

*This newsletter is written specifically for teachers and will include news and information to help you implement the CSCOPE curriculum. In it you will find tools for managing cooperative groups, explanations of CSCOPE documents, and easy-to-implement and highly effective instructional strategies, along with a preview of the upcoming six weeks. We hope you enjoy this newsletter and find it useful and informative!*

### In this issue:

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Your local service center contacts are listed on the last page.

Edited by the ESC Region  
XIII Local CSCOPE  
Support Team

## Taking a Look Back: Reflecting on This Year of Instruction

It's hard to believe another school year is coming to a close. As summer swiftly approaches, it's time to take a moment to stop and think back on your year of instruction. Reflections can be used to make connections from the past experiences and, through this process, work towards new goals for next school year. The first step is to focus on questions that you can truly benefit and grow from - questions such as:

What short- and long-term goals did I want to accomplish this year? What was the result of these goals?

What resources did I use this year to support my goals?

What areas went well this year? What accomplishments am I proud of?

What were some obstacles that I encountered? What did I do to overcome these obstacles?

Start with one question and reflect on your experiences. You can continue to add questions of your own and generate ideas through this process. The key is to keep this process simple so that you can see the benefits; reflections can be as short as a five minute journal writing at the end of the day. A practice of reflection can

help in the planning of next year's instruction, and this directly impacts and benefits students.

### Collaborative Team Reflection

Plan a time to schedule short, informal meetings and visits with your team members. If you do not work on a team, you might want to meet with other teachers who are teaching the same content area to share ideas and support. When you meet, discuss the effectiveness of teamwork and reflect on what has worked this year. Also, reflect on aspects such as teaching difficult concepts in the curriculum, strategies, or programs implemented this year. What impact did these have on student learning? Consider the following questions:

How did we work together as a team (with collaboration, with shared planning responsibilities)?

What are some considerations for working together next year? How can we strengthen our team?

*(continued on page 3)*

## Tips & Tools for Managing Cooperative Learning: ABCD Whispers

ABCD whispers is a way to conduct structured student to student conversations in your classroom. Students are assigned a letter (A through D). Each letter is given a different concept or term which students then illustrate on a sheet of paper. The term they are given should be written on this sheet of paper, no other words should be used but symbols are allowed. For example, during specific units the following terms might be given to the students:

Letter assigned to student	Unit of study and words for each student			
	Ecology	Research	Applications with Rational Numbers	Civil War
Student A	Food web	Primary Source	percent	resources
Student B	Producer	Secondary Source	proportion	tariffs
Student C	Heterotrophic	Perspective	Part	secession
Student D	Decomposer	Artifact	Whole	emancipation

Three to five minutes is usually adequate time for students to complete their drawings, but allow more time if students need to reference their notes or text for review before drawing. Once students have completed their drawings, they will stand as a group of four (one member representing each of the four letters A-D). Students complete three rounds of discussion as shown below. Students explain the drawing they did to another student, hear their explanation, and then exchange papers. In the second round they will be explaining someone else's paper, they will then exchange papers again. In the last round a student is hearing the explanation of their own paper. As students are having their discussions, the teacher will circulate through the room, listening for strengths and

### Round 1

Student A explains Paper A  $\longleftrightarrow$  Student B explains Paper B

Student C explains Paper C  $\longleftrightarrow$  Student D explains Paper D

### Round 2

Student A explains Paper B  $\longleftrightarrow$  Student C explains Paper D

Student B explains Paper A  $\longleftrightarrow$  Student D explains Paper C

### Round 3

Student A explains Paper D  $\longleftrightarrow$  Student D explains Paper A

Student B explains Paper C  $\longleftrightarrow$  Student C explains Paper B

*Adapted from a process demonstrated by Linda Hoyt (<http://www.lindahoyt.com>) which is based on a process from Longman Vocabulary.*

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- What are things we did well together?
- How can we continue to help support one another?
- What goals would the team like to work on for next year?
- How can we continue to support student learning?

Groups can also choose a focus question to consider. Team members can use this question to reflect on individually over a period of time, and then revisit at the next meeting to share and brainstorm ideas with one another. You may also want to consider participating in vertical discussions with other grade level teams. This is an extremely valuable process in determining how to support student conceptual development as well as allowing time for sharing resources.

### **Student Reflections**

If applicable, ask for student feedback. Learn when your students were most engaged and how you can strengthen strategies and content to support them.

**Reflections** help educators strengthen their teaching, deepen their knowledge, and adapt new ideas to help implement the district curriculum. Individual reflection centers your instructional practices and allows you to continue to strengthen knowledge and identify strategies that help support student learning. As you look back on this year of instruction, how did you make your district's curriculum your own? How will you continue to grow with your curriculum? Have those conversations with others, and look to those around you - your grade level team, department, or campus leaders - for support. Reflection is a continual

**"Follow effective action with quiet reflection. From the quiet reflection will come even more effective action." - Thomas F. Drucker**

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## **Differentiating Instruction**

In order for educators to consider the most effective differentiation strategies that will really make a difference in student learning, we first must determine the definition and the purpose of the word. Differentiated instruction is not a "thing" that should be accomplished in the classroom, instead it is a way of thinking about the teaching and learning of students. A few questions must be asked first. What exactly is differentiation and how does it apply to me? Based on the truth that all students learn differently, what practice or strategy is necessary for these students to make sense of the information being given to them? More specifically, how differentiated is a CSCOPE lesson as it is written?

In differentiated instruction students are placed at the center of teaching and learning (Tomlinson, 2001). Because each learner comes to school with a different set of learning needs, examples of which include differing educational, personal, and communal contexts (Taylor, 2003) and varying degrees of academic skill development (Levine, 2001), differentiated instruction advocates that the educator proactively plans a variety

of instruction methods so as to best facilitate effective learning experiences which are suited to the various learning needs within the classroom (Tomlinson, 2001). Expecting the students to modify themselves to "fit" into the curriculum does not work. Research reminds us that students come to the classroom with different ability sets and also, a variety of gaps in their learning. CSCOPE along with some simply applied strategies can engage all of the students in your classroom.

CSCOPE lessons are written in accordance with the Five E model. Even the seemingly simple "engage" and "explore" activities should never be eliminated when teaching the lesson. These instructional procedures set up the lesson to tap into the student's readiness and interest level, thus preparing them to make sense of the information that is forthcoming. Lev Vygotsky, a Russian psychologist, proved that individuals learn best in accordance with their readiness to do so (Tomlinson, 2001). This theoretical influence provides a concrete foundation for differentiated instruction. The readiness of the individual should

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match what a student learns, how they learn it and how the student demonstrates what they learned when using differentiated instruction. One goal in teaching should be to assist in creating an autonomous or independent learner. A stepping stone in achieving this is to build on the intrinsic motivation of the student. What better way to accomplish this than developing the interest level?

Look carefully at the Performance Indicator of a CSCOPE lesson. Notice the verbs. What exactly is it asking you to have the students accomplish? Each Performance Indicator has two parts, the content and the performance. Here is an example. A third grade Performance Indicator (Unit 6) states:

*Create a visual display that illustrates the literary elements of narrative structure with a book that you have recently read. Explain how the application of these literary elements has helped you to understand and interpret literary texts.*

What is the content of this Performance Indicator? What is the performance required? Another way to look at it is that the content is the “what” and the performance is the “how”. The content of this specific Performance Indicator is “literary elements of narrative structure” and how they help the student to “understand and interpret literary texts”. The performance is to “create a visual display”. After breaking the Performance Indicator apart into these two sections, remember that when differentiating for your class, the content must stay the same for all students. The variation would be included in the performance aspect of the Performance Indicator. The question to ask is how can the integrity of the original Performance Indicator remain intact while making alterations to meet the needs of my students? Each Performance Indicator should be evaluated in this manner prior to implementation to insure quality and effective learning to take place.

Another method of differentiating a CSCOPE lesson is to take a careful look at what is already imbedded. Again, think of the students that you will be working with. What is already there and what would be necessary to add according to the specific learning needs of your class.

Here is an example. In the second grade science lesson (Unit 02, Lesson 01) the title is *Change*

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### ***Tips for Designing and Managing Differentiated Instruction***

- Begin differentiating at your own pace. If you are new to differentiation, choose a couple of low-prep strategies to try out each semester.
- The time allotted for a task should be a little shorter than your students’ attention spans.
- Giving clear directions is essential when several activities are going on in the classroom.
- Be sure students have a plan for getting help when you are busy with another group. “Three before me” is a good motto.
- Group work can be noisy, but use strategies for minimizing the sound like teaching students to use their “6-inch” voices.
- Teach students what on-task behavior looks and sounds like.
- Have a plan for students or groups who finish quickly. Guide them to do higher quality work or have a game ready for when they finish. If they consistently have spare time, the work may be too easy for them.
- Observe student behaviors as a clue to the difficulty of the tasks. Students who give up quickly may not understand the directions or may think the work is too difficult. Plan to spend a little time at the beginning of the work session with those students to give them a head start.

Tomlinson, C.A. (2001). *How to differentiate instruction in mixed ability classrooms, 2<sup>nd</sup> Edition*. Association for supervision and curriculum development: Alexandria, Virginia.

(continued from page 4)

*Occurs: What is Change?* Look specifically at the “engage” activity. First write the question “What is change?” on the board and discuss with students. Next, show a piece of paper, cut the paper in half. Ask “What has changed?” Hold up a different piece of paper, ball it up, and ask the same question. This should prompt a discussion about permanent change.

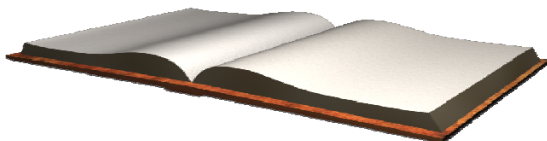
When considering students in your class that are ELL, what is already in the lesson to meet their needs? The activity is concrete and visual, and students are asked to record their findings. To add to this, if needed for better understanding, the teacher could pre-teach vocabulary like “permanent” and “change”. Another method of differentiating might be to give the student paper so they could follow along with the demonstration. By making these minor adjustments, the teacher is insuring the information and concept acquisition. By allowing the gifted student to speculate about the questions and providing them an opportunity to share their ideas either orally or in writing can assist in engaging this student too.

Effective differentiation does not require the teacher to change all that they have always done in the classroom. We must remember that differentiation is a way of thinking about teaching and learning. Responding proactively to the needs of the students requires careful evaluation of the prepared CSCOPE lesson.

Sources:

1. Levine, Mel (2002). *A Mind at a Time*. New York: Simon & Schuster.
2. Taylor, Lorraine; Catharine Whittaker (2003). *Bridging Multiple Worlds: Case Studies of Diverse Educational Communities*. Boston: Allyn & Bacon.
3. Tomlinson, Carol (2001). *How to Differentiate Instruction in Mixed-Ability Classrooms (2nd edition)*. Alexandria, VA: Association for Supervision and Curriculum Development.

**TALA Stipends for 6<sup>th</sup>, 7<sup>th</sup>,  
and 8<sup>th</sup> Grade Teachers!**



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**CSCOPE State Conference for Teachers  
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<http://www5.esc13.net/cscope/cscopeconference/index.html>.

**Hope to see you there!**



## 6th Six Weeks Lesson Preview



# Mathematics

## Overview

In the sixth six weeks, students in grades K-8 strengthen their understanding of TEKS that are traditionally difficult at the current grade, but that are foundational at the next grade. Understanding is reinforced through problem solving and connections between strands. Only 20 days of instruction are accounted for during the sixth six weeks.

### Kindergarten

**Unit 17 Direct Comparisons** connects the measurement attributes of weight/mass, temperature, length, area, time, and capacity. Students focus on what it means to measure through comparison of attributes rather than the traditional measurement instruction of “how” to measure. The Kindergarten TEKS were written to provide this foundational concept. Partitioning and unit iteration (leaving gaps between units or overlapping adjacent units) are important concepts that follow in the first grade TEKS.

### 1st Grade

**Unit 22 Measurement** connects the measurement attributes of area, capacity, weight/mass, time and temperature. Students review telling time on analog and digit clocks to the hour and half-hour, and order events according to duration. For area, capacity, and weight/mass, students use non-standard units in order to focus directly on the attribute being measured. In second grade students will select an appropriate model to approximate a standard unit to measure an object. Formal units using standard measurement tools do not appear in the TEKS until 3<sup>rd</sup> grade.

In **Unit 23 Organized Data**, students continue to develop their understanding of graphs through ongoing exploration of data analysis.

**Unit 24 Numerical Thinking** addresses quantitative reasoning, numerical patterns and operations to help student develop proficiency with whole numbers. This unit lays the foundation for 2<sup>nd</sup> grade where students are expected to select addition or subtraction to solve problems using two-digit numbers.

### 2<sup>nd</sup> Grade

**Unit 11 Operational Situations** reinforces real-world mathematical problem situations that consist of multiple steps and extemporaneous information. Students will problem solve, discuss their ideas, defend their solutions, and evaluate the solutions of others.

In **Unit 12, Another Look at Measurement**, students estimate and measure length and area through a variety of hands-on activities. Students begin to look at appropriate concrete models that represent a standard unit of length. This understanding is formalized in third grade.

### 3<sup>rd</sup> Grade

**Unit 12 Fractions and Measurement** incorporates fractions and measurement. Both fractions and measurement are primary focal points for Grade 3. The main focus of this unit is to develop the concept of equivalent fractions with sets of whole objects. Fractional relationships involving parts of a whole and parts of a set for students are complex. Additional rich, hands-on experiences will provide a strong, solid foundation for fourth grade. The focus of Lesson 02 allows students to be actively engaged in activities that require measurement of long distances. This lesson provides motivation at this point in the school year to make measurement more meaningful for the students.

**Unit 13 All Operations Overview** provides the opportunity for students to enhance their problem solving skills through operations with whole numbers. Word problems are designed to target a variety of TEKS, which require students to select the appropriate problem-solving strategies needed to find the solutions. The use of efficient procedures, including the standard algorithm, will help students at subsequent grade levels to develop fluency for operating on whole numbers and to understand why the procedures work.



## 6th Six Weeks Lesson Preview



# Mathematics

### 4<sup>th</sup> Grade

**Unit 12 Measurement Connections** addresses both customary and metric units of measurement. It is placed in the 6th six weeks as a review of the key points in Grade 4 measurement and to further support students' understanding of operations, fractions, and the measurement tools that can be used to enhance these skills.

In **Unit 13 All Operations** students enhance their problem-solving strategies through experiences with multiplication and division with interpretation of remainders. The use of efficient procedures, including the standard algorithm, will help students at subsequent grade levels to develop fluency for multiplying and dividing whole numbers and to understand why the procedures work.

**Unit 14 Fractions Overview** addresses describing, comparing, and relating fractions to decimals. Reinforcing fraction concepts at this time will help students at subsequent grade levels to continue building fraction skills, and to maintain a better understanding of the role of the fraction in problem solving and measurement.

### 5<sup>th</sup> Grade

In **Unit 13 Fraction Connections**, students generate and compare fractions and mixed numbers, and add and subtract fractions with like denominators.

**Unit 14 All Operations** addresses the computational expertise and fluency needed for problem solving.

**Unit 15 Measurement Connections** addresses both customary and metric units of measurement and is placed in this six weeks to support students' understanding of fractions and measurement tools. This unit includes both customary and metric measurement conversions.

### 6<sup>th</sup> Grade

**Unit 14, Another Look at Proportional Relationships**, addresses proportionality through experiences with customary and metric units and supports students' understanding of fractions and measurement tools.

**Unit 15 Mathematical Expressions and Equations** addresses proportional and other numerical relationships through different representations such as verbal, numerical, symbolic, tables, graphs, and equations. Students write expressions or equations and represent the expressions or equations in verbal, numerical, and symbolic form. The ability to formulate expressions or equations from problem situations is critical for understanding higher levels of mathematics.

### 7<sup>th</sup> Grade

**Unit 14 Applications of Proportional Reasoning** addresses fractions, decimals, percent conversions, percent changes, scale factors, unit rates, and dimensional analysis in order to reinforce concepts investigated during the first part of the year and extend proportional reasoning. These proportional relationships are represented using tables, graphs, and equations. Since proportional relationships are the focal points of the middle school state standards, proportionality and the applying of proportional reasoning to real-life problem situations are revisited in this unit.

### 8<sup>th</sup> Grade

**Unit 15: Applications with Rational Numbers** addresses modeling of real-world problems involving percents using proportional relationships. These concepts are tested on TAKS Grades 8, 9, 10, and on the Exit Level test and are typically a source of difficulty for students.

**Unit 16: Applications with Graphing Calculator** provides a final review of rational and irrational operations. Included are scientific notation, proportional and non-proportional situations, multiple representations of data (tables, graphs, verbal descriptions, and algebraic expressions), sequences, central tendency, scatterplots, and line graphs. These concepts have been taught throughout middle school mathematics. This unit also extends the knowledge base of how to use graphing calculator technology which is required for Algebra I. Most of these concepts are tested on the TAKS Grades 9, 10, and on the Exit Level test.



## 6th Six Weeks Lesson Preview



# Mathematics

### Algebra 1

In **Unit 10 Inverse Variations**, students investigate linear functions focusing on direct variation. Next they examine inverse variation relationships by looking at their graphs, tables, and equations. Finally they will compare inverse variation to a linear relationship. In Algebra 2, variation problems will continue to be applied and the graph of functions representing inverse variation will be explored.

In **Unit 11 Growth and Decay—Exponential Functions**, students investigate graphs, tables, and equations for exponential functions. Students will then compare and contrast these four mathematical models, determining what model can best be used to represent various real-life situations. In Algebra 2, exponential functions will be studied more in-depth and exponential equations will be applied to make predictions in problem situations.

### Geometry

**Unit 17 Constructions** involves investigating the attributes of geometric figures to make conjectures about geometric relationships through the use of constructions.

In **Unit 18 Euclidean vs. Non-Euclidean Geometry**, students compare Euclidean and non-Euclidean geometries through investigation of taxicab, spherical, and hyperbolic geometry. In taxicab geometry, comparisons are made between definitions of equidistant from a point and formulas for distance. In spherical and hyperbolic, comparisons are made between the parallel line theorem and the sum of the angles in a triangle.

**Unit 19 History of Mathematics** involves the historical development of mathematics systems. In this unit, students research the development and purpose of various geometric systems and present their findings to the class.

### Math Models

**Unit 9 Personal Finance** connects personal finance to mathematical models. In this unit, students study types of wages, deductions, and compensations. They create budgets and analyze banking options. Students investigate the purchase or lease of a home and automobiles in addition to the costs of insuring these purchases. Problem situations involving choices of personal finances are also explored.

Function models developed in previous units will be applied to examine income, savings, and loan options. Amortization models used in automobile loans and mortgages will be represented using tables and formulas. Tables will also be used to apply and compare insurance options.

In **Unit 10 Credit**, students use mathematical models will be developed to analyze and draw conclusions about installment buying. Problem situations involving choices of credit are also explored. Credit and installment buying has an impact on both personal finances and future financial planning.

**Unit 11 Financial Planning** uses mathematical models to examine investment options as preparation for the financial security and retirement. Students analyze and compare various investment options, including savings, annuities, stocks, bonds, and mutual funds. Problem situations involving choices of financial planning are also explored.

### Algebra 2

In **Unit 13 Conics**, describe the conic sections as the intersection of a plane and a cone, identify the characteristics of each conic section, and explore representations of each conic section in the real world. Students sketch graphs of the conic sections and relate parameter changes to the graphs. Students complete the square to convert conic sections in general equation form to standard equation form and identify the type of conic section from the representative equations. Students apply conic sections to real-world situations. The study of conic sections will be continued through the Precalculus curriculum.

**Unit 14 Additional Topics** contains the optional topics of polynomial functions, the Fundamental Theorem of Algebra and exploration of the shape and characteristics of graphs of higher degree polynomial functions. Matrices are covered in greater depth. Students solve problems by hand and by using the graphing calculator. Other topics may be substituted as time permits to meet the needs of students. All student expectations for Algebra 2 have been covered at this point in the curriculum.

**Have questions about the newsletter? Contact your Education Service Center.**

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