

Teachscope Professional Learning Suite: Online Learning Resources



Introduction

The Teachscape Professional Learning Suite provides access to a rich, deep array of easy-to-use, research-based online multimedia content libraries. These libraries help teachers and instructional leaders deepen their understanding of academic content while developing effective strategies for improving teaching and learning.

Modules in the online content libraries can be used by teachers and instructional leaders independently or as part of facilitated face-to-face professional development. The content libraries support instructional leaders as they work with teachers to build the instructional capacity of their schools.

The following pages outline the learning resources in each content library.

The Effective Instructional Strategies Series

The following summary chart provides an overview of the Effective Instructional Strategies Series content library that focuses on understanding and applying a range of research-based instructional strategies, including the nine categories of High Yield strategies identified by Robert Marzano and his colleagues. Developed in partnership with McREL, the San Diego, California school district, and the American Federation of Teachers, this content library focuses on ensuring both teachers and K-12 students understand and apply the strategies to improve teaching and student achievement.

EFFECTIVE INSTRUCTIONAL STRATEGIES TOPICS	MODULES
High Yield Strategies: The Foundation	<ul style="list-style-type: none"> • High Yield Overview • Planning for the High Yield Strategies • Setting Objectives and Providing Feedback • Reinforcing Effort and Providing Recognition
High Yield Strategies: Acquiring and Integrating Knowledge	<ul style="list-style-type: none"> • Cues, Questions, and Advance Organizers • Nonlinguistic Representations • Summarizing and Note-Taking • Cooperative Learning
High Yield Strategies: Practicing, Reviewing, and Applying Knowledge	<ul style="list-style-type: none"> • Generating and Testing Hypotheses • Homework and Practice • Identifying Similarities and Differences
Instructional Strategies to Improve Student Achievement	<ul style="list-style-type: none"> • Direct Instruction • Differentiating Instruction • Scaffolding in Action
Strategies to Deepen Student Learning	<ul style="list-style-type: none"> • Foundations of Effective Teaching • Instructional Decision Making • Understanding Student Need

High Yield Strategies: The Foundation

Provides an introduction to nine categories of instructional strategies and strategies for planning to incorporate these. It also provides High Yield strategies focused on identifying what students will learn and strategies that help inform how well they learn the content. The included modules are:

- High Yield Overview**

Offers an overview of the nine categories of instructional strategies and the context of incorporating these with curriculum design and classroom management. This module emphasizes the research base of the nine categories of strategies and the use of these in groups, not individually, to scaffold improved achievement.
- Planning for the High Yield Strategies**

Focuses on the intentional, consistent, and systematic planning necessary to incorporate the strategies effectively with ongoing teaching and learning. This module emphasizes a four-question planning structure to determine effective ways to incorporate the strategies.

- **Setting Objectives and Providing Feedback**

Focuses attention on strategies that define what students will learn and monitor how well they are learning it. This module emphasizes both teachers and students monitoring progress toward clearly defined objectives.

- **Reinforcing Effort and Providing Recognition**

Promotes making the relationship between effort and achievement clear. This module emphasizes the importance of addressing students' attitudes and beliefs in order to underscore the critical importance of effort.

Examines the categories of instructional strategies that focus on the ways in which students learn and how they can best synthesize and analyze academic content. The online modules include:

- **Cues, Questions, and Advance Organizers**

Provides strategies teachers can use to help students activate their prior knowledge, connect prior knowledge with new knowledge, and organize information. This module emphasizes using these strategies to assess student knowledge as well as for advancing student knowledge.

- **Nonlinguistic Representations**

Explores ways students can represent knowledge in nonlinguistic ways through pictures, graphics, mental images, physical models, and kinesthetic activities. This module emphasizes five proven.

- **Summarizing and Note-Taking**

Promotes strategies to help students think analytically and to deeply engage with academic content, promoting greater comprehension. This module emphasizes distilling and synthesizing complex information through summarizing and note-taking.

- **Cooperative Learning**

Focuses on cooperative learning as a strategy for enhancing student understanding of content and fostering decision-making and conflict-resolution skills. This module emphasizes the five key elements of effective collaborative learning.

Focuses on strategies that build comprehension by requiring students to practice and apply their skills. The online modules include:

- **Generating and Testing Hypotheses**

Promotes requiring students to apply their knowledge and use higher-level thinking skills by asking questions about what they know, finding ways to test those questions, and explaining their conclusions. This module emphasizes promoting both inductive and deductive reasoning to improve student learning.

- **Homework and Practice**

Focuses on homework and practice as two instructional strategies that provide students with opportunities to deepen their understanding of content and practice new skills and extend learning beyond the school day. This module emphasizes using these strategies to deepen content understanding and skill proficiency.

High Yield Strategies: Acquiring and Integrating Knowledge

High Yield Strategies: Practicing, Reviewing and Applying Knowledge

Instructional Strategies to Improve Student Achievement

- **Identifying Similarities and Differences**

Focuses on comparing, classifying, and creating or recognizing metaphors and analogies as instructional strategies that teachers and students can use to identify similarities and differences between items. This module emphasize accessing and connecting prior knowledge to new learning to explore content deeply.

Focuses on three specific strategies shown to improve student achievement – explicit, direct teaching; differentiating to address student learning needs; and scaffolding to support and enhance student learning. The online modules include:

- **Direct Instruction**

Provides information about the underlying research and the five phases of the direct instruction model. This module emphasizes the processes and impact of direct instruction on student learning.

- **Differentiating Instruction**

Provides a foundation for differentiating instruction, as understood through the Universal Design for Learning principles. This module emphasizes the planning necessary to differentiate instruction.

- **Scaffolding in Action**

Focuses on building knowledge about scaffolding and using scaffolding effectively in classrooms. This module emphasizes assessing student needs, planning for scaffolding, and integrating scaffolding with the ongoing teaching.

Promotes the teaching strategies proven to enhance and deepen student learning. The online modules include:

- **Foundations of Effective Teaching**

Explores teaching strategies that underlie establishing and maintaining well-managed classrooms and consistently producing gains in student achievement. This module emphasizes both effective instructional strategies and group management practices.

- **Instructional Decision Making**

Promotes a systematic process for collecting, analyzing, and interpreting student data to group students for instruction and to make decisions about the implications of their identified learning strengths and needs. This module emphasizes the development of an action plan to identify concrete steps teachers can take to ensure the academic achievement of students in each of the identified instructional groups.

- **Understanding Student Need**

Promotes an ongoing, systematic process to assess, interpret, and address student learning needs made evident through multiple sources of formal and informal data in a balanced literacy approach. This module emphasizes identifying focus students representative of the learning groups and informing instruction through their learning needs.

Strategies to Deepen Student Learning

The New Teacher Support Series

The following summary chart provides an overview of the New Teacher Support Series content library. This content library focuses on the foundational knowledge and skills essential to effective teaching. Developed in partnership with the American Federation of Teachers, this library emphasizes research-based strategies and practices that new teachers need as they enter into the teaching profession.

NEW TEACHER SUPPORT TOPICS	MODULES
Classroom Management	<ul style="list-style-type: none"> • Beginning of the Year Classroom Management • Secondary Classroom Management
Essential Teaching Strategies	<ul style="list-style-type: none"> • Foundations of Effective Teaching
Decision Making for Student Achievement	<ul style="list-style-type: none"> • Instructional Decision Making
Deepening Understanding of Student Learning Needs	<ul style="list-style-type: none"> • Understanding Student Need
Effective Instructional Planning	<ul style="list-style-type: none"> • Design for LEARNING
Teaching with High Yield Strategies: The Essential Foundation	<ul style="list-style-type: none"> • High Yield Overview • Setting Objectives and Providing Feedback

Classroom Management

Helps teachers organize and manage their classrooms from the first day of the school year; establish effective rules, routines, and procedures; monitor student behaviors; and ensure that the classroom environment is set up to promote teaching and learning. This resource is built around:

- Beginning of the Year Classroom Management**
 Promotes research-based practices to establish and maintain well-managed classrooms. The emphasis of this module is on applying research-based practices proven to ensure the classrooms support effective teaching and learning. Or:
- Secondary Classroom Management**
 Promotes developing classroom management systems that, at any time of the year, help teachers organize and manage the environment, make student expectations clear, build effective relationships, and foster an environment that promotes student engagement and success. This module stresses development of plans to apply the strategies and develop/revamp the way they manage their classrooms.

Essential Teaching Strategies

Promotes the use of classroom practices that have been proven to make a difference in what students learn and how well they learn it. The core teaching behaviors illustrated are designed to: (1) help teachers focus on those instructional practices that maximize student learning; and (2) apply student management strategies that build student participation and maintain student focus. The online module included is:

- **Foundations of Effective Teaching**

Highlights research-based practices used by teachers shown to be effective in establishing and maintaining well-managed classrooms and consistently producing gains in student achievement. This module stresses both effective instructional strategies and group management practices.

Decision Making for Student Achievement

Focuses on helping teachers collect, analyze, and interpret multiple forms of data and use these to develop class profiles that illustrate instructional groupings that reflect ranges of student learning strengths and needs. The online module included is:

- **Instructional Decision Making**

Promotes a systematic process for collecting, analyzing, and interpreting student data to group students for instruction and to make decisions about the implications of their identified learning strengths and needs. This module emphasizes the development of an action plan to identify concrete steps teachers can take to ensure the academic achievement of students in each of the identified instructional groups.

Deepening Understanding of Student Learning Needs

Helps teachers dig more deeply into student work, data, and ongoing formative assessments to assess and understand the learning strengths and needs of the students and use this information to differentiate lessons for the range of instructional groupings in their class. The included online module is:

- **Understanding Student Need**

Promotes an ongoing, systematic process to assess, interpret, and address student learning needs made evident through multiple sources of formal and informal data in a balanced literacy approach. This module emphasizes identifying focus students representative of the learning groups and informing instruction through their learning needs.

Effective Instructional Planning

Builds on prior work with developing well-managed classrooms and applying effective teaching practices by promoting research-based approaches to effective, outcomes-based instructional planning. The included module is:

- **Design for LEARNING**

Offers teachers a research-based model for instructional planning that incorporates strategies to: (1) build on prior knowledge; (2) teach focused, effective lessons; (3) promote active, engaged learning; (4) incorporate reflection; and (5) link to long-term learning. This module emphasizes application of effective planning to improve student learning.

Teaching with the High Yield Strategies: The Essential Foundation

Promotes the application of the nine categories of research-based strategies identified by Robert Marzano and his colleagues as effective ways to strengthen teaching practice and improve student achievement. The included modules are:

- **High Yield Overview**

Provides an overview of all nine categories of research-based instructional strategies, the research that underlies their identification, and a look at the instructional strategies in action – in multiple content areas and with students in a range of grade bands. This module emphasizes the connections among classroom management, curriculum design, and instructional strategies.

- **Setting Objectives and Providing Feedback**

Supports teachers in understanding how these strategies are interrelated and their importance in helping students set a direction for their learning and assess their progress relative to that goal. This module emphasizes both the teacher's and students' use of these strategies to improve student achievement.

The Data Driven Instruction Series

The following summary chart provides an overview of the online Data Driven Instruction Series, which provides resources for school leaders and for teachers. The resources for school leaders focus on research-based strategies to improve the ways in which they use data in order to get better results and boost student achievement. The resources for classroom teachers focus on integrating formative assessment techniques and interpreting the data from these assessments to make instructional decisions that target the needs of individual students.

DATA DRIVEN INSTRUCTION TOPICS	MODULES
Using Data Effectively for School Leaders	<ul style="list-style-type: none"> Finding Focus and Getting Results Leading and Supporting Effective Work with Data
Using Data Effectively for Classroom Teachers	<ul style="list-style-type: none"> Instructional Decision Making Effective Formative Assessment

Using Data Effectively for School Leaders

These modules focus on the unique needs of school leaders to establish, develop, and sustain a data-rich culture at their schools. Participants implement strategies to create the appropriate infrastructure to support effective work with data.

- Finding Focus and Getting Results**

Helps school leaders develop processes and implement successful strategies in their current work with data. Participants will analyze real-life case studies in three areas of data work—Assessment of Learning, Analysis of Data, and Taking Action Based on Data Analysis.

- Leading and Supporting Effective Work with Data**

Focuses on the most effective ways school leaders can establish a data-rich environment in which teachers and staff at their school are all adept at using data to engage in a continuous improvement process. This module includes ways to enhance the infrastructure so that current work with data yields better results, strategic processes for focusing on the effective use of data, and ways to overcome common obstacles to implementing change and building a trusting, supportive environment.

Using Data Effectively for Classroom Teachers

These modules focus on the unique needs of classroom teachers to develop and use formative assessment techniques to make ongoing instructional decisions that help increase student achievement.

- Instructional Decision Making**

Models and presents opportunities for teachers to practice the process of data collection, analysis, interpretation, and decision making that results from that work. This module presents a systematic process for organizing and analyzing student data in order to define actionable instructional implications. This process involves grouping for instruction and the creation of working hypotheses about what children in each group know and are able to do.

- Effective Formative Assessment**

Focuses on effective ways to conduct and analyze traditional and alternative methods of formative assessment. This module presents how to implement these strategies with both individual students and groups of students, including ways to involve students in their own assessment.

The English Language Learners Series

The following summary chart provides an overview of the English Language Learners Series content library. Developed in partnership with Stanford University, this content library focuses on strategies to develop K-12 English language skills, to integrate language and academic content development using SDAIE, and to support instructional leaders.

ENGLISH LANGUAGE LEARNERS TOPICS	GRADES	MODULES
Developing English Language Skills	Elementary Secondary	<ul style="list-style-type: none"> English Language Learners: Listening and Speaking English Language Learners: Reading and Writing
English Language Skills for Middle School Students	Secondary	<ul style="list-style-type: none"> English Language Development at Middle School
English Language Skills for High School Students	Secondary	<ul style="list-style-type: none"> English Language Development at High School
Using SDAIE to Promote English Language Development	Elementary Secondary	<ul style="list-style-type: none"> Using SDAIE for English Language Learners Teaching High School Math Using SDAIE Methodology Teaching High School Science Using SDAIE Methodology
Promoting English Language Learning: The Leadership Perspective	Instructional Leaders	<ul style="list-style-type: none"> ELLs and the Law Second Language Acquisition Theory Characteristics of Immigrant ELLs Teaching Strategies for Content Instruction Teaching Strategies for English Language Development ELLs and Accountability ELLs and Assessment

Developing English Language Skills

Focuses on effective ways to promote the four aspects of literacy – listening, speaking, reading, and writing – for English language learners. The included modules are:

- English Language Learners: Listening and Speaking**
 Provides specific strategies for promoting active listening and scaffolding the oral language development of ELLs. This module emphasizes explicit teaching to support comprehension and promote use of correct grammar.
- English Language Learners: Reading and Writing**
 Provides specific strategies to develop reading and writing skills of English Language Learners. Promotes the use of strategies such as developing meaningful reading, developing academic vocabulary, and encouraging cooperative learning.

English Language Skills for Middle School Students

Highlights and promotes the use of specific strategies to move English learners along the continuum of English language proficiency – through a focus on both English language development and academic content development. The included module is:

- **English Language Development at Middle School**

Offers instructional strategies to promote English language development and academic content knowledge for middle school ELLs at varying levels of English proficiency. This module emphasizes the theories and research behind the effective strategies and concrete ways to apply the knowledge to middle school instruction.

English Language Skills for High School Students

Focuses on literacy development – listening, speaking, reading, and writing – through a range of approaches that are focused on developing literacy skills. The included module is:

- **English Language Development at High School**

Promotes development of literacy-based academic English skills for high school English learners. This module emphasizes specific strategies proven to be effective with high school English learners.

Using SDAIE to Promote English Language Development

Focuses on helping teachers understand and apply the Specially Designed Academic Instruction in English (SDAIE) strategies to help English learners develop both academic content knowledge/skills and English language skills. The modules included are:

- **Using SDAIE for English Language Learners**

Promotes SDAIE strategies, based on sheltered instruction, for teaching content to ELLs. This module emphasizes integrating language development activities into content instruction.

- **Teaching High School Math Using SDAIE Methodology**

Helps teachers understand effective ways to teach key math content to English learners. The emphasis of this module is on promoting use of math vocabulary and concepts to scaffold achievement and English language development.

- **Teaching High School Science Using SDAIE Methodology**

Demonstrates the use of SDAIE strategies to promote both deep understanding of high school content and development of English language skills in science classes. This module emphasizes ways to address the challenges of content-area teachers in developing content and English language skills.

Promoting English Language Learning: The Leadership Perspective

Offers school leaders an overview of the key concepts they need to understand to promote, lead, support, and sustain effective ELL practices in their schools. The modules included are:

- **ELLs and the Law**

Provides an overview of the court decisions and the role of the Office of Civil Rights in shaping policies that inform programs for ELLs. This module emphasizes using state and federal laws and local policies to develop a vision of ELL services at the school site.

- **Second Language Acquisition Theory**

Provides an overview of second-language acquisition (SLA) theories that school leaders need to promote effective programs for ELLs. This module emphasizes issues that promote or constrain achievement of ELLs.

- **Characteristics of Immigrant ELLs**

Focuses on the dual frame of reference that informs the ease with which immigrant students become comfortable in their new language and culture and the particular challenges that adolescent immigrants face. This module focuses on ways the schools can help these newcomers overcome their predictable challenges.

- **Teaching Strategies for Content Instruction**

Promotes the use of SDAIE to scaffold both content learning and English language development. This module focuses on strategies school leaders can use to support effective content development for English learners.

- **Teaching Strategies for English Language Development**

Examines development of listening, speaking, reading, and writing skills for English learners. This module emphasizes best practices that principals can use school wide to inform ELL programs.

- **ELLs and Accountability**

Explores the ways in which the standards movement influences both processes and outcomes for ELLs. This module emphasizes managing the school improvement process to remove barriers that constrain the achievement of ELLs.

- **ELLs and Assessment**

Examines issues surrounding the assessment of ELLs. This module emphasizes the use and impact of formative tests, criterion-referenced tests, and norm-referenced tests on ELLs.

The Mathematics Series

The following summary chart provides an overview of the Mathematics Series content library which offers comprehensive elementary, middle and high school math support. Developed in partnership with the Concord Consortium, this content library focuses on essential mathematics content for the indicated grades, as defined by the NCTM Standards, Processes, and Focal Points.

MATHEMATICS TOPICS	GRADES	MODULES
The Foundations of Effective Mathematics Teaching	K–5/6	<ul style="list-style-type: none"> • Foundations of Effective Mathematics Teaching • Effective Questioning in the Mathematics Classroom • Formative Assessment in the Mathematics Classroom
Big Ideas in Elementary Math: Focus on Problem Solving	3–5/6	<ul style="list-style-type: none"> • Problem Solving in Mathematics • Broken Calculator
Big Ideas in Elementary Math: Focus on Number and Operations	3–4	<ul style="list-style-type: none"> • Division with Remainders • The Magnitude of Fractions
Studies in Algebra: Elementary Grades	4–6	<ul style="list-style-type: none"> • Pan Balance Equations • Patterns and Functions
Big Ideas in Elementary Math: Focus on Geometry	3–5	<ul style="list-style-type: none"> • 2D and 3D Figures • Calculating the Area of a Triangle
Big Ideas in Elementary Math: Focus on Probability and Statistics	4–6	<ul style="list-style-type: none"> • Measures of a Center • Using Data to Make Predictions
Studies in Middle School Math: Proportional Reasoning	5–8	<ul style="list-style-type: none"> • Proportional Reasoning in the Middle Grades
Studies in Secondary Math: Data Analysis	8–HS	<ul style="list-style-type: none"> • Data Analysis
Studies in Algebra: Proportional Reasoning	8–HS	<ul style="list-style-type: none"> • Proportional Reasoning
Studies in Algebra: Linear Functions	8–HS	<ul style="list-style-type: none"> • Linear Functions • Transformations of Linear Functions
Studies in Algebra: Linear Equations	8–HS	<ul style="list-style-type: none"> • Linear Equations • Systems of Linear Equations
Studies in Algebra: Quadratic Functions and Equations	8–HS	<ul style="list-style-type: none"> • Quadratic Functions • Quadratic Equations • Transformations of Quadratic Functions

MATHEMATICS TOPICS	GRADES	MODULES
Studies in Secondary Math: Algebra II	8–HS	<ul style="list-style-type: none"> • Operations on Number and Expressions • Linear Equations and Inequalities for Algebra II • Linear Systems for Algebra II • Quadratic Functions for Algebra II • Transformations of Quadratic Functions for Algebra II • Exponential Functions • Function Operations and Inverses • Higher Order Polynomial and Rational Functions

The Foundations of Effective Mathematics Teaching

Focuses on four essential aspects of effective teaching: (1) deepening understanding of mathematics content for teaching; (2) understanding student thinking; (3) effective formative assessment strategies; and (4) developing an environment that fosters problem solving. Online modules include:

- **Foundations of Effective Mathematics Teaching**
Highlights the rationale and pedagogy underlying effective practice. Continuous improvement of both teaching and learning is stressed.
- **Effective Questioning in the Mathematics Classroom**
Presents ways that questioning makes student thinking transparent and helps deepen their understanding and extend their comprehension. Differences between one-to-one and group discussions are stressed.
- **Formative Assessment in the Mathematics Classroom**
Offers rationale and strategies for formative assessments that elicit student understanding and inform teaching practice. Integrating formative assessments with standards and high-stakes testing is stressed.

Big Ideas in Elementary Math: Focus on Problem Solving

Uses work with a “broken” calculator to identify creative problem-solving strategies and use these to support students as they build understanding of the meaning of mathematics, gain number sense, and compute with fluency. The online modules include:

- **Problem Solving in Mathematics**
Offers views of various problem-solving strategies and the teacher’s role in creating an environment that supports problem solving. Using questioning and discussions to understand student thinking is stressed.
- **Broken Calculator**
Uses exploration of a broken calculator to promote number sense, computational fluency, and problem solving. Student communication about the strategies and solutions is stressed.

Big Ideas in Elementary Math: Focus on Number and Operations

Explores the Big Ideas of two core concepts in elementary math – division with remainders and the magnitude of fractions – and the research-based strategies to promote student understanding of each. The online modules include:

- **Division with Remainders**
Provides insight into the multiple meanings of division and how to help students contextualize and understand division problems. Effective questioning strategies are stressed.
- **The Magnitude of Fractions**
Explores effective ways to help students represent and compare fractions as numbers with magnitude, not just as parts of a whole. Proportional (multiplicative) reasoning is stressed.

Studies in Algebra: Elementary Grades

Provides insights into understanding and teaching the foundational concepts of algebra – patterns, equivalence, order of operations, variables, and use of algebraic symbols and representations. The online modules include:

- **Pan Balance Equations**
Deepen understanding of the concepts of equivalence, order of operations, and appropriate use of algebraic symbols. Effective questioning strategies to promote and support student learning are stressed.
- **Patterns and Functions**
Explore using patterns to identify functions, predict items in a sequence, and represent these as pictures, charts, and linear equations. Correct use of mathematics vocabulary is stressed.

Big Ideas in Elementary Math: Focus on Geometry

Promotes geometric thought through application of the Van Hiele framework, strategic questioning, inductive and deductive reasoning, and building understanding of the ways in which both concepts and procedures deepen thinking. Online modules include:

- **2D and 3D Figures**
Uses strategies that include reasoning, the vocabulary of mathematics, and a four-stage version of the van Hiele framework to develop student understanding of geometry. Students' use of reasoning and proof are stressed.
- **Calculating the Area of a Triangle**
Promotes the use of both concepts and procedures as problem-solving approaches to help students understand effective ways to find areas of nonstandard figures. The use of journaling and appropriate mathematics vocabulary to support understanding is stressed.

Big Ideas in Elementary Math: Focus on Probability and Statistics

Focuses on helping students use measures of center to describe data sets and to order and organize the data to make predictions that sometimes defy the notion of “fairness.” Online modules include:

- **Measures of Center**
Explores how to help students organize, represent, and describe data and data landmarks and use these to inform initial thinking about a situation. Scaffolding instruction for English learners and use of questioning are stressed in this module.

Studies in Middle School Math: Proportional Reasoning

- **Using Data to Make Predictions**

Deepens understanding of probability by exploring concepts of social vs. mathematical fairness, causality, and the relationship between sample size and predictions. Use of activities to contextualize the concepts and promote understanding is stressed.

Explores how a teacher uses an engaging activity to help students understand proportional reasoning and apply it to concepts in geometry, measurement, operations, and algebra. The online module included is:

- **Proportional Reasoning in the Middle Grades**

Promotes application of proportional reasoning to problem solving and to connecting content across the mathematics curriculum. The four levels of proportional reasoning and their application to specific types of problems are stressed.

Studies in Secondary Math: Data Analysis

Promotes the use of measures of center to interpret relationships within and among data sets by exploring and interpreting patterns. The online module included is:

- **Data Analysis**

Focuses on understanding the ways students think about measures of center, the relationships among data sets, and ways to represent the data to support deep understanding. Use of inductive reasoning to infer relationships is stressed.

Studies in Algebra: Proportional Reasoning

Explores the relationship between proportional reasoning and algebraic thinking and offers strategies to develop proportional reasoning through understanding student thinking about “real world” problems. The online module included is:

- **Proportional Reasoning**

Helps teachers deepen their understanding of and address the predictable challenges of helping students acquire and apply proportional reasoning to understand the multiple meanings of proportions and their applications to algebra. Understanding and advancing student thinking about proportional reasoning is stressed.

Studies in Algebra: Linear Functions

Grounds the study of linear functions and transformations of linear functions within the context of real-world applications to promote the concepts of rate of change, multiple representations, and the graphic and symbolic form of functions as objects for operations. Online modules include:

- **Linear Functions**

Focuses on functions as the core objects of algebra by representing, evaluating, and manipulating them in multiple ways and in various formats that represent real-world contexts. Observing and understanding student thinking is stressed.

- **Transformations of Linear Functions**

Focuses on the relationship between graphic and symbolic forms of functions as core concepts of algebra – as objects that can be operated upon. The emphasis in this module is on helping students shift from thinking of functions as processes to thinking of functions as objects.

Studies in Algebra: Linear Equations

Focuses on the relationship between equations and functions by promoting a view of equations as functions to which values have been assigned. It also focuses on the context of real-world applications as a way of understanding linear equations and systems of linear equations. The online modules include:

- **Linear Equations**
Examines the relationship between functions and equations and solving systems of linear equations from the perspective of functions, both symbolically and graphically. The concept of equivalence is stressed.
- **Systems of Linear Equations**
Explores problem-solving strategies, beyond the procedural, to solve systems of linear equations. The focus is on nonstandard approaches to solutions and on student perceptions and misperceptions of linear equations.

Studies in Algebra: Quadratic Functions and Equations

Explores quadratic functions, equations, inequalities, and transformations through concrete situations and provides analysis of multiple ways to explore their solutions by viewing algebra as objects and processes. Online modules include:

- **Quadratic Functions**
Promotes the concept of quadratic functions as a central idea in working with quadratic equations to model real-world situations. This module stresses understanding student thinking about quadratic functions to inform practice and deepen their understanding.
- **Quadratic Equations**
Connects physical, symbolic, tabular, and graphic representations of quadratic equations and functions and standard (textbook) and nonstandard solutions to these. This module stresses functions and relationships as the core of algebra.
- **Transformations of Quadratic Functions**
Focuses on the transformations of graphic and symbolic representations of quadratic functions as a means for understanding the characteristics of and solving these functions. In addition to transformations, this module emphasizes dilations, translations, and reflections of quadratic functions.

Studies in Secondary Math: Algebra II

Focuses on Algebra II topics by presenting four areas of focus for professional learning: content knowledge, common student errors and misconceptions, pedagogical approaches and strategies, and actionable processes for gathering data and implementing effective lessons in the classroom. Online modules include:

- **Operations on Numbers and Expressions**
Focuses on the critical foundational understanding of rational, real, and complex numbers, using both numeric and algebraic expressions, including expressions involving exponents and roots.
- **Linear Equations and Inequalities for Algebra II**
Focuses on teaching equations and inequalities under the umbrella of functions, as well as making connections between symbolic, graphic, and other representations of equations and inequalities.

- **Linear Systems for Algebra II**

Examines linear equations and inequalities in both two and three unknowns through the use of multiple representations and strategies for modeling and solving linear systems. This module identifies and unpacks common student errors that Algebra II students make in this content area.

- **Quadratic Functions for Algebra II**

Focuses on the relationships among the graphical and symbolic forms of quadratic functions. This module highlights activities for manipulating the three symbolic forms of quadratic functions in order to inspect and predict the function's shape, vertical orientation, and location.

- **Transformations of Quadratic Functions for Algebra II**

Focuses on the transformations, dilations, translations, and reflections of quadratic functions. This module highlights common student errors and gaps in conceptual understanding as well as teaching strategies and intervention techniques to address student misconceptions.

- **Exponential Functions**

Looks at functions as a way to understand the nature of exponential growth, the connections across different representations of exponential functions, and the connections between exponents and logarithms.

- **Function Operations and Inverses**

Focuses on how and why we find inverses of functions. It goes beyond a procedural approach by helping teachers provide students with the rationale for why it is necessary to find inverses of functions. It emphasizes multiple representations and shows connections between compositions of functions, inverse functions, domain, range, and one-to-one comparisons.

- **Higher Order Polynomials and Rational Functions**

Focuses on different characteristics of these functions, including characteristics of their algebraic representations (e.g., number of roots or zeros, odd or even, degree) and their graphical representations (e.g., vertical and horizontal asymptotes, holes and zeroes, behavior near various critical points).

The Literacy Series

The following summary chart provides an overview of the Literacy Series content library that focuses on deepening understanding of the theories that form the foundation of effective literacy practices. Developed in partnership with the National Reading Panel and other literacy experts, this series guides teachers to promote student achievement in key areas of literacy - listening, speaking, reading, and writing.

LITERACY TOPICS	GRADES	MODULES
Foundations of Effective Literacy Practice	Elementary	<ul style="list-style-type: none"> • Foundations of Teaching Reading – Phonemic Awareness • Foundations of Teaching Reading – Phonics • Foundations of Teaching Reading – Vocabulary • Foundations of Teaching Reading – Fluency • Foundations of Teaching Reading – Comprehension • Foundations of Teaching Writing • Foundations of Teaching Reading and Writing – Putting It All Together
Understanding the Research Base: Perspectives from the Experts	Elementary Secondary	<ul style="list-style-type: none"> • Early Reading Success, Edward Kame'enui • Comprehension and Vocabulary Development, Isabel Beck • Effective Comprehension Instruction, Michael Pressley • Methods to Teach Children to Read, Sally Shaywitz • Preventing Reading Failures, Reid Lyon • Reading Instruction and the Importance of Teacher Preparation, Louisa Moats
Evidence-Based Practices in Teaching Reading: Reading First	Elementary	<ul style="list-style-type: none"> • Phonemic Awareness and Phonics • Letter-Sound Correspondences • Word Building • Fluency • Vocabulary Development • Talking About Texts • Comprehension Strategies
Best Practices in Teaching Writing	Elementary	<ul style="list-style-type: none"> • Organizing for Writing • Writing Conferences • Sharing and Publishing
Effective Literacy Practices	Elementary	<ul style="list-style-type: none"> • Scaffolding in Action • Differentiating Instruction
Essential Readings in Literacy	Elementary Secondary	<ul style="list-style-type: none"> • Book Review: Overcoming Dyslexia, Sally Shaywitz • Book Review: Speech to Print, Louisa Moats • Book Review: The Academic Achievement Challenge, Jeanne Chall
The English Language Arts Series	Secondary	<ul style="list-style-type: none"> • Teaching Vocabulary (Project CORE: English Language Arts) • Providing Text Evidence (Project CORE: English Language Arts) • Analyzing Text Structures (Project CORE: English Language Arts)

In addition to the seven Literacy Series resources noted above, Teachscape offers two basal-aligned series that have been customized for California – the Open Court and the Houghton Mifflin series of online modules.

Foundations of Effective Literacy Practice

Provides research overviews, instructional implications, and application of the key areas identified by the National Reading Panel as key to teaching reading successfully. The online modules include:

- **Foundations of Teaching Reading – Phonemic Awareness**
Focuses on developing a deeper understanding of the research base, the components of phonemic awareness, and on effective instructional practices in this area. This module emphasizes applications of the research to scaffold effective reading practices.
- **Foundations of Teaching Reading – Phonics**
Examines the sound-spelling correspondences in reading instruction. This module emphasizes four specific approaches to teaching phonics effectively.
- **Foundations of Teaching Reading – Vocabulary**
Examines effective ways to develop vocabulary to scaffold comprehension. This module emphasizes listening, speaking, reading, and writing vocabulary.
- **Foundations of Teaching Reading – Fluency**
Explores how fluency scaffolds comprehension and how it is different from automaticity. This module emphasizes specific strategies to promote development of fluency.
- **Foundations of Teaching Reading – Comprehension**
Focuses on effective ways to help students extract meaning from text. This module emphasizes linking new knowledge to prior knowledge to scaffold meaning.
- **Foundations of Teaching Writing**
Focuses on the writing process as a series of steps all writers go through. This module emphasizes writing as a form of communication that allows students to scaffold comprehension.
- **Foundations of Teaching Reading and Writing – Putting It All Together**
Features a roundtable discussion among four experts: Dorothy Strickland, Catherine Snow, Connie Juel, and Isabel Beck. This module emphasizes the challenges of developing a lively and literate environment.

Understanding the Research Base: Perspectives from the Experts

Offers the perspectives of leading researchers for critical aspects of literacy – the role of district/school culture in supporting early literacy, effective comprehension strategies, the recommendations of the National Reading Panel, strategies to prevent reading failure, and the importance of teacher preparation. The online modules include:

- **Early Reading Success, Edward Kame'enui**
Focuses on four principles for early reading success and the cultures of schools and districts needed to support these. This module stresses the factors that contribute to early school success.
- **Comprehension and Vocabulary Development, Isabel Beck**
Uses the Text Talk project to illustrate ways teachers can use children's literature to help the youngsters make sense of the text. This module emphasizes the use of both contextualized and decontextualized language to promote comprehension.

- **Effective Comprehension Instruction, Michael Pressley**

Examines the key components of effective literacy instruction and the research base for these. This module emphasizes structures in reading programs that help support the development of comprehension.

- **Methods to Teach Children to Read, Sally Shaywitz**

Focuses on the work of the National Reading Panel and their report, *Teaching Children to Read*. This module emphasizes research-based strategies that define effective instruction.

- **Preventing Reading Failures, Reid Lyon**

Poses reading failure as a public health issue and examines strategies to prevent reading failure in students. This module emphasizes the importance of well-trained teachers in preventing reading failure.

- **Reading Instruction and the Importance of Teacher Preparation, Louisa Moats**

Examines the connection between teacher professional development and effective reading and language arts instruction. This module emphasizes how effective instruction is informed by deep understanding of reading development.

Focuses on the essential elements (phonemic awareness, phonics, vocabulary development, fluency, and comprehension) and proven, research-based strategies for effective reading instruction promoted by the National Reading Panel in their landmark study, *Teaching Children to Read* (2000). The online modules include:

- **Phonemic Awareness and Phonics**

Promotes the critical nature of helping children manipulate phonemes through activities such as blending and segmentation to support development of spelling and reading. This module stresses the research that shows small-group instruction in phonemic awareness is more effective than whole-group or individual instruction. The phonics section of this module focuses on letter/sound correspondence, word patterns, word building, and blending. The module stresses the importance of these foundational skills in scaffolding reading, spelling, and writing skills.

- **Letter-Sound Correspondences**

Offers teachers a range of effective strategies for teaching letter-sound correspondences for consonants, short vowels, and consonant digraphs and letter-sound correspondences in Spanish. This module emphasizes engaging and effective ways to teach this aspect of phonics.

- **Word Building**

Offers teachers a way to help students decode text by building, decoding, and changing words made from 3–4 consonants and 1–2 vowels. This module emphasizes the application of letter-sound correspondences to promote decoding.

- **Fluency**

Focuses on reading fluency, an often-neglected area of reading instruction, which is seen as the bridge between word recognition and comprehension. This module focuses on developing accuracy, speed, reading with expression, and automaticity.

Evidence-Based Practices in Teaching Reading: Reading First

Best Practices in Teaching Writing

- **Vocabulary Development**

Focuses on developing both oral and print (reading and writing) vocabulary that is taught both directly and indirectly, in age-appropriate ways. This module stresses developing vocabulary in authentic ways, using literature as a base.

- **Talking About Texts**

Is one of the two included modules that focus on comprehension. This module examines effective strategies teachers can use to frame discussions that help students construct meaning from text. This module emphasizes comprehension as an active process that builds on phonics, fluency, and vocabulary development.

- **Comprehension Strategies**

Is the second module that focuses on comprehension by promoting the construction of meaning through strategies to improve text comprehension. This module focuses on comprehension strategies educators can use before, during, and after instruction.

Presents effective strategies for implementing the writing process with elementary students. Together, the three online modules that follow offer a comprehensive overview of how teachers can develop the critical structures that support effective writing, improve student writing through conferencing, and celebrate the final writing products by sharing and publishing the student text. The online modules include:

- **Organizing for Writing**

Promotes developing and implementing structures to support student writing, including systematic instruction, modeling, focus lessons, prewriting, and connecting to literature. Writing as a recursive process is stressed in this module.

- **Writing Conferences**

Encourages students to improve their writing through focused feedback in student-student or teacher-student writing conferences during every phase of the writing process. This module emphasizes the different purposes for writing conferences and how these map to the prewriting, drafting, revising, editing, and publishing phases of the writing process.

- **Sharing and Publishing**

Provides a structure for helping students revise and celebrate their writing. This module emphasizes the multiple purposes for sharing writing and specific strategies to encourage students to share their writing with others.

Effective Literacy Practices

Highlights two critical instructional strategies proven to improve reading practice and outcomes – scaffolding and differentiation. These practices are at the core of helping teachers target appropriate instruction to address student learning needs and provide the support the students need to become capable and confident readers. The online modules include:

- **Scaffolding in Action**

Promotes the idea that effective scaffolding is more than simply offering students support as they learn challenging content; it includes nine common features that help students along the continuum to become independent learners. This module emphasizes the common features of effective scaffolding strategies and the knowledge and skills teachers need to scaffold children’s learning effectively.

Essential Readings in Literacy

- **Differentiating Instruction**

Uses the three principles of the Universal Design (UDL) to inform instruction that addresses student learning needs: (1) representing information in multiple ways (representation); (2) providing multiple pathways for students to demonstrate their knowledge and skills (expression); and (3) using multiple methods to engage and motivate students (engagement). This module emphasizes UDL as a guiding principle to differentiate instruction and provide access to learning for students.

Promotes seminal ideas that inform teaching and learning of literacy. The three noted researchers featured focus on addressing the challenges that teachers often face in shaping effective literacy instruction: the impact of dyslexia, using the structure of language to promote literacy teaching and learning, and both the assets and constraints of teacher-centered and student-centered learning. The online modules include:

- **Book Review: Overcoming Dyslexia, Sally Shaywitz**

Explores the biological basis for dyslexia and other reading problems and offers concrete ways to diagnose reading problems and specific strategies for helping teachers support students with dyslexia to help them become effective readers. This module emphasizes a number of accommodations teachers can make to help students with reading problems.

- **Book Review: Speech to Print: Language Essentials for Teachers, Louisa Moats**

Focuses on the key aspects of language structure that teachers can use to inform their work. This book review stresses the sound system of speech and language, the structure of words, spelling, the study of meaning in language, and syntax.

- **Book Review: The Academic Achievement Challenge: What Really Works in Classrooms, Jeanne Chall**

Highlights the debate over teacher-centered and student-centered classrooms by providing an analysis of the benefits and constraints of both and stressing the importance, regardless of approach, of aligning the instructional design of a lesson with the expected student outcomes.

The English Language Arts Series

Promotes improved student outcomes in secondary language arts by providing research-based strategies for teachers to use to improve their practice relative to core high school language arts content. The online modules included are:

- **Teaching Vocabulary (Project CORE: English Language Arts)**

Highlights specific ways teachers can improve and deepen instruction in vocabulary. This module also offers specific strategies to improve teachers' instructional practice.

- **Providing Text Evidence (Project CORE: English Language Arts)**

Focuses on improving instruction in key content that includes improving student performance in making inferences, generalizations, and conclusions with text evidence. This module emphasizes the development of strategies to improve teachers' instructional practice.

- **Analyzing Text Structures (Project CORE: English Language Arts)**

Enables teachers to improve their strategies in supporting student analysis of expository text structures. As with the prior CORE modules, this also provides specific strategies to improve teachers' instructional practice.

The Elementary Science Series

The following summary chart provides an overview of the Elementary Science Series content library that focuses on deepening understanding of earth and physical sciences content. Developed in partnership with the U.S. Geologic Survey and the Biological Sciences Curriculum Study (BSCS), this library provides effective strategies for teaching the content to improve student understanding of key concepts in elementary science - magnetism, properties of minerals, density, and the impact of natural forces on earth.

ELEMENTARY SCIENCE TOPICS	GRADES	MODULES
The Earth Science Series	4–5	<ul style="list-style-type: none"> Investigating Properties of Minerals: The 5 E's Science as Inquiry: Investigating Erosion
The Physical Science Series	3–5	<ul style="list-style-type: none"> Investigating Density: Why Objects Sink or Float Magnetism: Using Questions to Guide Learning

The Earth Science Series

Promotes deep understanding of two key areas in elementary earth science – the impact of erosion and the properties of minerals. The two online modules included promote student engagement and exploration through specific instructional strategies proven to improve student achievement in science and other content areas:

- Investigating Properties of Minerals: The 5 E's**

Examines two essential properties of minerals – hardness and light transmission – through hands-on studies informed by the 5 E's Instructional Model (engage, explore, explain, elaborate, and evaluate). This module stresses the importance of questioning to guide student understanding of the content.

- Science as Inquiry: Investigating Erosion**

Promotes exploration and understanding of the impact of the forces of nature on the earth. The featured teacher uses collaborative learning groups to engage her students in hands-on explorations of the ways in which forces of nature change and reshape the earth. This module emphasizes ways teachers can develop and support collaborative learning groups to deepen student learning.

The Physical Science Series

Highlights two important concepts in elementary physical science – density and magnetism. The two online modules shape student investigations through effective pedagogy proven to improve student achievement in science and other content areas:

- Investigating Density: Why Objects Sink or Float**

Explores the properties of density by investigating why some objects float while other objects sink, covering content that focuses on mass, weight, surface area, and density. This module promotes an approach that integrates math and science to design, conduct, and report on the investigations.

- Magnetism: Using Questions to Guide Learning**

Features investigations of magnetism that are guided by a consultation with a working scientist, the state learning expectations for students, and the questions generated by the students about magnets and magnetism. This module emphasizes the importance of student questioning in guiding scientific inquiries.

The Early Childhood Series

The following summary chart provides an overview of the Early Childhood Series content library. Developed in partnership with the Children’s Learning Institute (CLI), this library is designed for both instructional leaders (mentors and coaches) and early childhood teachers. The Early Childhood Series promotes developmentally appropriate practices that focus on building cognitive and social skills.

EARLY CHILDHOOD TOPICS	AUDIENCE	MODULES
Mentoring Effective Early Childhood Practices	Instructional Leaders	<ul style="list-style-type: none"> • Mentoring • Phonological Awareness • Classroom Management
Supporting Emerging Literacy	Teachers	<ul style="list-style-type: none"> • Setting the Stage for Children’s Talk • Read Alouds • Building Vocabulary • Phonological Awareness • Letter Knowledge • Written Expression
Supporting Math Development	Teachers	<ul style="list-style-type: none"> • Early Childhood Mathematics
Supporting Early Learning	Teachers	<ul style="list-style-type: none"> • Classroom Management • Pre-kindergarten Response to Intervention • Understanding Special Needs • Social Emotional Learning • English Language Learners: Culture, Language, Instruction

Mentoring Effective Early Childhood Practices

Promotes effective mentoring by highlighting the practices of accomplished mentors as they guide and support early childhood teachers in developing the environment and instructional practices that scaffold social, emotional, physical, and cognitive development of children. Online modules include:

- Mentoring**
 Focuses on the work of two mentors as they build relationships, set goals, and prioritize student learning with new and more experienced teachers. This module stresses understanding and addressing the individual interests and concerns that inform the work of teachers.
- Phonological Awareness**
 Explores mentoring strategies that guide and support teachers in developing phonological awareness, a key skill shared by competent readers. This module stresses understanding how to help children move along the continuum of phonological awareness, from simple to more complex skills.
- Classroom Management**
 Promotes mentoring techniques to guide teachers in developing, managing, and maintaining effective and appropriate environments for children. This module focuses on understanding and valuing the differences children bring to classrooms.

Supporting Emerging Literacy

Focuses on all four components of literacy (listening, speaking, reading, and writing) by promoting the implementation of language rich environments, thematic learning experiences, effective read alouds, and activities that support phonological awareness, letter knowledge, and vocabulary development. The online resources include:

- **Setting the Stage for Children’s Talk**
Promotes modeling, supporting, and teaching effective oral communication and providing environments that foster sharing and risk taking. This module stresses developing language-rich environments that create contexts for oral communication.
- **Read Alouds**
Offers guidance on the “nuts and bolts” of planning purposeful read alouds – from selecting books that connect with existing centers and ongoing learning to following up with activities to reinforce the content of the read alouds. Emphasis is placed on planning and practicing the read aloud.
- **Building Vocabulary**
Focuses on using thematic units to develop vocabulary through authentic and varied learning experiences that are seamlessly woven through all the centers. This module stresses the use of thematic units to promote deep understanding of the vocabulary.
- **Phonological Awareness**
Presents the key ideas in promoting phonological awareness along a continuum of skills that begins with listening and ends with blending and manipulating sounds – all in a purposeful, yet playful and developmentally appropriate way. This module stresses listening, rhyming, and using alliteration in enjoyable ways to develop love of language among children.
- **Letter Knowledge**
Supports teachers in offering learning activities that focus on letter names, letter sounds, what letters look like, and how letters are written and in creating language-rich environments to support early reading and writing. This module stresses the critical role of letter knowledge in early literacy.
- **Written Expression**
Focuses on the importance of writing to communicate ideas through individual and shared writing and by creating meaningful contexts that promote exchange of ideas. This module emphasizes the importance of planning writing activities to promote early literacy.

Supporting Math Development

Helps teachers leverage children’s natural curiosity about math concepts as an impetus to plan and implement focused, yet developmentally appropriate, math learning experiences. The included online module is:

- **Early Childhood Mathematics**
Explores how teachers can provide centers, read alouds, manipulative materials, and focused learning activities that promote development of early math concepts, such as shapes, patterns, size, ordering, and others. This module stresses using literature to support mathematical development.

Supporting Early Learning

Provides insights on developing, managing, and maintaining the structures, routines, procedures, and relationships that foster learning, independence, self-regulation, and love for learning. The online modules include:

- **Classroom Management**

Focuses on understanding the importance of setting up a room to support instructional goals and minimize conflicts, on establishing familiar routines and procedures to support transition from home to school and promote positive interaction in the classroom, and on developing and maintaining positive and supportive relationships that promote respect for the individuality of each child and support learning. This module stresses the critical need for positive relationships in the classroom community.

- **Pre-kindergarten Response to Intervention**

Focuses on an initiative that aims to meet the needs of all children through a tiered instruction and assessment framework. This module stresses targeted and intentional instruction to meet the needs of all students.

- **Social Emotional Learning**

Focuses on evidence-based instructional practices that support the development of important skills – skills that help young children as they establish a sense of self and begin to forge relationships with peers. This module emphasizes that preschool children with strong social skills and emotional self-regulation are more likely to enjoy success both interpersonally and academically in their future schooling experiences.

- **Understanding Special Needs**

Focuses on understanding and supporting special needs children who struggle regulating their behavior and attention, social and emotional responses, and receptive and expressive language. This module is not intended to provide diagnostic tools to teachers, but rather emphasizes information about these children and the kinds of teaching strategies that can help them in the pre-kindergarten classroom.

- **English Language Learners: Culture, Language, Instruction**

Helps early childhood teachers understand and meet the needs of English Language Learners in their classrooms. This course explores the socio-cultural issues that face English Language Learners in school and introduces teachers to the stages of language development.

