Rigor. Relevance. Quality

CSCOPE

Science 5th Six Weeks, 2008-2009

E-Newsletter

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, 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:

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

Written and edited by ESC Region XIII Local CSCOPE Support Team

Tips & Tools for Managing Cooperative Learning: Roundtable

Roundtable and Simultaneous Roundtable are valuable strategies to help students work cooperatively to contribute ideas. These strategies can be used in all content areas and grade levels to support students generating ideas and showing comprehension of content. Whether the student activity is creative writing, problem solving, or drawing pictures to complete a cycle, students can benefit from working together.

Roundtable

Start with an idea, question, problem, or prompt on a single piece of paper. The process starts with one student in a small group. That student begins by contributing ideas on the paper. After a designated amount of time provided by the teacher, the student passes the paper to the next team member in a clock-wise rotation. Students continue to pass the paper around the group. Each group member adds to the thoughts, answers, and drawings. After all members have contributed, a group or class discussion can be initiated using the ideas generated from the activity.

Simultaneous Roundtable

In simultaneous roundtable, more than one sheet of paper (no more than 4 sheets total) is passed within a small group. You can provide questions with related content that will help students generate ideas to help with comprehension and internalization of the concept being taught. Practice problems for math could be provided

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CSCOPE
Targeted success with quality curriculum.

Reaching and Teaching All Students: Differentiating Instruction

How can I reach all of the students in my classroom? I have TEKS to cover, IEPS to follow, and TAKS to prepare for. I have to ensure the learning of my ELLs with the ELPS. What about the GT students? In this alphabet soup of acronyms, one word emerges as an answer in article after article, in book after book, and on the lips of leader after leader. The word is differentiation.

After hearing about differentiation over and over, how can we really be sure we know the meaning and the process? According to Webster's dictionary differentiation is "…to make unlike; to develop specialized differences in…" How can that help in the classroom? Carol Ann Tomlinson, author of many publications on differentiation, defines differentiation as adapting "instruction to respond to the diverse student needs found in inclusive, mixed-ability classrooms." She also says that differentiation is "…shaking up what goes on in the classroom so that the curriculum is a better fit for all." Differentiated instruction moves teachers away from "One Size Fits All" and encourages students to take more responsibility for their own learning. Differentiation is based on the premise that students learn in different ways. Students come to us with different levels of knowledge, so there is no real similar starting point. Differentiation helps teachers tailor instruction to each student's level.

Brain research done in the past decade reveals much about how people learn and provides another reason for differentiating instruction. Research shows that learning happens when the brain seeks connections to what it already knows. The connections are different for each person because each person's experiences are different. Differentiation is an approach to teaching that works well with brain-based learning.

How can differentiation take place within a CSCOPE lesson? The answer is multifaceted. In order to manage a classroom in such a way that the needs of all students are being met, you must first evaluate the abilities, prior knowledge and interest level in the group. Consider what you know about your students as you review the recommendations in the CSCOPE Exemplar Lesson. How is it written to already differentiate instruction? What is in the lesson that already meets the needs of a variety of student learning styles, abilities, interests and prior knowledge? Differentiation can take place in the content being presented, the process by which students are expected to attain the information and/or the product students must complete to show acquisition of

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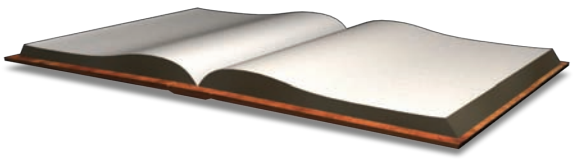
TALA Stipends for 6th, 7th, and 8th Grade Teachers!



Giving Meaningful Feedback

We all need helpful feedback if we are to learn successfully. In an attempt to provide helpful feedback, many of us have spent hours laboring over generating copious and voluminous feedback on every aspect of a student's work only to watch the student glance over and then ignore it. So how can teachers target feedback so students use and benefit from it? No matter what the context of feedback is, the timeliness, specificity, and usability of the feedback are critical.

Timely feedback is given when students are still thinking about the work and when they still have time to work on the learning target and make improvements. Giving the feedback days or even weeks after the performance is not timely, and therefore is not effective.

Specific feedback focuses on the positive features of the work. What did the student do correctly? What improvements did the student make over the last performance? Feedback about processes shows the student the connections between what they did and the results they got. (*When you added more detail, it made your thesis more clear. When you graphed the data and wrote a paragraph explaining it, the point was powerful.)* This will increase the likelihood that the student will be able to repeat this process successfully in future assignments. If feedback lacks specificity, or it addresses every characteristic of student work from handwriting to conceptual understanding, the student will see it as useless and ignore it.

Usable feedback varies according to student need. What does the student need to do to improve progress toward learning goals? Some students benefit from a question that will lead to knowing what they need to do to improve their performance. Other students may need a specific suggestion about what to do next. Some students respond best to oral feedback; others to written. Teachers know what the best fit is for individual students. Usable feedback given in a way that students can hear encourages the student to think, and communicates that next steps are within the student's ability, control, and understanding. (Jackson, 2009)

Consider the impact of teacher feedback as shown by research. In his synthesis of research about formative assessment, Wiliam (2006) sum-

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Examples of Effective Feedback	Non-Examples
"Interesting thesis. Can you find more specific evidence to support it?"	"B-"
John is able to perform the basic algorithm for 2 column multiplication, but because he does not yet understand the reason for it he often makes avoidable errors."	"Approaching mastery"
"When you modeled the instructional strategy of _____, it started me thinking about how I can use that in my classroom. Can you make time for those kinds of things in all meetings?"	"That was a good faculty meeting."
"When I visited your classroom I noticed that students were engaged in group discussions around the concept of _____. Their discussions were higher level and utilized academic vocabulary. Do you plan to use other cooperative grouping strategies in future lessons?"	"Nice lesson."

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and circulated as a team activity. For a fun and interactive creative writing lesson, students could start with a sentence to create a story; each student passes his/her paper around to allow team members to contribute a sentence to continue the creative writing process. There are many creative and innovative ways you can use this strategy with students.

Planning with a Focus

As part of your team planning, start a discussion about how to use this cooperative learning strategy in your instruction. Start with the Roundtable strategy. Once students feel comfortable with the Roundtable strategy, introduce Simultaneous Roundtable as applicable. After practicing with students, reflect on the effectiveness of the strategy. Revisit with your grade level team or department and discuss the implementation of the strategy in your instruction. This discussion is a valuable way to discuss the effectiveness of the strategy and ways to adapt the strategy to help support student learning.

Source http://www.kaganonline.com/KaganClub/FreeArticles/TestScores.html

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knowledge. Finally, use your knowledge of your students and your analysis of the Exemplar Lesson content, strategies and Performance Indicators to plan instruction for your students. Careful evaluation will uncover the truth that adaptations are possible while continuing to uphold the integrity of the Exemplar Lesson recommendations and the Performance Indicators.

Look for tips on how to differentiate in the next CSCOPE newsletter.

When applying it to real classroom strategies, it may be more effective to look at what differentiation is not. It is not simply offering a menu of different assignments for students to select from. Nor is it assessing some students harder on the same class assignment. "Awarding" additional problems or book reports to gifted students that finish early may be perceived as punitive instead of differentiated.

The idea of differentiating instruction to accommodate the different ways that students learn involves a hefty dose of common sense, as well as sturdy support in the theory and research of education. (Tomlinson & Allan, 2000) It encompasses that idea of making adjustments to meet the needs of all students. While many effective teachers adjust teaching based on the current needs of the class in real time, what could be called "reactive differentiation," true differentiation is an approach to teaching that requires active planning for student differences in classrooms. "Proactive differentiation" involves evaluation of the specific needs of your students in advance so you can plan for those differences while honoring your current teaching. This can be a strong and effective way to help students reach the potential that is really there.

Sources

Merriam-Webster's Collegiate Dictionary, 11th Edition (Red Kivar Binding with Jacket). (2003).

Tomlinson, Carol Ann. (October 1995). *Differentiating instruction for advanced learners in the mixed-ability middle school classroom*. ERIC EC Digest E536.

Tomlinson, Carol Ann. (2001) *How to differentiate instruction in mixed-ability classrooms*, 2nd Edition. Alexandria, VA: ASCD.

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marizes research (Butler, 1987) that showed that student performance improved substantially when descriptive feedback alone was given. Students are less likely to pay attention to descriptive feedback if it is accompanied by a grade *or an evaluative comment*. Furthermore, students who were given grades and praise showed no more progress than those given no feedback at all throughout their learning on the topic.

Wiggins (2008) summarizes the importance of feedback in the following way ". . .unless we build a strong feedback loop into our teaching and learning—providing for individual, targeted, specific feedback to each student, followed by opportunities to use it—then we will lose all except those students who would learn even without our help."

Sources

Jackson, Robyn R. (2009). *Never work harder than your students and other principles of great teaching.* Alexandria, VA: ASCD.

Popham, W. James (2008). *Transformative assessment.* Alexandria, VA: ASCD.

Shute, Valerie (2007). *Focus on formative feedback.* ETS.

Wiggins, Grant (2008, January 22). *Feedback: how learning occurs*. Retrieved February 4, 2009, from Big Ideas: An Authentic Education e-Journal Web site:http://www.authenticeducation.org.

Wiliam, Dylan (2006). *Keeping learning on track: formative assessment and the regulation of learning.* ETS.

CSCOPE State Conference for Teachers
San Antonio, Texas
June 23 and 24, 2009

For more details, go to
http://www5.esc13.net/cscope/cscopeconference/index.html.

Register by March 2, 2009 and save $30 on your registration fee.

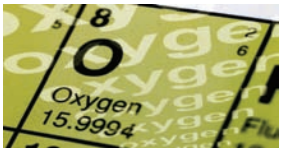
Quick Tip — It's Easy to Submit Unit Feedback!

To submit feedback for a specific unit, you must be working in the unit first.
1. Open a unit.
2. Click *View/Edit Unit*. (This is the first tab on the right side of the screen.)
3. Click *Collaborative Feedback*. (This is the third tab from the left.) You will be able to see all the feedback from your district.
4. Click *Submit Feedback* on the far right side of the screen.
5. Enter feedback or comments. Be very specific, using unit number, lesson number, page number and problem numbers.
6. Choose the category of feedback. You may enter different kinds of feedback:
   Grammatical/Punctuation/Format Errors
   Developer Issues/Bad Web Links/Attachment Issues/Other Tech Issues
   Content-related suggestions or recommendations
   Assessment Issues
7. Click the *Submit* button.

Once you submit feedback, the response to that feedback will be placed on your home page under the *Feedback* tab. Click the unit title to view the feedback and the response.

5th Six Weeks Lesson Preview

Science



Kindergarten

Unit 09: Exploring How We Live and Grow
Students make observations and comparisons of how they have grown and changed since the beginning of the school year. They will explore factors that affect their growth: good nutrition, exercise, rest, and safe habits. Students will then learn about how the muscle/bone system affects movement and exercise, as well as how healthy habits of exercise can affect the heart. By the end of the unit students will learn about the basic food groups. They will also discover how germs are transferred and learn proper hand washing methods. Rules and routines that make safe environments at home and school are reviewed.

Unit 10: Exploring How Animals Live and Grow
In the first part of the unit, students will explore different animal coverings and how they help protect the animals by keeping them warm and dry. Through hands-on investigations students will understand how insulation and waterproofing help some animals survive. In Lesson 2, students will learn about life cycles. Students will use pictures and models to observe, compare and record basic differences between insects and spiders and will discover the stages in an insect's life cycle by observing the changes over time in a mealworm habitat. Students will sequence pictures to show the stages in the life cycles of mealworms and spiders.

1st Grade

Unit 08: Investigating How I Grow and Change
Students will explore how we experience change and look for patterns in our human growth and development. Look for activities such as observing their own pictures to see how they have changed, to exploring the pattern of growth in their own teeth.

Unit 09: Investigating Organisms: Their Environment
In this twenty-four day unit, students will investigate the basic needs of organisms through activities such as researching and designing a habitat for a pet, as well as constructing garden containers to watch how organisms grow and change.

2nd Grade

Unit 09: Plants
It's all about plants! Students see plants in their daily lives, but do they know their seven basic needs? Students will explore the function, parts and characteristics. Students will learn the various external characteristics that allow needs to be met for the major biomes of the world and discover that plants play a very important role in our environment.

3rd Grade

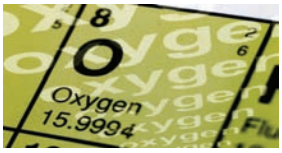
Unit 06: Investigating Inherited Traits of Living Organisms

Students will observe and investigate inherited traits. In the first lesson, students will gain an understanding that our features, such as hair color, are characteristics that are passed along from our families. Students will make connections to other living organisms and their life cycles, such as observing mealworms and the larval stage of darkling beetles. They will also see that there are variations or differences in species as they examine several varieties of apples.

Unit 07: Investigating Adaptation and Survival
Students will investigate how plants and animals have special adaptations that help in survival. In the evaluate, look for the performance indicator where students will observe a new organism, identify its special adaptations and analyze how each unique adaptation allows the organism to meet its needs and survive in its environment.

5th Six Weeks Lesson Preview

Science



4th Grade

Unit 06: Inherited and Learned Traits
Inherited and learned traits are the focus of learning in the first unit. Students will gain an understanding of how traits are passed from parents to their offspring. Look for a fun hands-on activity called Roberto's Family Connector. Students will also investigate what learned traits look like in living organisms through activities like Pet Patrol.

Unit 07: Characteristics for Survival
In this unit, students will explore how plant and animal adaptations help aid in the survival of these organisms. In one of the performance indicators provided, students truly extend their learning through investigating and analyzing what would happen if an animal were moved to a new habitat. Students must determine what adaptations the animal has in order to help it survive it's new surroundings.

5th Grade

Unit 07: Adaptive Traits and Survival
Students will gain an understanding of how organisms use their characteristics to survive in the environment around them. Students will also learn the important role food webs and food chains play in the balance of an ecosystem.

Unit 08: Cycles
The focus of the next unit is life cycles of plants and animals. Cycles such as the water, carbon, and nitrogen will be explored through hands-on investigations. Students will be asked to find commonalities among cycles, and understand that cycles interact with each other to keep nature in balance.

6th Grade

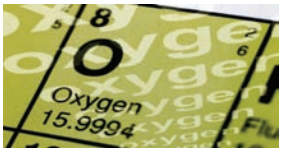
Unit 09: Atmospheric Cycles and Systems
The focus of the first unit is how the atmosphere interacts with Earth's surface to create weather changes. Students will participate in a highly engaging activity called Atmosphere Station Rotation.

Unit 10: Forces That Change the Earth
Students will then explore the rock cycle and become scientists that study the changes in the surface of the Earth. This lesson allows students to become scientific experts in a particular area of study and then to apply information they have obtained in a real-world scenario.

Unit 11: Properties of the Solar System
Students will be able to identify characteristics of the Sun, meteorites, asteroids, moons, and comets. The students will identify characteristics of the planets and have a better understanding of the numerous systems found at the planetary level. They will also gain an understanding of how those systems interact with the larger systems found within the solar system.

5th Six Weeks Lesson Preview

Science



7th Grade

Unit 08: Natural Events that Change the Environment
Get ready for a disaster this six weeks! Students will research and explore through hands on investigations the effects of natural disasters. Students will also understand the forces behind these disasters and how they are always changing the physical landscape around us. Two primary categories that will be investigated are weathering and erosion.

Unit 09: Earth's Resources
Students will review the types of natural resources. Students will research and analyze all aspects of the human impact on the Earth's resources. Students will share their findings and discuss both positive and negative aspects.

8th Grade

Unit 10: Force and Motion
In the first unit, students will explore Newton's Law of Motion through their own investigations and experiments.

Unit 11: Waves
Students will then venture to identify similarities and differences in mechanical and electromagnetic waves.

Unit 12: Universe: Stars and Galaxies
Students delve into the universe through stars and galaxies in Unit 12. They will study about the life cycles of stars and classify them using an HR diagram. Look for the elaborate piece where students create a rap or poem about the life cycle of a star. The performance indicator for the unit centers around students creating a travel brochure for visiting the universe!

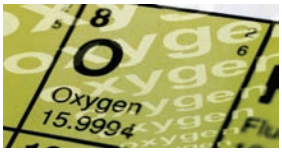
Biology

Unit 10: Plants
This six week's focus is investigating the systems of plants. Students will gain knowledge about the specialized functions of plants and the structure of plant cells. We will investigate and compare these characteristics and learn how specialized parts contribute to the survival of plants. Students will research, identify and evaluate the possibility of a plant surviving in a new environment based on the environmental conditions and the adaptations of the plant.

Unit 11: Body Systems
Students will review the four basic nutrients, analyze a food label, describe the systems involved with eating, and review the various forms of cellular respiration. They will review the functions of systems in organisms and study the integumentary system through exploring its interrelationship with other body systems. Students will then research other systems and provide presentations on the functions and interrelationships.

5th Six Weeks Lesson Preview

Science



Chemistry

Unit 10: Gases
In this unit, students will focus on the gas laws. Hands on activities related to Boyle's Law, Charles' Law and the Ideal Gas Law will be used as introductions to each law. The Combined Gas Law will also be addressed.

Unit 11: Solubility
This unit focuses on the factors that effects solubility. An opportunity to test the solubility of a salt at varying temperatures, graph the results, and develop rules for solubility are presented in this unit.

Unit 12: Solutions
Students will understand the properties of solutions such as the amount of saturation, electrical conductivity, and colligative properties. The concentration of a solution is a measure of the amount of a solute dissolved in a specific amount of solvent. The calculation of concentration of solution and the preparation of diluted solutions from concentrated ones is integral in the study of the chemistry of chemical reactions in solution.

IPC

Unit 09: Energy: Relationships
Students will review the conservation of energy which provides an opportunity to analyze the efficiency of energy conversions from different types of energy sources. They will also will explore the economic and environmental impacts of using various energy sources.

Unit 10: Energy: Heat
Through group investigations, students will analyze the efficiency of energy from different types of sources and the environmental impact of these forms.

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