

Short-term goals. Set unit and semester goals to refine and detail long-term standards-based goals. When developing short-term goals,

- write content and performance objectives for specific lessons;
- integrate active learning techniques;
- incorporate authentic tasks and assessments that connect students to standards;
- determine structure, sequence, and timing of lesson plans;
- use observations and student feedback to modify goals and lessons; and
- vary teaching methods and assessment strategies according to needs and learning styles of all students.

Daily goals. Daily goals put long-term and short-term plans into action. When developing daily goals,

- refine the relationship between what is taught and assessed;

- communicate goals and objectives to students at the beginning of each meeting;
- make sure tasks and activities are authentic and have a clear purpose;
- use observations and student feedback to modify goals for upcoming lessons; and
- review daily goals and objectives at the end of class time to reinforce standards.

Classroom Management

Suggesting reform and then ignoring classroom management is unrealistic. As teachers, we know that our teaching methodology is coupled with keeping our students ready to learn in a productive environment. Although the standards are not designed to be a quick fix for classroom problems, a few reminders and helpful hints may be useful as you make adjustments in your planning to implement standards.

Identify and reinforce two sets of student responsibilities. A technique for incorporating standards into the classroom is to divide student responsibilities into two domains: academic and behavioral. For academic responsibilities, create poster-size lists of standards you expect students to be responsible for achieving during the school year. Putting up all the standards at once would be overwhelming and unrealistic. Therefore, rotate specific lists of standards for units and lessons. Take time to explain standards to students. Direct students' attention to the standards regularly, relate the standards to lessons, and set goals with students for meeting standards throughout the school year.

For behavioral responsibilities, have students work in small groups or in a large discussion to define a set of classroom responsibilities. Create a poster-size list of the agreed-upon responsibilities and post it in the classroom. Direct students' attention to the list regularly.

Know your content well. Teachers' competence and passion motivate students. Being prepared on a daily basis and being confident and enthusiastic about content reduce disruption in lesson momentum. Use standards as a guide to master content areas.

Systemize classroom activities to help with timing and sequencing. Early in the year give students tools to behave and perform to your expectations in various teaching contexts. For example, when you instruct students to get into their groups to discuss a poem, they should know from practice exactly what you expect them to do.

Be aware of transitions. Make transitions between lessons and activities as seamless as possible. Therefore, include transition times and procedures in your lesson plans.

Assessment

Assessment links curriculum and instruction to standards by measuring each student's achievement of expected outcomes. Assessment must be functionally aligned with instructional methods and standards-based outcomes. Which assessment strategy or tool you choose to use depends on the purpose and procedures of each lesson.

Simple paper-pencil tests (such as short answer) allow us to make a judgment about what students have learned. We use paper-pencil tests to evaluate how well students remember what has been taught. Performance-based assessment goes a step beyond paper-pencil tests by requiring students to demonstrate what they have learned and what they are able to do with that knowledge. In other words, students must show comprehensive knowledge of basic skills and demonstrate that knowledge through performances such as exhibits, science experiments, role playing, journals, and projects. Of course, paper and pencils are the tools of some performance assessments, such as essays or the aforementioned journals.

Hints and Techniques to Incorporate into Assessment

Use assessment strategies in the learning context. For example, if laboratory work is used as a teaching strategy, the assessment should be hands-on, as well—not a multiple-choice test. In fact, we would argue that for classroom-level assessments of individual students, multiple-choice tests are rarely if ever an effective means of determining what students have learned or can do.

Use instructional strategies for assessment. Instructional strategies, such as journals, role playing, and inquiry teaching, can be adopted as assessment tools.

Use scoring guides and rubrics to identify levels of proficiency. Develop criteria for specific activities by aligning them with standards. Scoring guides help students understand how and why they are being assessed. In addition, scoring guides allow students to self-assess their proficiency.

Allow for divergent thinking. Use open-ended questions or questions without clear-cut answers to encourage students to employ their individual thinking styles to demonstrate proficiency.

Assess collaboration and team effort. Standards recognize that students need to work effectively with others to solve problems and make decisions. Plays, math demonstrations, and oral debates are a few examples of assessment strategies that can be used to assess group effort as well as an end product.

Use portfolios for ongoing assessment. Student portfolios reinforce standards-based teaching by measuring student progress through assessments of students' proficiency in process and product. Throughout the year, teachers and students participate in portfolio conferences whereby student work is used as an indicator of learning progress. Before and during the conference, goals and questions can be aligned with standards. Moreover, teachers can respond to the individuality and diversity of students by allowing students to set their own goals.

Challenges to Standards-Based Reforms

Unfortunately, implementing standards cannot make some of the most basic and obvious problems in education go away. We must address these obstacles and hope that by refining our profession through standards, policymakers and communities will support action to free our educational system of these constraints.

Large class sizes. As most of us know, large classes force content into the background while pushing classroom management into the forefront. Although standards advocate self-directed, active learning, students do need individual attention from their teachers.

District and state tests. Emphasis placed on district and state tests can dominate our teaching time and slow our students' success in the classroom. Reducing the amount of time allocated to test preparation and implementation allows teachers and students more time to focus on the process of learning.

Range of abilities of students. Currently, the ability levels of some students may not match expected standards-based outcomes for a specific grade level.

Incorporating diverse instructional methods and assessments to reach all students will help. Solving this problem will require that all teachers use standards appropriate for students' grade level. As we said earlier, reaching standards can only be done by teachers working together—the first-, second-, and third-grade teachers' efforts towards standards implementation lead to students' successful achievement of the fourth-grade benchmarks.

Lack of planning time. Teachers' planning time is often spent in meetings, covering other teachers' classes, grading, conferencing, and making phone calls to parents. There is little or no time to learn, develop, and implement new ideas.

As alarming as these issues are, finding ways to make standards a reality is possible. However, doing so will take collaboration, perseverance, time, good humor, and patience.

Take Action for Change

As teachers, we can influence the course of change for our schools by working together as a national community of professionals to implement standards-based education. Below are some suggestions for making standards work to support learning.

Expand professional development opportunities. To be effective, teachers need to be linked nationally to standards information. They need time to prepare, and they need in-service training, workshops, and materials that promote standards implementation. A first step to garnering this support is asking our schools, parents, and communities to support our efforts with time and allocation of funds. We can follow up by organizing teams to align school policies with standards and by recruiting parents and community members to become standards experts.

Develop a school-wide culture. Work with colleagues to create a supportive environment for change that guides the school community toward successful standards implementation. Craft specific measures to indicate progress toward your goals. These measures should be designed to enhance teacher professionalism and further your school's achievement.

Conduct action research. We are innovators, and our classrooms are laboratories. Our research is the constant refining of our profession to meet the needs of

the children we teach. As teachers, we can make great strides in advancing standards-based education by sharing successful strategies and techniques with our colleagues and by publishing innovative and transferable strategies for success.

Answers to Those Recurring Questions

Standards provide clear, high expectations for what students should know and be able to do to be functional members in society. Standards leave no doubt about what we should teach or why. With standards in place, we can be confident that other schools are working toward the same outcomes and that students are challenged appropriately. Standards also help us to assess our own professional growth by guiding the steps necessary to build expertise in the classroom.

With national standards in place, those recurring questions of content, methods, and ability will begin to be answered. In fact, as we teach in a professional culture rooted in high standards for all, we will have the confidence to guide students toward content- and performance-based achievement, and those questions may well disappear.

Professional Resources for Standards-Based Teaching

Listed below is a sampling of resources, arranged by subject areas, that can help teachers as they align standards with curriculum, instruction, and assessment. The list is by no means inclusive, and resources and books with which you are already familiar may also prove helpful when approaching them with standards in mind. In addition to texts, watch for articles in general education journals that discuss implementing standards. Keep in mind that each subject area has many journals that can help teachers design and reorganize classroom activities to meet standards.

We have included in the categories below some Internet resources from national discipline-based organizations. Websites are updated frequently, and referring to them is often less expensive and time-consuming than searching catalogs, libraries, and education supply stores. In addition, Websites may include reference resources and detailed plans that can be downloaded for immediate use. When Websites are interactive, teachers can participate in dialogues, network, and ask questions and get answers.

A number of commercial Websites can provide teachers with invaluable standards-based classroom resources as well. To consider supplementary curriculum materials, you may be interested in visiting the Websites of textbook publishers, national television networks, and national education organizations.

General Resources

Online Educator at **http://ole.net/ole/.** This site contains archives with subject-specific links and grade-level links. Each week *Online Educator* highlights other Websites of potential interest to teachers. It also includes a discussion forum and NetLesson, a guide for teachers on using the Internet.

Other organizations that may have standards-based resource materials for teachers include:

Education Trust
1725 K Street NW, Suite 200
Washington, DC 20006
202/293-1217; FAX: 202/293-2605
http://www.edtrust.org

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National Center on Education and the Economy
New Standards Project
700 Eleventh Street NW, Suite 750
Washington, DC 20001
202/783-3668; FAX: 202/783-3672
http://www.ncee.org

Mid-continent Regional Education Laboratory
2550 S. Parker Road, Suite 500
Aurora, CO 80014
303/337-0990; FAX: 303/337-3005
http://www.mcrel.org

The Arts

Visual Arts

National Art Education Association (NAEA)
1916 Association Drive
Reston, VA 20191-1590
703/860-8000; FAX: 703/860-2960
http://www.naea-reston.org

Adaptation of the National Visual Arts Standards, ed. Larry Peeno (1995)
Instructional Methods for the Artroom, ed. Andra L. Nyman (1996)

The NAEA Website provides an extensive listing of publications on art education standards and their implementation in the classroom. Topics covered include art curriculum development, teacher resources, professional development, and art content resources.

Additional Websites include:

ArtsEdNet at **http://www.artsednet.getty.edu**. This site contains sample lesson plans and curriculum ideas, an image gallery, Web gateways, a publications catalogue, and ideas for garnering support for arts education.

ArtsEdge at **http://artsedge.kennedy-center.org/sc/dsgntool.html**. In addition to resources for arts education, this site includes information on standards, frameworks, and assessment.

Association for the Advancement of Arts Education (AAAE) at **http://www.aaae.org**. Although AAAE serves the educators in the greater Cincinnati area, this Website provides "hot links" to a number of arts resources for teachers around the nation.

Music

Music Educators National Conference (MENC)
1806 Robert Fulton Drive
Reston, VA 20191
703/860-4000
http://www.menc.org

MENC magazines and journals: *Music Educators' Journal, Teaching Music, Journal of Music Teacher Education,* and *Journal of Research in Music Education.*

Additional Websites include:

Resources for Music Educators at **http://lrs.edu.uiuc.edu/Music-Ed/home.html**. This site contains a bibliography of useful readings for music teachers with some experience, links to a printed resources directory, information about the national arts standards, and a directory of World Wide Web resources. Designed for teachers of students aged five to eighteen.

MusicNet: The Online Guide to Music Education at **http://tqd.advanced.org/3306**. This site includes an interactive music education encyclopedia, tips from inside the music profession, and contests and games.

Theatre

Educational Theatre Association/International Thespian Society
3368 Central Parkway
Cincinnati, OH 45225-2392
513/559-1996; FAX: 513/559-0012
http://www.etassoc.org

Dance

Alliance for Health, Physical Education, Recreation, and Dance
1900 Association Drive
Reston, VA 20191
703/476-3400
http://www.aahperd.org

This Website contains links to the National Dance Association, which has information on publications and communications, conventions and meetings, and professional services.

Civics

Center for Civic Education
5146 Douglas Fir Road
Calabasas, CA 91302-1487
818/591-9321; FAX: 818/591-9330
http://www.civiced.org

The Center for Civic Education offers teachers curricular programs and materials, CD-ROM materials (including the U.S. Constitution), textbooks for various grade levels, and a number of publications, including copies of the nation's core documents, comparative lessons for democracies, and *CIVITAS: A Framework for Civic Education.* The center's Website provides access to Internet resources and access to research and evaluation.

English/Language Arts

Standards in Practice series. Four volumes, published by the National Council of Teachers of English (NCTE), offer teachers ideas and guidance on how to encourage students to develop language and literacy skills to meet national standards. Each book includes narratives and vignettes about implementing standards-based lessons. The teacher experiences are believable and touch all aspects of the teaching process.

Standards in Practice, Grades K-2, by Linda K. Crafton (1996)
Standards in Practice, Grades 3-5, by Martha Sierra-Perry (1996)
Standards in Practice, Grades 6-8, by Jeffrey D. Wilhelm (1996)
Standards in Practice, Grades 9-12, by Peter Smagorinsky (1996)

Assessing Student Performance: Grades K-5; Grades 6-8; Grades 9-12, eds. Miles Myers and Elizabeth Spalding (NCTE, 1997).

These three volumes, published by NCTE, are useful guides for developing assessment tools. Each book includes well-developed discussions, describes on-demand tasks, and provides grade-level samples of student work. The books also include guidance for using portfolios and rubrics that define different achievement levels for given tasks.

Associations to contact:

National Council of Teachers of English
1111 West Kenyon Road
Urbana, IL 61801
217/328-3870; FAX: 217/328-9645
http://www.ncte.org

NCTE magazines and journals: *Language Arts, Primary Voices, School Talk* (newsletter), *Voices from the Middle, English Journal,* and *Notes Plus.* The NCTE Website includes resources such as an annotated book list, teaching ideas, convention information, journal information, and an ongoing, updated, and practical discussion about implementing English standards and integrating reading and writing into other content areas.

International Reading Association (IRA)
800 Barksdale Road, P.O. Box 8139
Newark, DE 19714
302/731-1600; FAX: 302/731-1057
http://www.readingonline.org

IRA magazines and journals: *The Reading Teacher, Journal of Adolescent & Adult Literacy, Reading Research Quarterly,* and *Lectura y vida.*

Foreign Languages

Several associations in the foreign languages collaborated with the American Council on the Teaching of Foreign Languages (ACTFL) to create the *Standards for Foreign Language Learning* around five broad themes: Connection, Communication, Comparison, Culture, and Communities. From these standards, language-specific standards are being developed for Chinese, classical languages (Latin and Greek), French, German, Italian, Japanese, Russian, and Spanish.

Language Link at **http://polyglot.lss.wisc.edu/lss/lang/langlink.html** offers information to teachers on African languages and literature, Asian studies, Classics (Greek and Latin language and ancient literature), English as a Second/Foreign Language, French, Germanic languages, Italian, Portuguese, Quechua, Scandinavian studies, Slavic, and Spanish. Websites have links to information on culture and history, media, city tours, literature, and language.

Associations to contact:

American Council on the Teaching of Foreign Languages
6 Executive Plaza
Yonkers, NY 10701
914/963-8830; FAX: 914/963-1275
http://www.actfl.org

ACTFL offers teachers professional workshops in assessment, standards-based instruction, curriculum design, second language learners, and technology. Its Website also provides information on ACTFL certification workshops.

Geography

A Key to the National Geography Standards, by Gail Hobbs, Kit Salter, and Cathy Salter, provides a graphic guide linking the standards with grade levels. Distributed by the National Council for Geographic Education (NCGE).

Why Not Here?, by Phil Gersmehl, is a nine-chapter tool for implementing the geography standards in middle school and high school classes.

National Council for Geographic Education
16A Leonard Hall
Indiana University of Pennsylvania
Indiana, PA 15705
412/357-6290; FAX: 412/357-7708
http://www.ncge.org

NCGE publications include *Journal of Geography*, which offers strategies for teaching geography; a newsletter, *Perspective*, with resource information for teachers on directories, articles, and Internet materials for their classes; and an annual *Geography Resources for Teachers*, listing printed materials, posters, tests, contests, and video and CD-ROM materials.

History

Bring History Alive. This is a two-volume set, published by the National Center for History in the Schools (1997), that includes the *Sourcebook for Teaching World History* and the *Sourcebook for Teaching United States History*. Both texts include skills aligned with standards and are good for planning and creating objectives and lessons. They include annotated lists of resources.

Building a History Curriculum: Guidelines for Teaching History in Schools was prepared by the Bradley Commission on History in Schools and published by the National Council for History Education (1988, 1995). It lists topics for study in American history, Western civilization, and world history; discusses the place of history in the grades; and describes course structures and priorities. This foundational report has been expanded into a four-volume series:

Building a United States History Curriculum (1997)
Building a World History Curriculum (forthcoming)
Building a Curriculum in Western Civilization (forthcoming)
Building History Instruction in Grades K-4 (forthcoming)

Each volume will include general guidelines to planning curriculum, designing teachable courses, and collaborating with other teachers. They will feature central strands, significant questions, and major topics for course creation; and will list additional resources for eras, events, and topics.

Associations to contact:

National Center for History in the Schools (NCHS)
University of California at Los Angeles
10880 Wilshire Boulevard
Los Angeles, CA 90024
310/825-4702

NCHS publications include the national history standards and *Bring History Alive* (described above).

National Council for History Education (NCHE)
26915 Westwood Road, Suite B-2
Westlake, OH 44145-4656
440/ 835-1776; FAX: 440/835-1295
http://www.history.org/nche

History Matters! is the NCHE journal. The NCHE Website establishes links to major historical organizations, societies, museums, and Internet resources.

National Council for the Social Studies (NCSS)
3501 Newark Street NW
Washington, DC 20016
202/966-7840
http://www.ncss.org

NCSS magazines and journals are *Social Education* and *Social Education and the Young Learner.* They also published *Expectations of Excellence: Curriculum Standards for Social Studies.* The NCSS Website lists resources categorized by the ten themes of social studies standards, including books and periodicals, CD-ROMs, curriculum units, and electronic media.

Mathematics

Standards and Addenda books from the National Council of Teachers of Mathematics (NCTM) include grade-specific activities to allow teachers to customize their lesson plans and can be purchased in a number of package deals.

K-3 Addenda Books: 4 books
Grades 4-6 Addenda Books: 3 books
K-6 Addenda Books: 7 books
K-6 Subject Matter Books: 4 books *(Geometry and Spatial Sense, Making Sense of Data, Number Sense and Operations, Patterns)*
K-6 Addenda plus Subject Matter Books: 11 books
Grades 5-8 Addenda Books: 6 books
Grades 9-12 Addenda Books: 5 books
Grades K-12 Addenda Books: 22 books
The Complete Standards Package: 3 books *(Curriculum and Evaluation Standards for School Mathematics, Professional Standards for Teaching Mathematics, Assessment Standards for School Mathematics)*

Associations to contact:

National Council of Teachers of Mathematics
1906 Association Drive
Reston, VA 20191-1593
703/620-9840; FAX: 703/476-2970
e-mail: nctm@nctm.org
http://www.nctm.org

The NCTM magazines and journals are *Teaching Children Mathematics, Mathematics Teaching in the Middle School, Mathematics Teacher,* and *Journal for Research in Mathematics Education.*

National Center for Improving Student Learning & Achievement in Mathematics and Science
1025 W. Johnson Street
Madison, WI 53706
608/263-3605; FAX: 608/263-3406
e-mail: ncisla@mail.soemadison.wisc.edu
http://www.wcer.wisc.edu/ncisla

Additional Websites include:

AIMS Foundation Home Page at **http://aimsed.org.** This Website provides a large archive of learning activities that can be downloaded for science and mathematics classes. It also includes links to other sites and an idea exchange page.

Eisenhower National Clearinghouse for Mathematics and Science Education at **http://www.enc.org.** This Website provides a number of standards resources through an online catalogue of curriculum resources, the "ENC Resource Finder," and maintains the NCTM curriculum and evaluation for standards in school mathematics.

Science

The *Pathways* series published by the National Science Teachers Association (NSTA) provides guidelines to help teachers better understand the K-12 science standards and how to incorporate the standards into their classes. Each book is a repository of information and includes background science material on the standards, describes techniques for teaching the standards, and includes well-defined lesson plans and examples of appropriate classroom activities. Useful resources are included in each section of the book and in the appendices. The books also include discussion and suggestions for professional development.

NSTA Pathways to the Science Standards: Guidelines for Moving the Vision into Practice, Elementary School Edition, ed. Lawrence F. Lowery (1996)

NSTA Pathways to the Science Standards: Guidelines for Moving the Vision into Practice, High School Edition, eds. Juliana Texley and Ann Wild (1996)

The American Chemical Society has published *Chemistry in the National Science Education Standards: A Reader and Resource Manual for High School Teachers.* It is available from

American Chemical Society
Education Division
1155 16th Street, NW
Washington, DC 20036

Associations to contact:

National Science Teachers Association
1840 Wilson Boulevard
Arlington, VA 22201
703/243-7100; FAX: 703/243-7177
http://www.nsta.org

The NSTA magazines and journals are *NSTA Reports!, Science & Children, Dragonfly, Science Scope, The Science Teacher, Quantum, Journal of College Science Teaching.* NSTA's Website provides practical classroom ideas and information on how to implement standards. It also links visitors to a number of teaching resources.

NSTA has two additional Websites linking National Science Education Standards and NSTA's Scope, Sequence, and Coordination Project: **http://www.gsh.org/nsta/index.htm** and **http://www.gsh.org/nsta/nses_home.htm**. These sites include curricular resources and micro-units arranged by content standards and subtopics containing standards-based labs, readings, and assessments that can be downloaded.

American Association for the Advancement of Science
Project 2061
1333 H Street NW, Room 1027
Washington, DC 20005
202/326-6666; FAX: 202/326-6627
http://www.project2061/aaas.org

Project 2061, dedicated to reforming K-12 science education, was launched in 1989 by the publication of *Science for All Americans. Benchmarks for Scientific Literacy,* published in 1993 and now available on-line, provides specific learning goals for grades 2, 5, 8, and 12. *Resources for Scientific Literacy* offers teachers standards-based teaching and learning materials in a CD-ROM format. At the Project 2061 Website teachers will find information about Project 2061 and national standards in science, mathematics, and social studies.

National Sciences Resource Center
Smithsonian Arts & Industry Building, Room 1201
Washington, DC 20560
202/786-2064; FAX: 202/786-2028
http://www.si.edu/nsrc

The National Sciences Resource Center, a joint venture of the Smithsonian Institution and the National Academy of Sciences, offers elementary and middle school teachers guidance to using and developing science education resources, training in how to engage students in doing science, technical assistance, and leadership development.

Additional Websites include:

AIMS Foundation Home Page at **http://aimsed.org.** This Website provides a large archive of learning activities that can be downloaded for science and mathematics classes. It also includes links to other sites and an idea exchange page.

Eisenhower National Clearinghouse for Mathematics and Science Education at **http://www.enc.org.** Provides a number of standards resources through an on-line catalog of curriculum resources, the "ENC Resource Finder."

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