SREB

HIGH SCHOOLS THAT WORK

Planning for Improved Student Achievement

Ten Steps for Planning and Writing Standards-Based Units

Southern
Regional
Education
Board

592 10th St. N.W.
Atlanta, GA 30318
(404) 875-9211
www.sreb.org

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Introduction

Nothing matters more in the battle to improve student achievement than the teaching and learning that takes place in the classroom. There can be changes in leadership, changes in professional development opportunities and changes in schedules; but what matters most is a well-prepared teacher effectively engaging students in meaningful and intellectually challenging instruction.

The question is: How can teachers engage students in challenging and meaningful learning that also effectively addresses state and local standards? To address this question *High Schools That Work* (*HSTW*) developed this comprehensive guide to aid teachers in planning and writing standards-based lessons and units. It explains what standards-based units look like, how they work, and how they can be developed using a 10-step process and these guiding actions:

- **Use national, state and local standards to promote what students need to know and be able to do in the 21st century.** Standards-based unit planning provides a method for purposefully aligning standards to classroom activities, assignments and assessments. During the pilot of this process, administrators and teachers implementing this practice noticed a shift in the school's focus to curriculum and instructional practices. One high school principal observed, "standards-based units seem to change the focus from teaching to learning."

- **Raise the level of assignments and assessments and teach critical thinking.** Standards-based planning focuses instruction on developing rigorous and meaningful lessons that engage students in critical thinking and learning. Teachers develop daily plans that encourage higher-level thinking and help students achieve at or above grade level. Teams of teachers work together to create units, encouraging self- and peer-review to increase the quality of teacher assignment and student work. One middle grades teacher said, "since we now know how to do real standards-based planning, all of us will be expected to plan at higher levels."

- **Connect classwork to the real world.** When students can connect classroom content and assignments to previous information and real-world goals, they find relevance in learning and are motivated to succeed. A 12th-grader who struggled with mathematics throughout high school explained how a standards-based mathematics course helped him better understand the course content: "The class made me think and I learned more in that course than in all my other math courses in high school. I actually could see how each day's lesson connected to other lessons." Teachers develop daily lessons and unit plans that are not tied solely to textbooks. Assignments and assessments allow students to solve real-life problems.

- **Embed literacy strategies and habits of success in all lessons.** Schools with high student achievement embed reading and writing strategies into classroom instruction to engage students in mastering the language of the discipline. Standards-based planning requires teachers to identify the specific literacy strategies and habits of success their students need and incorporate these into every unit to help students develop time management, study and relationship skills.

- **Use a variety of learning styles that build on the diversity and strengths of students.** Standards-based unit planning encourages the use of multiple types of assignments and assessments to address multiple learning styles and provide the personal attention students need in order to succeed. The unit and daily plans ask teachers to use a variety of strategies. The unit format allows teachers to quickly review types of strategies planned for the unit and ensure that daily plans meet the needs of all students, especially those with special needs.

Teachers come into the standards-based unit development process with varying levels of experience and expertise. This guide is organized to accommodate all educators, from novices to those with experience in planning standards-based units. The 10 steps provide a basic outline for the planning process. For those who would like further information, the appendices provide additional resources and more in-depth explanations of the steps.

Planning a Standards-Based Unit

Why take the time to plan standards-based units?

Over the past 20 years, SREB staff members have visited hundreds of middle grades and high school classrooms. Observations from these visits reveal that, while most schools have gone through a process for mapping, prioritizing and aligning standards, few have developed a process for ensuring classroom assignments and assessments meet grade-level standards. Using data from school visits and state and national assessments, *HSTW* concluded that schools need a process to assist them in aligning instruction to *grade-level* standards using research-based strategies.

Results from the 2005 National Assessment of Educational Progress (NAEP) show that, nationally, students are not making significant academic progress in reading, mathematics or science. Twelfth-grade students' scores on the reading and science assessments declined between 1992 and 2005, and less than one-fourth of students achieved at or above the Proficient level on the 12th-grade mathematics assessment. One explanation for these stagnant and declining scores is the level to which teachers are teaching. When teachers hold students to minimum standards — which are often set below grade level — these low or basic expectations lead to low student achievement. A large percentage of students leave grade eight unprepared for challenging high school studies. Many 12th-graders are not prepared to succeed in postsecondary studies or to enter and progress in a high-demand, high-paying career.

To determine how curriculum standards are addressed, the *HSTW* Assessment asks 12th-graders if their courses repeated content they had previously learned. On the 2006 *HSTW* Assessment, more than 66 percent of seniors reported that courses sometimes or often repeated content. Seniors were also asked about literacy skills and reading requirements in various classes. Twenty percent reported reading only one book per year and demonstrating understanding of the significance of the main idea. Fourteen percent reported never reading a book outside of class. More than one-third of students reported never or seldom practicing silent reading in English classes. Many teachers are not using reading and writing strategies effectively to raise student achievement.

To get significantly more students achieving at or above grade level, teachers must be clear about what grade-level learning looks like. Once they have defined grade-level proficiency, schools and teachers can develop a purposeful instructional plan that engages and motivates students to achieve at the appropriate level. Implementing such instructional plans is essential to improving student learning.

In 2006, the National High School Center reported that teachers at high-performing schools focus on strategies that ensure academic rigor, particularly in core content areas. These teachers use guides to stay on track and align courses to standards, rather than simply teaching from the textbook. Standards-based planning provides such a strategy to help teachers avoid the common one-standard-per-day practice, to establish accountability for what they are required to teach, and to assist them in identifying the most important content and skills.

When teachers "begin with the end in mind" — planning lessons by first determining the desired outcomes — they have greater assurance that the daily and weekly activities are building on the final assessment and that students can master the essential content and skills embedded in the standards. "I'll never go back to the way I used to plan," one high school science teacher noted after implementing standards-based units. "My students are so excited about their work, and test scores show a marked improvement in comprehension and retention." Planning standards-based lessons and units takes time, but can result in engaging, grade-level instruction and improved student achievement.

What is a standards-based unit?

Standards are the clear articulation of what students should know (content standards) and be able to do (performance standards) after completing a unit. **This guide defines a standards-based unit as an instructional plan that deliberately focuses on a group of prioritized standards and uses essential questions, pre- and post-assessments, and a daily sequence of engaging instructional activities to teach the standards during a specified time.**

Standards-based units go beyond traditional learning activities by using lessons that engage students in applying new knowledge and skills to complete real-world projects. Students completing a unit clearly see the connections to day-to-day living through application of information. This planning approach aligns instruction with grade-level assignments and assessments to help all students achieve at the proficient and advanced levels. Standards-based units promote engaging, challenging student work through carefully designed lessons.

Standards-based units encourage **teachers** to:

- prepare high-interest, student-centered lessons at or above grade level.
- gain confidence in their ability to teach at high levels and in students' abilities to learn at high levels.
- plan for multiple outcomes by using research-based practices that engage students in meeting standards.
- provide a prescriptive method to determine extra-help and enrichment opportunities for students.
- analyze the effectiveness of lesson plans and adjust or reteach to improve student achievement.
- identify, organize, plan and allocate resources for best results.

Standards-Based units and lessons encourage **students** to:

- achieve at or above grade level.
- acquire and analyze information and apply it to new situations.
- solve problems similar to those found in the community and workplace.
- use the most advantageous learning strategies.
- use a variety of technologies.
- engage in group work to master the material.

Getting Started: Understanding the Vocabulary

Unit planning is new to many teachers, and the unit plan template is significantly different from the lesson plan format used in most schools. Before beginning the planning process, it is important to understand the common vocabulary associated with standards-based unit planning.

- **Benchmarks:** specific learning — measured at particular intervals — expected of students performing at grade level.
- **Curriculum:** the instructional framework that ensures standards (through their performance task indicators) are evident in the content, taught in the classroom and measured through classroom-based assessments. The curriculum includes resources needed to teach in a manner that results in students' mastery of the standard. A **curriculum map** includes the processes and skills, the content (essential concepts and topics), and the tasks (products, performances and problems) that assess learning.
- **Content standards:** definitions of the knowledge and skills students should acquire within a specific course (differ from process standards, defined below). Content standards define what concepts students should learn and understand within a course.
- **Exemplars:** samples of student work that exemplify different levels of performance according to the rubric.

- **Paper-and-pencil assessment:** traditional test used by teachers to determine the content knowledge and skills learned by students, from below- to above-level proficiency. Paper-and-pencil assessments often include multiple choice, fill-in-the-blank and constructed response questions.

- **Post-assessment:** a formative evaluation of student mastery and effectiveness of instructional strategies. The assessment should be administered at the conclusion of the unit and can also be used as a pre-assessment tool to determine prerequisites. The post-assessment consists of two parts: a paper and pencil assessment and a product-, performance- or problem-based assessment.

- **Process standards:** definitions of the ways in which students will apply the knowledge and skills required by the content standards.

- **Product-, performance- or problem-based assessment:** an evaluation that requires students to demonstrate application content knowledge. This assessment requires students to apply, analyze, synthesize and evaluate content and process standards in real-world situations.

Sample Process Standards		
English/ Language Arts	**Mathematics**	**Science**
■ Summarizing ■ Paraphrasing ■ Inferring ■ Categorizing ■ Predicting ■ Recognizing content vocabulary	■ Problem solving ■ Reading and communicating ■ Estimating and verifying ■ Logical reasoning ■ Using technology	■ Designing and conducting scientific investigations ■ Analyzing findings ■ Communicating and defending findings ■ Evaluating other investigations

  - **Performance:** a set of related tasks that students complete to help them make meaning of essential content and skills and to communicate mastery to teachers.

  - **Problem:** a complex question or challenge to be solved by students, requiring application of content and evidence of understanding.

  - **Product:** an object, model, display or other visual or written representation that communicates student mastery.

- **Proficiency:** the attainment of a standard or established benchmark at varying levels, such as Basic, Proficient and Advanced. Students scoring at the Proficient or Advanced levels (at or above grade level) are more likely to succeed at the next academic level.

Proficiency Levels			
	Basic	**Proficient**	**Advanced**
Performance	Partial mastery of prerequisite knowledge	Solid academic performance; mastery of standards	Superior academic performance; mastery of honors-level work
Grade level	Approaching grade level	At grade level	Above grade level
Assignments and assessments require students to:	remember information and make simple inferences and explanations	apply and analyze information learned, defend ideas and draw conclusions	evaluate and create further work and exploration of information learned

- **Readiness indicators:** definitions of the essential content knowledge and skills students need to advance to the next academic level.

- **Rubrics:** descriptions of specific criteria that indicate student proficiency at various levels for a task or set of tasks.

Criteria of an Effective Standards-Based Unit

The following rubric lists five characteristics of an effective standards-based unit — focus, instruction, rigor, evaluation and cohesiveness — and describes the criteria at various levels of quality. These criteria help teachers evaluate the overall effectiveness of a unit.

The rankings listed across the rubric encourage teachers to review the unit and revise as needed to improve rigor and quality. In training sessions, teachers use the rubric to identify strengths and weaknesses in newly developed units. Teachers are encouraged to use the rubric as a peer-review tool to improve lessons.

Rubric for Developing Standards-Based Units				
Criteria	**Exemplary**	**Sufficient**	**Getting There**	**Not Yet**
Focus	■ Clearly defines themes that will challenge students at varying levels of achievement ■ Targets manageable number of appropriate standards and indicators ■ Includes significant content, processes and skills ■ Clearly identifies what should be learned, why it is important and how it relates to real-life	■ Defines theme for study ■ Targets manageable number of appropriate standards and indicators ■ Includes significant content, processes and skills ■ Identifies what should be learned and why it is important	■ Defines theme for study, but with an unclear focus ■ States appropriate standards and indicators, but includes an unmanageable number ■ Includes content, processes and skills ■ Identifies what should be learned, but does not clearly communicate its importance	■ Identifies a narrow topic ■ States inappropriate learning standards and indicators ■ Includes unrelated content, processes and skills ■ Identifies random and disconnected learning
Instruction	■ Uses a variety of research-based instructional strategies ■ Requires students to use a variety of resources ■ Provides active, student-centered learning ■ Provides meaningful practice that supports the learning focus ■ Requires students to study from multiple perspectives	■ Uses a variety of instructional strategies ■ Requires students to use several resources ■ Provides some active, student-centered learning ■ Provides some practice that supports the learning focus ■ Requires students to analyze a topic in-depth	■ Uses traditional, mostly teacher-centered instructional strategies ■ Requires students to use few resources ■ Provides some student-centered learning ■ Provides little practice that supports the learning focus ■ Requires some independent study of a topic	■ Uses limited variety of instructional strategies ■ Requires little use of resources ■ Provides minimal student-centered learning ■ Provides practices that do not support the learning focus ■ Requires no independent study of a topic
Rigor	■ Requires use of higher-order thinking skills ■ Matches proficient-level indicators	■ Requires mostly analysis as the highest-order skill ■ Matches basic- and proficient-level indicators	■ Provides mostly recall-level tasks ■ Matches basic-level indicators	■ Provides only recall-level tasks ■ Fails to meet basic-level indicators

Criteria	Exemplary	Sufficient	Getting There	Not Yet
Evaluation	■ Uses a variety of performance assessments ■ Includes well-defined, relevant assessments that are evaluated by appropriate audiences ■ Includes continuous evaluation that provides feedback for students ■ Measures student progress using established criteria	■ Uses performance assessments ■ Includes relevant assessments that are evaluated by an audience ■ Provides continuous student evaluation ■ Measures student progress using established criteria.	■ Uses few performance assessments ■ Includes relevant assessments that are evaluated by teachers and/or peers ■ Measures student progress periodically ■ Does not communicate criteria for assessment	■ Does not include performance assessments ■ Includes assessments that are not relevant ■ Does not measure student progress during the unit ■ Does not establish criteria for assessment
Cohesiveness	■ Connects all components ■ Unifies instruction and assessment ■ Connects all assessments appropriately to the learning focus	■ Connects most components ■ Links instruction and assessment ■ Connects all assessments to the learning focus	■ Connects some components ■ Has incidental matches between assessment and instruction ■ Connects some assessments to the learning focus	■ Does not connect components ■ Includes assessments that do not reflect instruction ■ Connects few assessments to the learning focus

Unit Format: The Unit Plan Overview and the Daily Plan

The major steps in planning a standards-based unit are divided into two main parts: the **unit plan overview** and the **daily plan**. The elements central to all standards-based planning are standards, essential questions and post-assessments. These items form the core of all standards-based unit planning. Once they are established, other information on the unit plan overview and the daily plan template can be completed.

The Unit Plan Overview

The unit plan overview summarizes the instructional activities, essential questions, literacy strategies and habits of success to be addressed in the unit. Each item listed on the template will help teachers define how and what they will teach to help students achieve grade-level mastery of the standards. It is not necessary to complete all information at one time or in the order shown on the template. For example, the unit title is often not finalized until the unit is completed, and the teacher may not select literacy strategies until the end of the planning process.

The **course name** is the title listed on the school's master schedule and should clearly communicate the focus of the course. **Grade level** lists the grade of most students in the course (e.g., 10th, 11th, 12th). The **unit overview** provides a brief summary of the main concepts that will be taught and the unit's activities, skills, projects and assessments. The **timeframe** is the number of class blocks or periods required to complete the unit, including the post-assessment. **Acknowledgements** list specific individuals who provided information or help with the unit development.

Prerequisites are the specific knowledge and skills that students need to have mastered prior to beginning the unit to achieve grade-level mastery of the standards. The pre-assessment evaluates prerequisites and identifies what knowledge and skills students already have coming into the unit and any gaps or weaknesses. It is important to remember that many activities in a unit can be completed by students even if they lack some of the prerequisite skills diagnosed during the pre-assessment. Teachers should incorporate into the unit's lesson plan strategies to address knowledge and skills deficits. Students can participate successfully in the activities and receive extra help as needed.

A sample unit plan overview from a 12th-grade transitions mathematics class is shown on the following pages. The complete blank template is also available in Appendix A.

Sample: Unit Plan Overview

Unit Title: Move Over! You're Not in Line!

Course Name: Senior Applications of Mathematics: Exploring Linear Models

Grade Level: 12

Unit Overview: This unit will review the concepts of linear functions, linear inequalities and linear systems of equations through an application-based format. Graphing technologies such as graphing calculators and spreadsheets will be used where appropriate. Students will work in teams to complete application-based projects throughout the unit. A content-based assessment will conclude the unit.

Timeframe: 18 classes - 90 minutes each

Prerequisite Knowledge/Skills: Students should have a basic understanding of variables, solving equations and graphing points on a coordinate plane.

Essential Questions (open-ended to promote in-depth investigation):
1. How can we use linear models to analyze, represent and understand situations in everyday life?
2. How does the analysis of linear functions help you relate to other mathematical concepts?
3. How can we use linear inequalities to communicate situations in everyday life?
4. How do you differentiate between solutions of systems of equations?

Readiness Indicators: Identify independent and dependent variables from application situations and create the resulting table that would show the relationship between the two variables.

State/Local Standards (include complete standard): Students will use algebra to represent, analyze and solve problems.
a. Represent a given situation using algebraic expressions or equations.
b. Solve systems of linear equations or inequalities in two variables using algebraic techniques, including those involving matrices.
c. Simplify and evaluate algebraic expressions.
d. Solve algebraic equations or inequalities in one variable, including those involving absolute values.
e. Solve equations involving several variables for one variable in terms of the others.
f. Interpret solutions in problem contexts.

Acknowledgements:

Literacy Strategies (Check all that apply.)	Habits of Success (Check one per unit.)
(To be developed throughout the unit plan with ample opportunities for practice.)	
☑ Admit/Exit slips ☑ Graphic organizer ☐ Know/Want to Know/Learn chart (KWL) ☑ Open-response questions ☐ Double-entry/Two-column notes ☑ Retelling ☐ Reflection ☑ Jigsaw reading ☐ Anticipation guide ☐ RAFT (Role/Audience/Format/Topic) ☑ Interactive reading guide ☐ Concept definition maps ☑ Frayer model ☐ Visual prediction guide	☐ Create relationships (Teamwork, responsibility, effective communication) ☐ Study, manage time, organize (Organization, time management, study skills) ☐ Improve reading/writing skills (Use reading and writing to learn strategies) ☑ Improve mathematics skills (Estimate, compute, solve, synthesize) ☐ Set goals/plan (Set goals, plan, monitor progress) ☐ Access resources (Research, analyze, utilize)

Assessments:
Pre-Assessment: Use the content-based post-assessment as a pre-assessment. Do not return the test to the students or go over the solutions.
Daily/Weekly: (Included on daily activities plans)
Post-Assessment: 1. Content-based (traditional paper-and-pencil test): Post-assessment on unit content (Day 18) 2. Performance- , product- or problem-based: Teen Recreation Center Event project

The Daily Plan

Standards-based units use learning cycles to teach the foundational content for each course. The **daily plan template** guides teachers to follow a learning cycle for optimal learning and encourages mastery through a series of carefully planned activities. Teachers use this plan to engage students, introduce information, and schedule time for exploration and repetition.

Writing daily plans begins only after standards, essential questions and post-assessments are defined for the unit. Each day's plan follows a template based on the learning cycle and includes space for teacher information. A checklist of appropriate strategies for each component encourages the use of a variety of activities for different learning styles.

The daily plan begins by focusing students on the day's content knowledge as they enter the classroom — while teachers may be attending to assigned duties between classes — and encourages students to immediately begin thinking about the standards. The sequence of activities establishes a routine, which is important for students, and moves the class forward in an organized manner. All parts of the sequence continue to reinforce the unit's standards.

Anticipated times are guidelines for sequencing the various components of the lesson. Although there are many separate sections listed on the daily plan template, transitions between each section flow smoothly through the class period. Teachers move through a similar set of transitions and seldom stop to call attention to a change in activity.

Teachers in training sessions often ask if they can skip steps in the daily plan. Steps can be combined and rearranged; but skipping steps should be avoided, as it can lead to an incomplete learning cycle. For shorter periods, the amount of time can be reduced proportionately or components can be merged.

 Sample daily plans for 90- and 50-minutes class periods are shown on the following pages. A complete template is available in Appendix A.

Sample 90-Minute Daily Plan: *Move Over! You're Not in Line!*	
Suggested Time	**Activity**
Get Started 3-5 minutes	Ask the class to think about the following questions: What skills from our previous studies help us to gain a better understanding of real-world mathematics? What can we do to communicate our understanding of mathematics so that our audience will be able to understand what is presented?
Engage 3-5 minutes	Using a picture of a vending machine, introduce and define independent and dependent variables. Discuss the possible types of money that can go into a vending machine and what happens. Define the domain. The independent variable is all monies that will work in the machine, and the dependent variable is the product available from the machine. As the discussion develops, display the domain and range in a table.
Explore 15-18 minutes	Divide the class into teams and, using written scenarios, have the teams identify independent, dependent and confounding variables. Confounding variables are those situations which produce the need for controls in experiments. (This will create a spiral back to the Representing Data unit, the scientific method and experiment design.) Possible sample scenarios: ■ Diet and weight ■ Number of ice cubes and the temperature of the beverage ■ Height and shoe size ■ Hours worked and take home pay ■ Salary and lifestyle ■ Price of gas and distances traveled ■ Factors related to plant growth ■ Factors affecting student attention spans ■ Homework/study time and grade earned
Explain 17-20 minutes	Discuss the team activity and lead the class into a more abstract discussion of identifying domain and range from an equation, table or graph.
Practice Together (Whole Group Practice) 12-15 minutes	Working with the whole class, present an equation, a table and a graph. Have students determine the domain and range of each.
Practice in Teams/Groups/ **Pairs** (Small Group Practice) 12-15 minutes	Using real-world scenarios, equations, tables and graphs, have students identify the domain and range of each.
Practice Alone (Individual Practice) 10-15 minutes	After surveying the teams for their understanding of domain and range, give students one representation of each to identify on their own.
Evaluate Understanding 10-15 minutes	Ask students to share their solutions with the class or with their study team.
Closing Activities 6-10 minutes	Have students turn in their individual work as a ticket out the door. Assignment: Research domain and range and bring information or facts uncovered to class. Write a journal response to the following question: "How are domain and range related to independent and dependent variables?" Resources for information can include computer searches, textbooks, dictionaries and/or interviews. Cite sources used.
Resources/Materials	Vending machine picture
Enrichment/Extension and **Accommodation/Reteaching**	Give the class several graphs and ask them to identify the domain and range. Give the students the domain and range and ask them to generate the graph from the data.

Sample 50-Minute Daily Plans			
Suggested Time	**Grade Eight:** *Waves in Motion*	**Grade Seven:** *Family Branches*	**Grade Six:** *Biome Hoppers*
Get Started 1-2 minutes	Ask students to complete a journal entry: List all the words you can think of that are associated with waves.	Ask students to list five traits they have.	Have students listen to audio clips of three different sounds and identify where each sound is found in nature.
Engage 2-3 minutes	Demonstrate waves by playing music through Windows Media Player.	Use the *Guinness Book of World Records* to show "extreme" traits (e.g., tallest, shortest, biggest foot).	Display a picture of someone snow-skiing and someone water-skiing.
Explore 4-7 minutes	Have students analyze wave characteristics using water in a pan.	Measure and compare foot size from a record book with the teacher's foot or ask for volunteers within groups. *(Note: Adolescents are often self conscious. Be sure to avoid embarrassing anyone.)*	Have students complete vocabulary Bingo sheets with various biome words.
Explain 8-12 minutes	Use a graphic organizer to label the parts of a wave while students take guided notes.	Give a PowerPoint presentation on chromosomes, traits and genes.	Use a graphic organizer with the lecture on biomes.
Practice Together 8-10 minutes	Lead the Slinky activity with the whole class.	Demonstrate use of a Punnett square to show probability of traits in offspring.	Classify examples of words that might fit in each biome.
Practice in Teams/ **Groups/Pairs** 10-12 minutes	Have students work in small groups to see how they can change waves using the Slinky and record their results.	Have students work in pairs to practice other Punnett squares.	Have students work in pairs to list examples of other words that describe specific biomes.
Practice Alone 4-7 minutes	Have students work individually to construct a wave using given data points on graph paper.	Have students continue practicing on Punnett squares individually.	Have students choose one biome and write a poem or song, using descriptive words and examples.
Evaluate Understanding 5-8 minutes	Use an oral evaluation to measure understanding through discussion of activities.	Check Punnett squares.	Lead a discussion and have students guess which biome is described.
Closing Activities 3-5 minutes	Answer questions and assign homework.	Answer any questions. Assign homework: Survey and list the visible traits of the people who live in your home. *(Note: Remember that families are not always biologically related.)*	Assign homework: Complete a poem or song and prepare to share in class. Answer questions and clarify the assignment.
Enrichment/Extension and Accommodations/ Reteaching			Choose a music background or sound effects for the poem/song.

How do teachers learn to write a standards-based unit?

- Attend a professional development workshop to learn the process and create one unit.
- Teach the unit and make notes about successes and challenges.
- Schedule time for peer review and revisions.
- Engage other faculty members in creating and using a standards-based unit over a six- to eight-week period.
- Practice writing and using additional units.
- Transition all instruction to standards-based units and lessons.

How can administrators support change?

- Encourage teachers to attend professional development workshops on standards-based planning.
- Support teachers to work together in teams to plan standards-based units within and across disciplines.
- Schedule uninterrupted time for teachers to meet and plan together. Eliminate any potential roadblocks to collaborative planning.
- Assist teachers to select a standards-based unit format they will agree to use.
- Develop goals and timelines to guide administrators and teachers in developing standards-based units.
- Review schoolwide achievement data to measure deficits in understanding and skills that prevent many students from achieving at or above grade level. Present this data to teachers to help them plan units.
- Build a school-based professional library that provides information on standards-based planning. Include books, articles and periodicals.
- Develop memberships in content-specific professional organizations. Take advantage of periodicals and training opportunities in the organizations.
- Survey teachers to determine specific needs for content areas.
- Ask middle grades teachers to identify the major gaps in student achievement that prevent them from meeting high school readiness standards and ask the same questions for high school teachers regarding meeting college- and career-readiness standards.
- Schedule into the master calendar time for reviewing and revising the work completed on the unit.

The 10 Steps for Writing a Standards-Based Unit

The remainder of this guide is dedicated to defining and explaining the 10 steps for writing a standards-based unit. After the first step, "Choose your first topic carefully," stop and pull together the foundational pieces of the unit: standards, essential questions and the post-assessment. When completing these steps, keep in mind that the final six steps further develop and support the first four steps.

Step 1: **Choose your first topic carefully.**

Step 2: **Identify and chunk the standards and readiness indicators that drive the instruction.**

Step 3: **Write essential questions (based on the standards) that determine exactly what you want students to know and be able to do at the end of the unit.**

Step 4: **Plan the post-assessment test and task (product, performance or problem) and establish grading criteria that show mastery of the standards.**

Step 5: **Brainstorm all possible resources.**

Step 6: **Use data to choose literacy strategies.**

Step 7: **Choose the habits of success.**

Step 8: **Plan the daily sequence for each day of the unit.**

Step 9: **Teach the unit.**

Step 10: **Increase the level of proficiency.**

Step 1: Choose Your First Topic Carefully

When developing your first unit, choose the required standards that you find enjoyable and familiar. Allow yourself several weeks to plan and organize the unit materials. During the first unit-writing experience, it is best to concentrate your effort on completing the process.

Choose a standard (or standards) that lends itself to multiple days of lessons and is easily divided into manageable chunks for the time allocated. The standard should be broad enough to provide numerous choices for a postassessment. Broader standards may need to be addressed through multiple units. Give the unit a title that summarizes the topic and also will catch students' attention and engage them in the content.

Review an Example: Unit Titles

Teachers use creative titles to grab students' attention and help make connections to the unit's content. Below are examples of unit titles from various content areas.

English/ Language Arts	Mathematics	Science	Social Studies	Career/Technical Studies
■ Life Lessons ■ Survival 101 ■ Lights, Camera, Action!	■ What Does Math Have to Do With My Bedroom? ■ Lost and in Need of Supplies ■ How Rational Can You Be?	■ Genes: More Than You Wear ■ Water, Water Everywhere ■ Biome Hoppers	■ We're off to See the Wizard ■ Was There Really a Boston Tea Party? ■ America Grows Up	■ Can You Buy a Car With $50? ■ A Time Machine ■ Where Are the Jobs?

Think it Through

Is this topic a good choice? When is this topic scheduled to be taught? How much time will it take to teach it? Are there multiple standards for this topic? Are there several choices for the post-assessment? Does the title engage students?

Group — or "Chunk" — the Standards

In lesson planning, to "chunk" is to arrange a set of standards into similar and closely-related groups for planning and teaching. Review the entire list of curriculum standards that students are expected to master and begin organizing the standards into groups that represent common content and can be taught within the time frame. Avoid forcing standards to fit a particular unit topic; if a standard does not fit the definition of related content, move it to another unit.

While reviewing and chunking the standards, consider ways to integrate content from other subject areas into the unit as well. For instance, a mathematics standard may be addressed in a physics class. English units should address both reading and writing standards.
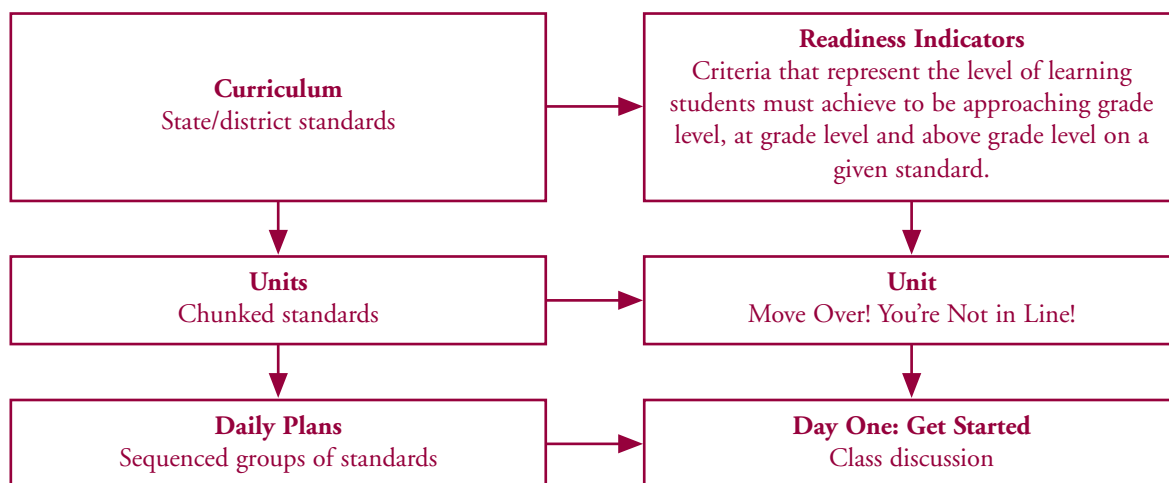
Identify the Required Standards for this Unit

To select the best standards for a unit, begin with the end in mind. Use backwards planning to divide each standard into the specific content and skills that students are expected to master at or above grade level.

The standards necessary for planning and teaching must be formally identified and publicized. For the classroom teacher, the most relevant standards are those that represent compliance with state and district policies. Using the publicized list of mandated standards, select standards that logically support the topic of the unit. Standards can be shifted into another unit if they do not support the topic.

Some standards are sequential and must be taught in a particular order. Some single standards contain so many subtopics that they need to be broken into several chunks. Skills embedded in some standards will be reintroduced and applied in later lessons as students work toward grade-level mastery of crucial outcomes. Keep these necessary sequences and conditions in mind when selecting standards.

Once the standards are identified, divide them into content topics and skills for daily planning. The graphic below demonstrates how standards are organized for teaching, moving from a large list to smaller chunks to smaller sequences within daily plans.

Curriculum State/district standards	**Readiness Indicators** Criteria that represent the level of learning students must achieve to be approaching grade level, at grade level and above grade level on a given standard.
Units Chunked standards	**Unit** Move Over! You're Not in Line!
Daily Plans Sequenced groups of standards	**Day One: Get Started** Class discussion

For more information about chunking standards, see Appendix B.1.

Identify the Readiness Indicators

After selecting standards for the unit, the next essential step is to develop indicators of mastery of knowledge and skills. Standards are often written as general statements, and teachers must determine the specific skills and knowledge associated with each standard. This step will clearly define the outcomes needed to get all students achieving at or above grade level.

When developing readiness indicators, keep in mind that not all standards represent true grade-level knowledge. Often, states have two or three levels of performance expectations and the lowest acceptable level is actually below grade level. If multiple performance expectation levels are acceptable, align teacher assignments, student work and assessments to the higher levels. When this is done, significantly more students will meet and exceed expectations.

SREB staff and a panel of experts in each subject field have developed five readiness guides to help teachers improve the achievement level of middle grades and high school students. They are divided into two series: *Getting Students Ready for High School* and *Getting Students Ready for College and Careers* (available online at www.sreb.org). Each guide includes content and process indicators aligned to recognized state and national standards. These indicators describe what is needed for success at the next academic level.

Getting Students Ready for High School	Getting Students Ready for College and Careers
Getting Students Ready for Algebra I: What Middle Grades Students Need to Know and Be Able to Do *Getting Students Ready for College-Preparatory/Honors English: What Middle Grades Students Need to Know and Be Able to Do* *Getting Students Ready for College-Preparatory/Honors Science: What Middle Grades Students Need to Know and Be Able to Do*	*Getting Students Ready for College and Careers: Transitional Senior English* *Getting Students Ready for College and Careers: Transitional Senior Mathematics*
The high school series describes the essential knowledge and skills that students need in order to succeed in challenging high school studies. These guides are built on the assumption that students who are performing at grade level can succeed in college-preparatory courses in high school. Each guide provides readiness indicators, sample assignments and assessments that illustrate the depth of work needed to achieve at the Basic, Proficient and Advanced levels.	The college and careers series describes the content knowledge and skills students will need to succeed in careers and postsecondary studies. These guides identify the standards that students are expected to meet if they are to avoid taking remedial courses at a community college or four-year institution, and if they are to succeed in a career immediately following high school. The guides include readiness indicators and a set of teacher assignments and classroom assessments that illustrate the level of work teachers should expect of students.

Step 3: Write the Essential Questions

Essential questions guide teachers to consider *what* students need to know and be able to do at the end of the unit and *how* grade-level work can be assessed. In defining the essential questions for a unit, one social studies teacher asked: "Five years from now, do I want students to list in order the events leading to the American Revolution, or do I want students to comprehend and put to use lessons learned that are applicable for today?"

Essential questions help teachers communicate to students the crucial points of the curriculum by stressing what they will investigate, probe and research. Essential questions increase the depth of instruction and narrow the focus of the lesson. When developing the essential questions, consider the following: What do students really need to know, understand and be able to do at the end of the unit? What knowledge, skills and processes are crucial for mastery? What life-long lessons can result from this unit?

For a unit that lasts one week or more (five or more instructional blocks or periods), develop four or five essential questions. The number of essential questions is flexible, but three to four questions should tie directly to the content of the unit and at least one should connect the content to students' lives. Aim for a balance of content and connection.

Essential questions are posted in the classroom and must be easily understood. They send a signal to students to search out answers and use critical thinking skills. They guide instruction from the pre-assessment to the completion of the post-assessment. As each day is planned, essential questions help target the content and reduce the chance of drifting off topic. Writing essential questions also leads to self-reflection by teachers during planning and instruction. The checklist below can be used to determine the strength of essential questions. If the answers to any of the items is "no," the essential questions may need revision.

Think It Through

Essential questions:	Yes	No
■ Address all targeted standards	☐	☐
■ Provide direction for teaching and learning	☐	☐
■ Connect to the assessments	☐	☐
■ Narrow the focus of the lessons to the most important elements	☐	☐
■ Encourage higher-order thinking	☐	☐
■ Are written in a language students understand	☐	☐
■ Are written in an open-ended style	☐	☐
■ Are appropriate to the length of the lesson	☐	☐
■ Are sequenced for the most logical progression	☐	☐
■ Are distinct and powerful	☐	☐

For more information about writing essential questions, see Appendix B.2.

Step 4: Plan the Post-Assessment Test and Task (Product, Performance or Problem)

How will you know if students understand and can apply the content taught during the unit? How will you communicate expectations to your students at the beginning of the unit? How will the post-assessment test and task determine students' mastery of the content and skills embedded in the standard and their ability to demonstrate and apply standards in a concrete format? These crucial decisions must be addressed early in the planning process to guide unit development and student assessment.

In standards-based unit development, the post-assessment includes two parts: Part one of the post-assessment is an appropriately written, high-quality paper-and-pencil test that determines the knowledge students have mastered and can apply. Part two of the post-assessment is a product-, performance- or problem-based assessment. It evaluates student progress in achieving each of the targeted standards and demonstrates mastery — specifically at or above grade level — of the standards on which the essential questions are based. Portfolios can also be used as post-assessments and are easily adapted to a variety of subjects. (For more information on portfolio post-assessments, see Appendix C.)

Examples of Pre-, Daily and Post-Assessments: Products, Performances and Problems			
Content Area/Activities	**Products, Performances, Problems**		**Optional Assessment Formats**
English Communicate ideas, opinions, and perceptions through writing and thinking.	Audiotapes Creative writing Dialogues Dramatic readings Interviews Journals	Plays Puppet shows Reports Storytelling Teach a lesson Solve a problem	Audiotape recordings Debates Jeopardy-style tests Portfolios Starter statements Written essays
Mathematics Create a flow chart to show problem-solving steps.	Attributes Charts Coded messages Computer projects Graphs Mind maps	Outlines Story grids T-charts Time lines Solve a problem	Charts Critiques Experiment logs Pattern games Rubrics "What If" exercises
Science Construct a set of diagrams illustrating systems of the body.	Book covers Collages Dioramas Designs Maps Mobiles	Models Pamphlets Photography Posters Sculptures Solve a problem	Flow charts or graphs Hands-on demonstrations Murals or montages Response cards Scrapbooks
Culture/Geography Role-play various cultural customs.	Act out vocabulary Dramas Exercises Experiments Games Impersonations	Keyboarding Pantomimes Role plays Manipulatives Solve a problem	Dramatizations Games Manipulatives Performances Physical exercises, routines Role plays
History Construct a musical time line for several historical periods.	Choral reading Environmental sounds Jump-rope rhymes Morse code Patterns	Musical Compositions Musical Plays Radio Shows Raps Solve a Problem	Analysis of musical structure Raps or songs Dances Musical performances

Content Area/Activities	Products, Performances, Problems		Optional Assessment Formats
Health Science Perform skills demonstrating healthy and unhealthy eating habits.	Author partners Discussions Group problem solving Group projects Human graphs Interviews	Jigsaws Lab Partners Peers coaching Simulations Solve a problem	Buzz Sessions Group Jigsaw Puzzles Group problem solving Project posters Scavenger hunts Think/pair/share
Exploratory Electives Create a piece of art to illustrate your personality.	Autobiographies Diaries Higher-order questions Journals Learning logs Observations	Personalizations Photo essays Reflections Summary statements Solve a problem	Autobiographical stories Diaries/logs/journals Individual conferences Individual skills lists Metacognitive inquiries Starter statements

Assessment products, performances and problems require a grading scale or rubric that describes assessment criteria. Developing an effective rubric serves two purposes: It helps students fully understand expectations for mastery and it helps teachers develop a rigorous assessment.

Developing Quality Scoring Guides

- Review the assignment/task requirements.
- Review criteria and delete subjective terminology.
- Determine content and skills to measure.
- Decide on the number of performance levels.
    1. Identify what you consider unacceptable (below grade level).
    2. Identify basic (approaching grade level) student work.
    3. Identify proficient (grade level) student work.
    4. Identify advanced (above grade level) student work.
- Determine revise/redo options for work that is approaching or below grade level.
- Share the scoring guide with students.

Quality scoring guides should:

- identify task requirements and criteria in specific, measurable terms.
- communicate the essential aspects of a quality product, performance or problem.
- link to identified standards and readiness indicators.
- specify student work at or above grade level.
- provide illustrations of proficient and advanced student work.
- include understandable, student-friendly language free of subjective terminology (e.g. some, few, most, usually).

Think it Through

What is the best way for students to demonstrate their mastery of the content? How will I grade the work? What does the rubric for this project look like? Is a product better than a problem-based approach? Am I using a variety of learning style assessments to determine mastery? What kinds of training do students need before they start? What kinds of support will I provide? Is outside help needed and/or available? Do I have the expertise to guide students through this product-, performance- or problem-based assignment and assessment?

Step 5: Brainstorm Possible Resources

After years of collecting file folders, boxes, shelves and desk drawers of clippings, worksheets, tests and lab activities, many teachers select a few favorite items and use them year after year. Other strategies or activities that may better suit students' needs are ignored. Now is the time to revisit those resources and use them creatively to engage students in learning.

Consider the "empty binder" approach to planning. Use an empty three-ring binder for each unit and continue to add materials and new ideas for different standards. Internet searches can provide numerous ideas for other resources and additional materials.
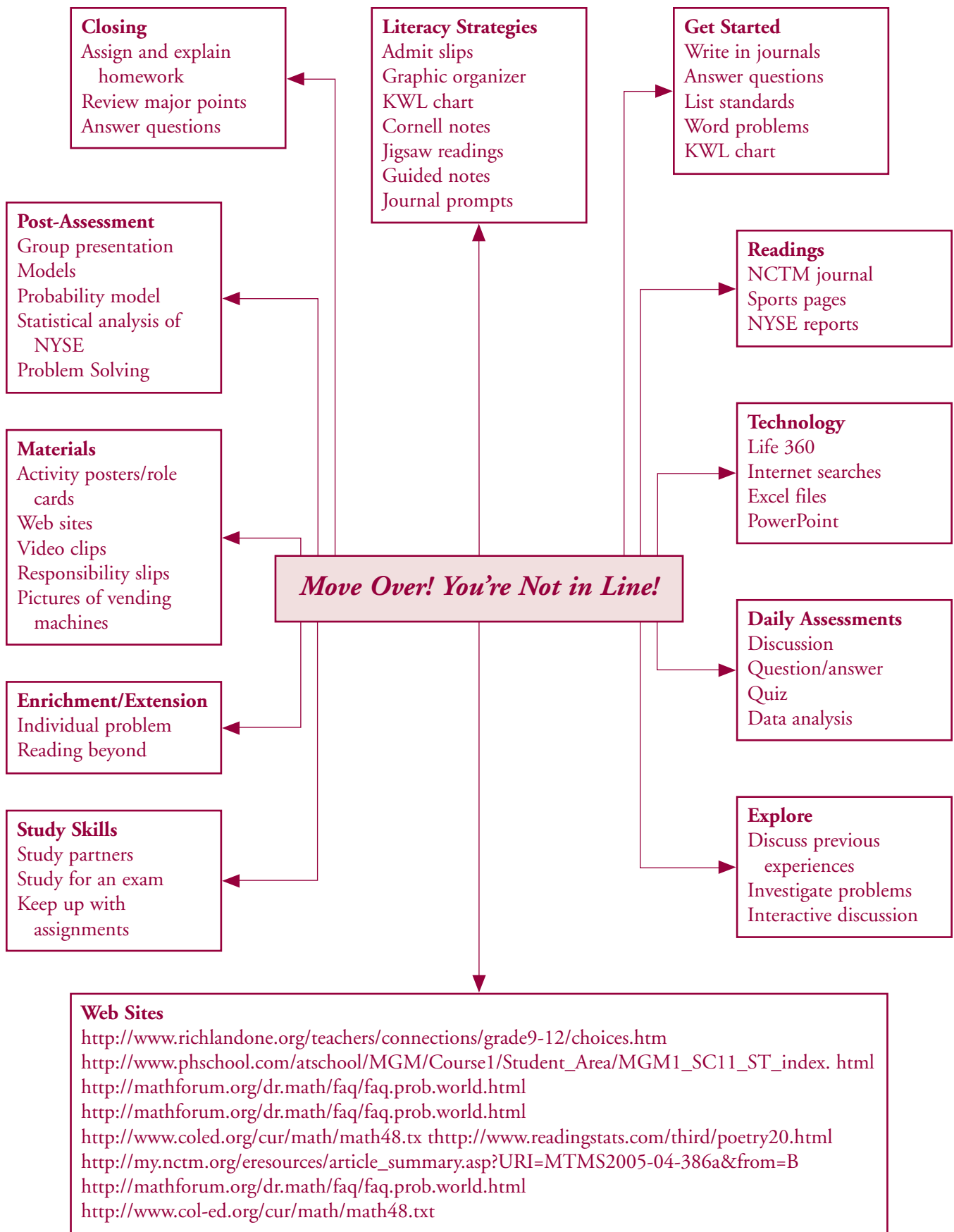
To help organize materials and resources for each lesson, the daily plan template includes a space for resources/instructional materials. Materials that are used routinely, such as textbooks, are not listed in the resource/materials list. Rather, this list should include those items that require preparation time and would not otherwise be close at hand at the time of the activity. The resource list also provides a record that can be expanded and revised as each unit is implemented. Choose resources based on an analysis of students' needs.

Use a graphic organizer to keep a current list of possible resources. (See the sample on the following page.) Rather than limiting materials to a few favorite ideas and activities, review and list additional options. This provides greater flexibility when writing the plan.

Think It Through		
Resources/Instructional Materials:	**Yes**	**No**
■ Fit available electronic and classroom equipment	☐	☐
■ Are adaptable to other media (Plan B) if electronic support fails	☐	☐
■ Are accessible to all students	☐	☐
■ Are available, ready for use at the start of class and organized	☐	☐
■ Are available in a variety of formats for accommodating different modalities	☐	☐
■ Fit time and budget constraints	☐	☐

For more information about brainstorming and using resources, see Appendix B.4.

Closing
Assign and explain
  homework
Review major points
Answer questions

Literacy Strategies
Admit slips
Graphic organizer
KWL chart
Cornell notes
Jigsaw readings
Guided notes
Journal prompts

Get Started
Write in journals
Answer questions
List standards
Word problems
KWL chart

Post-Assessment
Group presentation
Models
Probability model
Statistical analysis of
  NYSE
Problem Solving

Readings
NCTM journal
Sports pages
NYSE reports

Materials
Activity posters/role
  cards
Web sites
Video clips
Responsibility slips
Pictures of vending
  machines

Technology
Life 360
Internet searches
Excel files
PowerPoint

Move Over! You're Not in Line!

Daily Assessments
Discussion
Question/answer
Quiz
Data analysis

Enrichment/Extension
Individual problem
Reading beyond

Explore
Discuss previous
  experiences
Investigate problems
Interactive discussion

Study Skills
Study partners
Study for an exam
Keep up with
  assignments

Web Sites
http://www.richlandone.org/teachers/connections/grade9-12/choices.htm
http://www.phschool.com/atschool/MGM/Course1/Student_Area/MGM1_SC11_ST_index. html
http://mathforum.org/dr.math/faq/faq.prob.world.html
http://mathforum.org/dr.math/faq/faq.prob.world.html
http://www.coled.org/cur/math/math48.tx thttp://www.readingstats.com/third/poetry20.html
http://my.nctm.org/eresources/article_summary.asp?URI=MTMS2005-04-386a&from=B
http://mathforum.org/dr.math/faq/faq.prob.world.html
http://www.col-ed.org/cur/math/math48.txt

Step 6: Choose Literacy Strategies

The standards-based unit template continues SREB's emphasis on improving reading skills for all students. Students become competent, successful, independent learners in all their courses if they are taught to use reading and writing strategies to gain meaning from content. Reading is an important factor in improving student achievement and in success in college and careers. To become more proficient readers, students need to read more in a greater variety of genres and they need to make deeper analyses of the material read.

Secondary students need help comprehending content, but many also need help with fundamental reading skills. Incorporating literacy strategies throughout the curriculum enables students to develop traits of proficient readers. The SREB publication, *Literacy Across the Curriculum*, defines traits of proficient readers, including: making connections, self questioning, visualizing, determining importance, making inferences, synthesizing and monitoring comprehension.

By reviewing the school literacy plan and analyzing formative assessment data, teachers can determine appropriate literacy strategies for each unit. Focus on two or three strategies in-depth before moving on to other strategies, to help students gain greater understanding of content knowledge while advancing their ability to read, comprehend and analyze subject-matter materials. Below is a brief explanation of the strategies that support the development of proficient readers. Each of these is further discussed in *Literacy Across the Curriculum*.

> ### *Literacy Proficiency*
>
> A **proficient** reader, or one reading on grade level, is able to understand ideas in the text, compare and contrast information, determine the importance of ideas and provide overall interpretations of the text. Proficient readers recognize connections between ideas in the text, with other texts and with real-life experiences. They recognize general organizational features and can extend ideas in the text by making inferences such as predictions and conclusions.
>
> For definitions of literacy proficiency at various levels, See Appendix D.2.

Fifteen Literacy Strategies Every Teacher Can Implement

1. **Admit Slips** — Students compose a written response to one question at the beginning of class, such as "Which problem was hard for you?" or "What did you learn from your homework?"

2. **Exit Slips** — As students leave class, they give their teacher a slip on which they have responded to questions such as: "What did I learn?" and "What am I confused about?"

3. **Graphic Organizers** — As students read a passage, they outline the main ideas according to the organizational pattern of the text. Venn diagrams can be used, for example, for a passage that is organized by comparison/contrast. As students gain more experience, they select the organizer that matches the organizational pattern. These organizers are also known as mind maps or thinking maps.

4. **KWL Charts** — Used as a pre-reading and note-taking strategy, KWL charts have three columns: "What I Know" (before reading), "What I Want to Learn" and "What I Have Learned" (answers to the questions). Students fill in these columns as they read, and class discussion focuses on the columns.

5. **Open-Response Questions** — On each test, students should have at least one open-response question that asks them to explain a process to solve a problem, compare different processes or ideas, analyze the importance of certain ideas, or apply learning. Questions should be scored by a rubric.

6. **Double-Entry or Two-Column Notes** — Students take notes using pages that are divided into two columns. On the left side are the main ideas from reading or a class lecture; on the right are the details. It can also be used as an explanation process. On the left is a sample problem; on the right side are the steps to solve the problem.

7. **Retelling** — Pairs of students are given a reading passage. The first student reads aloud a section of one or two paragraphs. The second student, without looking at the text, summarizes what the first student read aloud. They both look at the text and compare it to their understanding. They reverse roles and continue until they have finished the passage.

8. **Weekly Reflections** — At the end of the week, students write for three to five minutes to reflect on what they did and learned that week. Possible topics include: "How I solved a problem," "How I used reading skills to learn this week," "The most valuable thing I learned" and "How I will apply what I learned to a career."

9. **Jigsaw Reading** — Students are divided into groups of four and each student takes a number from one to four. All "number ones" get the same article to read. After reading their article, all those who read the same article — article one, for instance — group together and discuss the main points. They return to their home groups and share the main ideas from all articles. Each group then makes a one-minute presentation to the whole class on the common ideas.

10. **Anticipation Guides** — Students respond to five or six statements that challenge or support preconceived ideas about key concepts. The most effective statements are those about which students have some knowledge, but not necessarily a complete understanding. For more information about anticipation guides, see Appendix D.3.

11. **RAFT** — Students learn to focus their writing by defining their Role, Audience, Format and Topic. For example: "As a graphic arts student, I am writing a letter to an editorial cartoonist to ask him how he designs his cartoons."

12. **Interactive Reading Guides** — Students use this variation of the study guide to work with a partner or group and to discuss essential ideas while reading. Interactive questions are developed by the teacher, and students brainstorm to connect personal knowledge to a passage. Students make predictions, create visual images, raise questions of their own and make inferences.

13. **Concept Definition Maps** — Students focus on content-specific vocabulary using a graphic organizer that encompasses the key components of a definition: class or category, properties or characteristics, and illustrations or examples. Students are encouraged not only to understand the formal definition of a term, but to integrate their personal knowledge into a definition.

14. **Frayer Model** — Students use the Frayer Model (Frayer, Frederick and Klausmeier, 1969) to record information about a concept. The graphic organizer contains four compartments: essential characteristics, nonessential characteristics, examples and non-examples.

15. **Visual Prediction Guide** — Students use the visual prediction guide (Irvin, 2001) to "read" visual information in texts. The teacher guides students through a text, offering only visual information, and students note information about the form: charts, diagrams or illustrations. Students then create their own visuals to illustrate text.

Appendix D provides further resources for incorporating literacy into your unit, including descriptions of *HSTW*'s five goals for literacy programs, definitions of literacy proficiency levels and further literacy strategies.

Think it Through

Is the literacy strategy appropriate for the content? Does student data support the need for instruction using this strategy? What content materials are available for use with this strategy?

Step 7: Choose the Habits of Success for the Unit

High-achieving students practice effective study skills and habits of success, which can be instilled by parents or guardians in the student's home or acquired through observation, repetition and self-direction. Students who do not acquire study skills and other habits of success often have difficulty in school. In planning standards-based units and lessons, teachers can incorporate activities to help students develop and apply habits of success to complete assignments.

Teaching habits of success is not an add-on, but an integral part of instruction. Student achievement and classroom data can help determine which habits of success are most needed and best fit each unit. Focus on at least one habit of success for each unit and embed activities that help students develop the habit.

Habits that help students create relationships:

- Work in teams: Work in a collaborative team setting.
- Be responsible: Develop a sense of responsibility to those around you; build trust among peers and adults.
- Communicate effectively: Listen actively, form an opinion, express ideas in a non-confrontational manner, resolve conflict.

Habits that help students study, manage time and get organized:

- Manage time: Know how to spend time productively.
- Keep up with materials: Acquire and maintain necessary supplies, notebooks, backpacks, homework.
- Use effective study skills: Prepare for tests, take notes, outline, question, study in teams.

Habits that help students improve reading and writing skills:

- Revise writing to meet standards.
- Use writing to learn the content in every class.
- Use reading strategies to analyze and comprehend the content in every class.

Habits that help students improve mathematics skills:

- Solve problems: Work through non-routine problems and those that provide insufficient or extraneous information.
- Estimate/predict: Have a sense of whether solutions are reasonable.
- Synthesize information: Actively look for connections between different mathematical ideas.
- Compute: Develop an understanding of computation processes rather than memorizing algorithms.

Habits that help students set goals and plan for the future:

- Be accountable — to yourself and others — for your own learning now and in the future; motivate yourself to complete assignments in a quality manner.
- Set short- and long-term goals and plan how to reach them.
- Make real-world connections to understand that success and failure in school affect success and failure beyond high school.

Habits that help students access resources:

- Identify appropriate questions to find information.
- Negotiate: Locate appropriate information from a variety of sources, including technology.
- Research: Report appropriate information and draw conclusions; give credit to others for their ideas.
- Analyze: Evaluate the quality and relevance of materials.

Think it Through

What skills do my students need to be successful? Which skills best fit this unit?

Step 8: Plan Each Day's Lesson

The daily plan on the unit template follows a learning cycle approach that is logical and connected and provides sufficient practice for students. Instruction is carefully planned to provide support for student mastery. Learning cycles allow students to build knowledge and continually connect to information from previous knowledge. When teachers use a plan effectively, students are able to explore and apply information independently and in groups, with the teacher's instruction and support.

Develop daily lessons that establish exactly what will be accomplished each day and in what logical sequence.

The components of a daily plan are:

- Get Started
- Engage
- Explore
- Explain
- Practice Together
- Practice in Teams/Groups/Pairs
- Practice Alone
- Evaluate Understanding
- Closing
- Enrichment/Extension and Accommodations/Reteaching

In the daily plan, it is important that the sequence of instruction follows a complete cycle. The time for some components can be shortened, but research indicates that for students to deeply connect and understand content, teachers must sequence and develop the lesson carefully. Components can be combined, but deleting components is not recommended. Times listed on the sample template on page 11 show the suggested proportion of each class period devoted to each part of the lesson.

Plan a Get Started Activity

This strategy focuses students as class begins. Typically, the younger and more active the students are, the more structured the Get Started activity needs to be. Teachers of middle-grades and even ninth-grade students can maintain classroom discipline by using a similar format, the same location and similar types of activities each day, particularly in the first semester. This provides continuity for students and helps eliminate disruptions and lack of focus. Get Started begins to establish students' connections to the standards and starts the learning cycle while the teacher may be busy with class-change duties.

Choose a Get Started activity that is connected to the standards, fits the lesson and can be completed by students independently. Examples include:

- My notes and ideas
- Admit slips
- Post objectives
- Essential question of the day
- Write in journal
- Solve problems
- Answer questions
- Pre-assessment
- Daily oral language
- Logic puzzles

View an example:

Get Started 3 minutes	*Ask the class to think about the following questions:* *What skills from our previous studies help us to gain a better understanding of real-world mathematics? What can we do to communicate our understanding of mathematics so that our audience will be able to understand what is presented?*

Think It Through

Get Started (bell ringer, do now, problem of the day, etc.):	Yes	No
■ Visible for students as they enter the classroom	☐	☐
■ Eliminates wasted time with clear directions	☐	☐
■ Includes accountability for finishing in allotted time	☐	☐
■ Establishes expectations of behavior for getting started without teacher support	☐	☐
■ Supports the standards	☐	☐
■ Challenges students, but does not frustrate them	☐	☐
■ Sets the stage and establishes a mood for learning	☐	☐
■ Fits the age and activity level of the students	☐	☐

Plan an Engage Activity

This preliminary object, activity, poem, story or demonstration focuses students and connects them to the lesson and the standards. Engagement activities should be exciting and attention-grabbing and use higher-level thinking to build students' interest in the subject. Connect the Engage activity to the information in the Get Started activity to help students continue into the learning cycle.

Choose an Engage activity that is connected to the standards, fits the lesson and grabs students' attention. Examples include:

- Display an interesting object/picture
- Demonstrate an exciting result
- Model a lab
- Discuss memorable, related experiences
- Read aloud
- Show a short, relevant video clip
- Use the Internet to find a location
- Collect data related to students' lives

View an example:

Engage 3–5 minutes	*Using a picture of a vending machine, introduce and define independent and dependent variables. Discuss the possible types of money that can go into a vending machine and what happens. Define the domain. The independent variable is all monies that will work in the machine, and the dependent variable is the product available from the machine. As the discussion develops, display the domain and range in a table.*

Think It Through

Engage:	Yes	No
Hooks students' attention and interest	☐	☐
Sets the stage and establishes the purpose for learning	☐	☐
Connects to and supports the standards and the Get Started activity	☐	☐
Uses higher-order thinking questions to establish learning	☐	☐
Matches the age, activity levels and learning styles of the students	☐	☐

Plan an Explore Activity

This is an opportunity for students to more deeply consider the standards and connect new information to prior knowledge. Students with little or no background knowledge of a topic particularly benefit from exploration, which provides experience with the new content and builds a knowledge and vocabulary base. Explore activities should help students connect prior experiences to the current content. As students begin to explore the topic, they become more focused on the content and less on the attention-grabbing aspects of the Engage activity. Try to incorporate words and pictures to help students make connections with the information. Consider activities such as creating graphic representations, making physical models, generating mental pictures, or drawing pictures and pictographs.

Choose an Explore activity that is connected to the standards, fits the lesson and provides opportunities to build background knowledge. Examples include:

- Manipulate related materials
- Investigate connected information sources (Web sites, periodicals, newspapers, etc.)
- Read a short selection
- Compare/contrast ideas
- Defend controversial opinions
- Create lists
- Interview classmates
- Build models
- Analyze data collected for the previous day's homework assignment

View an example:

Explore
15–18 minutes
	Divide the class into teams and, using written scenarios, have the teams identify independent, dependent and confounding variables. Confounding variables are those situations which produce the need for controls in experiments. (This will create a spiral back to the Representing Data unit, the scientific method and experiment design.) Possible sample scenarios:
	  - *Diet and weight*
	  - *Number of ice cubes and the temperature of the beverage*
	  - *Height and shoe size*
	  - *Hours worked and pay*
	  - *Salary and lifestyle*
	  - *Price of gas and distances traveled*
	  - *Factors related to plant growth*
	  - *Factors affecting student attention spans*
	  - *Homework/study time and grade earned*

Think It Through

Explore:	Yes	No
- Builds students' experiences through discovery	☐	☐
- Introduces and builds vocabulary	☐	☐
- Supports and extends the standards and the engagement activity	☐	☐
- Includes a majority of higher-order questions	☐	☐
- Focuses students on the content rather than the flash appeal	☐	☐

Plan an Explain Activity

Explain, often called lecture, is the most common form of delivery of information. Explain has an important place in the daily plan and should be delivered in a variety of forms. Schedule Explain activities to match the attention span of students.

Explain strategies often start with direct instruction and provide time to teach, instruct and address content once students are engaged and have explored content. Connect the content to real-world problems and situations and include examples to model the new information.

During the Explain activity, students should always record information using research-based strategies. Keep in mind that, no matter which note-taking strategies they use, students should leave class with written documentation of information they need. Cue students to important information and frequently check for understanding to ensure students are getting the content knowledge they need.

Choose an Explain activity that is connected to the standards, fits the lesson and provides pertinent information to develop concepts. Examples include:

- Lecture with guided notes
- Media presentation
- Interactive discussion
- Student presentations

View an example:

Explain 17–20 minutes	Discuss the team activity and lead the class into a more abstract discussion of identifying domain and range from an equation, table or graph.

Think It Through

Explain:	Yes	No
Delivers content in the most appropriate (research-based) format	☐	☐
Ensures that students organize information	☐	☐
Uses a research-based format for note-taking, such as teacher-prepared, interactive or combination notes	☐	☐
Includes print or broadcast media with guides, discussion, and other types of presentations	☐	☐
Includes frequent checks for understanding throughout the process	☐	☐
Utilizes a variety of visual, focusing answers that maximize active participation	☐	☐
Scripts questions into the explanation to encourage interaction and higher-order thinking	☐	☐
Focuses the cues and questions on what is important, rather than what is unusual	☐	☐
Connects standards to the real world and helps students make sense of the content	☐	☐
Includes short- and long-term student accountability	☐	☐
Helps target and build the habit(s) of success	☐	☐
Includes examples to model new content and skills	☐	☐

Plan a Practice Together Activity

Practice Together is teacher-guided, whole-group practice that allows students time to work independently with teacher monitoring and peer assistance. As students practice independently, the teacher observes and interacts with individual students to determine the success of students' practice. After an appropriate time — determined by student need — the teacher displays correct answers, information or procedures to the entire class. In some cases, students may feel comfortable sharing their answers with the class.

The advantage of Practice Together is that teachers are not lecturing for long periods of time, and students are able to practice and self-correct without fear of getting the wrong answer. Practice Together creates a supportive classroom culture as students work with new content, with teacher and peer support.

During the Practice Together activity, students should have the opportunity to focus on specific aspects of the lesson's content with rigorous activities. Within the group settings, students should act as group members and leaders, contributing individual knowledge. Monitor group work to make sure all students are participating and connecting the content knowledge from the Explore and Explain activities to complete the assignment.

Choose a Practice Together activity that is connected to the standards, fits the lesson and reinforces content development. Examples include:

- Complete a practice problem or lab.
- Use manipulatives.
- Construct a graph or timeline.
- Make predictions using information from the lecture.
- Complete collaborative writing.
- Create a whole-group graphic organizer.
- Write a draft.
- Engage in shared reading using overhead transparencies and Smart Board.

View an example:

Practice Together (Whole Group Practice) 12–15 minutes	*Working with the whole class, present an equation, a table and a graph. Have students determine the domain and range of each.*

Think It Through

Practice Together:	Yes	No
■ Includes rigorous, hands-on practice	☐	☐
■ Allows teacher to monitor and support during this practice	☐	☐
■ Addresses multiple learning styles and multiple learner profiles	☐	☐
■ Ensures students' engagement with note-taking	☐	☐
■ Requires students to collect individual information during whole-group practice	☐	☐
■ Allows students to take the lead in learning and provides additional examples	☐	☐
■ Focuses practice on specific aspects of a complex skill or process	☐	☐
■ Allows for student success	☐	☐

Plan a Practice in Teams/Groups/Pairs Activity

Working with other students in small groups provides additional practice with continued teacher support. In small groups, students are more likely to help each other, ask clarifying questions, admit confusion and work together toward completion. Consider the most appropriate size (small groups, pairs) and grouping options for the activity.

Small groups continue application of new content with similar material, helping students to transfer and apply new information. Guided practice allows students to work and respond in small groups, encouraging collaboration and teamwork. Communication skills are refined as students work together toward mastery of standards.

Choose a Practice in Teams activity that is connected to the standards, fits the lesson and provides appropriate practice activities. Examples include:

- Think/pair/share
- Study buddies
- Solve similar problems
- Practice active reading strategies
- Ask questions
- Peer review
- Design other problems, questions or labs
- Research information
- Revise writing
- Answer questions or problems
- Design individual investigation or projects

View an example:

Practice in Teams/ Groups/Pairs *(Small Group Practice)* *12–15 minutes*	*Using real-world scenarios, equations, tables and graphs, have students identify the domain and range of each.*

Think It Through

Practice in Teams/Groups/Pairs:	Yes	No
■ Uses the most appropriate grouping method for this content (pairs, small or cooperative groups)	☐	☐
■ Includes similar but varied problems based on standards	☐	☐
■ Requires less teacher-directed support and more student-directed practice	☐	☐
■ Allows the teacher to monitor and provide specific extra help	☐	☐
■ Incorporates the identified habit of success	☐	☐
■ Incorporates literacy strategies	☐	☐

Plan a Practice Alone Activity

Practice Alone activities give the teacher an opportunity to observe each student's work and lead to the Evaluate Understanding activity. Practice Alone provides time for the teacher to monitor the correctness of students' work, answer questions and provide extra help.

Practice Alone is often misinterpreted as homework and used at the end of the class as a Closing activity; however, Practice Alone is completed in the classroom with teacher monitoring, while homework is done independently at home. Homework allows students to demonstrate and practice retention of content without teacher support. During Practice Alone, students should have the opportunity to apply the knowledge they've gained and are more accountable for the content and skills in the lesson.

Choose a Practice Alone activity that is connected to the standards, fits the lesson and extends application of content. Consider individual needs of students and accountability. Practice Alone assignments can vary from student to student. Examples include:

- Compare and contrast using a Venn diagram.
- Write a final draft.
- Complete new problems.
- Design an experiment to solve a new problem.
- Read new information and use two-column notes.
- Create a brochure.
- Complete a RAFT assignment.

View an example:

Practice Alone *(Individual Practice)* *10–15 minutes*	*After surveying the teams for their understanding of domain and range, give students one representation of each to identify on their own.*

<table>
<tr><td colspan="3" align="center">***Think It Through***</td></tr>
<tr><td>**Practice Alone:**</td><td>**Yes**</td><td>**No**</td></tr>
<tr><td>■ Helps students transfer knowledge gained during the previous practice strategies to new problems and situations</td><td>☐</td><td>☐</td></tr>
<tr><td>■ Includes appropriate quantity of problems or examples</td><td>☐</td><td>☐</td></tr>
<tr><td>■ Supports individual accountability through notebooks, reports, etc.</td><td>☐</td><td>☐</td></tr>
<tr><td>■ Includes distributive practice spread out over time so that students maintain and deepen content knowledge and skills</td><td>☐</td><td>☐</td></tr>
</table>

Plan an Evaluate Understanding Activity

While standards-based unit planning allows for constant monitoring of students' understanding, teachers should also use formal assessments to gauge mastery. Using a variety of assessment strategies allows the teacher to differentiate instruction, ensuring that all students have an opportunity to master content.

When developing the Evaluate Understanding activity, incorporate a variety of assessment tools, including open-ended questions and oral and written questioning. Use the Evaluate Understanding activity to gauge mastery — particularly at or above grade level — and identify gaps in comprehension.

Choose an Evaluate Understanding activity that is connected to the standards, fits the lesson, assesses mastery of content and provides accountability. Select appropriate assessment methods that will provide useful instructional feedback. Examples include:

- Open response
- Oral discussion
- Exit slip
- Journal entry
- Paper and pencil quiz
- Lab report
- Book review
- Group report
- Project or model
- Frayer model
- RAFT assignment

View an example:

Evaluate Understanding *10–15 minutes*	*Ask students to share their solutions with the class or with their study teams.*

Think It Through

Evaluate Understanding:	Yes	No
▪ Utilizes most appropriate assessment method	☐	☐
▪ Uses a combination of written and oral questioning	☐	☐
▪ Allows for feedback to drive future instruction	☐	☐
▪ Provides for demonstration of partial or complete mastery of the content	☐	☐
▪ Allows for reteaching if mastery is not achieved	☐	☐
▪ Specifies if extra help is needed for process skills or content	☐	☐

Plan a Closing Activity

Preserving every minute of class time is crucial. During the last few minutes of a class period or block, teachers and students are often ready to end the learning cycle. This loss of those last five minutes each day for 180 days in a school year adds up to 15 hours of lost instructional time.

The closing activity provides a last opportunity for the teacher to complete the lesson and check for understanding and gives students a last chance to ask questions before they leave the classroom. The activity maintains classroom order and completes the cycle of learning in an appropriate, engaging manner that prepares students to exit the classroom. Use the Closing activity to set the tone for how class ends. Remember that establishing procedures for beginning and ending class is best accomplished during the first week of school.

In addition to completing the learning cycle for the lesson, the Closing activity should also help students understand the purpose of the homework assignment. Explain to students what the homework assignment is, why it is relevant, and what learning outcomes or purposes they can hope to achieve. Involve all students in the Closing activity to help them connect the day's content and prepare them for the next day.

Choose a Closing Activity that is connected to the standards, fits the lesson and reinforces the content included in the day's lesson. Examples include:

- Cartoons
- Exit slip
- One-minute paper
- Homework
- Journal sharing or discussion
- Review of major content points
- Answer questions

View an example:

Closing Activities *6–10 minutes*	*Have students turn in their individual work as a ticket out the door.* *Assignment: Research domain and range and bring information or facts "uncovered" to class.* *Write a journal response to the following question: "How are domain and range related to independent and dependent variables?" Resources for information can include computer searches,*

Think It Through

Closing:	Yes	No
■ Cements students' understanding of the content	☐	☐
■ Maintains on-task behaviors until the end of class	☐	☐
■ Answers questions and clarifies instructions	☐	☐
■ Sets up next day's instruction	☐	☐
■ Explains the purpose and outcome for homework (practice, preparation for new learning, etc.)	☐	☐
■ Provides a way for all students to participate and verbalize the day's learning	☐	☐

Plan Enrichment/Extension and Accommodations/Reteaching Activities

Enrichment/Extension activities encourage in-depth application of content for those students capable of more rigorous, advanced-level work. These activities should engage students who are ready for more challenges and information. In some cases, Extension activities can also serve as make-up work for students who have missed class.

Choose an Enrichment/Extension activity that is connected to the standards, fits the lesson, and encourages students to demonstrate higher levels of cognition. Examples include:

- Create steps for a new lab activity.
- Review problems identified through research and apply the information to specific societal issues.
- Compare and contrast authors' styles.
- Research and predict future global changes.

View an example:

Enrichment/ Extension	Give the class several graphs and ask them to identify the domain and range. Give the students the domain and range and ask them to generate the graph from the data.

Think It Through		
Enrichment/Extension:	**Yes**	**No**
■ Pushes students to go beyond proficient- or advanced-level mastery of the content	☐	☐
■ Encourages students to demonstrate higher levels of cognition (application, analysis, synthesis, etc.)	☐	☐
■ Allows the teacher to continue with other students if necessary	☐	☐
■ Differentiates homework or provides student choices during homework	☐	☐

Accommodations/Reteaching activities provide an opportunity to give extra help to students who are not meeting grade-level mastery of the topic. Try to work Accommodations into the lesson in a way that allows other students to continue with the day's work. Consider using various homework assignments to address varying levels of mastery, to help students who are below grade level reach a better understanding and to push all students to achieve advanced proficiency. Be sure that any Accommodations/Reteaching activities are still challenging and fair with the grading scale. The idea is not to "dumb down" the material, but to find methods to help students achieve at grade-level. All students can learn at higher levels if provided the extra time and help they need.

Choose an Accommodation/Reteaching activity that is connected to the standards, fits the lesson and addresses weaknesses identified on daily or pre-assessments. Examples include:

- Limit the homework quantity.
- Select reading materials appropriate to reading level.
- Use audio/video tapes to assist in reading.
- Provide other formats of reading materials.
- Allow more time.
- Encourage peer assistance or tutoring.

Think It Through

Accommodation/Reteaching:	Yes	No
■ Addresses identified skills for students who need extra help or extra time	☐	☐
■ Connects to and supports standards	☐	☐
■ Addresses weaknesses identified on pre- and daily assessments	☐	☐
■ Fits needs for multiple levels of extra help	☐	☐
■ Allows teacher to continue with other students if necessary	☐	☐
■ Fits fairly into the grading system	☐	☐

Step 9: Teach the Unit

Once the unit is developed, teaching becomes easier because the amount of planning already completed allows teachers to move easily through the instructional cycle. Teachers who use the unit-planning process repeatedly see greater student engagement and improved mastery of the material. Take time to reflect on how well the content plan works and revise and correct any parts of the standards-based unit that do not work. By taking careful notes, you can fine-tune the unit according to students' needs and any changes in standards. Develop the unit electronically for easier revision.

Use the notes section on the daily plan when teaching to record any information about revisions needed. Notes collected during the teaching process give a head start on identifying and correcting any problems. Student feedback about the aspects of the unit they particularly enjoyed and learned from provides another source for revision and strengthening. Feedback from colleagues is encouraged and helps teachers to revise lessons, reflect on lessons learned regarding assignments and assessments, address major gaps, and ensure elements of quality and accuracy.

As you teach:

- Make notes for later revision or make revisions on a daily basis.
- Determine additional strategies to teach content and skills not mastered by students.
- Review and revise the unit plan and daily sequence.
- Determine what works and what needs to be refined.
- Discuss with students how/if this change in planning affected learning. Write down their comments to share with colleagues.
- Identify major content and skills that students failed to master and make the necessary revisions to address them more successfully.

Think it Through

When did students do well and what motivated them? What aspects challenged them or caused disinterest? What types of assessments did I use each day, and did they work well? What academic or career/technical skills need reteaching?

Step 10: Increase the Level of Proficiency in the Unit

Student achievement in schools increases when teachers continually examine assignments and assessments to make sure they meet grade-level standards. Use a process for looking at assessments and student work to:

- determine if assignments and assessments are based on state content standards and if they meet grade-level expectations and college- and career-readiness standards.

- assess the rigor of the sample assessments and evaluate student work.

- schedule time to meet with teachers to discuss strengths, weaknesses, successes and failures.

- revise the unit as needed to increase its effectiveness.

- ask peers to review one specific question you have about assignments, assessments or the unit as a whole.

The notes taken during Step 9 will identify activities and assessments that need revision for increased proficiency. Commit to increasing proficiency levels of the assignments and assessments within the unit, using notes and feedback from students and colleagues. Tools such as Allen, Blythe and Powel's Tuning Protocol and the Praise, Question, Polish method can also help to evaluate assessments and assignments for increased rigor and proficiency. For more information on Tuning Protocols, see Appendix E.

Sample Praise, Question and Polish (PQP) Format:

1. Praise:

- _____ is good because…

- I like this because…

- _____ is effective because…

2. Question:

- What is …?

- Why is…?

- How did you…?

3. Polish:

- Have you considered…?

- Have you thought about…?

- You might want to…

- _____ might help improve this because…

Think it Through

What are the proficiency levels of the assignments and assessments in this unit? How can I maintain work at proficient and advanced levels? Will the use of a Tuning Protocol increase the rigor of the assignments and assessments in this unit? What are the changes I need to make to get more students to achieve at grade level and above?

APPENDIX A: Templates

A.1 Unit Plan Template Overview

The unit plan template includes elements necessary for comprehensive instructional plans. These units should include standards to be addressed, assessments, and instructional activities such as literacy strategies and habits of success. These units are usually developed in two- to three-week segments. Unit plans can be evaluated using rubrics based on a four-point scale. Unit plans should include:

- the full description of the standards that are being addressed.

- the level of intellectual demand students are expected to meet at the end of this instructional plan (move beyond recall/procedural skills to the proficient level of application/analysis and the advanced level of synthesis/evaluation).

- evidence that teachers will accept as proof that students have not only met the basic level required for this standard, but have moved on to at least a proficient level (grade level) of performance.

- major assignments to be given to students and strategies to make them engaging and authentic in ways that will motivate students, including a variety of activities that help all students succeed in meeting rigorous standards.

- an outline of the major study skills, literacy skills and research-based instructional strategies teachers will use to help students master the standards.

- details and expectations of students' major in-class and out-of-class instructional activities.

Unit Title:	
Course Name:	
Grade Level:	
Unit Overview:	
Timeframe:	
Prerequisite Knowledge/Skills:	
Essential Questions:	
Readiness Indicators:	
State/Local Standards (include complete standard):	
Acknowledgements:	

Literacy Strategies (Check all that apply.)	**Habits of Success** (Check one per unit.)
(To be developed throughout the unit plan with ample opportunities for practice.)	
☐ Admit/Exit slips ☐ Graphic organizer ☐ Know/Want to Know/Learn chart (KWL) ☐ Open-response questions ☐ Double-entry/Two-column notes ☐ Retelling ☐ Reflection ☐ Jigsaw reading ☐ Anticipation guide ☐ RAFT (Role/Audience/Format/Topic) ☐ Interactive reading guide ☐ Concept definition maps ☐ Frayer model ☐ Visual prediction guide	☐ Create relationships (Teamwork/responsibility/effective communication) ☐ Study, manage time, organize (Organization/time management/study skills) ☐ Improve reading/writing skills (Use reading and writing to learn strategies) ☐ Improve mathematics skills (Estimate/compute/solve/synthesize) ☐ Set goals/plan (Set goals/plan/monitor progress) ☐ Access resources (Research/analyze/utilize)

Assessments
Pre-Assessment:
Daily/Weekly:
Post-Assessment:

Unit Title:	
Day _____ of _____	
Readiness Indicator(s) for Today's Activities # _____ # _____	**Description**
State/District Standard(s) for Today's Activities # _____ # _____ # _____ # _____ # _____ # _____	**Description**

Anticipated Times	Sequence of Instruction	Activities Checklist
_____ minutes	Get Started	☐ Admit slip ☐ Post/discuss/copy objectives ☐ Write in journal ☐ Solve problems ☐ Answer questions ☐ Pre-assessment ☐ Other _____
_____ minutes	Engage	☐ Display object/picture ☐ Demonstrate reaction ☐ Model/demonstrate lab ☐ Discuss previous experiences ☐ Other _____
_____ minutes	Explore	☐ Brainstorm ☐ Create lists ☐ Investigate ☐ Build a model ☐ Work a problem ☐ Analyze data ☐ Lab activity ☐ Evaluate steps ☐ Other _____
_____ minutes	Explain	☐ Lecture with guided notes ☐ Student presentations ☐ Media presentation ☐ Interactive discussion ☐ Other _____

Anticipated Times	Sequence of Instruction	Activities Checklist
_____ minutes	Practice Together	☐ Complete practice problems ☐ Use manipulatives ☐ Construct graphs/timelines ☐ Make predictions ☐ Collaborative writing ☐ Whole-group graphic organizers ☐ Other _____
_____ minutes	Practice in Teams/Groups/Pairs	☐ Solve similar problems ☐ Practice active reading strategies ☐ Answer questions ☐ Peer review/edit ☐ Design other problems/questions/labs ☐ Research information ☐ Other _____
_____ minutes	Practice Alone	☐ Draft writing ☐ Answer questions/problems ☐ Design other problems/questions/labs ☐ Revise work ☐ Design individual investigations/projects ☐ Other _____
_____ minutes	Evaluate Understanding	☐ Discussion ☐ Open-response question(s) ☐ Quiz ☐ Writing sample ☐ Individual projects/investigations/presentations ☐ Other _____
_____ minutes	Closing Activities	☐ Assign/explain homework ☐ Review major points ☐ Answer questions ☐ Student reflection activity ☐ Exit slip ☐ Other _____
_____ minutes	Enrichment/Extension and Accommodations/Reteaching	☐ Review ☐ Practice ☐ Reading ☐ Tutoring ☐ Individual assignment ☐ Other _____

Resources/Instructional Materials:

Notes:

APPENDIX B: Learning More About the 10 Steps

B.1 Learn More About Standards and Chunking

In Step 2, teachers list all the standards relevant to the unit and shuffle them into manageable stacks. Experience and practice help in determining how to group the standards. Chunks can always be rearranged into different groupings.

Chunking standards:

- allows student to make connections that are premeditated by the teacher.
- produces deeper learning, less short-term memorization and more long-term memory connections.
- saves time by addressing results and outcomes.
- promotes data-driven decisions about activities and strategies that enhance learning.
- promotes mastery of the standards at the proficient or advanced levels.

Chunking promotes integration. With standards-based unit development, teachers can integrate standards from other academic and career/technical courses. SREB encourages integration with at least one other teacher. Enlist that teacher's cooperation and commitment to the process. Remember that collaborative teaching strengthens students' understanding and retention of content.

Communication skills in reading, writing, speaking and listening are integrated throughout the unit. The mathematics teacher who teaches students to read mathematical texts will advance both reading and mathematics achievement. Because units provide many opportunities for integration, teachers can incorporate multiple standards, study skills and habits of success into one unit.

B.2 Learn More about Essential Questions

The use of essential questions is not established in all states and districts and is, therefore, new to many teachers. Writing essential questions takes practice and requires teachers to carefully write questions that are specific enough to measure mastery, but not so specific that they become an assignment or activity. Essential questions turn educational standards into real-world, worthwhile content that encourages students to develop their own connections.

Writing essential questions takes time, patience and practice. Through pilot programs and training, SREB has found that there is usually one teacher in every group who has a knack for seeing the "big picture" of essential questions. This teacher can be a valuable mentor in writing and revising essential questions. If this mentor-teacher is not available, numerous texts and Web sites are available with examples of and ideas for writing essential questions. (See Appendix F.)

B.3 Learn More about Assessments

Assessment is an integral part of standards-based unit planning and requires coordination of the pre-, daily and post-assessments.

The pre-, daily and post-assessments listed on the unit template are formative assessments, meaning data from the assessments can be used to revise strategies and reteach information. In unit teaching, there is constant assessment that provides feedback for the teacher. Data collected from assessments might direct the teacher to plan a different approach, to reteach or to raise the proficiency level.

In the daily plan, the phrase "Evaluate Understanding" is used. This is an important part of the sequencing of instruction. Teachers use various tools to assess students, and the words "assessment" and "evaluation" are often used interchangeably. Regardless of which term is used, the key to assessment is to constantly monitor student learning. Feedback from a variety of assessments enables the teacher to make the best planning decisions.

Assessments:

- Pre-assessments determine the focus of instruction by identifying students' prior knowledge. Pre-assessments do not have to be written tests. They can be oral responses to questions or a classroom discussion in which the teacher records students' answers.

- Daily/weekly assessments determine instruction based on students' current and developing knowledge.

- Post-assessments determine student mastery and point out areas that may need reteaching. They include two types:

  - Paper-and-pencil tests (well-designed with thoughtful items) determine mastery through an objective-based design.

  - Product, performance or problem assessments demonstrate mastery through application. Product- and problem-based assessments result in tangible evidence about students' mastery of content. Performance-based assessments tend to be more subjective and rely heavily on a teacher's expertise in communicating (often verbally) the assessment criteria.

To encourage students to put forth the effort to achieve at or above grade level, consider adopting an A, B, C, Not Yet grading policy. This strategy requires students to redo work that does not meet standards and also requires extra help and extra time to help such students achieve at grade level. The following is a sample Not Yet grading rubric:

CATEGORY	A	B	C	Not Yet
Focus on Topic (Content)	There is one clear, well-focused topic. The main idea stands out and is supported by detailed information.	The main idea is clear, but the supporting information is general.	The main idea is somewhat clear but more supporting information is needed.	The main idea is not clear. There is a seemingly random collection of information.
Accuracy of Facts (Content)	All supportive facts are reported accurately.	Almost all supportive facts are reported accurately.	Some supportive facts are reported accurately.	No facts are reported, or most are reported inaccurately.
Pacing (Organization)	The pacing is well-controlled. The writer knows when to slow down and elaborate, and when to pick up the pace and move on.	The pacing is generally well-controlled but the writer occasionally does not elaborate enough.	The pacing is generally well-controlled but the writer sometimes repeats the same point or spends too much time on unneeded details.	The pacing often feels awkward to the reader. The writer elaborates when there is little need and leaves out necessary supporting information.
Sequencing (Organization)	Details are placed in a logical order that effectively holds the reader's interest.	Details are placed in a logical order, but in a way that makes the writing less interesting.	Some details are not in a logical or expected order, and this distracts the reader.	Many details are not in a logical or expected order. There is little sense that the writing is organized.
Commitment (Voice)	The writer successfully uses several reasons and appeals to show why the reader should care or want to know more about the topic.	The writer successfully uses one or two reasons and appeals to show why the reader should care or want to know more about the topic.	The writer attempts to make the reader care about the topic, but is not successful.	The writer makes no attempt to make the reader care about the topic.
Grammar and Spelling (Conventions)	The writer makes no errors in grammar or spelling that distract the reader from the content.	The writer makes one or two errors in grammar or spelling that distract the reader from the content.	The writer makes three or four errors in grammar or spelling that distract the reader from the content.	The writer makes more than four errors in grammar or spelling that distract the reader from the content.
Word Choice	The writer uses vivid words and phrases, and the choice and placement of the words seems accurate, effective and natural.	The writer uses vivid words and phrases, but occasionally the words are used inaccurately or seem forced.	The writer uses words that communicate clearly, but the writing lacks variety or flair.	The writer uses a limited vocabulary that does not communicate strongly or capture the reader's interest. Jargon or clichés may be present and detract from the meaning.
Format	The document remains true to selected format.	The writer generally uses format correctly, although there might be a minor lapse.	The writer does not demonstrate commitment to chosen format and wavers in style.	The reader is unable to determine the format for writing.

Ideas to remember when developing assessments:

- Before the work is assigned, determine the expectations for the post-assessment that best evaluate student mastery of the content standards.

- Coordinate daily and weekly assessments with the post-assessment product, performance or problem. Use checkpoints at regular intervals to keep students on task.

- Use information from all assessments to drive instruction.

- Design assessments to meet the needs of multiple learning styles and to increase the rigor of the standards-based unit.

- Utilize a variety of instructional tools, such as Bloom's taxonomy (knowledge, comprehension, application and analysis) and Webb's Depth of Knowledge (recall, basic application of skill/concept, strategic thinking and extended thinking).

B.4 Learn More about Using Resources

To inspire creative instructional planning, brainstorm resources before planning a unit. Brainstorming widens the scope of materials used and improves the process. When gathering new resources, remember that lessons are planned for a specific group of students, and one set of activities will not always fit another group. Teachers should constantly update and expand materials and strategies. Participation in regional and national training sessions and membership in content-based organizations are both important for improving learning opportunities, and model to students the importance of life-long learning.

APPENDIX C: Portfolio Post-Assessments

Portfolios are a significant type of post-assessment product and can be used in almost any subject area. Below are ideas for further use of portfolios as post-assessment products. When developing a portfolio assignment, consider the following items for inclusion in students' portfolios:

Career/Technical	English/Reading/Language Arts	Mathematics	Science	Social Studies
■ Career research articles ■ Weekly career brochure ■ Résumé ■ Monthly research presentations ■ Project plan ■ Study topic brochure ■ Live project plan for marketing ■ Technology progress report ■ Reading log ■ Employer skills/work habit evaluations ■ Marketing plans ■ Reading log	■ Cover letter ■ Book report ■ Daily oral grammar ■ Essays ■ Reflective journals ■ Character analysis paper ■ Primary source response ■ Reader responses ■ Poetry ■ Lecture notes ■ Reflection responses ■ Double-column notes ■ Writing prompt responses ■ Reading log	■ Responses students write about ■ Unit summaries — find and describe real-life examples ■ POW —Problem of the day/week responses ■ Chapter reflections ■ Constructed response questions ■ Reading log	■ Lab journal reports ■ Research papers ■ Reflection logs ■ Two short reports on the most interesting advances/discoveries in science ■ Reading log ■ Data collection ■ Science project research ■ Scientific journal reflections ■ Group reports ■ Brochures ■ Data collections and analysis ■ Major tests ■ Reading log	■ Journal entries of time periods ■ Rubrics for various projects ■ Project-based research ■ Projects ■ Essays ■ Transcripts of relevant trial decisions ■ Study topic brochures ■ Reading log

Example: Portfolio Post-Assessment for a Career/Technical Course

Develop a system of assignments to engage students in applying literacy skills in their career fields. These assignments will become a part of a comprehensive career/technical portfolio. Include the following activities:

1. reading and analyzing technical articles daily/weekly and using a rubric or scoring guide
2. using writing as a tool to facilitate higher-order thinking and produce technical materials, such as brochures, guides or other printed materials common to the field
3. researching and preparing a project plan and a written report common to the field, such as a business plan or a construction plan that uses basic technology (e.g., Internet search engines, word processors)

Example: Technical Literacy Assignment Portfolio

Items to Include in the Portfolio*	Unit/Lesson Topic	Number	Due Date
1. Written summaries of career-related articles (number and frequency) 2. Informative brochure or how-to instruction manual 3. Lab journal entries 4. Reflective journal entries 5. Researched paper			
Method(s) of Assessment			

* List books and or articles read, reports prepared and projects completed. The portfolio can become a component of the senior project. This should also be a part of the course syllabus.

APPENDIX D: Further Resources for Addressing Literacy

D.1 SREB's Five Goals for High-Level Literacy Programs

Students will:

1. **Read the equivalent of 25 books per year across the curriculum.** Students' reading skills and understanding of content will grow if they read more and are exposed to a wider range of materials. Teachers should assign eight to 10 books in English/language arts and another three to four or their equivalents in all other classes. Teachers in every class should assign reading appropriate to course content and expect students to demonstrate understanding of what they read. Expect students to read both fiction and nonfiction, including technical manuals, journal articles and magazine articles. Give students choice in the selection of materials within parameters that will allow them to meet course goals. Ask students to prepare written reports, make oral presentations and perform tasks related to what they have read.

2. **Write weekly in all classes.** Expect students to complete short writing assignments each week in all classes. These can take many forms, including journals, letters, editorials, essays, process descriptions, open-response questions, reports and written summaries. Some writing assignments can be for audiences and purposes outside the classroom. Provide frequent opportunities for students to revise their writing to improve quality. Expect teachers to use common grade-level rubrics for evaluating student work.

3. **Use reading and writing strategies to enhance learning in all classes.** Proficient readers summarize what they have learned; ask clarifying questions; use pertinent vocabulary; and analyze the content, purpose and structure of a text. Prepare and expect all teachers to demonstrate a variety of reading and writing strategies enabling students to learn the content and language of their disciplines and to communicate effectively.

4. **Write research papers in all classes.** Uncovering what has already been written and learned about a topic is a valuable learning process. Research is an integral part of most real-world occupations and is therefore a skill that must be learned in school. Individual research allows students to become experts on a particular topic and contribute to their classmates' learning. Research includes multiple steps — defining the question, locating and evaluating information, summarizing and paraphrasing information, combining information in cogent writing, and documenting sources. Expect students to write some research papers in the traditional format; others may be formatted as proposals, laboratory reports or journal articles.

5. **Complete a rigorous language arts curriculum taught like a college-preparatory honors English course.** To reach this goal, students read eight to 10 books each year and demonstrate understanding, write short papers each week that are graded and complete a research paper. Students will also complete summer reading assignments. Assigned materials can include a wide variety of grade-level selections, such as young adult and classic novels, biographies, poetry, drama, short stories and essays. Students will formulate and respond to questions and reflect on what they have read. They will identify connections among various reading materials and relate what they read to personal experiences and real life. Students use written work to demonstrate understanding of what they read and demonstrate a growing ability to organize thoughts and communicate clearly.

Reading Proficiency Levels — Eighth Grade

Basic

Eighth-grade students performing at the Basic level demonstrate understanding of explicitly stated information by retrieving it from texts. At the Basic level, students use text details to make simple inferences and predictions using explicitly stated information and supporting details to identify a character's emotions and recognize their cause. They use context clues to define and interpret a phrase. In addition, these students can use surface details to draw a logical conclusion or interpret meaning from texts. They can explain why information is included and recognize the purpose of a title and illustration. They can form an opinion in response to a text, but may not be able to cite supporting passages.

Proficient

Eighth-grade students performing at the Proficient level demonstrate understanding by using explicitly and implicitly stated information to identify and summarize the main idea of a text. At the Proficient level, students are able to extend text ideas to formulate an appropriate question or make a relevant connection to real-life experience. They can use surface details to make a comparison. In addition, these students demonstrate some knowledge of literary elements and devices by recognizing poetic imagery and using details to explain the meaning of a symbolic phrase. When discussing a title's appropriateness or expressing a text-based opinion, they can provide general support from the text.

Advanced

Eighth-grade students performing at the Advanced level demonstrate a thorough understanding of theme, point of view and characterization by using specific ideas from across a text and by connecting ideas between two texts. At the Advanced level, students can explain the relevance of a question by extending text ideas and using a connection between the text and real-life experience. In addition, advanced students can derive meaning from whole texts to make overarching evaluations. When analyzing content or expressing text-based opinions, advanced students can provide specific support.

Reading Proficiency Levels — 12th Grade

Basic

Twelfth-graders performing at the Basic level demonstrate a general understanding of grade-level texts. They locate specific information and identify the main ideas and purpose. Students make simple connections between ideas within a text and provide general evaluations of the meaning or purpose. In addition, they identify interpretations and text-based support for those interpretations.

Proficient

Twelfth-graders performing at the Proficient level demonstrate understanding of grade-level texts. They understand explicitly stated ideas, compare and contrast information in different parts of a text, determine the relative importance of different ideas and provide overall interpretations of a text's meaning. Proficient readers recognize connections between ideas in the text, with other texts and with real-life experiences. They recognize general organizational features and can extend ideas in the text through making inferences such as predictions and conclusions.

Advanced

Twelfth-graders performing at the Advanced level demonstrate a thorough understanding of grade-level texts. They integrate text ideas, explain causal relationships, and evaluate complex information and organizational features. Students analyze text ideas to provide specific and extensive support for evaluations and interpretations of the text. They evaluate an author's opinion and explain how that opinion is conveyed. They make connections between complex, deeply embedded ideas within the text, with other texts and with real-world experiences. They can interpret

Anticipation Guides

An anticipation guide, or prediction guide, prepares students for what they are about to read or discuss by having them react to a series of statements related to the new content. Anticipation guides are valuable because they prepare students to read and discuss by connecting them to the information ahead of time. Students tend to become interested in the topic because they have been asked to share their opinion.

In *Reading to Learn in the Content Areas*, Judy S. Richardson and Raymond F. Morgan outline steps for creating and using a good anticipation guide:

1. Read the assignment and identify the big ideas. Choose which of the big ideas is most likely to engage students in reading.
2. Write statements based on the big ideas. The statements should be specific enough to draw a response from students, but general enough to inspire discussion.
3. After the students fill out the guide, lead a class discussion. Ask students to provide arguments for their opinions and explain how they came to that conclusion.
4. Present the material and then provide time for students to adjust their responses.

Sample Anticipation Guide

Place a check mark in front of those sentences that you believe to be true. During or after reading Chapter One in *Literacy Across the Curriculum*, "Why We Need an Across-the-Curriculum Emphasis on Literacy," cross through checkmarks you wish to change and place new checkmarks next to statements you now find to be true.

☐ 1. Companies are more likely to provide remedial programs for employees than once was the case.

☐ 2. Employers are expecting more from employees, especially in the manufacturing, wholesale and retail segments of the economy.

☐ 3. Reading and writing proficiency is more important in higher education than in the workplace.

☐ 4. The 25 fastest growing jobs today require stronger literacy skills than jobs that are declining.

☐ 5. Young adults' basic academic skills influence the types of courses they take in high school, the amount of homework they do, whether they graduate from high school or obtain a GED certificate, whether they attend college upon graduation, their choice of major field of study, their persistence in college and the types of academic degrees they obtain.

☐ 6. There have been slight increases in achievement among 17-year-olds on the National Assessment of Educational Progress (NAEP) reading exam over the past decade.

☐ 7. Literacy skills are strongly associated with social, educational and economic outcomes in our society.

Student Reading Log

Reading logs help students keep track of information they've read and also show them the results of their work. Seeing a list of accomplishments can help motivate students to continue their efforts. Reading logs result in just such lists when students complete an entry for every book or article they read. The following sample reading log can be easily added to student notebooks or journals.

Name: _____ Course:_____

Title of Book or Article	Due Date	Number of Pages	Running Total

Sample Reading Assignment: Report on a Professional Journal Article

Reading and reporting on professional journal articles encourages students to make connections between classwork and real-world information. Students in both academic and career/technical classes benefit from reading and writing about professional articles. The following sample reading assignment provides examples of specific tasks students can complete when reading professional journals and outlines ideas for incorporating writing to learn, writing to demonstrate learning and authentic writing.

Writing to learn helps students master information. Authentic writing uses information from the text or the exercise to apply writing skills and content knowledge in a real-world assignment. For example, students could use information from a graphic organizer to compose a letter to their congressman advocating the reduction of petroleum-based fuels.

Technical literacy standards:

1. Read, comprehend and synthesize information from a wide range of sources within the technical field.
2. Write and speak clearly using the language of the field to communicate effectively to a variety of audiences.

Assignment Instructions:

Once every two weeks, select and read an article from a professional journal and prepare an oral or written report about the article. Check the class schedule for the dates on which you will have either an oral or written report due and record those dates in your reading log and daily planner.

For a written report, write two pages summarizing the article and your reaction to it. For an oral report, prepare a five-minute presentation summarizing the article and your reaction to it. Use the following questions to develop your report or presentation:

- How will the information in the article help you obtain and sustain employment in your field?
- Why is the information important to the field?
- Do you agree or disagree with this information? Support your position.

Types of Writing in your content area:

Directions: On the chart below, write down at least three ideas that can be used in your content area classroom.

Writing to learn	Writing to demonstrate learning	Authentic writing
Sample Answers:		
Learning journals	Completing essay test questions	Resumes
Learning logs	Creating a lab report	Letters
Study guides	Writing a process or product paper	Speeches

APPENDIX E: The Tuning Protocol

The Tuning Protocol as outlined below was developed by Joseph McDonald and David Allen to help teachers evaluate the quality of student work and assessments. This method allows teachers to review sample work, determine if samples meet grade-level standards and assess the rigor of student assignments. More information on the Tuning Protocol can also be found in *Looking Together at Student Work*, by Tina Blythe, David Allen and Barbara Powell (College Press, 1999).

Tuning Protocol Steps

1. **Introduction (five minutes):** The facilitator introduces protocol goals, guidelines and schedules.

2. **Presentation (five to10 minutes):** The teacher describes the assignment's context (the type of students in this course, at what grade level and what point in the year the assignment is given, etc.). The teacher then poses questions for the group to consider. Participants do not respond or make comments at this time.

3. **Clarifying Questions (five minutes max):** Participants ask questions to clarify facts only (How many students are in the class? What experience do they usually have?). The facilitator ensures questions asked do not pertain to warm/cool feedback (step six).

4. **Examination of Work (five to 15 minutes):** Participants analyze the assignment and note where it is "in tune" with goals and standards and where improvements could be made. Analysis should focus primarily on the questions posed by the teacher during step two.

5. **Pause to Reflect on Warm and Cool Feedback (two to three minutes max):** Participants take a few minutes to review their comments and decide what warm and cool feedback they can provide to the group discussion.

6. **Warm and Cool Feedback (10 minutes):** During this step, the teacher listens without responding. Participants share their warm and cool feedback. The facilitator may want to begin first with warm feedback and then move on to suggestions for improvement, or alternate between the two. Participants should always begin with some positive feedback. Participants' feedback should continue to focus primarily on the questions posed by the teacher.

7. **Reflection (five minutes):** The teacher addresses the feedback, asking further questions and exploring ideas that arose from participants' feedback. Note: This is not a time for the teacher to defend his or her position, but to reflect on how to implement suggestions.

8. **Debrief (five minutes):** The facilitator leads an open discussion on the experience.

Tuning Protocol Guidelines

This process for peer review can be intimidating, especially for the teacher who is presenting his or her assignments. The following guidelines will help ensure a respectful, collaborative, effective session during which assignments can be thoughtfully analyzed and improved, if necessary. Groups participating in the tuning protocol may want to develop further guidelines to make all participants comfortable.

- Be respectful of presenters, students and their work.
- Contribute with thoughtful, probing and specific comments and questions.
- Respect the facilitator's role, particularly in regard to following the guidelines and keeping time.
- Keep the conversation constructive (particularly when facilitating the process).
- Don't skip the final debriefing step, which allows the quality of the process to continually improve.

APPENDIX F: Resources and Further Reading

Ainsworth, Larry B. *Power Standards: Identifying the Standards that Matter the Most*. Advanced Learning Press, 2003.
This book explains the meaning of and process for using "power standards" — prioritized standards derived from a systematic and balanced approach to distinguishing what is absolutely essential for student success.

Ainsworth, Larry B. *Unwrapping the Standards: A Simple Process to Make Standards Manageable*. Advanced Learning Press, 2003.
The publication describes how to identify academic content in standards by "unwrapping" it from the full text of the standards and how to determine exactly what needs to be taught to students.

Ainsworth, Larry B. and Donald J. Viegut. *Common Formative Assessments: How to Connect Standards-Based Instruction and Assessment*. Corwin Press, 2006.
The authors discuss power standards, unwrapping the standards, big ideas and essential questions. Also included is information on improving instructional unit design and performance assessment in the classroom.

Allen, D., Tina Blythe, and Barbara S. Powel. *A Guide to Looking Collaboratively at Student Work*. Harvard Project Zero, 1996.
This publication is based on the Turning Points report from the Carnegie Corporation in 1989 and guides teachers through a structured approach to collaboration. The guide stresses the importance of collaborative work in the middle grades — a pivotal point in the lives of adolescents — and provides six protocols to help teachers work collaboratively to improve student assignments and assessments.

Anderson, Lorin W., David R. Krathwohl, Peter W. Airasian, Kathleen A. Cruikshank, Richard E. Mayer, Paul R. Pintrich, James Raths, and Merlin C. Wittrock. *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. Allyn & Bacon, 2001.
This book represents a thoughtful revision of Bloom's Taxonomy of Educational Objectives to resolve some of the conceptual and empirical concerns of the original hierarchy. The author's work adds a dimension of "knowing what" to build on "knowing how."

Dolejs, Chris. *Report on Key Practices and Policies of Consistently Higher Performing High Schools*. National High School Center, 2006 — http://www.betterhighschools.org.
This report, written particularly for state leaders, outlines a common framework found in high-performing high schools to demonstrate policies and practices that leaders can support to improve student achievement.

Jacobs, Heidi Hayes. *Mapping the Big Picture: Integrating Curriculum & Assessment K–12*. Association for Supervision and Curriculum Development, 1997.
Hayes describes a seven-step process for creating and working with curriculum maps. The author also addresses the importance of asking essential questions and designing assessments to demonstrate what students learn.

Jacobs, Heidi Hayes. *Getting Results With Curriculum Mapping*. Association for Supervision and Curriculum Development, 2004.
In this book, Hayes discusses how to get the most out of the curriculum mapping process, which is critical to improving teaching and learning. Hayes also provides detailed sample curriculum maps from a variety of schools.

Joyce, Bruce, Marsha Weil, and Emily Calhoun. *Models of Teaching*. Seventh ed. Allyn & Bacon, 2003.
The seventh edition of *Models of Teaching* is written to be the core of the theory/practice of instruction. It covers the rationale and research on the major models of teaching and applies the models by using scenarios and examples of instructional materials.

Literacy Across the Curriculum: Setting and Implementing Goals for Grades Six Through 12. SREB, 2004.
This guide provides concrete, research-based steps not only for raising reading and writing achievement but also for helping students learn more in every class by using literacy skills. The guide focuses on five literacy goals: reading 25 books across the curriculum; writing weekly in all classes; using reading and writing strategies; writing research papers; and taking rigorous language arts classes.

"Looking at Learning….Again, Part 2." *Powerful Practices in Mathematics and Science: Modeling, Generalizing, and Justifying.* Video Series. Harvard-Smithsonian Center for Astrophysics. Annenberg Media, 2000 — www.learner.org.

This video series includes discussions from a wide variety of educators and provides insight and information about how students really learn.

Marzano, Robert J. *The Art and Science of Teaching: A Comprehensive Framework for Effective Instruction.* Association for Supervision and Curriculum Development, 2007.

This book presents a model for increasing the quality of teaching by incorporating research-based data and an understanding of students' needs. Marzano devotes chapters to communicating learning goals, helping students interact with new knowledge, establishing classroom rules, engaging students, communicating high expectations and "developing effective lessons organized into a cohesive unit."

Marzano, Robert J. and John S. Kendall. *A Comprehensive Guide to Designing Standards-Based Districts, Schools, and Classrooms.* Association of Supervision and Curriculum Development, 1996.

This publication outlines why standards are needed and discusses formats for benchmarks, assessment strategies and accountability guidelines for standards-based education.

Marzano, Robert J., Debra Pickering, and Jay McTighe. *Assessing Student Outcomes: Performance Assessment Using the Dimensions of Learning Model.* Association for Supervision and Curriculum Development, 1993.

This book outlines performance tasks that help students apply knowledge to meet standards and provides numerous examples of performance task assessments.

Reeves, Douglas. *Making Standards Work: How to Implement Standards-Based Assessments in the Classroom, School, and District.* Third ed. Advanced Learning Press, 2001.

Written primarily for teachers, this book addresses why standards matter. The author provides a step-by-step processes for making standards work in the classroom; policy issues to consider when making standards work in the district; and resources such as reproducible handouts, sample assessments and assignments, a glossary and bibliography.

Richardson, J.S., Raymond F. Morgan, and Charleen Fleener. *Reading to Learn in the Content Areas.* Sixth ed. Wadsworth Publishing, 2005.

The authors provide strategies for helping students use literacy skills — reading, writing and discussion — to improve learning in all subject areas. This edition focuses specifically on incorporating technology such as computer software and the Internet programs to advance literacy skills.

Webb, Norman L. *Aligning Assessment to Guide the Learning of All Students: Six Reports on the Development, Refinement, and Dissemination of the Web Alignment Tool.* Council of Chief State School Officers, 2006 — http://www.ccsso.org/publications/details.cfm?PublicationID=293

This publication represents the work of a 16-state collaborative and is intended to empower state and district practitioners in the use of an automated, online alignment system.

Webb, Norman L. *Alignment, Depth of Knowledge & Change.* Wisconsin Center for Education, 2005.

In this presentation, Webb compares general and specific factors affecting curriculum alignment; presents an overview of depth of knowledge from Webb, Marzano, Bloom, and Tyler; provides samples of assessment items; looks at validity of assessments; presents questions about vertical alignment; and provides a tool for alignment.

Web sites:

The Anneneberg Foundation — http://www.annenbergfoundation.org.

CES National Web: Essential Resources for School Change — http://www.essentialschools.org.

Kentucky Department of Education — http://www.kde.state.ky.us/KDE/.

Ohio Department of Education, Instructional Management System — https://ims.ode.state.oh.us.

The University of Vermont, Index of Outreach Sources — www.uvm.edu/~outreach/edresources/sbunits.

APPENDIX G: Rigor Rubric: Implementation of Schoolwide Practices

Minimal Implementation	Emerging Implementation	Schoolwide Implementation
Assessment for Learning		
□ There is evidence in state or local assessment results that students are not performing at higher levels of learning. □ Assessments are primarily for summative grades and not for informing teachers for reteaching content or retooling instruction.	□ Individual grade levels or content areas have created common assessments that challenge students across levels of cognitive complexity. □ Assessments are analyzed for cognitive complexity alignment to standards and instruction.	□ Project-based assignments and performance assessments are schoolwide practices to assess at higher levels of cognitive complexity. □ State and local assessments provide evidence that students are learning across all levels of cognitive complexity and are proficient at or above grade level.
Collaboration		
□ No collective discussion or communication between home and school addresses rigor or approaches to higher levels of learning. □ No professional development is offered to improve classroom and school practices of instruction (including differentiation) and assessment (including performance-based).	□ School and teacher leaders believe in and advocate increasing rigor by improving curriculum, instruction and assessment. □ Learning teams or whole-faculty study groups examine taxonomies of learning objectives, performance-based assessments and differentiated instruction.	□ Teachers collaborate across the school to create learning opportunities that challenge students to learn at higher levels. □ Teachers collaboratively review assignments and assessments to discern levels of cognitive complexity and correct misalignment to standards.
Course-Taking or Grouping Patterns		
□ Student placement in courses or with teachers is often subjective and influenced by perceptions of how students can "handle" academic challenges. □ No data (from master schedules or transcripts) is collected to monitor equitable access to opportunities.	□ Gatekeeper and honors classes are opened up for participation by all students. □ Graduation requirements are changed to increase rigor and readiness.	□ Guidance and student placement are not influenced by myths and disbeliefs about students' abilities to achieve at higher levels of learning. □ All students are required to be proficient in the course work necessary for readiness for the next grade level, college or the workplace.
Curriculum Coherence		
□ No collaborative effort exists among the professional community to examine the whole curriculum for academic challenge. □ No vertical (within grade level or subject area) or horizontal (across grade levels or subject areas) alignment exists to review and realign the curriculum for academic challenge.	□ Lesson or unit plans include levels of cognitive complexity to be achieved. □ The fourth term and senior year of high school provides meaningful and higher-order capstone learning experiences.	□ Curriculum coherence is monitored and midcourse corrections made to ensure that the curriculum, as a whole, develops all levels of cognitive complexity. □ Learning objectives, assignments and assessments reflect grade-level work.

Expectations for Student Work

☐ Many, if not all, assignments and assessments are at low to mid levels of cognitive complexity. ☐ Teachers fail to make explicit the expectations for performance through the use of course syllabi, rubrics and assignment directions (either written or oral).	☐ There is evidence that higher levels of cognitive complexity are available to some, but not all, students. ☐ Exemplary student work is provided to students as examples of proficiency.	☐ The school's staff has a collective belief that all students can achieve across all levels of cognitive complexity. ☐ Students are accountable for producing quality work and are supported by school and district policies for redoing, grading and reteaching.

Grading Practices

☐ Grading practices vary by teacher, subject, student group and grade level. ☐ Teachers individually determine the levels of cognitive complexity of assignments and assessments.	☐ Grades describe the student's performances on meaningful and academically challenging work. ☐ Course syllabi provide students descriptions of the academic challenges, expectations for the student, and the formula for determining final course grades.	☐ Grading practices are consistent and transparent across the school. ☐ Student grades are correlated with proficiency levels on state assessment results.

Instructional Strategies

☐ Neither supervision nor school improvement requires staff to be accountable for instruction across all levels of cognitive complexity. ☐ Teachers use low-level questioning techniques to prompt thinking in the classroom.	☐ Classroom discussions represent more complex levels of learning because of an array of questioning techniques practiced and instructional strategies used. ☐ Differentiation in assignments, supportive instruction and redoing work allows students to progress at different rates.	☐ School leaders observe and evaluate the rigor of the actual curriculum and instruction as a substantive component of supervision and school improvement. ☐ Rigor, cognitive complexity or higher levels of learning are significant components of the school's mission and staff's communication between home and school.

Schoolwide Literacy

☐ No schoolwide literacy initiative exists to provide students the essential support for improvement in literacy skills across disciplines.	☐ Literacy coaches provide support and strategies to mitigate cognitive complexity barriers related to literacy. ☐ All teachers are trained and able to improve literacy in the classroom and throughout the school.	☐ The professional community regularly monitors its status on schoolwide literacy to support curriculum, instruction and assessment. ☐ Professional development, faculty meetings and learning teams address the adult learning needed to increase literacy in classrooms and across the school.

Student Support

☐ A cycle of low expectations and achievement exists in the school. ☐ Traditional remediation strategies are the primary support for students.	☐ A pyramid approach to interventions provides a timely, student-centered approach to below basic proficiency on assignments and assessments. ☐ Teachers provide extra help to accelerate student learning.	☐ Resources are reallocated and the school day restructured around the learning needs of students. ☐ Policies ensure and practices provide multiple levels of student support.

Other SREB Publications that Support Planning and Teaching Standards-Based Units

Getting Students Ready for College and Careers: Transitional Senior English

This report describes and defines the reading and writing readiness standards that are needed to prepare students for postsecondary studies and careers. It provides samples of related school assessments to help teachers provide the support and class structure needed to get students to the readiness level expected by colleges. Also included are samples of learning activities to provide a structure for students to improve their literacy preparation.

By Renee Murray and Gene Bottoms

Getting Students Ready for College and Careers: Transitional Senior Mathematics

This report describes and defines the mathematics readiness standards that are needed to prepare students for postsecondary studies and careers. It provides samples of related school assessments to help teachers provide the support and class structure needed to get students to the readiness level expected by colleges.

(Unpublished)

Redesigning the Ninth-Grade Experience: Reduce Failure, Improve Achievement and Increase High School Graduation Rates

The ninth grade is a crucial year that defines for many students whether they will continue toward high school graduation, further study and employment, or will become disengaged and drop out. This report outlines the key conditions of an effective ninth-grade experience, designed to engage more students in challenging high school academic and career/technical studies.

Getting Students Ready for College-preparatory/Honors Science: What Middle Grades Students Need to Know and Be Able to Do

When students leave the middle grades, they need to have the knowledge and skills to succeed in college-preparatory/ honors science. This report provides guidance for a rigorous science curriculum in the middle grades that is based on a solid set of standards. Educators can use this framework in developing course syllabi, lesson plans, assignments, assessments and professional development activities that prepare students for this level of work.

By Gene Bottoms, Betty Harbin and Bob Moore

Getting Students Ready for College-preparatory/Honors English: What Middle Grades Students Need to Know and Be Able to Do

This curriculum framework is an effort to ensure that students leave the middle grades with the knowledge and skills to succeed in college-preparatory/honors English. Educators can use this framework in developing course syllabi, lesson plans, assignments, assessments and professional development activities that will prepare students for rigorous English classes in high school.

By Renee Murray and Gene Bottoms

Getting Students Ready for Algebra I: What Middle Grades Students Need to Know and Be Able to Do

This curriculum framework is an effort to ensure that students leave the middle grades with the mathematics knowledge and competencies to succeed in Algebra I. Educators can use this framework in developing course syllabi, lesson plans, assignments, assessments and professional development activities that will prepare students for high-level mathematics classes in high school.

By Gene Bottoms

Publications are available on the SREB Web site, www.sreb.org. For more information, call (404) 875-9211, Ext. 236 or email publications@sreb.org.