

Implementing Core Knowledge® in a Multi-age Classroom

Special Area: Implementation of Core Knowledge (Thursday)

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I. ABSTRACT

The multi-age classroom setting can be a valuable way to successfully teach the Core Knowledge® sequence. The tools to guarantee this success are collaboration, preparation, and innovation. Using The PEAK School model for multi-age Core Knowledge® instruction, we will discuss the salient instructional issues necessary to ensure that every student acquires the Core Knowledge® content.

Utilizing a lecture, demonstration, and discussion format, some of the following topics will be addressed: fostering staff collaboration to ensure successful learning; creating and monitoring multi-grade Year Long Plans; instructional procedures; and using learning management tools.

II. OVERVIEW

A. Specific content from the *Core Knowledge Sequence* includes:

1. Kindergarten and first grade sayings and phrases (p.10 and 26)
2. Wolfgang Amadeus Mozart
 - The Magic Flute (p. 100)
 - variations on “ah! vous dirai-je Maman” (p. 99)
 - Symphony # 40 (p. 147)
 - Piano Concerto #21 (p. 147)
 - A little Night Music (p. 33)
3. Lasting Ideas from Ancient Civilizations: Ancient Greece (p.138 and 139)
 - The Greek polis (city-states) and patriotism
 - Beginnings of democratic government: Modern American Democratic government has its roots in Athenian democracy (despite the obvious limitations on democracy in ancient Greece, for example, slavery, vote denied to women)
 - The Assembly
 - Suffrage, majority vote
 - The “classical” ideal of human life and works
 - The idea of the well-rounded individual and worthy citizen
 - Pericles and “The Golden Age”
 - Architecture: the Parthenon
 - Games: The Olympics
4. Ancient Greece (p. 48)
 - Geography: Mediterranean Sea and Aegean Sea, Crete
 - Sparta
 - Athens as a city state: the beginnings of democracy

- Persian Wars: Marathon and Thermopylae
- Olympic Games
- Worship of gods and goddesses
- Great Thinkers: Socrates, Plato, and Aristotle
- Alexander the Great

5. Ancient Rome (p. 70)

Geography of the Mediterranean Region.

- Mediterranean Sea; Aegean Sea; Adriatic Sea. Greece; Italy (peninsula); France; Spain, Strait of Gibraltar; Atlantic Ocean. North Africa; Asia minor (peninsula); Turkey. Bosphorus (strait); Black Sea; Istanbul (Constantinople) Red Sea; Persian Gulf; Indian Ocean.

Background.

- Define A.D. / B.C. and B.C.E. /C.E.
- The legend of Romulus and Remus
- Latin as the language of Rome
- Worship of gods and goddesses, largely based on Greek religion.
- The Republic: senate, patricians, plebeians.
- Punic Wars: Carthage, Hannibal.

The Empire

- Julius Caesar
- Defeats Pompey in civil war, become dictator. “Veni, vidi, Vici” (I came, I saw, I conquered)
- Cleopatra of Egypt
- Caesar assassinated in the senate; Brutus
- Augustus Caesar

B. This presentation will address the following administrative and teacher issues:

1. Sustaining Core Knowledge®
2. Monitoring progress: Assessment and Evaluation
3. Ensuring staff collaboration
4. Designing common planning and instruction time

III. RESOURCES

- A. *Journal for Staff Development.* Manhattan, KS: Kansas State University. All issues.
- B. SRI International. “Build a School Culture That Nurtures Staff Collaboration and Participation in Decision Making.” School-Based Reform--Lessons From A National Study – A Guide for School Reform Teams. Available URL: <http://www.ed.gov/pubs/Reform/pt2d.html>, 1995.

IV. PRESENTATION OUTLINE

Implementing Core Knowledge® in a Multi-age classroom

A. Why teach Core Knowledge® in a multi-age setting:

1. Space constraints
2. Partnering/peer tutoring
3. Students as teachers
4. Classrooms as families
5. Cooperative learning

B. Preparing Core Knowledge® in a multi-age setting:

1. Teacher buy-in and commitment to sequence and to each other
2. Fostering staff collaboration to ensure successful learning
3. Creating and monitoring multi-grade Year Long Plans
4. Linking Core Knowledge® content and state standards
5. Partnerships with AmeriCorps, America Reads, and America Counts
6. Collaboration with music, art, and PE teachers to integrate content

C. Instruction of Core Knowledge® in a multi-age setting:

1. Creating meaningful connections between new and previous content
2. Monitoring progress: Assessment and Evaluation
3. Individualized assessment expectations
4. Learning management tools
5. Teacher commitment to breadth and depth of sequence
6. Peer tutoring/teaching
7. Parent volunteers

V. HANDOUTS/WORKSHEETS

- A. Appendix A – Collaboration Hints
- B. Appendix B – Classroom Schedules
- C. Appendix C – Core Knowledge Content Form
- D. Appendix D – Curriculum Plans
- E. Appendix E – Core Knowledge Lessons which highlight multi-age instruction
- F. Appendix F – Content Plan & Implementation Analyses

VI. BIBLIOGRAPHY

Core Knowledge Sequence: Content Guidelines for Grades K – 8. Core Knowledge Foundation, 1999. 1-890517-20-8.

Charbonneau, M. P. & Reider, B. E. *The Integrated Elementary Classroom.* Massachusetts: Allyn and Bacon, 1995. 0-205-15462-X (#1)

Dettmer, P., Thurston, L. P., & Dyck N. *Consultation, Collaboration, and Teamwork For Students with Special Needs*. Boston, MA: Allyn and Bacon, 2002. 205340733

Kasten, W. C. & Clark, B. K. *The Multi-age Classroom: A Family of Learners*. Katonah: Richard C. Owen. 1993. 1-878450-35-2 (#2)

Appendix A

COLLABORATION HINTS

Stage 1

- ❖ Discuss notes on topic
- ❖ Elicit impressions/ideas from others

Stage 2

- ❖ Evaluate current plan
- ❖ Prioritize the most important objectives

Stage 3

- ❖ Design a plan to address objectives
- ❖ Be specific
- ❖ Decide Who, How, & When
- ❖ Identify materials used
- ❖ What other resources can be used

Stage 4

- ❖ Summarize main points
- ❖ Make sure there is a consensus on service delivery
- ❖ Set up the next meeting for collaboration
- ❖ Document the agreed upon:
 - Objectives
 - Plan of action
 - Additional information that was not previously documented

Peak School
Kindergarten & First Grade Daily Schedule
Mrs. Field, Teacher

Monday	8:35 – 9:00 A.M. Work Pledge Attendance	9:00- 10:15 Reading and Writing	10:15- 10:30 Recess	10:30- 11:20 Math	11:20 – 12:10 Lunch	12:15-12:30 Story	12:30-12:45 Read and Rest	12:45-1:15 Core Knowledge Read aloud	1:15- 2:00 Music	2:00-2:30 Science	2:30-3:00 Show and Tell Dismissal
Tuesday	8:35 – 9:00 A.M. Work Pledge Attendance	9:00- 10:15 Reading and Writing	10:15- 10:30 Recess	10:30- 11:20 Math	11:20 – 12:10 Lunch	12:15-12:30 Story	12:30-12:45 Read and Rest	12:45-1:00 Show and Tell	1:00- 1:30 Poetry	1:30-2:15 History	2:15-3:00 Supplemental Reading and Activities Dismissal
Wednesday	8:35 – 9:00 Calendar Pledge Attendance Poems Sayings	9:00- 10:15 Reading and Writing	10:15- 10:30 Recess	10:30- 11:20 Math	11:20 – 12:10 Lunch	12:15 – 12:50 Geography	12:50-1:00 Dismissal				
Thursday	8:35 – 9:00 Calendar Pledge Attendance A.M. Work	9:00- 10:15 Reading and Writing	10:15- 10:30 Recess	10:30- 11:20 Math	11:20 – 12:10 Lunch	12:15-12:30 Story	12:30-12:45 Read and Rest	12:45-1:45 Poetry and Read Alouds	1:50- 2:50 P.E.	2:50-3:00 Dismissal	
Friday	8:35 – 9:00 Calendar Pledge Attendance A.M. Work	9:00- 10:15 Reading and Writing	10:15- 10:30 Recess	10:30- 11:20 Math	11:20 – 12:10 Lunch	12:15 – 1:00 Spanish	1:00-2:15 Art	2:15-2:50 Core Knowledge Continuation and Elaboration	2:50-3:00 Dismissal		

Peak School
First & Second Grade Daily Schedule
Ms. Erika Flak, Teacher

Monday	8:35 – 9:00 Morning Journal and Poetry	9:00-10:15 Reading and Writing	10:15-10:30 Recess	10:30-11:20 Math	11:20 – 12:10 Lunch	12:15-12:30 Read Aloud/ Quiet Reading	12:30-1:10 History	1:10-1:50 Science	1:50-2:50 Writers Workshop and other Language Arts Activities	2:50-3:00 Dismissal
Tuesday	8:35 – 9:00 Morning Journal and Poetry	9:00-10:15 Reading and Writing	10:15-10:30 Recess	10:30-11:20 Math	11:20 – 12:10 Lunch	12:15-12:30 Read Aloud/ Quiet Reading	12:30-1:00 Writing Workshop, other Language Arts activities	1:00-1:45 Music	1:50-2:50 Art	2:50-3:00 Dismissal
Wednesday	8:35 – 9:00 Morning Journal and Poetry	9:00-10:15 Reading and Writing	10:15-10:30 Recess	10:30-11:20 Math	11:20 – 12:10 Lunch	12:15 – 12:50 Spanish	12:50-1:00 Dismissal			
Thursday	8:35 – 9:00 Morning Journal and Poetry	9:00-10:15 Reading and Writing	10:15-10:30 Recess	10:30-11:20 Math	11:20 – 12:10 Lunch	12:15-12:30 Read Aloud/ Quiet Reading	12:40-1:15 Language Arts Activities	1:15-2:00 History/Geography	2:00-2:45 Science	2:45-3:00 Dismissal
Friday	8:35 – 9:00 Morning Journal and Poetry	9:00-10:15 Reading and Writing	10:15-10:30 Recess	10:30-11:20 Math	11:20 – 12:10 Lunch	12:15 – 12:30 Read Aloud/ Quiet Reading	12:30-1:10 History/ Geography	1:10-1:50 Science	1:50-2:50 P.E.	2:50-3:00 Dismissal

Peak School
Fourth, Fifth and Sixth Grade Daily Schedule
Ms. Leo Gonzalez, Teacher

Monday	8:35 – 9:00 Arrival Attendance Homework Check	9:00-10:15 Reading and Writing	10:15- 10:30 Recess	10:30- 11:20 Math	11:20 – 12:10 Lunch	12:15-1:00 Spanish	1:00-1:50 Science	1:50-2:50 P.E.	2:50-3:00 Dismissal
Tuesday	8:35 – 9:00 Arrival Attendance Homework Check Sayings and Phrases	9:00-10:15 Reading and Writing	10:15- 10:30 Recess	10:30- 11:20 Math	11:20 – 12:10 Lunch	12:15-1:15 Science	1:15-2:00 History/ Geography	2:00-2:50 Art	2:50-3:00 Dismissal
Wednesday	8:35 – 9:00 Arrival Attendance Homework Check Poetry	9:00-10:15 Reading and Writing	10:15- 10:30 Recess	10:30- 11:20 Math	11:20 – 12:10 Lunch	12:15 – 12:50 Read Aloud/ History	12:50-1:00 Dismissal		
Thursday	8:35 – 9:00 Arrival Attendance Homework Check Sayings and Phrases	9:00-10:15 Reading and Writing	10:15- 10:30 Recess	10:30- 11:20 Math	11:20 – 12:10 Lunch	12:15-1:00 History/ Geography	1:00-1:45 Music	1:45-2:50 Science	2:50-3:00 Dismissal
Friday	8:35 – 9:00 Arrival Attendance Homework Check Poetry	9:00-10:15 Reading and Writing	10:15- 10:30 Recess	10:30- 11:20 Math	11:20 – 12:10 Lunch	12:15 – 1:15 Science	1:15-2:00 History/ Geography	2:00-2:50 Hands on Art Activities	2:50-3:00 Dismissal

Appendix C

Core Knowledge® Lesson Content

Teacher: _____

Grade Level: _____

Saying of the Week

Grade Level: _____

Poem of the Week

Grade Level: _____

Stories (Read Aloud)

Grade Level: _____

History Content

Grade Level: _____

Geography Content

Grade Level: _____

Science Content

Grade Level: _____

Appendix D

October Peak School – grades 4,5,6

	Core Knowledge® Content	State Standards
Language Arts	<p>Fourth Grade</p> <p>V. Sayings and phrases</p> <p>As the crow flies Go to pot Laugh and the world laughs with you Run of the mill</p> <p>Fifth Grade</p> <p>I. Reading And Writing</p> <p>See topics of instruction from August and September</p> <p>II. Poetry</p> <p>I Hear America Singing (Walt Whitman) I, too, sing America (Langston Hughes) The Snowstorm (Ralph Waldo Emerson)</p> <p>III. Fiction and Drama</p> <p>A. Stories</p> <p><i>The Secret Garden</i> (Frances Hodgson Burnett)</p> <p>V. Sayings and Phrases</p> <ul style="list-style-type: none"> • Eureka! • Sit on the fence 	<p>Strand 1: Reading Process</p> <p>Concept 5: Fluency</p> <p>PO 1. Read from familiar prose and poetry with fluency and appropriate rhythm, pacing, intonation, and expression relevant to the text.</p>
History & Geography	<p>FOURTH GRADE</p> <p>IV. Reformers</p> <ul style="list-style-type: none"> • Abolitionists • Dorothea Dix and the treatment of the insane. • Horace Mann and public schools • Women’s rights <ul style="list-style-type: none"> Seneca Falls convention Elizabeth Cady Stanton Lucretia Mott Amelia Bloomer Sojourner Truth <p>V. Symbol and Figures</p> <ul style="list-style-type: none"> • Recognize and become familiar with the significance of <ul style="list-style-type: none"> <i>Spirit of ‘76</i> (painting) White House and Capitol Building <p>FIFTH GRADE</p> <p>1. Westward Expansion</p> <p>A.. Westward Expansion before the Civil War</p> <ul style="list-style-type: none"> • Early Exploration of the west Daniel Boone, Cumberland Gap, Wilderness Trail. Lewis and Clark, Sacagawea “Mountain men” fur trade Zebulon Pike, Pike’s Peak • Pioneers Getting there in wagon trains, flatboats, steamboats. Many pioneers set out from St.Louis (where the Missouri and the Mississippi River meet) 	<p>1SS-E19. Describe the successes and failures of the reforms during the Age of Jacksonian Democracy, with emphasis on:</p> <p>PO 1. the extension of the franchise to all white men</p> <p>PO 2. Indian removal, including the Trail of Tears</p> <p>PO 3. the abolition movement, including the role of the Quakers, Harriet Tubman, and the Underground Railroad</p> <p>PO 4. Suffrage for women, including Seneca Falls and Elizabeth Cady Stanton</p> <p>1SS-E20. Describe the aims and impact of the Western expansion and settlement of the United States, with emphasis on:</p> <p>PO 1. how and from whom the United States acquired the Northwest Territory, Louisiana Territory, Florida, Texas, Oregon Country, the Mexican Cession and the Gadsden Territory</p>

	<p>Land routes: Santa Fe Trail and Oregon Trail Mormons (Latter-day Saints) settle in Utah, Brigham Young, Great Salt Lake Gold Rush, '49ers</p> <ul style="list-style-type: none"> • Geography Erie Canal connecting the Hudson River and Lake Erie Rivers: James, Hudson, St. Laurence, Mississippi, Missouri, Ohio, Colombia, Rio Grande Appalachian and Rocky Mountains Grate Planes stretching from Canada to Mexico Continental Divide and the flow of rivers: east Of the Rockies to the Arctic or Atlantic Oceans, west of the Rockies to the Pacific Ocean • Indian Resistance More and more settlers move onto Indian lands, treaties made and broken Tecumseh (Shawnee): attempted to unite tribes in defending their land Battle of Tippecanoe Osceola, Seminal leader <p>Fifth Grade I. World Geography A. Spatial Sense (Working with Maps, Globes, and other geographic tools)</p> <ul style="list-style-type: none"> • Climate Zones: Artic, Tropic, Temperate • Time Zones (review from grade 4th); Prime Meridian (0 degree); Greenwich, England; 180 Line (International Date Line) <p>IV. U.S. Geography</p> <ul style="list-style-type: none"> • Fifty States and Capitols Continuation from last month 	<p>PO 2. how geography and economic incentives influenced early American explorations, including those of Lewis and Clark, James O. Pattie and the fur trade</p> <p>PO 5. the impact of westward expansion on American Indian nations, including broken treaties and the Long Walk of the Navajos</p>
Visual Arts	<p>Fifth Grade II. American Art: Nineteenth-century United States</p> <ul style="list-style-type: none"> • Become familiar with the Hudson River School of landscape painting, including Thomas Cole: <i>The Oxbow (The Connecticut River Near Northampton)</i> (also known as <i>View of Mount Holyoke, Northampton, Massachusetts, after a Thunderstorm</i>) Albert Bierstadt: <i>Rocky Mountains, Lander's Peak</i> 	<p>1AV-E2. Demonstrate increasing technical ability and skill to complete visual arts assignments</p> <p>PO 1. Demonstrate technical ability and skill to complete visual arts assignments PO 2. Demonstrate improvement of technical ability and skill in a sequence of one's own artwork PO 3. Produce a portfolio demonstrating improved technical ability and skill</p>
Music	<p>I. Elements of Music See Topics for instruction through out the year from August-September, as well as ; - Understand the following notation and terms: Names of lines and spaces on the treble clef; middle C Treble clef, staff, bar line, double bar line, measure, repeat signs,</p>	<p>1AM-E1. Expand note-reading ability to include sixteenth and dotted notes, and rests in 6/8, 3/8, and all brave (cut time) meter signatures</p> <p>PO 1. Identify meter and note/rest values PO 2. Compare/contrast meter and note/rest</p>

	<p>Whole note, half note, quarter note, eighth note, Whole rest, half rest, quarter rest, eighth rest, grouped sixteenth notes, Tide note, dotted noted, Sharps, flats, <i>Da capo, al fine</i>, Meter signature: 4/4 or common time 2/4, 3/4, 6/8, Quiet; <i>pp, p, mp</i>, Loud; <i>ff, f, mf</i>.</p> <p>III. American Musical Tradition (fifth grade)</p> <ul style="list-style-type: none"> Spirituals Originated by African Americans, many spirituals go back to the days of slavery. Familiar spirituals: Down by the River Sometimes I Feel Like a Motherless Child Way Faring Stranger We Shall Overcome 	<p>values PO 3. Speak and/or sing and/or play examples of music utilizing the above elements</p> <p>1AM-E9. Identify and demonstrate the basic physical and scientific properties of the technical aspects of music (e.g., acoustics, resonance, intervals, materials used in the construction of instruments, computer keyboards and workstations, Musical Instrument Digital Interface [MIDI], Computer Assisted Musical Instruction [CAMI], mathematics, human anatomy)</p> <p>PO 1. Explain the nature of sound as vibration PO 2. Describe the effect an instrument's physical properties will have upon its sound PO 3. Analyze the qualities that differentiate one instrument or voice from another</p>
<p>Mathematics</p>	<p>Fourth Grade</p> <p>I. Number and Number Sense</p> <ul style="list-style-type: none"> Round to the nearest ten, hundreds, and thousands Identify perfect squares (and square roots) to 144; recognize the square root sign. <p>III. Fractions and Decimals</p> <p>A. Fractions</p> <ul style="list-style-type: none"> Recognize fractions to one-twelfth Identify numerator and denominator <p>IV. Computation</p> <p>A. Multiplication</p> <ul style="list-style-type: none"> Review and reinforce basic multiplication facts to 10 x 100 <p>V. Measurements</p> <ul style="list-style-type: none"> Linear measure: estimate and make linear measurements in yards, feet, and inches (to 1/8 in); and in meter, centimeters, and millimeters. Time: solve problems on elapsed time. <p>VI. Geometry</p> <ul style="list-style-type: none"> Identify and draw points, segments, rays, lines. Identify and draw lines: horizontal; vertical; perpendicular; parallel; intersecting. 	<p>GRADE 4</p> <p>Strand 1: Number Sense and Operations Concept 2: Numerical Operations PO 1: Add whole numbers. PO 2. Subtract whole numbers. PO 5: Multiply multi-digit numbers by two-digit numbers.</p> <p>Strand 1: Number Sense and Operations Concept 3: Estimations PO 3. Estimate length and weight using both the U.S. customary and metric units. PO 4. Estimate and measure for distance.</p> <p>Strand 2: Data Analysis, Probability, and Discrete Mathematics Concept 1: Data Analysis (Statistics) PO 6. Formulate predictions from a given set of data. PO 7. Solve contextual problems using graphs, charts, and tables.</p> <p>Strand 2: Data Analysis, Probability, and Discrete Mathematics Concept 2: Probability PO 5. Compare the outcome of experiments to predictions made prior to performing the experiment. PO 6. Make predictions from the results of student-generated experiments using objects (e.g., coins, spinners and number cubes). PO 7. Compare the results of two repetitions of the same level appropriate probability experiment.</p> <p>Strand 4: Geometry and Measurement Concept 1: Geometry Properties PO 1. Identify the properties of two-dimensional figures using appropriate terminology.</p>

	<p>Fifth Grade</p> <p>I. Number and Number Sense</p> <ul style="list-style-type: none"> Integers Locate positive and negative integers on a number line. Compare integers using $<$, $>$, $=$. Know that the sum of an integer and its opposite is 0. Add and subtract positive and negative integers Using a number line, locate positive and negative whole numbers Round to the nearest ten; hundreds; thousands; and hundred-thousand. <p>II. Ratio and Percent</p> <p>A. Percent</p> <ul style="list-style-type: none"> Recognize the percent sign (%) and understand percent as “per hundred” Express equivalences between fractions, decimals, and percents, and know. $1/10 = 10\%$ $1/4 = 25\%$ $1/2 = 50\%$ $3/4 = 75\%$ <p>III. Fractions and Decimals</p> <p>B. Fractions</p> <ul style="list-style-type: none"> Determine the least common denominator (LCD) of fractions with unlike denominators <p>IV. Computation</p> <p>C. Multiplication</p> <ul style="list-style-type: none"> Write numbers in expanded form using multiplication <p>D. Division</p> <ul style="list-style-type: none"> Estimate the quotient <p>E. Solving problems</p> <p>Sixth Grade</p> <p>I. Number and Number Sense</p> <ul style="list-style-type: none"> Determine the greatest common factor (GCF) of given numbers. Determine the least common multiple (LCM) of given numbers. <p>II. Ratio, percent, and proportion</p> <p>A. Ratio and Proportion</p> <ul style="list-style-type: none"> Solve proportions, including word problems involving proportions with one unknown. Use ratios and proportions to interpret map scales and scale drawing. <p>B. Percent</p> <ul style="list-style-type: none"> Convert between fractions, decimals, and percents. Find the given percent of a number, and find what percent a given number is of another number. 	<p>PO 3. Draw points, lines, line segments (open or closed endpoints), rays or angles.</p> <p>PO 4. Classify angles. (e.g., right, acute, obtuse, straight)</p> <p>PO 5. Classify triangles as right, acute, or obtuse.</p> <p>GRADE 5</p> <p>Strand 1: Number Sense and Operations</p> <p>Concept 1: Number Sense</p> <p>PO 5. Order whole numbers, fractions, and decimals.</p> <p>PO 6. Compare two whole numbers, fractions and decimals. (e.g., $1/2$ to 0.6)</p> <p>PO 8. Determine the equivalence between and among fractions, decimals, and percents in contextual situations.</p> <p>Strand 1: Number Sense and Operations</p> <p>Concept 2: Numerical Operations</p> <p>PO 1. Select the grade level appropriate operation to solve word problems.</p> <p>PO 2. Solve word problems using grade level appropriate operations and numbers.</p> <p>PO 3. Round to estimate quantities.</p> <p>PO 7. Apply grade level appropriate properties to assist in computation.</p> <p>Strand 1: Number Sense and Operations</p> <p>Concept 3: Estimation</p> <p>PO 1. Solve grade level appropriate problems using estimation.</p> <p>Strand 2: Data Analysis, Probability, and Discrete Mathematics</p> <p>Concept 1: Data Analysis (Statistics)</p> <p>PO 1. Formulate questions to collect data in contextual situations.</p> <p>PO 2. Construct a double-bar graph, line plot, frequency table or three set Venn diagram with appropriate labels and titles from organized data.</p> <p>Strand 2: Data Analysis, Probability, and Discrete Mathematics</p> <p>Concept 3: Direct Mathematics: Systematic Listening and Counting</p> <p>PO 1. Find all possible combinations when 1 item is selected from each of 2 sets of different items, using a systematic approach. (e.g., shirts: t-shirts, tank top, sweatshirt; pants: shorts, jeans)</p> <p>GRADE 6</p> <p>Strand 1: Number Sense and Operations</p> <p>Concept 1: Number Sense</p> <p>PO 6. Determine the least common multiple for two whole numbers.</p> <p>PO 7. Express a whole number as a product of its prime factors using exponents when appropriate.</p> <p>Strand 1: Number Sense and Operations</p> <p>Concept 2: Numerical Operations</p> <p>PO 4. Apply the symbols for “...” or “___” to</p>
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	<p>III. Computation</p> <p>C. Multiplication</p> <ul style="list-style-type: none"> Distribute property for multiplication over addition or subtraction, that is, $A \times (B+C)$ or $A \times (B-C)$: understand its use in procedures such as multi-digit multiplication. <p>D. Solving problems</p> <ul style="list-style-type: none"> Solve problems with more than one operation, according to order of operations (with and without a calculator) <p>VI. Geometry</p> <ul style="list-style-type: none"> Angles Bisect an angle Triangles: Construct different kinds of triangles Find Area (A) of planes 	<p>represent repeating decimals and “.” to represent ratios, superscripts as exponents.</p> <p>PO 5. Use grade level appropriate mathematical terminology.</p> <p>PO 14. Solve Problems involving fractions or decimals (including money) in contextual situations.</p> <p>Strand 2: Data Analysis, Probability, and Discrete Mathematics</p> <p>Concept 4: Discrete Mathematics: Vertex-Edge Graphs</p> <p>PO 1. Find the shortest route on a map from one site to another (vertex edge graph)</p> <p>Strand 4: Geometry and Measurement</p> <p>Concept 1: Geometry Properties</p> <p>PO 1. Determine the appropriate measure of accuracy within a system for a given contextual situation. (e.g., would you measure the walls of your bedroom wall using inches or feet?)</p> <p>PO 5. Convert within a single measurement system (US customary or metric). (e.g., how many ounces are equivalent to 2 pounds?)</p> <p>PO 8. Draw a two-dimensional shape that has line symmetry.</p> <p>PO 9. Draw a two-dimensional shape with given numbers of lines of symmetry.</p> <p>PO 11. Draw two congruent geometric figures.</p> <p>Strand 5: Structure and Logic</p> <p>Concept 2: Logic, Reasoning, Arguments, and Mathematical Proof</p> <p>PO 1. Solve a simple logic problem from given information. (Which of three different people live in which of three different colored houses?)</p>
<p>Science</p>	<p>From Fifth Grade</p> <p>VI. Chemistry: Matter and Change.</p> <p>B. Elements</p> <ul style="list-style-type: none"> Elements have atoms of only one kind, having the same number of protons. The Periodic Table: organizes elements with common properties Atomic symbol and atomic number Some well-known elements and their symbols. Hydrogen H Helium He Carbon C Nitrogen N Sodium Na Aluminum Al Silicon Si Chlorine Cl Iron Fe Copper Cu Silver Ag Gold Au Two important categories of elements: metals and non-metals. Metals comprise about 2/3 of the known elements. Properties of metals: most are shiny, ductile, 	<p>5SC-E1. Examine, describe, compare, measure, and classify objects and mixtures of substances based on common physical and chemical properties (e.g., states of matter, mass, volume, electrical charge, density, boiling points, pH, magnetism, solubility)</p> <p>PO 1. Identify common physical and chemical properties</p> <p>PO 2. Compare physical and chemical properties of common objects</p> <p>PO 3. Compare physical and chemical properties of common mixtures</p> <p>(Grades 6-8)</p> <p>PO 1. Classify objects and mixtures of substances based on physical and chemical properties</p> <p>PO 2. Analyze physical and chemical properties of objects and mixtures</p>

malleable, and conductive.

Review from fourth grade.

II. Chemistry: basic terms and concepts.

D. Solutions

- A solution is formed when a substance (the solute) is dissolved in another substance (dissolvent), such as when sugar or salt is dissolved in water; the dissolved substance is present in the solution even though you cannot see it.
- Concentration and saturation (as demonstrated through simple experiments with crystallization)

Introduce from fifth grade

VI. Chemistry: Matter and Change.

C. Chemical and Physical Change.

- Chemical change changes what a molecule is made up of and results in a new substance with a new molecular structure. Examples of chemical change: rusting of iron, burning of wood, milk turning sour.
- Physical change changes only the properties or appearance of the substance, but does not change what the substance is made up of. Examples of physical change: cutting wood or paper, breaking glass, freezing water.

From fifth grade

VII. Science Biographies

- Percy Lavon Julian
- Ernest Just
- Carl Linnaeus

Appendix E

Sayings and Phrases

Grade Level: Kindergarten and First Grade

Written by: Kelly Field, The PEAK School

Length of Unit: yearlong

I. Lessons: Sayings and Phrases

A. Daily Objectives

1. Concept Objectives

- a. Recognize that print represents spoken language and conveys meaning (Az Standard: Strand 1, Concept 1, PO 1.)
- b. Hold a book right side up and turn pages in the correct direction (Az. Standard: Strand 1, Concept 1, PO 2.)
- c. Start at the top left of the printed page, track words from left to right, using return sweep, and move from the top to the bottom of the page (Az. Standard: Strand 1, Concept 1, PO 3.)
- d. Demonstrate the one-to-one correlation between a spoken word and a printed word (Az. Standard: Strand 1, Concept 1, PO 8.)
- e. Produce a variety of artworks to communicate ideas, experiences and stories (Az. Standard: 1AZ-R1. PO 3.)

2. Lesson Content: Kindergarten and first grade sayings and phrases.

3. Skill Objectives

- a. Students will track words as we read the saying or phrase as a class.
- b. Students will discuss possible meanings and examples of the saying or phrase.
- c. Students will trace the saying or phrase in the Sayings and Phrases Journal.
- d. Students will copy the saying or phrase using correct sentence format including upper and lower case letters and appropriate punctuation.
- e. Students will illustrate the saying or an example of the saying.
- f. Students will write a sentence or two to describe their illustration.

B. Materials

1. Kindergarten and First Grade Sayings and Phrases Journal
2. pencils
3. crayons

C. Procedures/Activities

1. In the beginning of the year introduce the students to their Sayings and Phrases Journal and explain to them that we will be discussing a new saying or phrase every week.
2. Describe what a saying or phrase is and how we use them in everyday life. Demonstrate how we will read the saying or phrase together, how to trace and copy the saying or phrase and expectations for illustrations and writing.
3. On the first day of using the journal, do each part together as a class with consistent checking of students understanding. For example, read the saying as a group (a few times) reinforce tracking and then trace each letter of the saying or phrase as a class.
4. Lead a discussion as to what the saying or phrase means. Encourage students to give other examples and explain the meaning in their own words.
Next, demonstrate how to copy the saying or phrase in the space provided. Remember to tell the students to finger space, use upper and lower case letters and to use punctuation. Finally, illustrate the saying or phrase together (guided drawing) and write about the illustration together (guided writing). Remind the students that you will have different expectations for kindergartners and first graders illustrations and writing.

5. Follow the above for each saying or phrase. As the year progresses, provide less direct instruction and encourage the students to demonstrate more independence in their illustrations and writing.

D. Assessment/Evaluation

1. Students will be assessed on their participation in our group discussion and their ability to communicate their understanding of the saying or phrase through their illustration and writing.
2. Students will be assessed on their ability to track words as we read the saying or phrase as a class.
3. Students will be assessed on their progress on handwriting, writing and illustrating throughout the year.

II. BIBLIOGRAPHY

Hirsch, Jr. E.D. *What Your First Grader Needs to Know*. New York: Dell Publishing, 1991, ISBN 0-385-31026-9

Hirsch, Jr. E.D. *What Your Kindergartner Needs to Know*. New York: Dell Publishing, 1991, ISBN 0-385-31026-9

Music with Mozart

Written by: Katherine Reed, The PEAK School

Grade Levels: Second/Third Grade

I. LESSON: Timelines of Mozart's Life

A. Daily Objectives

1. Concept Objective(s):
 - a. Use appropriate terminology (e.g., tempo, meter, style, tonality, quarter notes/whole notes, types of musical instruments and voices.) to describe and explain music. AZ standard 3AM-F1
2. Lesson Content
 - a. Keyboard Instruments: recognize that the piano and organ are keyboard instruments.
 - b. Listen to a variety of keyboard music including Mozart, Beethoven, Mendelssohn and Bach.
3. Skill Objective(s)
 - a. Students will identify various musical terms PO1
 - b. Students also will describe a piece of music using appropriate terminology. PO2

B. Materials

1. Construction Paper
2. Markers
3. Composers book Meet the Great Composers

C. Key Vocabulary

1. Tempo- The rate of speed music is played in.
2. Meter- a planned rhythm
3. Style- A certain type of music
4. Tonality- a sound on one pitch

D. Procedures/Activities

1. Hand out information sheets about Mozart.
2. The students will read this information together in groups. This will help the younger students understand the information.
3. The teacher will discuss what the students read with them in a round table discussion.
4. The students will then use this information to make a timeline of Mozart's life. This assignment will be done outside of class.
5. The next class period the students will share their timelines with the class.

E. Assessment/Evaluation

1. Students will answer questions in class about Mozart's life.
2. Students will share their timelines with the class.

II. BIBLIOGRAPHY

Mongomery, J. & Hinson, M. *Meet the Great Composers*. Van Nuys, CA. 0882848550

Music with Mozart

Written by: (Katherine Reed, The PEAK School)

Grade levels: Fourth/Fifth/Sixth

I. LESSON: Timelines of Mozart's Life

A. Daily Objectives

1. Concept Objective(s)
 - a. Analyze the uses of dynamics, pitch, duration, melodic contour, structure, timbre, and tempo in aural examples of diverse genres and cultures. (AZ standard 2 AM-E2)
2. Lesson Content
 - a. Composers and their music: Wolfgang Amadeus Mozart, The Magic Flute, selections, including : Overture; Introduction, Zu Hilfe! Zu Hilfe!; Aria, Der Vogelfanger bin ich ja; Recitative and Aria, O zittre nicht mein lieber Sohn!; Aria Ein Madchen oder Webchen; duet, Pa-pa-gena! Pa-pa-gena!; Finale, Recitative and Chorus. Die Strahlen der Sonne.
 - b. The classical symphony: Wolfgang Amadeus Mozart, Symphony No. 40; The classical concerto: soloist cadeza; Wolfgang Amadeus Mozart, Piano Concerto No. 21
3. Skill Objective(s)

Students will identify characteristics of various musical genres and styles.

B. Materials

1. Construction Paper
2. Markers
3. CD Mozart Symphonies Nos 40-41
4. Composers book Meet the Great Composers

C. Key Vocabulary

1. Genres- A certain grouping or classification of a music type
2. Dynamics- full of energy
3. Pitch- highness or lowness of sound
4. Duration – the time that something happened
5. tempo- the rate of speed music is played in.

D. Procedures/Activities

1. Hand out information sheets about Mozart.
2. The students will read this information together in groups. This will help the younger students understand the information.
3. The teacher will discuss what the students read with them in a round table discussion.
4. The students will then use this information to make a timeline of Mozart's life. This assignment will be done outside of class.
5. The next class period the students will share their timelines with the class.

E. Assessment/Evaluation

1. Students will answer questions in class about Mozart's life.
2. Students will share their timelines with the class.

II. BIBLIOGRAPHY

Mongomery, J. & Hinson, M. *Meet the Great Composers*. Van Nuys, CA. 0882848550

Music with Mozart

Written by: (Katherine Reed, The PEAK School)

Grade Level: First Grade

I. LESSON: Timelines of Mozart's Life

A. Daily Objectives

1. Concept Objective(s): Sing/play a varied repertoire of songs from different genres and diverse cultures. (AZ standard 1 AM-F3)
2. Lesson Content : Composers - Become familiar with Wolfgang Amadeus Mozart as a composer who wrote what is know as classical music, and listen to the Allegro (first movement) from A Little Night Music).
3. Skill Objective(s): Students will sing and or play songs of various genres. (PO4)

B. Materials

1. Construction Paper
2. Markers
3. Composers book: *Meet the Great Composers*

C. Key Vocabulary

1. Classical Music- a certain kind of music

D. Procedures/Activities

1. Teacher will read a story of Mozart's life.
2. The teacher will lead a discussion of Mozart's life.
3. The class will make a timeline of Mozart's life on the Board
4. The students will draw a picture of what they think Mozart looked like.

E. Assessment/Evaluation

1. Students will answer questions in class about Mozart's life.
2. Students will share their drawings of Mozart.
3. The following lesson students will answer questions regarding Mozart.

II. BIBLIOGRAPHY

Mongomery, J. & Hinson, M. *Meet the Great Composers*. Van Nuys, CA. 0882848550

Ancient Greek Polis and the Beginnings of Democracy

Grade Level: Sixth (with adaptation for fifth and Fourth grades)

Written by: Leonor Gonzalez, PEAK School

Length of Unit: One Lesson

I. Lesson: Greek polis (city-state)

A. Daily Objectives

1. Concept Objectives
 - a. Students will understand the social organization of Greek city-states that share a common language and religion.
 - b. Students will understand aspects of Athenian democracy, such as the Assembly, ostracism, the boule, public and private law, and the strategoi.
 - c. Students will describe the rights of women, slaves and metics.
 - d. Students will recognize the importance of education to Athenians
2. Lesson Content from Core Knowledge sequence
 - a. The Greek polis (city-state) and patriotism
 - b. Beginnings of democratic government: Modern American democratic government has its roots in Athenian democracy (despite the obvious limitations on democracy in ancient Greece, for example, slavery, vote denied to women)
 - The Assembly
 - Suffrage, majority vote
 - c. The “classical” ideal of human life and works
 - The idea of the well-rounded individual and worthy citizen
3. Skill Objectives
 - a. Students will practice rhetoric by participating in a debate Greek style. (Arizona Arts Standard 2AT-E3)
 - b. Students will listen and respond to inferential and critical recall questions (Arizona History Standard 1SS-E8)
 - c. Students will utilize a variety of resources to access information (Arizona History Standard 1SS-E1)
 - d. Students will develop new vocabulary (Arizona Language Arts Standard Strand 1, concept 4)
 - e. Students will recognize purpose in ancient Greek studies (Arizona History Standard 1SS-E12)

B. Materials

1. Pen and Pencil
2. Notebook
3. Pearson Learning Core Knowledge history Book Grade 6
4. Handouts from Teacher Resource Book
5. Dictionary
6. Reference resource books
7. Computer with internet

C. *Key Vocabulary*

1. Suffix-archy: Greek for leader
2. Oligarchy: “rule of the few”. Power held by few wealthy men.
3. Monarchy: a government ruled by only one person.
4. Anarchy: the complete absence of government.
5. Suffix-cracy: to rule or power
6. Aristocracy: “Rule of the best” system which a few noble or upper-class families held power
7. Democracy: power shared by a large number of citizens
8. Technocracy: government by technicians, controlled by scientist and engineers.
9. Plutocracy: government by the wealthy.
10. City-state: An independent town or city that governs it self and the land around it.
11. Asia Minor: Another name for the Anatolia Peninsula, where much of Turkey is located.
12. Ostracize: In ancient Athens, to banish or send away; nowadays it means to “drive someone out of social life”.
13. Rhetoric: The art of using language, especially to persuade others.

D. *Procedures/Activities*

1. Teacher will display a world map focusing in the Mediterranean Sea and the countries surrounding it.
2. Students will have a copy of a blow up detail of the Mediterrean Sea map and will be able to locate cities such as Sparta, Athens, Salamis, Corinth, and other city-states from ancient Greece.
3. Teacher will present the phrase “government of the people, by the people, and for the people” in order to introduce the idea of democracy.
4. Teacher will write on the board vocabulary words and
5. Students will read Chapter 1 “The Ancient Greek City-States” of Ancient Greece and Rome from History and Geography Level 6,

E. *Assessment*

1. Teacher will assess the understanding of vocabulary by looking at students responses on notebooks.
2. Teacher will assess understanding of material read by handing out a review questionnaire.
3. Teacher assess the understanding of City-Sates by viewing the performance of students during the Activity: Create your own City-State

Appendix F

The PEAK School Implementation Analysis

Grade Level	Language Arts/ English	History & Geography	Visual Arts	Music	Mathematics	Science	Grade Level Average
Kinder- garten	4/4=100%	7/7=100%	3/3=100%	3/3=100%	6/6=100%	7/7=100%	100 %
Grade 1	4/4=100%	8/8=100%	3/3=100%	3/3=100%	6/6=100%	8/8=100%	100 %
02-03 Grade 2	4/4=100%	12/12=100%	5/5=100%	2/3=66%	5/6=83%	5/6=83%	87%
03-04	¼=25%	1/12=8%	5/5=100%	3/3=100%	6/6=100%	0/6=0%	55%
02-03 Grade 3	4/4=100%	1/6=16%	0/3=100%	2/3=66%	5/6=83%	0/8=0%	61%
03-04	4/4=100%	6/6=100%	3/3=100%	3/3=100%	6/6=100%	8/8=100%	100%
02-03 Grade 4	5/5=100%	4.5/10=45%	2/5=40%	1/3=33%	4/6=66%	2/7=28%	52 %
03-04	1/5=25%	7/10=70%	4/5=80%	3/3=100%	6/6=100%	4/7=57%	72%
02-03 Grade 5	1/4=25%	5/11=45%	1/3=33%	1/4=25%	4/8=50%	4/7=100%	39%
03-04	4/4=100%	6/11=55%	2/3=67%	4/4=100%	8/8=100%	2/7=29%	75%
02-03 Grade 6	3/4=75%	2/9=22%	.5/1=50%	1/2=50%	1/8=12%	3/6=50%	43%
03-04	2/4=50%	1/9=11%	0/1=0%	2/2=100%	8/8=100%	0/6=0%	43.5%

In a multi-age setting the students receive Core Knowledge[®] over a 2 year setting for 2nd and 3rd grade. The 4th -6th graders will receive their Core instruction over the three year period. All students will have had all of the Core Knowledge[®] Content by the time they graduate from the 6th grade.

	2002-2003	2003-2004	2004-2005
2nd/3rd	2nd Core Knowledge Content	3rd Core Knowledge Content	2nd Core Knowledge Content
4th/5th/6th	4th and 5th Core Knowledge Content	5th and 4th Core Knowledge Content	6th Core Knowledge Content
4th/5th	N/A	N/A	N/A
6th/7th/8th	N/A	N/A	N/A

	2005-2006
2nd/3rd	3rd Core Knowledge Content
4th/5th/6th	N/A
4th/5th	4th Core Knowledge Content
6th/7th/8th	7th Core Knowledge Content