Curriculum Mapping 101

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- What is Mapping?
- Why Map?
- What are basic tasks schools carry out with Mapping?
- How can Mapping impact student achievement?
- How can Mapping serve as a HUB for all school improvement efforts?

FOUR PHASES for CURRICULUM MAPPING TRAINING

I. Laying the Foundation
II. Launching the Process /Getting Started
III. Maintaining, Sustaining, and Integrating It into the System
IV. Advanced Mapping Tasks

I. Laying the Foundation

- The Prologue to Mapping
- Establishing the Reasons for Mapping
- Creating a Shared Vision/understanding
- Identifying Your Leadership Support Structure

What is Curriculum Mapping?

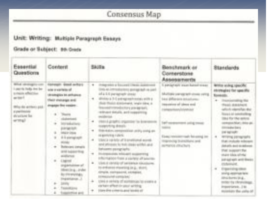
A path or course to run in small steps…

What is Curriculum Mapping?

a process for collecting and maintaining an operational data base of the curriculum in a school and then using it to improve student performance.

Curriculum Mapping is a verb.

Creating the maps themselves



…And then

Using them to make instructional decisions

What We Know About Effective Schools

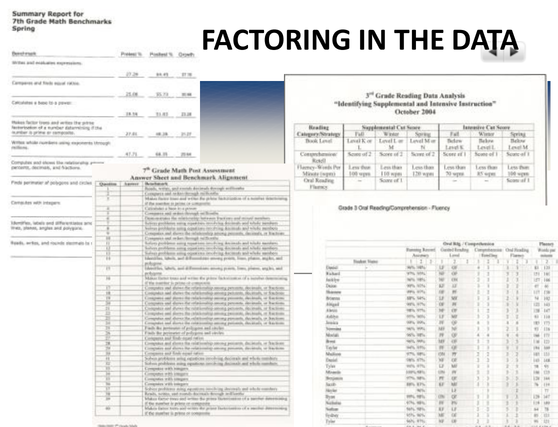
A “guaranteed and viable curriculum is the #1 school-level factor impacting student achievement.”

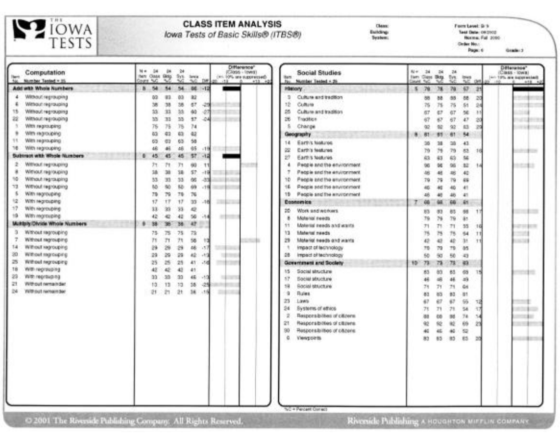
-Marzano, What Works in Schools

Current Curriculum

- What are the strengths of the current curriculum?
- What changes if made would better prepare your students for the 21st century?

FACTORING IN THE DATA





The Standards Problem

- 160 national and state-level standards documents (more than 2000 pages)
- A synthesis yielded 255 standards and 3,968 benchmarks
- Require an additional 15,465 hours for students to learn them all
- 9 more years of education

Factoring in the Future

- Kindle
- Blogs
- Wikis
- Twitter
- Facebook
- Google Docs
- Podcasts
- Artificial Intelligence
- YouTube
- Text messaging
- Online photo streams
- Google Earth
- Smart boards
- Semantic Web
- Web 2.0
- Media Grids
- Global Network

How can we use data and incorporate new discoveries, 21st Century Skills, new innovations, and new technologies to design a curriculum for the Future?

Reasons for Mapping….

- Common Language
- Gain information
- Avoid Repetitions
- Identify Gaps
- 21st Century Skills
- Integration of Literacy
- Address Deficit Areas
- Higher-order Thinking
- Other areas….???

II. Launching the Process /Getting Started

- Developing Consensus and/or Individual Maps
- Initiating the Review Process
- Adapting the Process for Special Populations
- Identifying and Choosing the Right Technology

Types of Maps

Individual Maps

- Diary Maps
- Projection Maps

Collaborative Maps

- Consensus Maps
- Master Maps
- Essential Maps
- Core Maps
- District Maps

Consensus Map Template

Unit:
Grade or Subject:

Essential Questions	Concept/Content	Skills	District Benchmark Assessments	Standards

Curriculum Map — American Citizenship – Eighth Grade

	August	September	October	November	December
Essential Questions	• Why did the founders make the Constitution a flexible document? • Why are the Bill of Rights important? • Why should the government be balanced?	• Why have a Congress? How would your answer affect the citizens/people? • Is there a better way? • How does a bill become law?	• Why would anyone want to be President? • Why does government create so much red tape?	• Should all citizens have equal justice under the law? How can we maintain equal rights for all? • What should be considered a crime? • Why do we need a criminal justice system?	• What powers should states have? • Why don't we have more than 50 states? • Why do we have state government?
Content	• Formation of Government • Ideals of the Constitution • Three branches of government • Bill of Rights • Amendment process of the Constitution	• Legislative Branch - Powers of the Branch - Qualifications, duties, and powers of the members - Organization of Leg. Branch - Bill into Law * Steps * Process * Effect(s) on citizens	• Executive Branch - Powers of the Branch - Qualifications, duties, and powers of the Pres./VP - Organization of Exec. Branch - Executive Departments and the Cabinet • Election Process	• Judicial Branch - Kinds of Laws - Right to a Fair Trial - Federal Court System - Supreme Court - Important Court Cases - Kinds of laws - Juvenile Justice System • Civil Rights	• State Government - Executive - Legislative - Judicial - Qualifications, Powers, and Roles of each Branch - State of Iowa Constitution
Skills	• Describes the impact of the English on the United States Government • Analyzes the effects of the Bill of Rights on citizens • Describes the amendment process • Analyzes key amendments and their effects on citizens	• Describes the qualifications, duties, and powers of the members of the Leg. Branch • Demonstrates the organization of the Leg. Branch • Identifies the steps used in passing a bill into law • Demonstrates how a bill becomes law • Analyzes the effects of the Leg. Branch on citizens • Develops opinions using supportive ideas (RS)	• Describes the qualifications, duties, and powers of the executive branch • Analyzes the effects of the executive branch on citizens • Describes the election process at the national levels • Differentiates facts from opinions (RS)	• Describes the qualifications, duties, and powers of the judicial branch • Analyzes the effects of the judicial branch on citizens • Identifies major court cases that impacted the civil rights movement • Develops opinions using supportive ideas (RS)	• Compares and contrasts different forms of state government • Describes the qualifications, duties, and powers of the Legislative, Executive, and Judicial Branches of State Governments • Analyzes the effects of the state government on its citizens • Identifies the different levels of the court system in Iowa
Assessments	• Study Guides, quizzes, tests/essays • Write your own Bill of Rights • Create Your Own Country • Current events (topic individual rights)	• Graphic Organizer on steps used to pass bill into law • Bill into Law Performance Task includes: - Roles determined by qualifications, duties, and powers of the members - Organization includes House and Senate, committees, process for bill into law • Persuasive Paper: "How is the "law" going to affect the students (the people)? • Debate (Interdisciplinary-SS/LA) - Why have a Congress? - Is there a better way?	• Mock elections/ Campaigning Techniques	• Mock Trial • "Who am I? Civil Rights Research	• Letter to a state legislator

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Curriculum Map — Math – Fourth Grade

Year: 2004-2005
Revised 3/31/05

Essential Questions	• What strategies for multiplying and dividing do I know and use? • How are multiplication and division the same and how are they different? • What are fractions? • How do I compute multi-digit addition, subtraction, multiplication, and division problems?	• How can I describe and extend numerical patterns? • How can signs be applied to complete equations? • What mathematical properties do I know?	• How do I which strategy to apply to solve a problem?	• How do I know which strategy to apply to solve a problem?	• What kind of information is best displayed on the different kinds of graphs? • How do I know which type of graph to use with a data I have collected?	• What is the relationship between area, perimeter, and volume??
Content	**Numbers and Operations** - Comparing/Ordering Numbers - Number Identification - Computation Addition Subtraction Multiplication Division - Place Value - Fractions - Estimation - Decimals	**Algebraic Thinking** - Patterns and Sequences - Mathematical Relationships	**Problem Solving**	**Measurement** - Time - Money - Calendar - Systems of Measurement	**Data Analysis and Probability** - Graphing/Data - Statistics	**Geometry and Spatial Sense** - Geometry - Spatial Sense
Skills	**Comparing/Ordering Numbers** ✓✓ Compares and orders numbers 0-10,000 ✓ Compares and orders numbers 0-1,000,000 **Number Identification** ✓✓ Identifies, reads, and writes numbers to 100,000 ✓ Identifies, reads, and writes numbers to 1,000,000 **Computation** **Addition** ✓✓ Adds four-digit numbers with regrouping ✓ Demonstrates automaticity with basic addition facts to 18 (R) ✓ Adds six-digit numbers with regrouping **Computation** **Subtraction** ✓✓ Subtracts five-digit numbers with regrouping ✓ Demonstrates automaticity with basic subtraction facts to 18 (R) ✓ Subtracts six-digit numbers with regrouping **Computation** **Multiplication** ✓✓ Demonstrates automaticity with multiplication facts through 10x10 ✓✓ Multiplies a two-digit by two-digit number ✓ Multiplies a three-digit number by a two-digit number **Computation** **Division** ✓✓ Divides a three-digit number by a one-digit number ✓ Demonstrates automaticity with division facts through 8 ✓ Explains relationship of multiplication and division	**Patterns and Sequences** ✓✓ Completes numerical patterns ✓ Skip counts by 25's to 100 (R) **Mathematical Relationships** ✓✓ Applies correct operation to complete an equation: x, ÷, - ✓ Uses symbols to construct number sentences: <, >, =, ( ) ✓ Solves open equations using algebraic symbols: <, >, =, ( ) ✓ Recognizes the role of parentheses in the order of operations ✓ Identifies and applies the associative, identity, communicative, distributive, and zero properties to compute whole numbers	✓ Uses a variety of appropriate strategies to solve problems - Uses manipulatives - Draws a picture - Creates a pattern - Sorts information - Classifies information - Writes a number sentence - Makes a table or graph - Creates a model - Guess and check (R) ✓ Uses a variety of appropriate strategies to solve problems - Works backwards - Makes a list ✓ Determines the information needed to solve word problems (R) ✓ Explains in writing how a problem is solved (R) ✓ Applies the appropriate operation, addition, subtraction, multiplication, or division to solve single or multi-step word problems	**Time** ✓✓ Tells time before and after the hour (R) ✓✓ Differentiates between AM and PM (R) ✓✓ Tells time to the minute (R) ✓✓ Calculates elapsed time to the minute **Money** ✓✓ Counts combinations of coins and bills up to $100 ✓✓ Determines fewest coins and bills to make a specified amount ✓✓ Computes correct change ✓✓ Counts back correct change ✓✓ Places decimals correctly to multiply or divide money ✓ Places decimals correctly to add or subtract money (R) ✓ Compares and orders money to a specified amount ✓ Estimates amounts of money	**Graphing/Data** ✓ Makes and reads bar, picture, real, line, and pictographs (R) **Statistics** ✓✓ Analyzes line graphs, pictographs, bar graphs, and circle graphs to gain information ✓ Summarizes information from graphs and tables ✓ Uses tables and graphs to identify trends, understand relationships, and draw conclusions	**Geometry** ✓✓ Calculates and labels perimeter of dimensioned polygons ✓ Calculates and labels area of rectangles ✓ Calculates and labels the volume of a three-dimensional rectangular prism **Spatial Sense** ✓✓ Recognizes congruence and similarity of plane figures ✓ Identifies transformation of shapes ✓ Recognizes acute, obtuse, and right angles

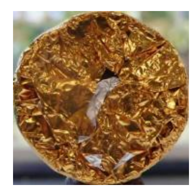
Consensus or Collaborative Map

A COLLABORATIVE DOCUMENT THAT IDENTIFIES THE NONNEGOTIABLES (THE CORE) FOR EACH SUBJECT

- **District's Specific Content**
- **Specific Skills That Support the Standard**
- **Materials and Resources**
- **Common District Assessments**
- **Activities and Instructional Strategies**

Unpacking the Standards

- **Content can be found within the standard… look for nouns**
- **Skills can be found within standards… look for verbs (that can be measured, not "understand" or "demonstrate")**



Unpacking Standards…

ELA Word Recognition – Lit Competency | Content

- Use knowledge of a variety of decoding strategies such as letter-sound correspondence, syllable patterns, decoding by analogy, word structure, use of syntactic (meaning) cues, to read unfamiliar words.
- Integrate sources of information to decode unfamiliar words, self-monitor and self-correct for word-reading accuracy
- Use word recognition skills and strategies quickly, accurately, and automatically when decoding unfamiliar words
- Recognize at sight a large body of high frequency words, and specialized content vocabulary

Unpacking Standards…

ELA Word Recognition – Lit Competency	Content
• Use knowledge of a variety of decoding strategies such as letter-sound correspondence, syllable patterns, decoding by analogy, word structure, use of syntactic (meaning) cues, to read unfamiliar words. • Integrate sources of information to decode unfamiliar words, self-monitor and self-correct for word-reading accuracy • Use word recognition skills and strategies quickly, accurately, and automatically when decoding unfamiliar words • Recognize at sight a large body of high frequency words, and specialized content vocabulary	• Decoding strategies -letter sound recognition -Syllable patterns -Analogy -Word structure -Syntactic -Semantic • Self-Monitoring Strategies • Self-Correcting Strategies • High Frequency Words • Specialized Content Vocabulary

Number Sense (4th Grade) Standard

Students will demonstrate an understanding of numbers, ways of representing numbers, and relationships among numbers and number systems, demonstrate meanings of operations and how they relate to one another, and compute fluently and make reasonable estimates.

Number Sense

- Understanding of numbers
- Representation of numbers (e.g. symbols, manipulatives, number line, pictorial representations)
- Relationship among numbers and number systems
- Meanings of operations (e.g. addition, subtraction, multiplication, division)
- Reasonable Estimates (e.g. rounding, benchmarks, compatible numbers and evaluate the reasonableness of the solution, justify results)

Curriculum Alignment
Alaska Standards for Math – Grade 5

Strand	Stem	PSGLE (Performance Standard Grade Level Expectation)	District's Specific Content	Specific Skills that Support Standard	Resources and Materials	Common District Assessments (formative and summative)	Activities And Instructional Strategies
Numeration (N): Understand and use numeration	The student demonstrates conceptual understanding • of whole numbers to millions by	[5] N-1 reading, writing, ordering, or [counting L]	Whole numbers Reading whole numbers Writing whole numbers Ordering whole numbers Counting whole numbers	Reads written numbers up to 1,000,000 Writes numbers up to 1,000,000 Puts numbers in correct order from least to greatest Demonstrates the ability to complete a sequence to 1,000,000			
	The student demonstrates conceptual understanding • of whole numbers to millions by	[5] N-2 identifying place value positions from tenths to millions	Place value Regrouping	Demonstrates place value with base ten blocks Identifies number place value from tenths to millions Demonstrates ability to regroup using base ten blocks			
	The student demonstrates conceptual understanding • of whole numbers to millions by	[5] N-3 converting between whole numbers written in expanded notation and standard form	Expanded notation Standard form	Translates a number from expanded form to standard form and vice versa (e.g., 300 + 40 + 8 is 348)			

Curriculum Alignment
Alaska Standards for Writing – Grade 8

Strand	Stem	PSGLE (Performance Standard Grade Level Expectation)	District's Specific Content	Specific Skills that Support Standard	Materials and Resources	Common District Assessments (formative and summative)	Activities and Instructional Strategies
Write Using a Variety of Forms	The student writes about a topic by	[8] 3.1.1 Incorporating the thesis statement, which identifies the focus or controlling idea for the entire composition, into an introductory paragraph	Thesis statement Introductory Paragraph Three-five paragraph essay	Integrate a focused thesis statement into an introductory paragraph as part of a 3-5 paragraph essay			
	The student writes about a topic by	[8] 3.1.2 Writing in paragraphs that include relevant details and evidence that support the main idea of the paragraph and thesis statement*	Relevant details Supporting evidence Main idea Three-five paragraph essay	Write a 3-5 paragraph essay with a clear thesis statement, main idea, relevant details, and supporting evidence			
	The student writes about a topic by	[8] 3.1.3 Organizing ideas using appropriate structures (e.g., order by chronology, importance, comparison and contrast, classification and definition) to maintain the unity of the composition with a variety of transitional words and phrases	Logical organization of ideas Sequence of ideas Comparison Contrast Chronology Transition Phrases Unity Classification Definition	Use a writing organizing rubric/structure to maintain composition unity. Make use of a variety of transitional words and phrases to link ideas within and between paragraphs			

Curriculum Alignment
Alaska Standards for Science—Grade 10

Strand	Stem	PSGLE (Performance Standard Grade Level Expectation)	District's Specific Content	Specific Skills that Support Standard	Materials and Resources	Common District Assessments (formative and summative)	Activities and Instructional Strategies
SA1 Students develop an understanding of the processes of science used to investigate problems, design and conduct repeatable scientific investigations, and defend scientific arguments.	The student develops an understanding of the processes of science by:	[10] SA1.1 asking questions, predicting, observing, describing, measuring, classifying, making generalizations, analyzing data, developing models, inferring and communicating.	Scientific inquiry Process skills • Questioning • Predicting • Observing • Describing • Measuring • Classifying • Generalizing • Analyzing • Inferring • Communicating Models	Questions, predicts, observes, describes, measures, records data, classifies, generalizes, analyzes data, and makes inferences during the process of scientific investigations Creates models to illustrate or test concepts and ideas Communicates findings and defends scientific explanations based on evidence			
	The student develops an understanding of the processes of science by:	[10] SA1.2 reviewing pertinent literature, hypothesizing, making qualitative and quantitative observations, controlling experimental variables, analyzing data statistically (i.e., mean, median, mode), and using this information to draw conclusions, compare results to others, suggest further experimentation, and apply their	Scientific inquiry Experimental design Literature review	Reviews scientific literature for information that applies to an investigation Creates a hypothesis Makes and records qualitative and quantitative observations Controls experimental variables Calculates mean, median, and mode for statistical analysis of data Draws conclusions from data and compares conclusions to results			

Individual Map

Is a document that reflects the nonnegotiables and allows the teacher to customize instruction by adding additional skills, appropriate activities, assessments, and essential questions

What information do we collect initially on a map?

- Essential Questions
- Concept/Content
- Skills
- Assessments
- Activities
- Resources/Supporting Materials

Individual Map

Unit:
Grade or Subject:

Essential Questions	Concept/Content	Skills	Assessments	Activities/ Instructional Strategies	Materials/ Resources	Standards

Curriculum Map 2009-2010

Old Trail School
Baker, Cheryl / Math Geometry / Grade 8 (Middle School)

	Essential Questions	Content	Skills	Assessment	Assessment (Linked)	Standards
Quarter 1: Tools of Geometry (Week 1, 3 Weeks)	What is Geometry? Is there just one type of Geometry?	Geometric terms Basic constructions, specifically congruent segments, angles Real number computation	Formally define geometric terms. Recognize and explain the necessity for certain terms to remain undefined, such as point, line and plane. Given a property of points and lines, tell whether it is true in each of the four geometries. Estimate, compute, and solve problems involving real numbers, including ratio, proportion, and percent, and explain solutions. Use mental computation and estimation to determine the reasonableness of answers when using technology. Use algebraic representations and functions to describe and generalize geometric properties and relationships.		Test Chapter 1 Project Baffling Bacteria Extended Problem Other Algebra Cumulative Review Chapter 1	
Quarter 1: Reasoning and Proof (Week 4, 3 Weeks)	What is a "Proof" and how is it used?	Logical thinking, specifically conditional, biconditional Inductive, deductive proof Proof - congruent angles Mathematical communication using extended problems	Make, test and establish the validity of conjectures about geometric properties and relationships using counterexample, inductive and deductive reasoning, and paragraph or two-column proof and critiquing the comments made by others. Prove or disprove conjectures and solve problems. Apply reasoning processes and skills to construct logical verifications or counter-examples to test conjectures and to justify and defend algorithms and solutions. Apply properties of conditionals in real situations. Apply properties of a good definition. Formulate a problem or mathematical model in response to a specific need or situation, determine information required to solve the problem, choose a method for obtaining this information, and set limits for an acceptable solution. Use algebraic representations and functions to describe and generalize geometric properties and relationships.		Test Chapter 2 Other Algebra Cumulative Review Chapter 2	

Unit Design Template

Unit Title: Problem-solving and Data Analysis

Grade Level or Course: 5th Grade Math

Standard(s): Statistics and Probability (S&P): Formulate questions, gather and interpret data, and make predictions

GLE (s):
- Designing an investigation and collecting, organizing, or displaying, using appropriate scale, data in real-world problems using bar graphs, tables, charts, diagrams, or line graphs with whole numbers up to 50.
- Using information from a variety of displays.
- Using mode, median, or range with up to 10 pieces of data with a value of 10 or less Each.

Essential Questions:
How can I analyze data to explain why?
How can I gather information to interpret and justify my answer?

Concept/Content:

Concept: Good mathematicians can solve and explain data using a variety of methods.

Content:
- Types of Data Displays:
  - ✓ Line graphs
  - ✓ Tables
  - ✓ Charts
  - ✓ Diagrams
  - ✓ Bar and line graphs
  - ✓ Venn diagrams
- Mean, median, range, minimum, maximum, and mode
- Methods to solve problems
- Justification of Arguments
- Conjectures/Interpretation of Data

Vocabulary/Specialized terms: justify, logical, support, interpret, analyze, calculate, line graphs, median

Unit Design Template

Skills and Integrated Skills:
- Designs an investigation to collect data
- Organizes or displays data using either bar graphs tables, charts, or diagrams using a scale appropriate to the data up to 50
- Identifies correct display of a given data set
- Calculates the mode, median, or range for a set of numbers
- Interprets information from tables, bar graphs, line graphs, circle graphs, or Venn diagrams to analyze data
- Uses specialized terms to explain their process and findings

Assessment(s):
(i.e. performance Tasks and other evidence)
- Create and explain a graph that includes mean, median, and mode.
- Data strand test
- Excel project using data and analysis – create and explain

Learning Activities:
- Class survey to practice data collection strategies
- Create a-graph activity
- Variables science lab

Materials and Resources:
Math Journal work while in class; and teacher observation are also used to assess student understanding.
Everyday Math Journal 1
Everyday Math Template
Everyday Math Masters Book
Everyday Math Games

http://illuminations.nctm.org/

Creating Quality Maps…

Unit Title:

Essential Questions:

Concept/ Big Idea:	Content Topics/ Key Information:

Content

THE "WHAT" THAT IS TO BE TAUGHT

- **Targeted facts and key information**
- **Content Topics**
- **Discipline, interdisciplinary, or student-centered**

- **Written in noun form**

Unit: Data Analysis 5th Grade

Essential Questions:

Concept/ Big Idea:	Content Topics/Key Information:
	•Types of Data Displays: -Line graphs -Tables -Charts -Diagrams -Bar and line graphs -Venn diagrams •Methods to solve problems - make a picture or diagram •Conjectures/Interpretation of Data Terms: Mean, median, range, minimum, maximum, and mode

Unit: The Legislative Branch of Government 8th

Essential Questions:

Concept/ Big Idea:	Content Topics/Key Information:
	•Qualifications, duties, and powers of the members •Organization of the Legislative Branch •Bill into Law (steps, process, and effects on citizens) •Powers of the Legislative Branch •Relationship with other branches of government Terms:

Unit: Multiple Paragraph Essays 8th Grade

Essential Questions:

Concept/ Big Idea:	Content Topics/Key Information:
	•Thesis statement •Introductory paragraph •3-5 paragraph essay •Relevant details supporting evidence •Logical organization of ideas (e.g., order by chronology, importance,) •Main idea •Unity •Transitions •Sentence variety Terms: organizational structures, compound-complex, personal style, controlled organization, unity

Unit: Mapping Basics

Essential Questions:

Concept/ Big Idea:	Content Topics/ Key Information:
	•Definition •Components •Types of Maps •Sample Maps •Link to standards •Step-by-Step process

Using Concept(s)…to Sharpen the Focus

Concept:

-A relational phrase or statement

-sharpens focus and helps to determine what needs to be taught

Example(s):

1. Location determines a country's economic possibilities.
2. Teamwork promotes cooperation
3. Systems and interdependent components.
4. History repeats itself
5. Problems can be solved in different ways.

Unit: Data Analysis 5th Grade

Essential Questions:

Concept/ Big Idea:	Content Topics/Key Information:
The message conveyed by the data depends on how the data is collected, represented, and summarized.	•Types of Data Displays: -Line graphs -Tables -Charts -Diagrams -Bar and line graphs -Venn diagrams •Methods to solve problems - make a picture or diagram •Conjectures/Interpretation of Data Terms: Mean, median, range, minimum, maximum, and mode

Unit: The Legislative Branch of Government 8th

Essential Questions:

Concept/ Big Idea:	Content Topics/Key Information:
The legislative branch of government is an arm of the democratic process.	•Qualifications, duties, and powers of the members •Organization of the Legislative Branch •Bill into Law (steps, process, and effects on citizens) •Powers of the Legislative Branch •Relationship with other branches of government Terms:

Multiple Paragraph Essays 8th Grade

Essential Questions:

Concept/ Big Idea:	Content Topics/Key Information:
Writers use a variety of strategies to enhance their message and engage the reader.	•Thesis statement •Introductory paragraph •3-5 paragraph essay •Relevant details supporting evidence •Logical organization of ideas (e.g., order by chronology, importance,) •Main idea •Unity •Transitions •Sentence variety Terms: organizational structures, compound-complex, personal style, controlled organization, unity

Unit: Mapping Basics

Essential Questions:

Concept/ Big Idea:	Content Topics/ Key Information:
Mapping is a Two-sided Coin: Prescription and Diagnosis	•Definition •Components •Types of Maps •Sample Maps •Link to standards •Step-by-Step process

Unit Title:

Essential Questions:

Concept/ Big Idea:	Content Topics/ Key Information:

The concept is sometimes difficult to state in the early phases of mapping.

"If you have difficulty stating the concept . . . . Identify three words that describe the focus of the unit; force these into a statement."

Essential Questions

Over-arching interrogatives that provide focus and engage students

- Organizers to sharpen focus
- Higher-level thinking
- "Mental Velcro"
- Connections beyond content being studied
- "So why is this important"...?

Which of the following are Essential Questions?

1. What makes a family a community?
2. What are the three main branches of the government?
3. Is the Civil War still going on today?
4. How is intelligence measured?
5. What do good readers do?
6. What are the parts of an insect?

Unit: Data Analysis 5th Grade

Essential Questions:
How can the collection, organization, interpretation, and display of data impact how data is interpreted?

Concept/ Big Idea:	Content Topics/Key Information:
The message conveyed by the data depends on how the data is collected, represented, and summarized.	•Types of Data Displays: -Line graphs -Tables -Charts -Diagrams -Bar and line graphs -Venn diagrams •Methods to solve problems - make a picture or diagram •Conjectures/Interpretation of Data •Terms: Mean, median, range, minimum, maximum, and mode

Unit: The Legislative Branch of Government 8th

Essential Questions:
Why is the legislative branch of government an arm of the democratic process?
Why Congress? Is there a better way?

Concept/ Big Idea:	Content Topics/Key Information:
The legislative branch of government is an arm of the democratic process.	•Qualifications, duties, and powers of the members •Organization of the Legislative Branch •Bill into Law (steps, process, and effects on citizens) •Powers of the Legislative Branch •Relationship with other branches of government Terms:

Unit: Multiple Paragraph Essays 8th Grade

Essential Questions:
What strategies can I use to help me be a more effective writer?
Why do writers pick a particular structure for writing?

Concept/ Big Idea:	Content Topics/Key Information:
Writers use a variety of strategies to enhance their message and engage the reader.	•Thesis statement •Introductory paragraph •3-5 paragraph essay •Relevant details supporting evidence •Logical organization of ideas (e.g., order by chronology, importance,) •Main idea •Unity •Transitions •Sentence variety Terms: organizational structures, compound-complex, personal style, controlled organization, unity

Unit: Mapping Basics

Essential Questions:
What is mapping?
How is mapping a Two-sided coin?

Concept/ Big Idea:	Content Topics/ Key Information:
Mapping is a Two-sided Coin: Prescription and Diagnosis	•Definition •Components •Types of Maps •Sample Maps •Link to standards •Step-by-Step process

Unit Title:

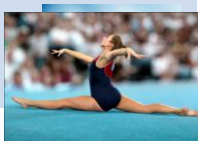
Essential Questions:

Concept/ Big Idea:	Content Topics/ Key Information:

Skills

WHAT STUDENTS NEED TO KNOW OR BE ABLE TO DO IN ORDER TO DEMONSTRATE MASTERY OR UNDERSTANDING OF THE CONTENT

- Are **specific, observable** and **measurable**
- Include benchmark skills, critical skills, and 21st century skills
- **Begin with action verbs....**



Precision is Critical to a Successful Performance

Consider the precise skills needed for any performance:

- **Basketball**
- **A Musical**
- **Art Show**
- **A Documentary**

Examples of Precise Skills

- ***Find*** **the main idea and supporting details**
- ***Estimate*** sums and differences using rounding techniques to the nearest 1000.
- ***Alphabetize*** to the second letter
- ***Interpret*** data represented in a bar graph
- ***Identify*** root words, suffixes and prefixes
- ***Label*** the parts of an informative speech

- ***Explain*** the difference between fact and opinion
- ***Locate*** and ***Identify*** parts of a book: title page, table of contents, index and glossary
- ***Compare and contrast*** the benefits and limitations of a hybrid car and SUV
- ***Define*** the hypothesis and conclusion of an "if-then" statement
- ***Analyze*** four primary documents written by John F. Kennedy
- ***Tell*** time to the minute

Predicted PSAE Status	Skills needed to move to next level
Meets	• Solve word problems containing several rates, proportions, or percentages. • Calculate or use a weighted average. • Apply rules of exponents. • Manipulate expressions and equations. • Solve quadratic and absolute value equations. • Find solutions to systems of linear equations. • Interpret and use information from graphs in the coordinate plane. • Use the distance formula and Pythagorean theorem. • Use properties of parallel and perpendicular lines to determine the equation of a line. • Use relationships involving area, perimeter, and volume to geometric figures to compute another measure. • Apply basic trigonometric ratios to solve right-triangle problems. o Rearrange a formula before solving a problem. o Find mistakes in solutions to problems. o Find the best deal and use the result for another calculation. o Find areas of basic shapes. o Find the volume of a rectangular solid.
Exceeds	

- Statements adapted from the ACT *College Readiness Standards* http://www.act.org/standard/index.html.
  - These statements correspond to levels on ACT *WorkKeys* http://www.act.org/workkeys/assess/foundational.html.

Skills or Activity?

- **Compare and contrast different types of cells.**
- **Interview a local politician about his or her political contributions**
- **Create a poster that categorizes vertebrates and invertebrates**
- **Categorize insects into groups of vertebrates and invertebrates**
- **Read and take notes from non-fiction chapter**
- **Explain the steps in the problem solving process.**
- **List major events on a timeline of US History**
- **Develop a podcast that summarizes the key points in the text.**
- **Keep a fitness log to keep track of aerobic activities**
- **Summarize plot by describing the story problem, main events, and the resolution**
- **Compute the perimeter of simple geometric figures with unknown side lengths.**

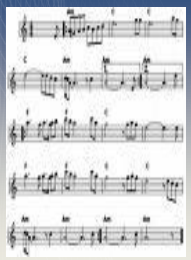
21st Century Skills

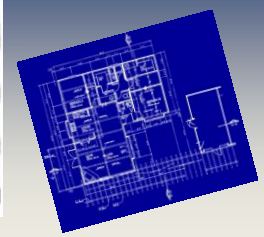
- Critical Thinking
- Problem Solving
- Communication
- Collaboration
- Information Literacy
- Media Literacy

Points to Consider…

- Check for clarity and precision
- Check the alignment between all components on the map
- Check level of understanding

Terms Matter…





Curriculum Mapping A-Z Chart

A-B	C-D	E-F
G-H	I-J	K-L
M-N	O-P-Q	R-S
T-U	V-W-X	Y-Z

Three Tiers of Assessments

- Drill and practice
- Rehearsal
- Authentic performance

Some forms of assessments include…

7th Grade Math Multiple Choice Post Assessment

1. Which number is prime?
   A. 69 B. 59 C. 49 D. not given
2. What is the least common multiple of 22 and 14?
   A. 308 B. 154 C. 98 D. 77
3. Solve for n: 2n – 6 = 24
   A. 60 B. 30 C. 15 D. not given
4. Choose the composite number.
   A. 11 B. 37 C. 51 D. 17

Constructed Response Assessment

12th Grade Reading Constructed Response

Discuss the relationship between the two cases, *Plessy* v. *Ferguson* (1896) and *Brown* v. *The Board of Education of Topeka* (1953). Be sure to review the similarities and differences between the cases and emphasize the relationship between the two. Give specific examples from both readings and draw from outside sources and/or personal experiences to support your answer.

Performance-Based Assessment

Third Grade Problem Solving Task

Your favorite job is a window washer hanging on the side of a building to clean windows. On a weekend trip with your family, you see three motels in a row. You notice that the Holiday Inn is 4 floors and each floor has a total of 7 windows. The Best Western has 6 floors and each floor has a total of 9 windows. The Comfort Inn has 8 floors and each floor has a total of 5 windows.

If you were to wash the windows of the Holiday Inn, how many windows would you wash?

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Please solve this problem in more than one way. You must show your solution visually and with a number sentence. Materials will be provided if you would like to use them.

Evidence of Learning

- Online journals
- Documentaries
- Surveys
- Webcasts from live sites
- Video Conferences
- Facebook
- Create models
- Legal briefs

- Hypothesis testing
- Tests: *essay, objective, short answer*
- Podcasts
- Blogs
- Digital music compositions
- Original plays
- Graphic organizers
- Web page
- Story Maps
- Online Courses

Figure 4.2 Matching Achievement Targets to Assessment Methods
From Rick Stiggins, *Student-Involved Classroom Assessment*, 3d ed, p 93 (Table 4.1) with some additions from Bena Kallick

TARGET TO BE ASSESSED	ASSESSMENT METHOD			
	Selected Response Short Answer	Extended Written Response	Performance Assessment	Personal Communication
Knowledge Mastery	Multiple choice, true/false, matching, and fill-in can sample mastery of elements of knowledge Constructed written response	Exercises can tap understanding of relationships among elements of knowledge	Not a good choice for this target--three other options preferred observation	Can ask questions, evaluate answers, and infer mastery, but a time-consuming option interview
Reasoning Proficiency	Can assess application of some patterns of reasoning Multiple choice Constructed written response	Written descriptions of complex problem solutions can provide a window into reasoning proficiency Persuasive essay Analytical essay Criticism Descriptive essay	Can watch students solve some problems or examine some products and infer about reasoning proficiency Observation Comparative observation	Can ask student to "think aloud" or can ask follow up questions to probe reasoning Interview Personal essay
Skills	Can assess mastery of the knowledge prerequisites to skillful performance, but cannot rely on these to tap the skill itself.		Can observe and evaluate skills as they are being performed Observation Debate Forum choreography	Strong match when skill is oral communication proficiency; also can assess mastery of knowledge prerequisite to skillful performance interview
Ability to Create Products	Can assess mastery of the knowledge prerequisite to the ability to create quality products, but cannot use these to assess the quality of products		Can assess: (1) proficiency in carrying out	Can probe procedural knowledge and knowledge of attributes

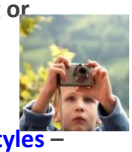
The Legislative Branch of government is an arm of the democratic process.
- **Qualifications, duties, and powers of the members**
- **Organization of the Legislative Branch**
- **Bill into Law (steps, process, and effects on citizens)**
- **Powers of the Legislative Branch**
- **Relationship with other branches of government**

Skills
- ✓ **Describe** the qualifications, duties, and powers of the Legislative Branch of government
- ✓ **Explain** the organizational structure of the Legislative Branch
- ✓ **Identify** the steps used in passing a bill into law
- ✓ **Analyze** the effects of the Legislative Branch on citizens
- ✓ **Compare and Contrast** the functions of the other branches with the legislative branch
- ✓ **Explain** how the Legislative Branch is an arm of the democratic process
- ✓ **Develop** an opinion using supportive ideas (reading skill)

Assessments
Bill into Law Simulation
Persuasive Paper – How will the law effect the people (students)?
Essay Test over the Essential Questions
Debate: Why have Congress, Is there a better way?
Podcast on one of the key areas of the Legislative Branch of Government

Differentiating the Curriculum

- **Content/Topics** – varying the knowledge, skills
- **Process/Activities** – varying learning or strategies
- **Product/Assessments** – varying the complexity of the product
- **The Environment and/or Learning Styles** – varying teaching strategies and learning styles



III. Maintaining, Sustaining, and Integrating the System

- Establishing Benchmark Assessments
- Merging Assessment Results into Maps
- Integrating Active Literacy
- Developing An Implementation Plan

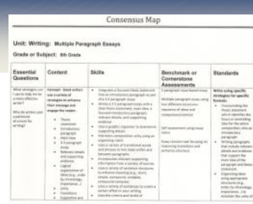
The CM Seven-Step Review Process:

1. Collecting the Data
2. First Read-Through
3. Small Like/Mixed-Group Review
4. Large Like/Mixed-Group Comparisons
5. Determine Immediate Revision Points
6. Determine Points Requiring Some Research and Planning
7. Plan for Next Review Cycle

(from Mapping the Big Picture: Integrating Curriculum and Assessment K-12; 1997, ASCD, Jacobs, HH.)

Curriculum Mapping is a verb.

Creating the maps themselves


Consensus Map

Unit: Writing: Multiple Paragraph Essays

Grade or Subject: 8th Grade

Essential Questions	Content	Skills	Benchmark or Cornerstone Assessments	Standards

...And then

Using them to make instructional decisions

Small Mixed-Group Review

- Small Groups of 5 to 8 faculty members are formed
- Groups should be diverse (e.g. different grade levels and departments)
- Meetings should run approximately 1 and ½ hours
- The goal is to share individual findings and collect the data.

Like-Group (Horizontal Teams) and Mixed-Group (Vertical Teams) Reviews

- **Like-groups:** consist of teachers and support staff ***within*** a given discipline or same subject and/or grade level.
- **Mixed-groups:** consist of teachers and support staff ***across*** grade levels /or different disciplines.

Areas of Focus

1. Ah Hahs – What is something you learned?	2. Possible Gaps/Repetitions
3. Scaffolding of Skills	4. Questions/Clarifications

Areas of Focus

1. Ah Hahs – What is something you learned?	2. Possible Gaps/Repetitions
3. Evidence of Higher-order thinking	4. Questions/Clarifications

Essential Questions
- ✓Why did the nation grow apart?
- ✓What were the causes of the Civil War? Is it still going on today?
- ✓How did slaves communicate their story?

Concept/Content
A number of factors caused the Civil War and divided a nation.
- •The economic and social differences between the North and South
- •State rights vs. Nation rights
- •Maryland's position as a border state
- •Underground Railroad
- •Key people (Abraham Lincoln, Harriet Tubman, Fredrick Douglass, Harriet Beecher Stowe..)

Skills
- •Explain the economic and social impact as a factor in the Civil War
- •Differentiate between state and national rights and explain how it was a factor in the Civil War
- •Describe life in Maryland as a border state as compared to the north and southern states
- •Compare and contrast the attitudes and laws in border states versus nonborder states
- •Identify main ideas using stick'em strategy
- •Define the concept of the Underground Railroad
- •Describe the life of a slave in Maryland and Montgomery County

Next…Data Collection Phase

- **Replicate the quadrant on a slide or chart paper (appoint a recorder)**
- **The facilitator will begin with the first map and using a go 'round have each person in turn share information they have collected for each area of focus for that specific map. (The recorder will capture this data.) There is NO DISCUSSION during this process.**

Reading the Maps

Use the areas of focus in the quadrant:

- **skim each map for that information**
- **look for progression of skills**
- **check level of understanding (Bloom's Taxonomy)**
- **check for precise language**
- **write comments directly on the map or jot your notes on the form**

Beginning the Process…

Go 'round – each person in the group has a chance to highlight certain aspects of their map (one minute per person)

-something you forgot

-evidence of higher-order thinking or precise language

-a clarification

-something you want to point out

-a change you plan to make

Areas of Focus:

-something you learned/something that became clearer to you

-any possible gaps or repetitions

-evidence of higher-order thinking/scaffolding of skills

-questions/clarifications needed

- **Continue the process until the data has been collected for each map**

When You have completed the process…

- Review the data
- Asterisk items you feel are priorities
- Address any questions
- Combine with another group – reach consensus on items to be addressed and priority areas
- Discuss possible ways to address the items you have asterisked

IV. Advanced Mapping Tasks

- Integrating 21st Century Skills
- Replacing Dated Content
- Upgrading to Contemporary Assessment Types
- Rethinking School Formats and Structures

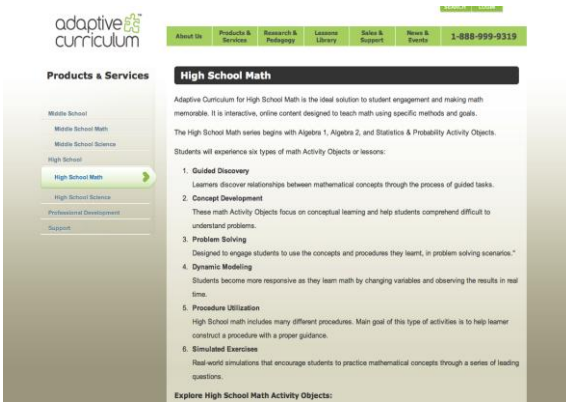
Introducing Foveo Products

- Students labored over the creation of their product and ultimately chose high-end chocolate and water bottles due to their seemingly universal appeal. They chose the name "Foveo" because it means to support and nurture in Latin and the color orange because it is eye-catching and invokes the notion of caution.

Patrick F. Bassett, www.nais.org.

Fay School & Saigon South International School

Return



Upgrading Assessments…

- Take one of your current assessments and focus on higher-order thinking and 21st Century Skills….
- How might you "upgrade" it….???

Websites…

- http://www.curriculumdesigners.com/
- http://www.curriculum21.com/
- http://www.sheskeylearning.com/
- http://shop.ascd.org/productdisplay.cfm?productid=109008 (Curriculum 21: Essential Education for a Changing World)
- Silvia Rosenthal Tolisano – Globallyconnectedlearning.com

Curriculum 21 websites

- www.YouTube - Did you know 4.0…
- http://www.ccsso.org/
- www.media-awareness.ca/
- www.medialit.org
- www.cloudinstitue.org
- www.clexchange.org
- www.curriculum21.com
- www.designshare.com
- www.facingthefuture.org
- www.frankbaker.com
- www.sheskeylearning.com
- www.themetschool.org/Metcenter/The_Education.html
- www.novemberlearning.com
- www.ODTmaps.com
- www.readwritethink.org/lessons
- www.teachingmedialiteracy.com

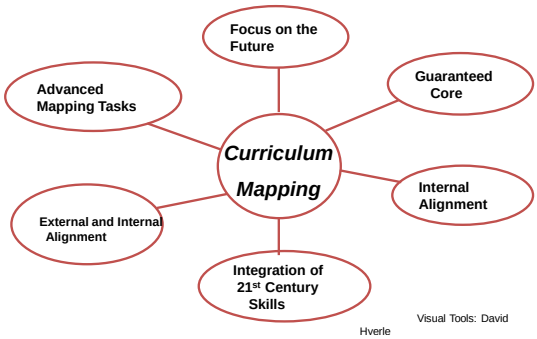
Even More Websites…

- http://www.dangerouslyirrelevant.org/
- http://www.instituteforhabitsofmind.com/
- http://www.Cloudinstitute.org
- http://www.facingthefuture.org
- http://www.readwritethink.org/lessons
- http://www.novemberlearning.com
- http://www.creativelearningexchange.org
- http://www.asiasociety.org
- http://www.teachingmedialiteracy.com

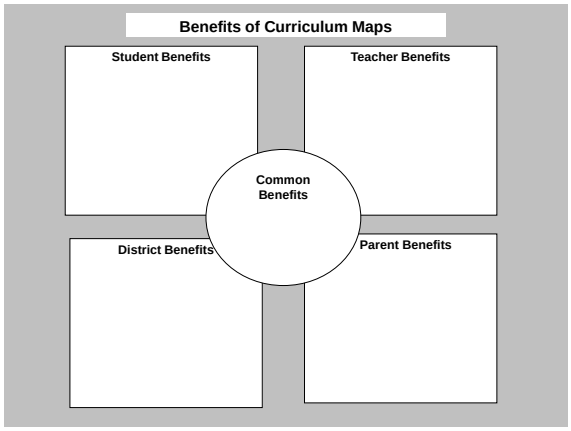
Websites cont.

- http://www.frankbaker.com
- http://www.designshare.com
- http://www.themetschool.org/Metcenter/The_Education.html
- http://www.ODTmaps.com
- http://www.sustainableschoolsproject.org
- http://differentiationcentral.com/differentiationcentral.html
- http://www.designshare.com/index.php/home

CM for Improved Student Performance



Visual Tools: David Hverle



Benefits of Curriculum Mapping

- a consistent core curriculum
- common terminology
- a tool/process to focus and inform instruction
- gaps/ repetitions
- articulation of skills
- HUB for all school improvement efforts
- Integration of 21st Century Skills
- Alignment of assessments and activities

Curriculum for the 21st Century