

Charter School Application



**Revised and Resubmitted to the State College Area School District
March 9, 1998**

**Submitted to the Bald Eagle and Bellefonte Area School Districts
May 18, 1998**

Applicants:

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March 9, 1998

State College Area School District
Board of School Directors
131 W. Nittany Avenue
State College, PA 16801-4899

Dear State College Area School District Board of School Directors,

With this revised application, we request that you grant a charter creating the "Centre Learning Community Charter School." The CLC, as described in the attached plan, will be a small, innovative, public, non-profit, non-sectarian school, conforming to all of the requirements of the charter school legislation as described in Act 22 of 1997. In this application we drop the concept of our school as composed of several clusters, as originally proposed, and seek approval for a single academic program, previously described as the "SPARC Cluster."

We sincerely appreciate the time and energy you have invested in the review of our proposal, and we believe that this resubmission addresses all of the concerns expressed in your letter of February 26, 1998. Our original application (which was based on the categories identified in the Charter School legislation) has been modified and expanded to reflect our latest thinking and the information you requested, and on the next page we provide a table that will lead you more directly to the sections of the proposal in which we address each concern.

We hope that you will agree to schedule an additional public hearing at which we will be allowed to explain our academic program and to demonstrate the significant and growing community support for the proposal. (We would appreciate as much notice as possible in the scheduling of this meeting, so that our parents and other supporters can adjust their schedules to attend.)

We also appreciated the spirit of the final paragraph of your letter, proposing to establish a "collaborative relationship" to include quarterly meetings for the discussion of educational innovations and other opportunities our schools will offer each other. We see that as an extension of our existing, mutually beneficial relationship, and we would like that very much!

As always, we are very willing to respond to any questions you may have, and can be reached at the addresses, phone numbers, and email addresses below.

Sincerely,

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cc: Dr. Eugene Hickok, Secretary of Education, Pennsylvania Department of Education
Dr. Tim Daniels, Senior Policy Specialist, Charter Schools, PA Department of Education
Tom Gentzel, Assistant Executive Director, Pennsylvania School Boards Association

Notes on and Index to Clarifications Requested:

Clarification Requested:	Response:
By-laws	Neither the charter school legislation nor the PSBA guide referred to "bylaws." We were unsuccessful in finding school bylaws in the short time available, so we modeled ours after bylaws used by educational professional organizations. See Appendix A, on Page 50 - 56.
Advertisement Plan for Recruiting Students	See Section XI of Bylaws, on page 56.
A Core Planning Group for Founding Families	See Section VII of Bylaws, on page 52.
Possible Facility Location	See page 48.
Liability Insurance	Based on recommendations by Dennis Younkin, we received a bid from Frost and Conn -- the same company that handles the SCASD and several other school districts. These bids are reflected in the budget, which is included as Appendix B. See page 60.
Complete Budget	Consulted with Dennis Younkin, and budgeted based on his advice. See Appendix B, pages 58 - 62.
Specific Student Evaluation Criteria	See pages 41 - 44, and Appendix C, on pages 64 and 65.
School Calendar which clarifies transportation requirements	Since school district calendars are approved one year at a time, and since this charter is written to describe the school's operation over several years, we built in a statement clarifying that our school year will parallel yours, and that no transportation is expected outside of the school year you define. See page 48.
Criminal background checks of staff	Both Mark Toci and Kyle Peck have had recent background checks, and will, as the legislation requires, have these checks renewed <i>before accepting a position</i> with the school. Our policy has been modified to clarify this requirement. See Bylaws, Section V, page 51 and 52.
A plan for substitutes	See Bylaws, Section X, page 56.
How student outcomes will be measured	See pages 41 - 44, and Appendix C, on pages 64 and 65.
How special education students will be identified and how services will be provided	Spoke with Bob Coldiron, Pam Francis, Denny Shanafelt, and Joe Nicosia about special needs issues, and followed or exceeded their advice when budgeting for testing and services for special needs students. They reported that most students have been identified before reaching 5th grade, and offered their best estimates percentages of students that might be tested and served. See pages 40 - 41.
Continuity of administrative leadership	See bylaws, Section VIII, pages 53 - 55.
Comprehensive educational programming for grades five through eight	See pages 1 - 41.
Emergency Plan for teachers and students	See Bylaws, Section IX, pages 55 - 56.

Centre Learning Community Charter School Application

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I. Identification of Charter Applicant(s)

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I. Name of School

The name of the proposed charter school shall be: "The Centre Learning Community Charter School." The official acronym for the school shall be "CLC."

I. Grade or Age Served

The CLC will serve students normally placed in grades 5 through 8. In order to create the multi-year relationship we believe is central to achieving the academic standards described in this document, we will only accept students entering grades 5 and 6.

I. Proposed Governance Structure

The proposed governance structure for the CLC is described in detail in Section VIII of our bylaws, which are attached as Appendix B.

I. Mission, Educational Goals, Curriculum and Assessment

A. Mission Statement

The mission of the Centre Learning Community Charter School is to create a powerful, safe, secure, active, project-based, learning environment in which students develop the necessary knowledge, skills, and attributes to lead a fulfilled and successful life.

A. Educational Goals and Objectives

Academic Goals and Objectives

The CLC will provide a comprehensive educational program for students in grades five through eight. The core goals and objectives of the Centre Learning Community will include all of the academic standards adopted by the Pennsylvania State Board of

Education and other goals our parents and educators agree are critical to our students' success.

Goals for each academic subject are listed below. The Reading, Language Arts, and Mathematics sections are based on the "Draft Standards" released by the Commonwealth of Pennsylvania. Our goals for Science, Social Studies, and Art are based on a review of middle level curriculum undertaken by the R.E.A.L. Initiative, under a grant to Penn State from Hershey Foods Corporation, and are presented in the form of "Knowlecules" - clusters of related questions our students will answer.

Reading and Language Arts Goals (From the PA Draft Standards for 5th and 8th Grade)

1.1 Learning to Read Independently

- A. Determine text organization and content.
- B. Identify the purpose for reading.
- C. Anticipate what the text may be about.
- D. Select text appropriate to a given purpose.
- E. Apply phonics (i.e., sound-symbol relationships) when reading.
- F. Apply word analysis (i.e., root words, prefixes, and suffixes) to read new words.
- G. Read with fluency.
- H. Read and determine meaning from text by independently:
 - 1. using context clues (semantics),
 - 2. interpreting the syntax of text,
 - 3. interpreting graphics (e.g., illustrations, photographs, charts, maps, graphs, tables),
 - 4. locating text or graphics which confirms or alters earlier assumptions,
 - 5. rereading,
 - 6. synthesizing text and previous learning,
 - 7. identifying and defining new words and concepts.
- I. Clarifying meaning in text by making:
 - 1. notes,
 - 2. outlines,
 - 3. graphic organizers.
- J. Adjust reading rate to purpose and difficulty of text.
- K. Use text to build on previous knowledge.
- L. Analyze the author's main points, citing evidence from the text.
- M. Paraphrase text (speaking or writing) consistent with the author's tone and meaning.
- N. Cite text to judge whether earlier assumptions were accurate.

1.2 Reading to Solve Problems, Make Decisions, and Draw Conclusions

- A. Find detail from more than one source to defend or refute a generalization; form a generalization based on specific evidence from more than one source.
- B. Use examples from multiple texts to support a conclusion.
- C. Use facts from text to inform and support opinion.

- D. Recognize when text is intended to persuade.
- E. Confirm or reject information for validity and relevance.
- F. Distinguish between essential and non essential information according to the purpose for reading.
- G. Compare and contrast a narrative of informational text with other media (e.g., novel/play, newspaper account/television news report).
- H. Compare and contrast problems and solutions in narrative, informational, and persuasive texts.
- I. Construct problems and solutions similar to those found in text.
- J. Evaluate both the author and the student-generated solutions, using criteria established by the student.

1.3 Reading, Analyzing, and Interpreting Literature

- A. Read and classify poetry, plays, short stories, and novels according to type (e.g., poetry, sonnet, epic poem, haiku, limerick, etc.).
- B. Read and classify non-fiction as newspaper and magazine articles, letters, essays, biography and autobiography, reference materials (e.g., encyclopedia, atlas, almanac).
- C. Read literature from various historical eras and cultures based on common themes.
- D. Describe the impact of historical and cultural influences on literacy selections.
- E. Analyze the use of literary elements used by the author:
 1. characterization
 2. setting
 3. plot
 4. theme
 5. point of view
 6. tone
 7. style
- F. Analyze the effect of literary devices:
 1. dialogue,
 2. sound techniques (rhyme, rhythm, meter, alliteration, etc.),
 3. figurative language (personification, simile, metaphor, allusion, hyperbole, etc.)
- G. Demonstrate an understanding of literature through interpretive, creative, and evaluative responses. Relate these responses to previous responses, other literature, historical eras, and other cultures.

1.4 The Process of Writing: (pre-write, draft, revise, edit, publish).

- A. Engage in pre-writing activities.
 1. Identify the audience and purpose.
 2. Select a topic.
 3. Gather information.
 4. Narrow the focus.
 5. Determine the most effective format for audience and purpose.
- B. Draft
 1. Compose a draft to communicate information and/or ideas clearly and precisely.
- C. Revise
 1. Review the draft to improve focus, organization, content, and style.

2. Obtain feedback and consider suggestions from others.
 3. Re-write the draft.
- D. Edit
1. Correct spelling, grammar, punctuation, and stylistic errors.
- E. Publish
1. Present / defend final copy.

1.5 Types of Writing (narrative, informational, persuasive).

- A. Write short stories, poems, and plays that show evidence of:
 - 1. varying organizational methods,
 - 2. relevant illustrations,
 - 3. dialogue,
 - 4. a literary conflict,
 - 5. literary elements,
 - 6. literary devices.
- B. Write multi-paragraph informational pieces such as descriptions, letters, reports, instructions, essays, newspaper articles, and interviews, that show evidence of:
 - 1. cause and effect,
 - 2. a problem and solution when appropriate to the topic,
 - 3. relevant graphics, such as illustrations, photographs, charts, maps, graphs, and tables.
- C. Write persuasive pieces that show evidence of:
 - 1. a clearly stated position or opinion,
 - 2. convincing and elaborated evidence, properly cited,
 - 3. developing reader interest,
 - 4. anticipating and countering reader concerns and arguments.
- D. Maintain a written record of activities, course work, experience, honors, and interests.

1.6 Quality of Writing

- A. Write with a sharp, distinct, focus.
 - 1. Write with awareness of audience and task.
 - 2. Establish and maintain a clear purpose.
 - 3. Sustain a single point of view.
 - 4. Communicate ideas clearly.
- B. Write using well-developed content appropriate for the topic.
 - 1. Use information and details specific to the topic.
 - 2. Use information and details specific to the focus.
 - 3. Fully develop ideas using substantive and/or illustrative content.
- C. Write with controlled and/or subtle organization.
 - 1. Maintain logical order or sequence.
 - 2. Write one subject paragraphs.
 - 3. Make logical transitions between sentences and paragraphs.
 - 4. Write with clear evidence of an introduction and conclusion.
- D. Write with a command of the stylistic aspects of composition.
 - 1. Use precise language.
 - 2. Make effective word choices.
 - 3. Use a variety of sentence structures, types, and lengths.
 - 4. Develop and maintain consistent voice and tone.
 - 5. Exhibit originality of language.
- E. Write with a command of mechanics, usage and sentence completeness.
 - 1. Spell correctly, using necessary tools and strategies (e.g., dictionary).
 - 2. Use capital letters correctly.
 - 3. Use punctuation correctly.

- period (.)
 - exclamation point (!)
 - question mark (?)
 - comma (,)
 - Quotation marks ("")
 - apostrophe (')
 - colon (:)
 - semicolon (;)
 - hyphen (-)
 - dash (-)
 - brackets ([])
 - parentheses (())
 - ellipsis (...)
 - virgule (/)
- F. Write with proper usage of:
1. nouns,
 2. pronouns,
 3. verbs,
 4. adjectives,
 5. adverbs,
 6. conjunctions,
 7. prepositions,
 8. interjections.
- G. Write complete sentences, including:
1. simple, compound and complex,
 2. declarative, interrogative, exclamatory, and imperative.

1.7 Speaking and Listening

- A. Listen to others:
1. without interrupting,
 2. asking clarifying questions,
 3. distinguishing relevant information, ideas, and opinions from those which are irrelevant,
 4. taking notes when needed.
- B. Listen to selections of literature, including fiction and non-fiction:
1. relating it to previous knowledge,
 2. anticipating what's next,
 3. retelling, including theme, characters, tone, and setting,
 4. identifying and defining new words and concepts,
 5. summarizing the selection.
- C. Speak using complete sentences, adjusting volume, pace, pronunciation, stress, and enunciation to audience and purpose.
- D. Contribute to discussions by:
1. asking relevant questions,
 2. responding with relevant information, ideas, or opinions to questions asked,
 3. listening to and acknowledging the contributions of others,

4. adjusting the tone and involvement to encourage equitable participation,
 5. paraphrasing and summarizing when prompted.
- E. Present information, ideas, and opinions to others, showing evidence of:
1. logical organization,
 2. degree of detail appropriate to the topic and purpose,
 3. proper language and usage,
 4. adjusting appropriately to audience reaction.
- F. Participate effectively as a speaker and/or listener in the following activities:
1. everyday conversation,
 2. oral reading,
 3. formal presentations (e.g. speeches, panel reports, plays),
 4. interviews as part of the research process,
 5. informal debates,
 6. complex directions and explanations.
- G. Engage the audience using a variety of techniques, including:
1. eye contact,
 2. voice inflection,
 3. visual aids,
 4. expressive language and gestures.

1.8 Characteristics and Function of the English Language

- A. Use a dictionary and thesaurus to determine the origin and derivation of words to read, write and speak effectively.
- B. Describe differences in syntax and semantics in a variety of written and oral text.
- C. Recognize and describe the effect of language variations (dialects, syntax, specialized vocabulary) in a variety of written and oral text.
- D. Use language variations appropriate to audience and purpose (including dialects, syntax, specialized vocabulary) when writing and speaking.

1.9 Researching

- A. Select and refine a topic for research.
- B. Determine valid resources for researching the topic, including primary and secondary sources, and verifying the accuracy of the resources.
- C. Locate materials appropriate to purpose in a school library/media center and access materials from a public library.
- D. Use and explain basic library classification systems.
- E. Use tables of contents, indexes, key words, cross references, and appendices to locate information.
- F. Use the card catalog, "Reader's Guide to Periodical Literature" and other indexes (traditional and electronic) to locate information.
- G. Use the features of electronic media (e.g., menus, databases, search techniques and engines, the Internet, bulletin boards) to locate information (and people).
- H. Use the following to gather information:
 1. books, including dictionaries, encyclopedias, atlases, and almanacs,
 2. newspapers,
 3. periodicals,

4. audio/video resources,
 5. computers,
 6. interviews,
 7. surveys,
 8. documents,
 9. artifacts.
- I. Take notes relevant to the research topic.
 - J. Develop a thesis statement based on the research.
 - K. Organize, summarize and present the main ideas from research.
 - L. Give precise formal credit for others' ideas, images or information, using a standard method of documentation.

Mathematics Goals (From the PA Draft Standards for 5th and 8th Grade)

(Those followed by "(5)" represent 5th grade competence level, "(8)" represents 8th grade level)

I. Numbers, Number Systems, and Number Relationships

- A. Use expanded notation to represent whole numbers or decimals. (5)
 - B. Apply integers in everyday problem situations. (5)
 - C. Apply number theory concepts to rename a number quantity. (5)
 - D. Demonstrate that mathematical operations can represent a variety of problem situations. (5)
 - E. Use models to represent fractions and decimals. (5)
 - F. Explain the concept of prime and composite numbers. (5)
 - G. Use simple concepts of negative numbers such as on a number line in counting and temperature. (5)
 - H. Develop and apply number theory concepts (e.g. primes, factors, multiples, and composites) to represent numbers in various ways. (5)
-
- A. Represent and use numbers in equivalent forms (integers, fractions, decimals, percents, exponents, scientific notation, and square roots). (8)
 - B. Simplify numerical expressions involving exponents and using order of operations. (8)
 - C. Distinguish between and order rational and irrational numbers. (8)
 - D. Apply ratio and proportion to mathematical problem situations involving distance, rate, time, and similar triangles. (8)
 - E. Simplify or expand problems using exponential forms. (8)
 - F. Use scientific notation to simplify problem information. (8)
 - G. Use models to represent operations on positive and negative numbers. (8)
 - H. Represent numbers as equivalent fractions, decimals, and percents. (8)
 - I. Use the number line model to demonstrate integers and their applications. (8)
 - J. Use the inverse relationships between addition, subtraction, multiplication, division, and exponentiation and root extraction to determine unknown quantities in equations. (8)

I. Computation and Estimation

- A. Create and solve word problems involving addition, subtraction, multiplication and division of whole numbers using concrete materials, paper and pencil, estimation, and mental computation. (5)
- B. Create and solve word problems involving addition, subtraction, multiplication, and division of whole numbers using calculators. (5)
- C. Develop and apply algorithms to solve word problems that involve addition, subtraction, and/or multiplication with decimals with and without regrouping, and fractions and mixed numbers, that include like and unlike denominators. (5)
- D. Demonstrate the ability to round numbers. (5)
- E. Determine through estimations the reasonableness of answers to problems involving addition, subtraction, multiplication and division of whole numbers. (5)
- F. Demonstrate skills for using fraction calculators to verify conjectures, confirm computations, and explore complex problem solving situations. (5)
- G. Apply estimation strategies to a variety of problems including time and money. (5)

- A. Use models to represent operations (addition, subtraction, multiplication or division) on positive and negative numbers. (8)
- B. Complete calculations applying the order of operations. (8)
- C. Apply the Pythagorean Theorem. (8)
- D. Add, subtract, multiply, and divide different kinds and forms of rational numbers, including integers decimal fractions, percents, and proper and improper fractions. (8)
- E. Solve word problems using ratio and proportion. (8)
- F. Estimate the value of irrational numbers. (8)
- G. Estimate the amount of tips and discounts using ratios, proportions, and percents.
- H. Determine the appropriateness of overestimating or underestimating in computation. (8)
- I. Select a method for computation and explain why it is appropriate. (8)
- J. Identify the difference between exact value and approximations and determine which is appropriate for a given situation. (8)
- K. Check the reasonableness of an answer obtained using a calculator or a spreadsheet. (8)
- L. Demonstrate skills for using computer spreadsheets and scientific and graphing calculators. (8)

I. Measurement and Estimation

- A. Select and use appropriate instruments and units for measuring quantities such as perimeter, volume, area, weight, time, and temperature. (5)
 - B. Select and use standard tools to measure the size of figures with specified accuracy, including length, width, perimeter, and area. (5)
 - C. Estimate, refine, and verify a specified measurement of objects. (5)
 - D. Convert linear measurements within the same system. (5)
 - E. Add and subtract measurements. (5)
-
- A. Develop formulas and procedures for determining measurements (e.g. area,

- volume, distance, etc.). (8)
- B. Solve rate problems (e.g., rate \times time = distance, principal \times interest rate = interest, etc.). (8)
 - C. Convert measurements within the same system using linear, square, and cubic units. (8)
 - D. Measure angles in degrees and determine relations of angles. (8)
 - E. Estimate, use, and describe measures of distance, rate, perimeter, area, volume, capacity, weight, mass and angles. (8)
 - F. Describe how a change in linear dimension of an object affects its perimeter, area, and volume. (8)
 - G. Use scale measurements to interpret maps or drawings. (8)

I. Mathematical Reasoning and Connections

- A. Compare quantities and magnitudes of numbers. (5)
 - B. Use models, number facts, properties and relationships to check and verify predictions and explain reasoning. (5)
 - C. Draw inductive and deductive conclusions within mathematical contexts. (5)
 - D. Distinguish between relevant and irrelevant information in a mathematical problem. (5)
 - E. Interpret statements made with precise language of logic (i.e. all, every, none, some, or, many). (5)
-
- A. Make conjectures based on logical reasoning and test conjectures by using counter-examples. (8)
 - B. Combine numeric relationships to arrive at a conclusion. (8)
 - C. Use if...then statements to construct simple valid arguments. (8)
 - D. Construct, use, and explain algorithmic procedures for computing and estimating with whole numbers, fractions, decimals and integers. (8)
 - E. Distinguish between inductive and deductive reasoning. (8)

I. Mathematical Problem Solving and Communication

- A. Develop a plan to analyze a problem, identify the information needed to solve the problem, carry out the plan, check whether an answer makes sense and explain how the problem was solved. (5)
 - B. Use appropriate mathematical terms, vocabulary, language symbols and graphs to clearly and logically explain solutions to problems. (5)
 - C. Show ideas in a variety of ways, including words, numbers, symbols, pictures, charts, graphs, tables, diagrams and models. (5)
 - D. Connect, extend, and generalize problem solutions to other concepts, problems and circumstances in mathematics. (5)
 - E. Select, use, and justify the methods, materials, and strategies used to solve problems, including mental mathematics, paper and pencil, physical models, fraction calculators and computers. (5)
-
- A. Invent, select, use, and justify the appropriate methods, materials, and strategies used to solve problems, including mental mathematics, paper and pencil, sketches, diagrams, physical models, scientific and graphing calculators, spreadsheets and computers. (8)
 - B. Solve problems by developing a plan, analyzing the problem, identifying the information needed to solve the problem, carrying out the plan, checking whether answers make sense and are complete, and explaining how the problem was solved. (8)
 - C. Verify and interpret results using precise mathematical language, notation, and representations, including numerical tables and equations, simple algebraic equations and formulas, charts, graphs and diagrams. (8)
 - D. Justify strategies and defend approaches used and conclusions reached. (8)
 - E. Determine pertinent information in problem situations, and whether any further information is needed for solution. (8)

I. Statistics and Data Analysis

- A. Organize and display data using pictures, tallies, tables, charts, bar graphs, and circle graphs. (5)
- B. Describe data sets using mean, median, mode and range. (5)
- C. Sort data using Venn diagrams. (5)
- D. Predict the likely number of times a condition will occur based on the analyzed data. (5)
- E. Construct and defend simple conclusions based on data. (5)

- A. Compare and contrast different plots of data using values of mean, median, mode, quartiles and range. (8)
- B. Consider effects on reliability of sampling procedures and of missing or incorrect information. (8)
- C. Fit a line to the scatter plot of two quantities and describe any correlation of the variables. (8)
- D. Design and carry out a random sampling procedure. (8)
- E. Analyze and display data in stem-and-leaf and box-and-whisker plots. (8)
- F. Use scientific and graphing calculators and computer spreadsheets to organize and analyze data. (8)
- G. Determine the validity of the sampling method described in published studies. (8)

I. Probability and Predictions

- A. Find all possible combinations and arrangements involving a limited number of variables. (5)
- B. Make a tree diagram and list the elements in the sample space. (5)
- C. Perform simulations with concrete devices (dice, spinner, etc.) to predict the chance of an event occurring. (5)
- D. Determine the fairness of the design of a spinner. (5)
- E. Express probabilities as fractions and decimals. (5)
- F. Compare predictions based on theoretical probability and experimental results. (5)
- G. Calculate the probability of a simple event. (5)
- H. Determine patterns generated as a result of an experiment. (5)
- I. Determine the probability of an event involving and, or or not. (5)
- J. Predict and determine why some outcomes are certain, more likely, less likely, equally likely or impossible. (5)

- A. Determine the number of combinations and permutations for an event. (8)
- B. Present the results of an experiment using visual representations (tables, charts, and graphs). (8)
- C. Compare and contrast experimental and theoretical probability. (8)
- D. Formulate questions whose answer depends on chance and design and conduct experiments to determine the answers to those questions. (8)
- E. Analyze predictions such as election polls. (8)
- F. Compare and contrast results from observations and mathematical models. (8)
- G. Make valid inferences, predictions and arguments based on probability. (8)

I. Algebra and Functions

- A. Use concrete objects and combinations of symbols and numbers to create expressions that model mathematical situations. (5)
 - B. Explain the use of combinations of symbols and numbers in expressions, equations, and inequalities. (5)
 - C. Apply a realistic situation to given equations, inequalities, tables or graphs. (5)
 - D. Select and use appropriate strategies to solve number sentences and explain the method of solution. (5)
 - E. Recognize, reproduce, extend, create and describe patterns, sequences and relationships verbally, numerically, symbolically and graphically, using a variety of materials. (5)
 - F. Connect patterns to geometric relations and basic number skills. (5)
 - G. Form rules based on patterns (e.g., an equation which relates pairs in a sequence). (5)
 - H. Generate functions from tables of data and relate data to corresponding graphs and functions. (5)
 - I. Locate and identify points on a coordinate system. (5)
-
- A. Create expressions, equations, or inequalities that model problem situations. (8)
 - B. Interpret expressions, equations and inequalities. (8)
 - C. Use concrete objects to model algebraic concepts. (8)
 - D. Select and use a strategy to solve an equation or inequality, explain the solution and check the solution for accuracy. (8)
 - E. Solve and graph equations and inequalities using scientific and graphing calculators and computer spreadsheets. (8)
 - F. Discover, describe, and generalize patterns, including linear, exponential and simple quadratic relationships. (8)
 - G. Apply simple algebraic patterns to basic number theory and to spatial relations. (8)
 - H. Use patterns and function concepts to solve routine and non-routine problems. (8)
 - I. Represent relationships with tables, graphs in the coordinate plane, and verbal or symbolic rules. (8)
 - J. Graph a linear function from a rule or table. (8)
 - K. Generate a table or graph from a function and use graphing calculators and computer spreadsheets to graph and analyze functions. (8)
 - L. Show that an equality relationship between two quantities remains the same as long as the same change is made to both quantities; and explain how a change in one quantity determines another quantity in a functional relationship. (8)

I. Geometry

- A. Give formal definitions of geometric figures. (5)
- B. Classify and compare triangles and quadrilaterals according to sides or angles. (5)
- C. Identify and measure circles, their diameters and radii. (5)
- D. Describe in words how geometric shapes are constructed. (5)
- E. Construct two and three dimensional shapes and figures using manipulatives,

- geoboards, and computer software. (5)
- F. Find familiar solids in the environment and describe them. (5)
- G. Create an original tessellation. (5)
- H. Describe the relationship between the perimeter and area of triangles, quadrilaterals and circles. (5)
- I. Represent and use the concepts of line, point, and plane. (5)
- J. Define the basic properties of squares, pyramids, parallelograms, quadrilaterals, trapezoids, polygons, rectangles, rhombi, circles, triangles, cubes, prisms, spheres, and cylinders. (5)
- K. Analyze simple transformations of geometric figures and rotations of line segments. (5)
- L. Identify properties of geometric figures (i.e., parallel, perpendicular, similar, congruent, symmetrical). (5)

- A. Draw geometric figures and related segments in a computer environment. (8)
- B. Construct figures incorporating perpendicular and parallel lines. (8)
- C. Draw, label, measure and list the properties of complementary, supplementary, and vertical angles. (8)
- D. Classify familiar polygons as regular or irregular up to a decagon. (8)
- E. Identify, name, draw and list all properties of squares, cubes, pyramids, parallelograms, quadrilaterals, trapezoids, polygons, rectangles, rhombi, circles, spheres, triangles, prisms, and cylinders. (8)
- F. Construct the perpendicular bisector of a line segment and an angle bisector using a compass, a straightedge, paper folding and computer software. (8)
- G. Construct parallel lines, draw a transversal, measure and compare angles formed such as alternate interior and exterior angles. (8)
- H. Distinguish between similar and congruent polygons. (8)
- I. Approximate the value of π (pi) through experimentation. (8)
- J. Use simple geometric figures such as triangles and squares to create, through rotation, transformational figures in three dimensions. (8)
- K. Generate transformations using computer software. (8)
- L. Analyze geometric patterns, such as tessellation's and sequences of shapes. (8)
- M. Analyze objects using tessellation's, symmetry, congruence, similarity, scale, and angles and identify their applications in practical situations. (8)
- N. Use the tools of geometry including compass, protractor, straightedge, reflector, and computer drawing software. (8)

I. Trigonometry

- A. Identify and compare parts of right triangle including right angles, acute angles, hypotenuse, and legs. (5)
- B. Create right triangles on a geoboard. (5)

- A. Compute measures of sides and angles using proportions, the Pythagorean Theorem, and right triangle relationships. (8)
- B. Solve problems requiring indirect measurement for lengths of sides of triangles. (8)

I. Concepts of Calculus

- A. Make comparisons of numbers such as more, less, same, least, most, greater than and less than. (5)
 - B. Identify least and greatest values represented in bar and circle graphs. (5)
 - C. Identify maximum and minimum. (5)
 - D. Describe the relationship between rates of change and time. (5)
 - E. Estimate areas and volumes as the sums of areas of tiles and volumes of cubes. (5)
 - F. Describe the relationship between the size of the unit of measurement and the estimate of the areas and volumes. (5)
-
- A. Analyze graphs of related quantities for minimum and maximum values and justify. (8)
 - B. Describe concept of unit rates, ratios, and slope in the context of rate of change. (8)
 - C. Determine whether a pattern in a table or graph continues indefinitely and explain the reason. (8)
 - D. Determine the fractional equivalent of a repeating decimal. (8)
 - E. Continue a pattern of numbers or objects that could be extended infinitely. (8)

Science Goals (From the R.E.A.L. Initiative)

3.1 General Science

A. Cause and Effect

What is cause and effect? How is cause and effect used in science? How is cause and effect used in other fields?

B. Change

What types of change occur in nature? What is the difference between an evolutionary change and a metamorphic change? How has music changed in the 20th century? How has art changed? How has the quality of life changed? How have international boundaries changed in the world in the last 10 years? What are the most important changes that have taken place since your grandparents were your age? What makes these things the most important? What do you predict will be the most important changes in the remainder of your lifetime? How are sciences and mathematics used to predict change?

C. Computers

How is the computer like other tools? How is it different? What parts make up a computer system? How does a computer work? What is software and where does it come from? What is the difference between "storage" and "memory," and what different storage "media" are available? How is the computer keyboard different from a typewriter keyboard? Why does a computer have a "mouse" and what does it do? What are "windows" on computer systems and what are they for? What are the trends in the computer industry, and what do these trends seem to predict for computers in your lifetime? In what ways has computer technology impacted man? What common household devices utilize computer technology to help them work? Are "computers" and "technology" the same thing?

D. Concept Maps

What is learning? What is a "concept map?" When is concept mapping a good cognitive strategy? How is concept mapping like outlining?

E. Conclusions / Inference

What is meant by drawing a conclusion? How is an implication different from an inference?

F. Correlation

What does it mean when two things are "correlated?" How is correlation different from cause and effect?

G. Data, Data Gathering, Data Analysis

What are data? What are data used for? How do you collect and organize data? What computer applications could help you process data?

H. Experimentation

What is a scientific experiment? What does it mean to "test a hypothesis?" What is a variable? What is the difference between dependent and independent variables? What does it mean to "control" a variable?

I. Graphs

What are graphs? What are graphs used for? What are the different types of graphs? How do you decide which type of graph to use to represent data? How do you graph data?

J. Hypothesis / Theory

What is a hypothesis? Where do hypotheses come from? What is "experimental evidence?" What is a theory? What is a scientific law? What is the relationship between a hypothesis, a theory, and a scientific law?

K. Important Scientists

Who were Galileo, Copernicus, DaVinci, Newton, Einstein, Curie, Saulk, Goddard, Edison, and Meade, and what made them famous? Who else deserves to be on this list,

and why?

L. Invention

What is an invention? How is an invention developed? What can happen to an invention? Who are some famous scientific inventors and what were their inventions? Do inventions only occur in scientific areas? What is "creativity," and how is it developed?

M. Internet

What is the Internet? Why is it important? What can it be used for? What kind of information is available on the Internet? What is information literacy?

N. Measurement Systems

What is a system of measurement? What system of measurement is used world-wide? What customary system is used in the USA? Why? Which do you think is better?

O. Measurement Devices

What are the major physical measures, measurement systems, and measuring devices used in science?

P. Measurement

What is an ounce? Is a liquid ounce the same as an ounce of a dry substance? How does a gram compare to an ounce?

Q. Microscopes

What is a microscope and how is it used by scientists? Do all types of microscopes use visible light to see small objects? What is an "Electron Microscope?" What is an electron?

R. Research

What is research? What are some of the forms research can take? (What is the difference between "quantitative" and "qualitative" research? What is the difference between "experimental" and "descriptive" research?) What resources are commonly used in research? How is writing a research report different from writing a story? What are the steps in writing a research report? What is a bibliography? What is plagiarism?

S. Science

What are the three major physical sciences? How are they similar? How are they different? What are the major contributions of each to man's understanding of the world?

T. Scientific Method

What is the "scientific method" and what is its purpose? Where did the scientific method come from? What are the primary steps in the scientific method? Who uses the scientific method? Is the scientific method the only way to discover knowledge? How might people who are not scientists use the scientific method?

U. Technology

What is technology? What technological tools have been developed from the application of scientific knowledge? What important technologies have had an impact (positive or negative) on life?

3.2 Earth Science**A. Acid Rain**

What is acid rain? Where does it come from? How is it detected? What does it do to the environment? How acidic is the rain in your state, and what is the primary cause of the acidity?

B. Atmosphere

What is the composition of the earth's atmosphere? How do the atmosphere's systems affect us? How do the actions of people effect the atmosphere? How do the effects of one nation's impact on the atmosphere effect people in other nations and plant and animal life around the world? What is the "Greenhouse Effect?" How do scientists assess the evidence related to the greenhouse effect? What is the Ozone Layer, and why is it important? What human activities appear to damage the ozone layer? What is the relationship between skin cancer and the atmosphere?

C. Balance of Nature / Food Chain

What is the "balance of nature?" What happens when something disrupts the natural balance? What is a food chain? What roles can organisms have in a food chain?

D. Biomes / Regions

What is a biome and how does it form a large-scale life-support system? What are the six land biomes and two water biomes? What is a region and how do they form and change? How does an ecosystem compare to a biome?

E. Earthquakes

What internal forces cause earthquakes, how are they predicted and measured, and what effects do earthquakes have on our environment?

F. Ecosystems

What is an ecosystem? What are the effects of changes in the Earth's ecosystems on the larger planetary system? What is the effect of a loss of air quality on fragile ecosystems?

G. Environmental Change

How have the environments of the United States mainland, Alaska, and Hawaii changed over time? What factors have affected the environments of the US?

H. Erosion

What water-dependent systems cause weathering of the earth's surface and what are the results of such weathering? What ice-dependent forces (glaciers, etc.) cause weathering of the earth's surface and what are the results of such weathering?

I. Garbage

What happens to our garbage? What is a landfill? What is recycling? How can trash be used? How does the packaging of goods affect product quality, recycling and the amount of garbage sent to the landfill?

J. Geological History

What clues exist concerning the earth's geologic history? How do scientists determine the age of things and how is that information used to reveal the earth's history? How are time periods in earth's geological history organized? What are fossils, and how are they created?

K. Geothermal Energy Sources

Why are certain places more likely than others to have natural phenomenon such as volcanoes and earthquakes? What places in the US have the most volcanoes and earthquakes?

L. Man and Environment

In what ways can people and their environment interact beneficially? Why is it important to understand how humans and environments interact? In what ways can people and their environment interact detrimentally?

M. Natural Resources

What are the earth's "renewable resources?" How does man use and abuse renewable resources, and how can man protect these resources for the future? What are the earth's non-renewable resources, how does man use and abuse these resources, and how can man conserve these resources for the future? What are the earth's energy resources and in what ways are they harnessed to do work for man? How do our natural resources of water and air support life on earth? What are the implications of limited natural resources? Why are laws needed to regulate hunting and fishing? In what ways can we conserve our natural resources of land, water, and air, to preserve life on earth in the future?

N. Oceans

How do ocean systems affect life on earth? How is exploration of the ocean like the exploration of outer space? Why do scientists believe that life on earth came out of the oceans? What causes waves? What is "plankton," and why is plankton important? What are currents, and where are the most important ones? How did ancient sailors navigate?

O. Oil

What is "petroleum," and how was it formed? How is petroleum used and how did petroleum impact the United States during the energy crisis of the 1970's? Where are the natural reserves of petroleum found? How did the oil problems of the 1970's and 1980's change the types of cars that were sold in the United States? What are some of the drawbacks of petroleum as an energy source?

P. Plate Tectonics

What is "plate tectonics" Describe this hypotheses explaining how the continents, oceans, and other features of the earth's surface were formed. How are the "continental drift" and "plate tectonics" theories related, and in what way do they describe how the earth's crust is changed over time?

Q. Rocks & Minerals / Fossils

How were rocks and minerals formed, and what are the physical properties of the most commonly found rocks and minerals? What is the relationship between an element and a mineral?

R. Volcanoes

How does volcanic activity effect the surface of the earth, the formation of rocks and minerals, and the atmosphere?

S. Weather

What atmospheric forces cause weathering of the earth's surface, and what are the results of such weathering? What is a weather system, how is it measured, and how do weather systems affect our climate? What factors produce changes in the weather and climate systems? Given a weather map from a local newspaper, predict trends in the weather for the next few days. What are the "Gulf Stream" and "El Nino," and what effect does it seem to have on weather?

3.3 Physical Science

A. Alternative Energy Sources

How are hydropower and wind power similar? How are they different? How can solar power be used today? What is the difference between fission and fusion nuclear power? How is nuclear power being used around the world? What are the risks associated with the use of nuclear power, and how can these risks be managed?

B. Electricity

What is electricity? What is an electrical current? What are the forms of electrical current and how can this form of energy be used by man? What modern technologies we use everyday depend on electrical energy and electronic systems? What is an electrical circuit? What is a short circuit? What is an open circuit? Where can you find electrical circuits and what do they do? What are common electrical power sources? Which electrical sources can be dangerous? How is static electricity different from current electricity? What is electricity, and how is it generated?

C. Electromagnetism

How is an electromagnet made, and what machines has it made possible?

D. Elements

What is an element? How many natural elements are there? How are man-made elements formed? What is the relationship between elements, atoms, and molecules?

E. Fossil Fuels

What are fossil fuels and how are they harnessed to do work for man? What are the effects of the use of fossil fuels on the environment? What alternative energy sources exist for fossil fuels and how can they be used by man?

F. Laws of Motion

What are the "laws of motion?" Why was their discovery important?

G. Matter / Mass

According to current theory, what is the nature of matter and how can it be described? What is "mass?" How do scientists describe matter and its properties and composition? What is the "particulate model for matter?" What are some other theories or models of matter? What are the three major properties of matter? (pressure, temperature, and volume) From a scientific point of view, what are the major differences between solids, liquids, and gasses? What is the principle, "the conservation of mass?"

H. Simple Machines

What are the six types of simple machines from which all other machines are built? How do machines contribute (by multiplying speed or multiplying force) to getting work done? What is "work?"

3.4 Space Science

A. Earth / Moon System

What is a day? What is a year? Why does the sun appear to rise in the east? What causes seasons? Why does the position of the sun appear to change with the seasons? What causes eclipses? Why don't we have a solar eclipse every time the moon goes around the earth? What causes the "phases of the moon?"

B. Gravity

What is gravity? How does gravity effect life? What is the relationship between gravity and mass? What are tides, and what causes them? Why is the Earth's moon covered with craters while the Earth is not? What does this have to do with gravity?

C. Light Year

What is a light year? Is it possible that a star you see is not really there? Explain your answer. What does the equation: "rate x time = distance" have to do with this topic? When would you use that equation?

D. Location

What is the difference between absolute and relative location of a place? How do we determine the absolute location of a place? How do we determine the relative location of a place? Why is it important to know about the location of a place?

E. Rockets / Orbits

What is a rocket, and how does it work? What is an orbit, and how is a satellite put into orbit? How are satellites used in everyday communication?

F. Solar System

What are stars, planets, satellites, comets, asteroids, and meteors? How are they similar and how are they different? Why is the solar system called a

system?

G. Space Program

How did the US space program get started? How has the space program contributed to the quality of life on earth?

H. Universe

What is the "universe?" Discuss how the universe seems to be moving and changing. What objects lay beyond our solar system and what do we know about them?

3.5 Biology and Health

A. Cells

What are cells? How are plant and animal cells different? What are the different types of cells in the human body? How do human cells join together to form tissue? What are the six types of human body tissues? What is "cell division?" How do plants and animals reproduce?

B. Classification of Living Things

How do scientists organize and classify the earth's living organisms? Why? Were other systems possible?

C. Emotions

What are the names of different emotions? Where do you go when you need to talk to someone about an emotional issue?

D. Energy

What is energy? What is the difference between potential energy and kinetic energy? What are the nine major sources of energy? What sources of energy are used to heat homes in the place in which you live? In what ways can energy be conserved in daily living? What makes a device or building material energy efficient? What are some common examples of energy efficient devices and materials? What is the law of the conservation of energy?

E. Energy Use and Conservation

How does insulation work and what do "R-values" mean? What things affect the energy efficiency of a house? What things can you do in a house to affect its energy efficiency? What are some ways to conserve energy in our everyday life? What things should you consider when choosing an energy source?

F. Genetics / Heredity

What are genes, and how are characteristics passed from one animal to its descendants? What controls characteristic traits in living organisms and what happens in reproduction that transfers these traits to the offspring? What is bioengineering, and what are some of the ethical issues in this new field?

G. Healthy Living

What special care from you does your body need to ensure its proper functioning? What is the importance of good nutrition? What are some healthy dietary practices? What are some unhealthy dietary practices? What is a calorie? How can you determine how many calories are in the foods you eat? Why is food preservation important? What are "preservatives" and what methods are used to preserve food you use at home?

H. Human Reproduction

What are the male and female reproductive systems of the human body and how do they

function?

I. Learning

What is "mathematics?" What is learning? How does learning happen? How can you become a better and better learner?

J. Life

What is life? What six common features do all living things have in common? What is required to support life as we know it? What internal structures do all living organisms have in common? How do living organisms recreate themselves to sustain life? What is extinction, and what are common causes of extinction? What are the characteristics of all living organisms? (growth, reproduction, the exchange of materials and energy with the environment)

K. Maturation

What physical changes do individuals experience growing from a child to an adult? What is "the Fountain of Youth?" What changes have occurred in the typical human life span in the last 200 years? How is that different in different cultures? What factors seem related to length of life? How are changes in lifespan changing our culture, influencing politics, and our economic system? What other changes are resulting from the extended life span?

L. Mental Health

What are the three sides of the "Total Health Triangle" and what does each side represent? What is mental health? What does it mean to be mentally healthy? What are the qualities of a person with good mental health? What do emotions have to do with mental health? What is self-concept and why is it important to have a good self-concept? How can you improve your own self-concept? How can you improve another person's self-concept?

M. Microscopic Organisms

What are viruses and how do they affect living organisms? What bacteria, protists, and fungi, and how do they affect other more complex living organisms?

N. Nervous System

What is the nervous system and what is its function? What is the brain, what are its major parts, and what does it do?

O. Organs

In the human body, what is an organ? Name groups of organs in the human body that work together to serve a common purpose. What is a "transplant?"
What is an "organ donor?"

P. Photosynthesis

What is photosynthesis, and why is it important? What are chlorophyll and chloroplasts, and what role do they play in photosynthesis? What is "deforestation," and what are some of the reasons why deforestation can be a problem?

Q. Physical Health

What is physical health? What is physical fitness? What is endurance? What is flexibility? What is strength? How can you improve your own physical health?

R. Plants

How are plants different from animals? "What are "protists?" What do plants require? How does altitude affect growth of plants and animals that are found in mountain regions, and why?

S. Skeletal System

What is the skeletal system of the human body and what is its function? What is a bone? How are bones connected and what makes them move to allow your body motions? What is "marrow," and why is it important?

T. Systems

What is a system? What is a sub-system? What are some examples of systems? What are some other types of systems that are important to daily living?

U. Systems of the Human Body

What are the circulation and digestive systems of the human body, and how do they combine to supply energy to the human body? What are the respiratory and excretory systems of the human body and how do they function to remove the human body's byproducts? What is the endocrine system and how does it relate to other systems of the human body?

V. Wellness

What is wellness? What can disrupt wellness? What are communicable diseases? What causes them? How are they spread? What is a noncommunicable disease? What is an epidemic? What is immunity? How does your body fight off disease? What is a "lifestyle disease?" What is AIDS and how is it transmitted? What makes AIDS so dangerous? What can physical examinations do for health and wellness? What are some things you can do to look, feel, and be healthy?

Social Studies (From the R.E.A.L. Initiative)

4.1 World Cultures and History

A. Culture

What is a human culture? Why did various cultures begin to develop? How can different cultures interact with each other?

B. America Before Europeans

According to archaeologists, where did the very first native peoples of North and South America come from? During what time period did explorers from Europe "rediscover" the Americas? In what ways did European cultures and Native American cultures interact? Who were the native people of Alaska before foreign explorers arrived? Do any Native American cultures still exist today?

C. Civilization

What is meant by civilization? When comparing various civilizations, what aspects or developments of a civilization do archaeologists and historians use? What name(s) do historians give to our present day civilization? What patterns of existence or civilization have occurred throughout man's history? What factors have had the greatest effects on civilizations? What have we learned from these patterns that can help us in the future?

D. Archaeology

What is the difference between an archaeologist and a historian? How do archaeologists discover information about man's past? How do archaeologists organize prehistoric time periods? How do historians discover information about man's past? How do historians organize historical time periods?

E. Early Civilizations

What four major civilizations were first to develop and where were they centered? What common factors contributed to the establishment of the first civilizations? Did early civilizations contact or influence each other in any way? What are the names of the greatest early civilizations? What contributions of ancient civilizations are still in use today? Which ancient civilizations have contributed to our present culture?

F. Empires

For what reasons did early empires form? What types of empires formed in early times? How have empires affected early civilizations? What types of empires have formed in modern times? Do any empires exist today? How have empires affected modern civilizations? What legacies (benefits/problems) can an empire have for its peoples?

G. Greek Civilization

How did the Greek civilization form and what time period did it span? What factors are believed to have caused the decline of the Greek civilization? What can we learn from the events in the history of Greek civilization?

H. Important Thinkers and Communicators

Who were Plato, Aristotle, Socrates, Thoreau, Montessori, Piaget, Gandhi, Tutu, and Confucius? What were their major contributions? Who else belongs on this list, and why?

I. Invention

What is an invention? How is an invention developed? What can happen to an invention? Who are some famous scientific inventors and what were their inventions? Do inventions only occur in scientific areas? What is "creativity," and how is it developed?

J. Middle Ages

What were the major influences on daily life in western civilization during the Middle Ages? How were the people governed during the Middle Ages? What was Feudalism? What institutions influenced western culture at this time? What major changes in western civilization occurred during the late Middle Ages that have carried into modern times?

K. Museums

What is a museum? What kinds of collections can be considered for a museum? What can you learn by going to a museum? How is a museum different than a library?

L. Political Issues

What is a political issue? How does a question or an opinion become a political issue? What can happen to a political issue? What effects to political issues have on people? How are political issues solved?

M. Political Decisions

What is a political decision? Who makes political decisions? How are political decisions made? How does the culture of people affect political decision making? Do political decisions always provide the best solutions on important issues?

N. Political Systems

What is a political system? Is a political system the same as a government system?

O. Prehistoric Man

According to archaeologists, who were the first prehistoric people? Where does much of what we believe about life in prehistoric times come from? What factors most affected human existence at that time? What is the current range of estimates of man's existence on earth?

P. Propaganda

What is "propaganda?" Can propaganda be either true or false information? How is advertising a form of propaganda? When does information (a news story on TV, a newspaper article, an advertisement, etc.) become propaganda?

Q. Renaissance

What and when was "the Renaissance" and what changes took place in western civilization in that time period? What great individuals influenced these times and what were their contributions to western civilization? What institutions influenced western

civilization at this time? Was there a Renaissance in eastern civilization? Why do some people believe that the time you are living in right now will eventually be seen as "Renaissance, version 2.0?"

R. Roman Civilization

How did the Roman civilization form and what time period did it span? What factors are believed to have caused the decline of the Roman civilization? What can we learn from the events in the history of Roman civilization? When did the Roman empire fall? Why is this event important and what changes in civilization occurred? What major historical age followed and what time period did it span? After the Roman empire fell, what happened to the western part of the former empire? What major events influenced the course of western civilization during the Middle Ages? After the Roman empire fell, what happened to the eastern part of the former empire? What major events influenced the course of eastern civilization during the Middle Ages?

S. South America

What are the names of the major countries, regions, and physical features on the continent of South America? Which countries use English as a principal language? What other languages are principal languages in South America? What are the most controversial issues in South America, and how are those issues similar and different?

T. Wars

What are the primary causes of wars? Are there rules for war? What things are illegal during war, and why? How are these rules enforced? What is the United Nations? What countries participate, and why? What is a "superpower?" Who are today's superpowers, and what are the responsibilities of a superpower? What keeps a superpower from taking over less powerful countries?

U. World War II

What countries were involved in fighting World War II, when, and why? How were the population and quality of life in various countries affected by World War II? What were concentration camps and what were their purposes? How did Hitler and the Nazis use propaganda against religious, ethnic, and political groups? How was propaganda especially focused on Jews? What was Adolf Hitler's "Final Solution?"

4.2 American History

A. Democracy

What is democracy? What is necessary for a democracy to work? What percentage of the world's population lives under democratic governments? What are the most popular alternatives to democracy?

B. Civil War

What was the primary issue that caused the Civil War? What is a "civil" war? Where do you predict there might be a civil war in your lifetime?

C. Early America

What European cultures most influenced the Americas in the period of rediscovery?
What world cultures influence the United States today?

D. Early American Civilizations

What early civilizations formed in the Americas? Did any types of empires exist? What were major contributions of native American civilizations to human history? What effect did the European colonization of the Americas have on the native American civilizations?

E. Farming

How does our natural resource of land and its soil systems support life on earth? What is

the US Food and Drug Administration (FDA)? Why are farmers important to any society? How has farming changed in the last 100 years? In the last 50 years?

F. Government

Why did some form of government become necessary for man? Who governed the peoples of early times? How were the people governed in early times? What is a system of government? What systems of government can you identify? What system of government exists in the USA? Can a system of government be changed? How does the government provide services for its citizens? What government services do you rely on? What are the "branches" of the system of government in the US? How do the various levels and branches of government interact as a system?

G. Pennsylvania

Why is Pennsylvania often called a "commonwealth" instead of a state? What does "commonwealth" mean? Where in the world has that same name been used in reference to a country? What makes Pennsylvania different from other states? What have been the most significant events in Pennsylvania's history? What changes do you predict for Pennsylvania in your lifetime? What changes do you think Pennsylvania should consider to improve its future?

H. Politically Important Americans

Who were Abraham Lincoln, George Washington, Harry Truman, Franklin Roosevelt, Theodore Roosevelt, Benjamin Franklin, Thomas Jefferson, Martin Luther King, John F. Kennedy, Caesar Chavez, Susan B. Anthony, Jesse Jackson, and Richard Nixon, and why were they important to the USA? Name at least three other people you think should have been on this list and explain why.

I. Revolutionary War

Why did the United States separate itself from England? When? Who were the most important people during this change, and what did they do? How important were "the media," and how were they important? How might people from England interpret these events differently from Americans?

J. Rights and Responsibilities

What is a "right" of a citizen? How are citizen's rights determined? What government document specifies our rights as US citizens? Do citizens in other countries have the same rights as we do? Do rights change? If so, how? What is a responsibility? How do we find out about what responsibilities we have? Describe the relationship between rights and responsibilities.

K. The US

What places form the United States and what are their relative locations? What major physical regions exist in the United States mainland, Alaska, and Hawaii, and where are they located within each place? What other types of regions exist in the United States mainland, Alaska, and Hawaii? What factors influenced the development or lack of development in each region?

4.3 Economics

A. Copyright

What does it mean when something is "copyrighted?" Why do copyright laws exist? How is a copyright different from a trademark? How is a copyright different from a patent? What are the copyright laws? What are the copyright laws with regard to music? Images? Videos? Text? What should you do when you think that something you might like to do

may be a violation of copyright laws? How do you go about copyrighting something you have created?

B. Banking / Credit

What is "interest?" How does a loan from a bank work? What is a credit card, and how does it work? How do credit cards make money?

C. Budgeting

What is a budget? What does the term "balanced budget" mean? What is a budget deficit? What is the national debt, and where did it come from? What might the impacts of the national debt be on you?

D. Business

What is the "law of supply and demand?" What is profit? What does the term "cost of doing business" mean, and what are some of the things that fall into this category? What is a business plan? How is "marketing" different from "sales" and "advertising?"

E. Advertising

What advertising techniques do companies use to make their products appealing to consumers? What makes some advertisements more effective than others? How much do different types of advertisements cost, to create, and to run? How might you calculate the value of an advertisement? What ethical issues are important to consider when developing and viewing advertisements?

F. Economic Decisions

What is an economic decision? Who makes economic decisions? How are economic decisions made? How does the culture of people affect economic decision making? Do economic decisions always provide the best solutions on important issues?

G. Economic Issues

What is an economic issue? How does a question or an opinion become an economic issue? What can happen to a economic issue? What effects to economic issues have on people? How are economic issues solved?

H. Money

What are taxes, and why do they exist? How do you balance a checkbook? What is a "bounced check," and what can happen if you do this? Where does money's value come from, and how are international values placed on money?

I. Movement of People and Products

What factors cause the movement of people? How do economic factors affect the movement of people and products? How does transportation affect the movement of people and products? How does the movement of people and products effect a place?

J. Taxes

Why do we have taxes? What kinds of federal, state, and local taxes are assessed, and why? Who has the power to tax? Who gives the power to tax? Who pays the most taxes? Why?

K. Using Money

What denominations of money are used in the USA? What is an "exchange rate?" How do you calculate the cost of a product in dollars, when the price is expressed in a foreign currency? How do you make change during a purchase? What is a discount? What is interest? How do you calculate the price of an item, including tax?

4.4 **Sociology**

A. Conformity / Peer Pressure

What is conformity? Is it necessary? If so, when and why? What is peer pressure? Is peer pressure good or bad? How can we learn to handle peer pressure? How do you handle problems with peers? What do you do when someone does something unacceptable to you?

B. Community

What is a community? Does a community have to be a certain size? What kinds of communities can be formed? What do you have to do to belong to a community? What keeps a community together? What breaks a community apart? Is citizenship belonging to a community?

C. Authority

What is authority? Does there have to be someone in authority? What factors can determine who has authority? How is authority enforced? Why does authority have to be enforced? What individuals, groups or institutions have authority over you? Why?

D. Ethnicity

Where does your family come from? What ethnic groups make up your community? Which individuals and groups have contributed the most to your state's cultural heritage? Why should a community value its ethnic diversity?

E. Fact / Opinion

What is the difference between fact and opinion? How do you distinguish facts from opinions?

F. Family

What is a family? How have families changed since your parents' and grandparents' generations? What are some problems that families encounter? How do families resolve problems? What is child abuse? Where can an abused child go to find help?

G. Friendship

What is friendship? What does having a "best friend" mean? What qualities should you seek in a friend? How do friendships begin, grow, and change over time? How do you know when someone is your friend?

H. Public Opinion

What is public opinion? How is public opinion measured? What shapes public opinion? How can public opinion affect an individual's opinion or behavior? How does public opinion affect the culture of a people? How does culture affect public opinion? How can public opinion be changed?

I. Responsibility

What does responsibility mean? Are there different kinds of responsibility? What does it mean to be responsible? What should you do when someone asks or encourages you to act in an irresponsible way?

J. Social Health

What is "social health?" How do individuals affect the social health of a group or community?

K. Success

How do people in your community define success? How can we measure success? How does failure play a part in achieving success? Is success the same in other cultures? What

might you accomplish to consider your life a success?

L. Thinking

What is thinking? Who are some great thinkers, and what made them great? How can you become a better thinker?

M. Population

What effects where people live? In what ways do people effect the place where they live? In what ways does culture effect the way people live? How do the available natural resources effect how well people live?

4.5 Science Technology and Society

A. Cultures / Culture Shock

What is a "culture?" What is culture shock? In what ways have different groups reacted to cultural differences between peoples? How has this affected mankind? How does modern man react to cultural differences? What does it mean when a culture or a civilization is "native" to a region? How is a native culture or civilization different from a colonial culture or a civilization?

B. Challenging Beliefs

How has man's thinking about the solar system changed from ancient to modern times? What did most people think about early scientists who tried to convince people that the earth was not the center of the universe? What happened to Galileo when he challenged what people believed?

C. Change

What types of change occur in nature? What is the difference between an evolutionary change and a metamorphic change? How has music changed in the 20th century? How has art changed? How has the quality of life changed? How have international boundaries changed in the world in the last 10 years? What are the most important changes that have taken place since your grandparents were your age? What makes these things the most important? What do you predict will be the most important changes in the remainder of your lifetime? How are sciences and mathematics used to predict change?

D. Change / Systems

How do changes in one area of technology, such as communications or electronics, change other areas of technology, such as cars?

E. Animals and Humans

What is the difference between domestic animals and non-domestic animals? How has our view of animals changed over time? What role do animals serve in scientific research?

F. Drugs

What is a drug? When are drugs helpful and when are they harmful? Why are some drugs illegal? Why do people use illegal drugs? Where do illegal drugs come from and how do they get to your neighborhood? What societal problems are associated with the use of illegal drugs? What are "crack babies," and how will society deal with them?

G. Environmental Issues

What is an environmental issue? Name and discuss at least three. How can you express your thoughts about environmental issues? What effect have the mass media had on environmental issues? How has music served a role in environmental awareness and decision making? What positive and negative impacts do humans have on the

environment? How do increasing human populations impact the environment? How are environmental decisions made? When are they political decisions, and when are they economic decisions? Why is the term "environmentally safe" important to consumers? Is there a difference of opinion and attitude about the environment among the younger population and the adult population, nationally and in your community?

H. Ethics

What does the word ethics mean? What does it mean to be an ethical person? What causes people to do unethical things? What is a "Code of Ethics," where might you find one, and why?

I. Oil

What is "petroleum," and how was it formed? How is petroleum used and how did petroleum impact the United States during the energy crisis of the 1970's? Where are the natural reserves of petroleum found? How did the oil problems of the 1970's and 1980's change the types of cars that were sold in the United States? What are some of the drawbacks of petroleum as an energy source?

4.6 Geography

A. Countries

What is a country? How is a country different from a continent? What is the only country that is also a continent? What are provinces and states? How are countries, provinces and states related? Is a nation the same as a country?

B. Continents / Hemispheres

What is a continent? How many continents are there and what are their names? What separates continents from each other? What continents make up the Eastern Hemisphere? What continents make up the Western Hemisphere? How are they different?

C. Geography

What is geography? What are the "Five Themes of Geography?" How is each theme used to discover knowledge about the world and its people? In what sources can you find information about each place in the world?

D. Global Community

What is a "global community?" What is a global issue? What are the present global issues? What roles can the United States best serve in the global community?

E. Landforms

What are the major types of landforms? How does a landform affect such things as climate, habitat, and human activities? What are dominant landforms in your area?

F. Location

What is the difference between absolute and relative location of a place? How do we determine the absolute location of a place? How do we determine the relative location of a place? Why is it important to know about the location of a place?

G. Location / Map & Compass

How does a compass work? What are "degrees" in geographic measurement? How can distance be measured? What are latitude and longitude lines and how do they locate any spot on a globe? What are time zones? What and where is the Prime Meridian? What and where is the International Dateline?

H. Maps

What is a map and how is it used to describe characteristics of a location? Why do we need maps? What is another name for a map maker? How is a map made and what are its essential parts? What information do we learn from globes that is not readily available from flat maps? What is an atlas, and where did that name come from? How are the borders of a country drawn? Why are maps important for world peace? What different types of maps can be made for the same area or part of the earth? How do globes and flat maps differ in showing the earth? What is a great circle route on a globe, and how is it different from a straight-line route on a flat map?

I. North America

What are the names of the major countries and/or regions on the continent of North America? Which countries in North America use English as a principal language? What other languages are principal languages in North America? In what ways is Canada like the United States and in what ways is it different? In what ways is Mexico like the United States and in what ways is it different?

J. Physical Characteristics of a Place

How can places be described? What are physical characteristics of a place? What are human characteristics of a place? How do physical and human characteristics of a place affect the use and benefits of that place?

K. Regions

What is a region? How are natural regions formed? What are some kinds of natural regions? How are man-made regions formed? What are some kinds of man-made regions? What names are used to describe major regions of the US and other parts of the world?

Art (From the R.E.A.L. Initiative)

5.1 General Art

A. Color

What are the "primary colors," and how are they combined to produce the other colors? What are "complementary colors?" What IS color, and how is it perceived? What is colorblindness? What color combinations are considered pleasing today? How has the popularity of color combinations changed in the past few decades, and why?

B. Important Artists

Who were Picasso, Michelangelo, VanGogh, and DaVinci, and why is each considered to be so important?

C. Important Musicians

Why were John Philip Sousa, Beethoven, the Beatles, Mozart, Gilbert & Sullivan, Andrew Lloyd Weber, Billie Holiday, Benny Goodman, Scott Joplin, Duke Ellington, John Cage, Joan Baez, and Elvis Presley famous? Who else deserves to be on this list, and why? What type of music did each create or perform? Can you identify the major works of each when you hear them?

D. Styles of Painting

What are the similarities and differences among the realistic, impressionistic, cubist, surrealist, and pointillist styles of painting? (Learn to classify paintings according to

these categories.)

E. Symmetry

What is symmetry? How do you determine symmetry of an object? How do you make a symmetric figure?

F. Types of Music

What are the similarities and differences among jazz, blues, rock, spiritual, and classical music? Which do you prefer, and why?

6.0 Research and Technology Skills (Added by the CLC Founding Coalition)

- 6.1 Use traditional library resources to locate information.
- 6.2 Use computers to locate and retrieve information from the Internet's World Wide Web and FTP servers, as well as on-line databases, encyclopedia, and atlases.
- 6.3 Demonstrate the ability to locate and use libraries, people, and other resources outside the school.
- 6.4 Use a microcomputer word processing program to organize and present ideas (words, tables, images, charts, and graphs).
- 6.5 Use the telephone, electronic mail, and Internet-based conversations to converse with others.
- 6.6 Use a microcomputer database management program to store, sort, select, and extract information.
- 6.7 Use an electronic spreadsheet program to efficiently store, analyze, and graph numeric information.
- 6.8 Use a graphic processing program to represent ideas using illustrations and diagrams.
- 6.9 Use the World Wide Web to publish original work including text, images, and links.

7.0 Citizenship Skills (Added by the CLC Founding Coalition)

- 7.1 Form and defend positions on complex issues (i.e. protection of endangered species, taxation, air pollution) by conducting research, analyzing alternatives, and organizing evidence and arguments.
- 7.2 Debate controversial issues effectively, while retaining respect for people who disagree.
- 7.3 Work effectively as a member of a team.

8.0 Cognitive and Creative Skills (Added by the CLC Founding Coalition)

- 8.1 Demonstrate higher-order thinking.
- 8.2 Demonstrate the creative skills of fluency and elaboration.
- 8.3 Demonstrate skill in problem-solving.
- 8.4 Demonstrate the ability to integrate ideas from a variety of content sources (text, graphics, audio and visual media, etc.).
- 8.5 Demonstrate the ability to organize and plan.
- 8.6 Demonstrates the ability to monitor one's own thinking and evaluate the quality of one's own work.
- 8.7 Use and describe a comprehensive set of formal thinking skills developed by

Dr. Edward deBono.

9.0 Physical Education / Health

Working with the CLC staff and a fitness professional, each student will develop an Individualized Physical Education Plan which will outline Cardiovascular, Strength, Balance, and Flexibility Goals that the student will work towards through the year. When a goal is attained, a new goal will be established.

9.1 Cardiovascular Goals

Each CLC student will establish and work toward an appropriate:

- A. resting and exercising target heart rate.
- B. target time in which to run a half-mile.
- C. target time in which to run 100 meters.
- D. set of supporting goals to be determined by student and staff.

9.2 Strength Goals

Each CLC student will establish and work toward an appropriate:

- A. number of sit-ups to be done in sixty-seconds.
- B. number of push-ups to be done in sixty-seconds.
- C. distance to throw a softball.
- D. distance to kick a soccer ball.
- E. set of supporting goals to be determined by student and staff.

9.3 Balance and Flexibility

Each CLC student will establish and work toward an appropriate set of goals that develop balance and range of motion. Examples would be:

- A. Walk across a 2 inch wide by 8 foot long balance beam without stepping off.
- B. With feet together and legs straight, comfortably touch the floor with the palms of your hands.

At regular intervals, students will be asked to demonstrate progress towards the above goals as they have been stated in their IPEP.

Along with physical development, we believe that Physical Education should provide students with the foundation for actively participating in athletics and physical fitness activities throughout their lives. In order to provide this foundation, and allow students the activity necessary to begin meeting their goals (as outlined above), three days a week, for a minimum of 50 minutes, CLC students will engage in a variety of organized physical activities. Although competitive team and individual sports are seen as important aspects of the CLC physical education program, the focus will be placed on participation and not competition.

CLC will take advantage of Penn State's sports facilities including courts, fields, and tracks, and

students will take advantage of the many seasonal activities that are available in the Centre region. These will include but not be limited to hiking and cross country skiing.

9.4 Health

- A. Demonstrate an understanding of the food pyramid and its role in maintaining good health.
 - B. Prepare and order meals that reflect a sensible approach to nutrition.
 - C. Demonstrate a knowledge of and skills in basic first aid techniques.
 - D. Demonstrate a knowledge of and skills in stress reduction techniques.
 - E. Demonstrate a knowledge of emotions and how emotions impact physical health.
 - F. Demonstrate an understanding of the impact and dangers of drug and alcohol abuse.
 - G. Demonstrate an understanding of sexually transmitted diseases.
-

10.0 Foreign Language

All students at the CLC will participate in a 4 year Spanish Language Development Program. The goal of the FLDP is to provide students with the skills and knowledge required to converse in text and speech at a basic proficiency level, and create an awareness of the diversity of other cultures.

To accomplish proficient language skills, CLC students will make use of a several tools and resources and take part in a variety of activities.

Computer Based Instruction:

Students will spend part of their foreign language instruction time working through CBI that is designed to help develop vocabulary, grammar, and comprehension skills.

Internet Based Language Forums:

Internet Based Language Forums provide a safe place for students to practice and develop their writing and reading skills.

Guest Speakers and Class Discussions:

Guest Speakers and Class Discussions will provide an environment in which students can practice their speaking, listening, and comprehension skills.

E-Pals

To provide a real world context and practice for the development of their foreign language skills, students will participate in long term E-Pals projects. E-Pals makes use of the Internet and Email to connect kids around the world. Each CLC student will be required to find an E-Pal whose native language is Spanish. One of the goals of E-Pals is that the participants work together to learn each others language.

Students will maintain a foreign language proficiency portfolio which will describe their language learning and acquisition process and activities. This portfolio will also contain artifacts

such as letters, emails, projects, and tests that demonstrate their progress. Students will also participate in a standardized foreign language testing program.

Non-academic Goals and Objectives (Added by the CLC Founding Coalition)

The Centre Learning Community believes that knowledge, skills, and attributes are all critical to our students' futures. While knowledge and many skills are considered "academic" by most people, other goals and objectives toward which we will work may not.

Our seven initial Core Non-academic goals are:

1. Each student will demonstrate high levels of creativity.
2. Each student will demonstrate respect for the rights and feelings of other individuals.
3. Each student will demonstrate respect for property.
4. Each student will model ethical behavior.
5. Each student will demonstrate high levels of confidence.
6. Each student will demonstrate high levels of independence.
7. Each student will demonstrate the ability to work effectively as a member of a team.

A. Curriculum

The CLC will immerse its students in complex, interesting "real-world problems" and will teach the knowledge and skills in the context of these problems. For example, students will be involved in the design their school, identifying what spaces should be used for which purposes, designing and building some of the furniture, involving themselves in other important school-related decisions. Students will run a small educational software business, designing, developing, producing, and marketing multimedia learning experiences on the topics students in grades 5-8 are to learn (see the academic goals above). The CLC teachers will use these activities to "build in" the learning goals -- the skills students are to develop and the knowledge they are to gain. For example, students will learn about ratios, proportions, and percents while developing a business plan for the multimedia company, and about photosynthesis while developing instructional software on that topic.

The Role of "Multimedia Learning Modules" in the Centre Learning Community's Comprehensive Educational Plan

One of the most important learning opportunities offered by the CLC is the student-developed "multimedia learning modules," which may take a variety of forms including videotapes, websites, computer-assisted instruction lessons, booklets, or any combination of these options. CLC students engage in the **development of** multimedia learning resources because the activities involved in the development process cause them to develop and refine important skills, and to learn about important topics normally taught in school. And, the projects our students produce become resources through which other students in the CLC can learn, and perhaps even the basis for a student-run business. This document explains the process and scope of these projects, and

identifies some of the many opportunities for skill development.

Skill development is expressed in terms of the "Proposed Academic Standards for Reading and Writing," and "Proposed Academic Standards for Mathematics," published by the Pennsylvania Department of Education and the Governor's Advisory Committee on Academic Standards. These standards, once they have been finalized later this year, will become the basis for assessment of all public schools in Pennsylvania. Over the next few years, all public schools will be required to express their curriculum and describe student progress in terms of these standards. The base numbering system for the highest level standards is included by the state. We have added the next two levels of numbering (A,B,C, and 1. 2. 3.) so that readers of this document will see where certain components have been omitted.

The Process:

Each "multimedia learning module" is developed by a development team of three students, advised by a "steering committee" composed of at least five other students and the teacher. Most steering committees will also benefit from participation by community members. The three member development team, designated by the teacher, works cooperatively to develop a multimedia learning module on a topic selected by the teacher from the CLC's list of "knowlecules" (the clusters of important questions that define what is to be known). When the learning module is complete, the other students use the learning module to develop the understandings called for by the knowlecule. The development team monitors the results as students work through the learning module, and makes revisions to the learning module as indicated by the results. The process is described in more detail in the nine stages below. Each stage is described in a narrative sentence or paragraph, followed by a set of "deliverables" that list the documents the team will produce, and a description of the skills (standards) employed to complete the process.

Stage One: Investigation

During the Investigation stage, the development team members become experts on the assigned topic by conducting research, refining and extending the list of questions presented in the knowlecule, identifying key resources (media and human) that will be used as information sources, compiling notes, and creating a concept map that represents the topic.

Deliverables:

- Revised list of questions (new knowlecule)
- List of resources consulted
- Research notes
- Concept map

Skills Developed:

Commonwealth of Pennsylvania Reading and Language Arts Standards:

- 1.1 Read Independently (all components)
- 1.2 Reading to Solve Problems, Make Decisions, and Draw Conclusions (Components A- G)
- 1.3 Reading, analyzing, and interpreting literature (components B, C, G)
- 1.4 Process Writing (component A)

1.9 Researching (all components)

Stage Two: Product Proposal

Following a successful review (by the teacher) of the deliverables from stage one, students submit a written report and deliver a formal presentation documenting their project plan to a steering committee consisting of five students, the teacher, and usually one or more community members with expertise in the area being studied. The paper and presentation contain:

- An Abstract: A narrative description of the project's purpose, scope, media selected, and overview of the product design.
- Learning Objectives / Assessment Items: A list of outcomes describing what students who use the lesson will be able to do, and a set of "test items" that will be used to measure what students know and can do.
- Resource List: A document describing the references, resources, and people who will be consulted during the development of the project.
- Timeline: A proposed set of deadlines and milestones to guide project management.
- Budget: A document describing a proposed budget for the project and how that budget will be managed and recorded.
- Participant Roles: A document describing each team member's responsibilities within the project, (consistent with Individual Learning Targets established at the end of the previous project -- see stage eight below).

Before the presentation, the steering committee will have read the proposal carefully, preparing questions for the team. The steering committee listens to the proposal presentation, formulating questions and taking notes, and immediately following the presentation, asks questions and makes recommendations for revision as necessary, and negotiates a date for resubmission (if needed).

Deliverables:

- Abstract
- Objectives and Assessment Items
- Revised Resource List
- Project Timeline
- Proposed Budget
- Participant Role Description

Skills Developed:

Commonwealth of Pennsylvania Reading and Language Arts Standards:

- 1.1 Read Independently (all components)
- 1.2 Reading to Solve Problems, Make Decisions, and Draw Conclusions
(Components A- G)
- 1.4 Process Writing (all components)
- 1.5 Types of Writing (components B, C)
- 1.6 Quality of Writing (all components)
- 1.7 Speaking and Listening (all components)
- 1.8 Characteristics and Functions of English Language
- 1.9 Researching (all components)

Commonwealth of Pennsylvania Mathematics Standards:

- 2.1 Numbers, Number Systems, and Number Relationships (B,D,G,I,L,R)
- 2.2 Computation and Estimation (A-E,G,L-S)
- 2.3 Measurement and Estimation (G)
- 2.4 Mathematical Reasoning and Connections (B,D,G)
- 2.5 Mathematical Problem Solving and Communication (C)
- 2.6 Statistics and Data Analysis (A,E)
- 2.8 Algebra and Functions (J,K,M,N,T)
- 2.11 Concepts of Calculus (B,C,D,H,I)

Stage Three: Project Design

For each objective identified, the team selects appropriate media and a promising instructional strategy, develops an outline, a flow chart, and/or a storyboard, as appropriate, and presents these to the steering committee for input. A revised budget for the project is also presented at this stage.

Deliverables:

- Media Selection Justification
- Instructional Strategy
- Outlines, flow charts, and/or storyboards
- Revised Budget

Skills Developed:

Commonwealth of Pennsylvania Reading and Language Arts Standards:

- 1.2 Reading to Solve Problems, Make Decisions, and Draw Conclusions (Components A- G)
- 1.4 Process Writing (all components)
- 1.5 Types of Writing (all components)
- 1.6 Quality of Writing (all components)
- 1.7 Speaking and Listening (all components)
- 1.9 Research (all components)

Commonwealth of Pennsylvania Mathematics Standards:

- 2.1 Numbers, Number Systems, and Number Relationships (B,D,G,I,L,R)
- 2.2 Computation and Estimation (A-E,G,L-S)
- 2.3 Measurement and Estimation (G)
- 2.4 Mathematical Reasoning and Connections (B,D,G)
- 2.5 Mathematical Problem Solving and Communication (C)
- 2.6 Statistics and Data Analysis (A,E)
- 2.8 Algebra and Functions (J,K,M,N,T)
- 2.11 Concepts of Calculus (B,C,D,H,I)

Stage Four: Project Development

Using the necessary tools, develop the product as designed. Gather input from Steering Committee and revise as indicated, throughout the development stage. The team also develops the computer-based assessment system to allow computer-based testing on the topic. At all levels of the process the team is responsible for managing and tracking the project budget.

Deliverables:

- Multimedia Lesson
- Computer-based assessment system
- Notes on one-to-one formative evaluations
- Budget updates

Skills Developed:

Commonwealth of Pennsylvania Reading and Language Arts Standards:

- 1.2 Reading to Solve Problems, Make Decisions, and Draw Conclusions (Components A- G)
- 1.4 Process Writing (all components)
- 1.5 Types of Writing (all components)
- 1.6 Quality of Writing (all components)
- 1.7 Speaking and Listening (all components)

Commonwealth of Pennsylvania Mathematics Standards:

- 2.1 Numbers, Number Systems, and Number Relationships (B,D,G,I,L,R)
- 2.2 Computation and Estimation (A-E,G,L-S)
- 2.3 Measurement and Estimation (G)
- 2.4 Mathematical Reasoning and Connections (B,D,G)
- 2.5 Mathematical Problem Solving and Communication (C)
- 2.6 Statistics and Data Analysis (A,E)
- 2.8 Algebra and Functions (J,K,M,N,T)
- 2.11 Concepts of Calculus (B,C,D,H,I)

Stage Five: Testing

Test the effectiveness of the product using a random sample of at least three students who have not yet demonstrated competency on the topic.

Deliverables:

- Report of test results
- Written recommendations for revision

Skills Developed:

Commonwealth of Pennsylvania Reading and Language Arts Standards:

- 1.2 Reading to Solve Problems, Make Decisions, and Draw Conclusions (Components A- G)
- 1.7 Speaking and Listening (all components)
- 1.9 Researching (all components)

Commonwealth of Pennsylvania Mathematics Standards:

- 2.1 Numbers, Number Systems, and Number Relationships (B,D,G,I,L,R)
- 2.2 Computation and Estimation (A-E,G,L-S)
- 2.3 Measurement and Estimation (G)
- 2.4 Mathematical Reasoning and Connections (BDG)
- 2.5 Mathematical Problem Solving and Communication (C)
- 2.6 Statistics and Data Analysis (A,B,D,E,F,I,K)

- 2.7 Probability and Predictions (H)
- 2.8 Algebra and Functions (J,K,M,N,T)
- 2.11 Concepts of Calculus (B,C,D,H,I)

Stage Six: Revision

Revise product, based on test results, and schedule an end-of-project evaluation meeting with the steering committee. Send an email invitation to the Steering Committee asking that they read the end-of-project report, use the module, and bring their feedback to the end-of-project evaluation meeting. The end-of-project report includes student's assessment of their own performance and of the performance of other team members. The document will also include a final budget report.

Deliverables:

- Revised Multimedia Lesson
- End-of Project Report
- E-mail invitation to the Steering Committee

Skills Developed:

Commonwealth of Pennsylvania Reading and Language Arts Standards:

- 1.4 Process Writing (all components)
- 1.5 Types of Writing (all components)
- 1.6 Quality of Writing (all components)
- 1.7 Speaking and Listening (all components)

Commonwealth of Pennsylvania Mathematics Standards:

- 2.1 Numbers, Number Systems, and Number Relationships (B,D,G,I,L,R)
- 2.2 Computation and Estimation (A-E,G,L-S)
- 2.3 Measurement and Estimation (G)
- 2.4 Mathematical Reasoning and Connections (BDG)
- 2.5 Mathematical Problem Solving and Communication (C)
- 2.6 Statistics and Data Analysis (A & E)
- 2.8 Algebra and Functions (J,K,M,N,T)
- 2.11 Concepts of Calculus (B,C,D,H,I)

Stage Seven: End-of-project Evaluation and Revision

Conduct end-of-project evaluation meeting. Team gathers feedback from Steering Committee and leads discussion of which comments will lead to product modifications.

Deliverables:

- Notes on feedback from Steering Committee
- Final Release version of the Multimedia Learning Module

Skills Developed:

Commonwealth of Pennsylvania Reading and Language Arts Standards:

- 1.2 Reading to Solve Problems, Make Decisions, and Draw Conclusions (Components A- G)
- 1.4 Process Writing (components C, D, E)

- 1.5 Types of Writing (all components)
- 1.6 Quality of Writing (all components)
- 1.7 Speaking and Listening (all components)

Stage Eight: Goal Setting for Next Project

The Teacher meets with each team member to discuss individual progress made, choose next project topic, and set new Individual Learning Target Contract that will guide roles played in the development of the next project. Assessments of key skills and attributes are recorded in the student's on-line portfolio.

Deliverables:

- Individual Learning Target Contract for each student
- Next project topic
- Updated Student Portfolio

Skills Developed:

Commonwealth of Pennsylvania Reading and Language Arts Standards:

1.7 Speaking and Listening

Stage Nine: Monitor and Maintain

The students monitor results generated as other students work with the lesson, suggesting and making improvements to the lesson, based on results.

Deliverables:

- Report on "Lesson Performance"
- New version(s) of the Multimedia Learning Module

Skills Developed:

Commonwealth of Pennsylvania Reading and Language Arts Standards:

1.4 Process Writing (components C, D, E)

1.5 Types of Writing (all components)

1.6 Quality of Writing (all components)

1.7 Speaking and Listening (all components)

1.9 Researching

Commonwealth of Pennsylvania Mathematics Standards:

2.2 Computation and Estimation (A-E,G,L-S)

2.3 Measurement and Estimation (G)

2.4 Mathematical Reasoning and Connections (BDG)

2.5 Mathematical Problem Solving and Communication (C)

2.6 Statistics and Data Analysis (A,B,D,E,F,I,K)

2.7 Probability and Predictions (H)

2.8 Algebra and Functions (J,K,M,N,T)

2.11 Concepts of Calculus (B,C,D,H,I)

Content Sequencing:

Although different students will accomplish the learning tasks in different sequences, we have arranged the topics about which the students will develop modules to reflect a coherent structure that resembles the sequence in which the topics are approached in other schools. The topics will be arranged in this way:

5th grade

Math - General

Science - Earth

Social Studies - American History and Economics

Language - General

6th grade

Math - General

Science - Physical Science
Social Studies - World Cultures and History / Geography
Language - General

7th grade

Math - Algebra
Science - Space Science / Environmental Ed.
Social Studies - Government
Language - General

8th grade

Math - Geometry / Algebra
Science - Biology / Physical / Systems
Social Studies - Sociology / Science Society and Technology
Language - General / Plays / Shakespeare

A. “Teaching Methods”

While the project-based approach described above is an outstanding way to accomplish much of what is described in our academic and non-academic goals, there are topics and skills that "don't fit" into the projects or are best handled through formal instruction. This, in combination with the vast differences in individual learning styles and backgrounds causes us to also employ a second strategy: a comprehensive set of computer-based lessons on the topics normally taught at these grades. We will make available, both at home and at school, key components of the Jostens "Integrated Learning System," which provides lessons in math, reading, language arts, science, and social studies.

In addition, we will employ the classic strategies of one-to-one tutoring, peer tutoring, and occasional bursts of small group instruction to students who are ready for and in need of instruction on an identified topic. These "mini lessons" will take place during the regular school day, while other students are engaged in project work.

Individualized Educational Plans (IEP)

Working with their teacher, parents, and professional consultants when necessary, each student will develop an Individualized Educational Plan (IEP) that will guide the student and teachers as they plan and work toward achieving the student's academic goals. The IEP will state academic goals and objectives and outline an educational strategy and timeline through which those goals and objectives will be met. The IEP will also be used to track the student's progress towards meeting academic goals and objectives. This IEP will be maintained in electronic form which will allow for immediate access and updating. Parents and students will have continued access to the IEP.

A. Accommodating Students with Special Needs

Students with special needs will be welcomed into the Centre Learning Community. Individualized educational plans will be developed for each student in the school, including those with special needs, through conversations that include the student, the

parents (or other advocates), the educators, and appropriate specialists from outside the school. We have consulted with the professionals at the Central Intermediate Unit who are in charge of educating special needs students, and have agreed on projected numbers of students to be tested, rates for testing, and possible ways to provide services. However, all involved have agreed that it is impossible to create a blanket policy for dealing with special needs students. Each deserves a customized plan that can not be developed in advance. The costs and services required can not be predicted at this time, but our commitment to students with special needs is real, and this commitment is reflected in the attached budget.

A. Assessment Methods

Assessing the Performance of the School

The school will be evaluated in six ways:

- 1) All students will participate in statewide testing programs, and the results of these tests will be used to assess school performance. (Despite their imperfections, standardized and criterion-referenced testing programs offer a form of evidence that should not be dismissed.)
- 2) Student performance against the standards expressed in this document will be examined and tracked on an ongoing basis. We will develop a method to keep students and their parents informed of student progress.
- 3) Parents will be surveyed at monthly meetings, and their beliefs about the school's performance will be the topic of public discussion.
- 4) Students will be surveyed four times each year, and their beliefs about the school's performance will be the topic of public discussion, in the same meeting at which parent feelings are discussed.
- 5) Educators will be surveyed four times each year, and their beliefs about the school's performance will be the topic of public discussion.
- 6) Educators will meet with the Administrator once each month to discuss issues and opportunities for enhancing the school's programs.

The CLC will provide parents, appropriate School District officials, and appropriate persons employed by the Pennsylvania Department of Education with online access to appropriate data on student and school attendance and performance, by allowing access to information in secure locations on the school's computer network.

Teachers will be evaluated based on both student performance and parent satisfaction. Student performance will be assessed by examining the goals and objectives met, and parent satisfaction will be measured through the monthly meetings mentioned above. If parents are dissatisfied with the performance of the educator, the administrator and educator will discuss the problem and identify a course of action. If multiple parents are dissatisfied, the administrator will host a meeting with the educator and dissatisfied parents. If more than 20% of the parents remain dissatisfied with a teacher's performance, and student achievement is not considered outstanding, the CLC Board of Trustees may choose to seek a different educator.

Evaluating Student Performance

As mentioned above, each CLC student will have an Individualized Education Plan (IEP), developed through conversations that include the student, the parents (or other advocates), the educator(s), and specialists from outside the school (as appropriate). This plan will define an aggressive, challenging set of accomplishments, which includes attainment of learning outcomes identified in the state standards. Because students' aptitudes and interests vary, student performance will be evaluated as progress against each student's IEP, not competitively as comparisons with the performance of other students. Students will strive to attain all of the accomplishments identified in the IEP, not to outperform each other.

The purpose of our system of assessment is to contribute to student performance by:

- informing students in no uncertain terms what is to be learned
- making it easier for teachers to monitor and track attainment of knowledge and skill
- making it easier for teachers to deliver the learning experiences students need, and
- keeping parents informed about student progress.

To achieve this purpose, the CLC will employ different strategies to measure and report knowledge, skills, and attributes. Each is described briefly below.

"Knowledge" refers to the possession of information. A person either does or does not "know" something. Knowledge can be tested in a variety of ways, the most direct of which is asking a person to tell what they know. Sometimes we know things we can't express well, but most of the knowledge we work to convey in schools can be retold.

The CLC will assess knowledge through online tests and open-ended written and oral tests. The online tests will be developed as part of the multimedia learning modules students develop. The "open-ended tests" can take the form of interviews scheduled with the teacher or through the submission of papers or electronic mail that contains all of the questions contained in the knowlecules and the students' responses to them. When the teacher assesses the quality of the students' responses, any completed questions and knowlecules will be recorded as part of an on-line "progress report" as illustrated below. Students will be able to submit tests on any knowlecule at any time, and take and re-take tests until they have successfully exhibited the desired level of understanding.

Back Forward Home Reload Images Open Print Find Stop

Knowledge Report for John Thompson

Which set of Knowlecules would you like to review?

[Fine Arts](#)

[Health / P.E.](#)

[Language Arts](#)

[Math](#)

[Music](#)

[Science](#)

[Social Studies](#)

[All, listed alphabetically](#)

[By Individualized Education Plan \(IEP\)](#)

Balance of Nature / Food Chain

<input checked="" type="checkbox"/>	What is the "balance of nature?"
<input checked="" type="checkbox"/>	What happens when something disrupts the natural balance?
<input checked="" type="checkbox"/>	What is a food chain?
<input checked="" type="checkbox"/>	What roles can organisms have in a food chain?

Banking / Credit

<input checked="" type="checkbox"/>	What is "interest?"
<input type="checkbox"/>	How does a loan from a bank work?
<input checked="" type="checkbox"/>	What is a credit card, and how does it work?
<input type="checkbox"/>	How do credit card companies make money?

Bases / Place Value

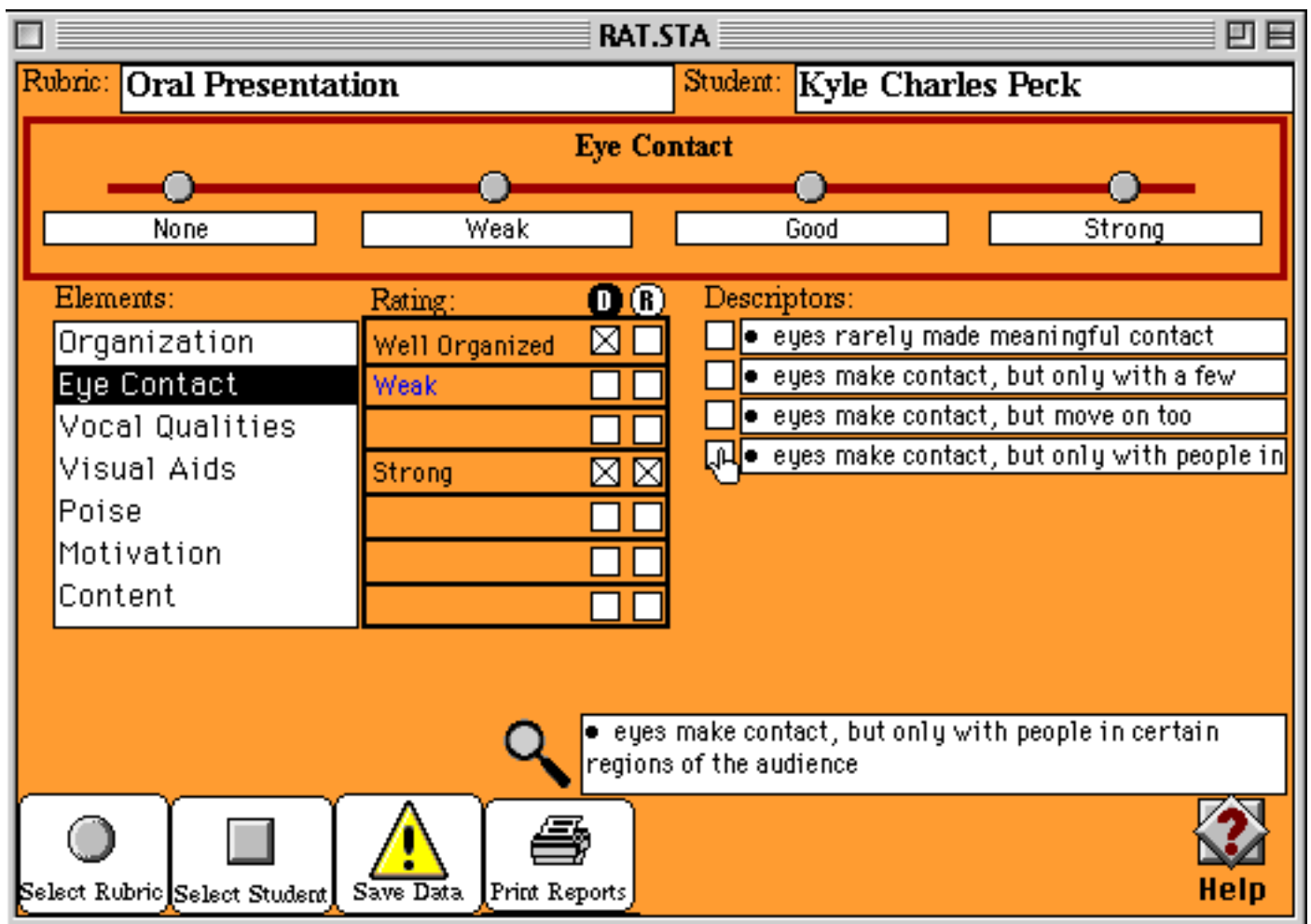
<input type="checkbox"/>	What is the "base" of our number system. Why?
--------------------------	-----------------------------------------------

Skills are different from knowledge in several important ways:

- skills must be practiced to be learned
- they usually reflect levels of competence that develop with experience and guidance,
- they should be assessed repeatedly by demonstration, and

- performances should be accompanied by lots of informative feedback.

For this reason, the CLC will assess skills using "rubrics," -- generally a set of scales designed to describe complex performances. The CLC teachers and Administrator will maintain a close relationship with and will contribute to projects currently underway in Intermediate Units across Pennsylvania that are working to develop assessment tools for assessing the attainment of the draft standards. We will use a tool known as the "Rubric Processor," developed by Penn State University and the Greensburg Salem School District, through two "Goals 2000" grants. This tool allows students and teachers to focus on the components of a high-quality performance, and to provide extensive feedback, efficiently. Using this tool, teachers can create rubrics for important performances, and can communicate effectively with students and their parents. A sample screen below shows part of the process, as a teacher rates a student's eye contact as part of a review of an oral presentation. Seven elements of an effective presentation have been identified, and each rating is characterized by a series of descriptors and recommendations, which come together to form a narrative report like the one included as Appendix C. Reports on skill development will become part of an "electronic portfolio" available to students at school and at home.



Attributes are very difficult to measure and report. However the CLC believes that they are

important and will facilitate informal discussions about them as a standard part of parent/student/teacher conferences.

Communication with parents and students will be ongoing. The latest data on student progress will be available online to our students, their parents, the School Districts in which our students reside, the Pennsylvania Department of Education, and of course to the CLC staff.

A. Maintaining School Records and Disseminating Required Information

The maintenance of school records and the dissemination of information required under the law will be the shared responsibility of students, parents, educators, and the administrator. An electronic record keeping system will be employed, and information on student performance will be made available to parents and other authorized parties via the Internet and printed reports. "PIN Numbers" (Personal Identification Numbers) will be used to control access to information (as they are to bank accounts). Data about student achievement of educational goals and objectives will be entered automatically when students pass computerized tests, and will be entered by educators when students demonstrate skill in off-line exhibitions.

I. Admissions Policy and Criteria for Student Examination

The CLC will determine its minimum and maximum number of students, based on its academic goals and its cost to operate. All students will be allowed to apply for these vacancies, based on the procedure described below. (There will be no entry testing, or prerequisite skills necessary.) First priority in admissions will be give to children whose parents have actively participated in the development of the school, and to siblings of students formerly enrolled in the CLC. (One set of parents, Patricia and Charles Ryan, parents of two CLC aged sons, are the only parents to which this priority will apply.) If the number of students from sponsoring districts (districts that have approved the charter) applying for the remaining openings exceeds the number of openings available, a lottery will be held among these students to fill the openings. If the number of openings exceeds the number of applicants from sponsoring districts, applicants from other school districts will be admitted, via lottery if the number of out-of-district applicants exceeds the number of openings.

During the first three years of the school's operation, we agree to limit the growth to 48 students in the 1998-1999 school year, and to expand by only 24 more students in each of the two following years. Recruitment and admission practices are defined in the CLC bylaws.

I. Suspension and Expulsion Policy

Rules or Guidelines Governing Student Behavior

A Code of Conduct is specified in the CLC Bylaws. The students, parents, and educators of the CLC will collaboratively modify this code during the first year of the school's operation.

Policies Regarding Student Expulsion and Suspension

We hope that the smallness of our school and the intense relationships that will develop between educators and students and between educators and parents will make expulsion and suspension unnecessary. However, we refuse to let recurring inappropriate behavior by a few students inhibit the progress of many. Extreme student behavior problems will result in review, decision, and action by the Board of Trustees. The teachers will have the power to recommend suspension or expulsion of a student, but this decision must be reviewed by the Board of Trustees, and should only follow actions that jeopardized the safety of other students, and written communication with the student's parents or other advocates warning that such action would be taken if the detrimental behavior is not ended.

I. Involvement of Community Groups

The Centre Learning Community will be tied to the community in many different ways. Perhaps the most important will be related to our relationship with "Filmspace, Inc., a State College-based communication design and production firm that specializes in educational video and interactive media. With over twenty-five years in presentation design and production, their work has been utilized in museums, on television, in K-12 and higher education, and more recently on the Internet. Their work in environmentally-oriented educational projects goes back to 1973 when they were involved in a public television-produced series for middle-school audiences on ecology. Filmspace produced three shows in the 13-part series, including "Nova," a Blue Ribbon winner at the American Film Festival.

Filmspace maintains a full-time staff of approximately twenty writers, designers, producers, directors, editors, and audio/computer experts. They maintain relationships with dozens of specialists, including illustrators, photographers, computer programmers, animators, etc.

Filmspace maintains a completely digital design and post-production environment which relies on two AVID digital video editing systems and a 24-track digital audio studio that supports all video and web production.

In addition to our connection with Filmspace, we will use electronic mail and other electronic forms of communication to contact professionals in the local community and around the world, forming a new "virtual community." We anticipate links with senior citizens' organizations, preschool programs, and service organizations in the community. The CLC intends to offer an electronic, Internet-based, "Window into the Classroom" by providing an inexpensive video camera connected to a computer on the Internet that will transmit real-time video and audio that any parent's Internet-based computer can be configured to receive. This will allow parents to use spare moments to "drop in on" CLC activities. The same inexpensive camera (a little larger than a golf ball and costing less than \$100) can be shipped with the necessary software to community members and experts around the world to allow inexpensive real-time interviews when visits are impossible.

The Nature and Extent of Parent Involvement

Parent involvement is one of the cornerstones of our school. Thanks primarily to the multi-year connection between the students and the teacher, the relationships between parents and educators will be far more personal and productive. Many charter schools *require* a high level of parent involvement or students are not accepted. While we will not require high levels of parent involvement *at the school* (because that alone would deprive certain students of a powerful educational experience and many of the students who need our services most would be excluded from participation), we will require that each parent maintain contact with the teacher through telephone, email, or another form of contact. Each educator will strive to develop high levels of parent involvement. We will not require it on the opening day, but we will create it by using parents' time well.

Community Backing

A small core of parents and educators have gathered to create the ideas expressed in this document. State College Chamber of Commerce Member businesses are aware of our work, and are considering ways to support us, as are a group of people forming a children's museum in the area. The Dean, several professors, and graduate students from the College of Education at Penn State have pledged support and/or have been key players in the development of the ideas expressed in this document. We have also discussed the CLC with the innovative professors and staff members of Penn State's "Schreyer Institute for Innovation in Learning," and may develop a long-term relationship with them. All of these relationships pale in comparison with the outstanding support we receive from Filmspace, our new partners.

I. Financial Plan and Audit Plan

Enrollment Projections and Goal, Grades Served, and Students per Grade

Because we believe that there are benefits to small schools and because we understand the financial and planning implications our school presents to local school districts, we have agreed to constrain our growth in our first three years, expanding from a maximum of 48 students in 1998-1999, to 72 students in the 1999-2000, and 96 students in the 2000-2001 school year. Although the school will ultimately serve students in grades 5-8, we will only accept students in grades 5 and 6, since the outcomes we strive for can not be accomplished in one or two years. We will accept students who are leaving grades 4 and 5 in traditional schools, expecting a three or four year commitment to the CLC.

Startup and Operating Budget

Based on these projections, the Budget for the CLC is attached as Appendix D.

Fundraising to Supplement Per Pupil Allocations

The Centre Learning Community will seek external support from local businesses and manufacturers of educational products, only during the initial years, to defray the large startup costs that handicap most charter school efforts. Because we hope to demonstrate that a series of high-quality educational options can operate at the same cost as public education, we will not seek donations or other contributions to supplement the per pupil allocations after the first few years. Our goal is to create successful academic programs without increased cost.

Auditing

An accountant will be hired to manage the school finances. The Board of Trustees will review budgets and expenditures, and will approve changes in budgets recommended by the teachers. A formal audit will be conducted by the accountant on an annual basis, and the books will be open to the public and to auditors from sponsoring school districts and the Pennsylvania Department of Education.

I. Review of Complaint Procedures

The Centre Learning Community, like all charter schools, will thrive or die based on parent satisfaction. For this reason and others, we take parent satisfaction very seriously. We will communicate clearly what students have and have not learned, and, as described in the assessment section above, parents will be surveyed at monthly meetings and will be encouraged to express themselves to the educators and the administrator. Each parent complaint will be dealt with in two days or less, via telephone, meeting, email, or via written response. In all cases, a brief written report stating the cause of the parent's dissatisfaction and the action taken will be sent by the educator to the administrator.

Parent complaints will not be viewed negatively, but as opportunities to strengthen the bond with the home and as important input through which to strengthen the school.

I. Physical Facility Description / Transportation

Facilities:

Centre Learning Community Charter School and Filmspace, Inc. are pleased to announce a partnership that will include a shared learning and work space, to be located at 616 West College Ave. in the building that currently houses Fisher Auto Parts. This partnership is to be a true cooperative effort through which CLC and Filmspace will share space, resources, and expertise in order to create an environment which maximizes learning, creativity, and production.

Unfortunately, the building will not be renovated and ready for occupancy until January, 1999. However, in the spirit of this newly formed partnership, CLC and Filmspace are working together to find a temporary location to house both organizations during the renovations. Brian Ashworth, business manager at Filmspace, and Mark Toci (lead teacher at CLC) are working together to find and solidify appropriate temporary facilities. Recently, CLC and Filmspace have contacted Tom Songer and Ed Friedman, two property owners in the State College area, to discuss possible temporary locations. CLC also holds first right of refusal on a 4000 square foot facility located at 232 E. College Ave, below the clothing store known as "Mr. Charles."

We are looking for approximately 50 - 60 square feet per student, in a public building, and anticipate annual expenses of approximately \$10 - \$15 per square foot. The search is in full swing, and we are confident that a suitable space will be identified before the State College Area School Board acts on this application in April.

Transporting Students to Educational Facilities

As stated in the legislation creating charter schools, students residing in the State College Area School District and other districts that have approved our charter will be provided transportation in the same manner as those attending other public schools. Students of other school districts are to be provided transportation under the same section of the school code that currently covers non-public schools by their district of residence. Districts that provide transportation to a charter school outside their own district are eligible for the special payment (currently \$200) per pupil currently provided for transporting non-public students.

Should we extend our CLC school calendar to include the summer months, or other dates when the local school districts are not in session, we will not expect the districts to supply transportation, but we may invite them to offer those services for a fee to be negotiated at that time.

I. Proposed School Calendar

In it's first three years of operation, the CLC will operate on the same calendar as the State College Area School District, including at least 180 school days and 900 hours of instruction. The CLC will operate on an extended day schedule, with doors opening at 7:15 every morning and closing at 5:30 PM, to accommodate most parents' work schedules. Students may arrive and depart based on travel schedules as determined by busses and parent work schedules. We will

develop a program that opens the facility on some evenings, probably by inviting trained parent volunteers (with appropriate criminal and child abuse clearances) to staff the facility.

I. Proposed Faculty and Professional Development Plan

The Centre Learning Community will hire on the basis of willingness and ability to lead students to the accomplishment of the school's objectives. Each position will be advertised, and a search committee will make recommendations to the Board of Trustees based on their assessment of the candidates' ability to cause students to reach the stated objectives. Attributes of the applicant, including energy level, confidence, enthusiasm, and ethics will be an important part of the assessment, as will skills considered important to success.

We anticipate employing two full-time educators in 1998, 3 in 1999, and 4 in 2000. As required by the charter school legislation, at least 75% of our professional staff will hold appropriate Pennsylvania certification, and all will have received criminal and child abuse clearances.

The CLC will make use of paraprofessionals as instructional assistants and instructional aides.

Professional Development Opportunities

Each educator will develop his or her own professional development plan. The educator will be allowed to spend five work days per year engaged in professional development, during which the administrator or an appropriate substitute teacher will supervise the students. The CLC budget includes several line items for professional development, to include participation in appropriate workshops, conferences, and courses, and the acquisition of books, newspapers, magazines, professional journals, and other publications important to the educator's professional development.

I. Student Participation in District Extra-Curricular Activities

Individual CLC students may request to be permitted to engage in any of the full range of extra curricular activities offered by their home school districts. According to the legislation, "... no school district of residence shall prohibit a student of a charter school from participating in any extra curricular."

I. Report of Criminal History and Child Abuse Record for Individuals Employed

Results of a background check for criminal record and child abuse will be submitted for each educator, staff member, and administrator, before they are hired, and for each parent volunteer. Dr. Peck and Mark Toci have received these clearances recently, and will have them updated before the CLC opens.

I. Plan for Liability and Appropriate Insurance Coverage

Upon being granted a charter, the CLC will seek insurance to protect against liability and risk by purchasing insurance coverage as required in the charter, and will operate in a manner that minimizes the risk of injury and harm to the students, employees, and others. Insurance coverage will include health, workers compensation, retirement, automobile liability, general liability, property, trustee and employee liability, performance surety, and tort liability. Bids for these coverages have been received and are included in the attached budget.

Appendix A: The CLC Bylaws

Centre Learning Community By-laws

3/2/98

Section I - Name

The name of the Charter School shall be the Centre Learning Community Charter School, (also referred to as "CLC").

Section II - Mission

The mission of the Centre Learning Community Charter School is to create a powerful, safe, secure, active, project-based learning environment in which students develop the necessary skills, knowledge, and attributes to lead a fulfilled and successful life.

Section III - Students and Parents

CLC will accept students normally entering the 5th and 6th grade into an educational program that extends to 8th grade. The CLC will require no prerequisites for admission, and as the CLC is a public school, there will be no tuition. The CLC will serve students without regard to race, color, national or ethnic origin.

The CLC will determine its minimum and maximum number of students, based on its academic goals and its cost to operate. All students will be allowed to apply for these vacancies, based on the procedure described below.

- 1) An application period will be advertised during which students from school districts that have approved the charter may apply.
- 2) At the end of the application period a lottery will be held during which applicants are randomly selected to fill the vacancies.
- 3) If vacancies remain at the end of this application/lottery period, a second application period will be advertised, during which students from other school districts may also apply.
- 4) At the end of this period a second lottery will be held to fill remaining vacancies.

CLC teachers and educators will provide parents and guardians with important and appropriate information concerning their child's academic and non-academic progress on a regular basis. As such, CLC will work with parents/guardians to see that open and efficient lines of communication are established. Parents of CLC students will be required to agree, by signing the application, that they will maintain communication with the teachers about their child's progress.

Section IV - School Calendar

The CLC school calendar will coincide with the State College Area School District school calendar. As such, CLC transportation requirements will be in keeping with those of the State College Area School District. The CLC will provide a minimum of 180 days or 900 hours of instruction.

Section V - Criminal Background Check

As specified by Act 22, all CLC employees “who have direct contact with students” are required to submit a “report of criminal history record information” prior to accepting a position with the charter school. Kyle Peck and Mark Toci have recently received Act 34 clearance and are in the process of updating this clearance in order to meet the necessary requirements. This information will be provided to the State College School District prior to accepting positions, as stated in the legislation.

Section VI - Code of Conduct

It is the goal of CLC to provide students with a safe and secure learning environment. Discipline is the process through which a person discovers not only his or her rights and those of his or her peers, but also learns about responsibilities within the context of a community.

The Code of Conduct will support and reinforce the primary mission of the school and therefore will frown on behavior that threatens that mission. It will connote a higher standard than the avoidance of physical harm or disruption among students and staff. Students and staff must be respectful and civil toward one another at all times. Respect for the individual is expected regardless of race, color, sex, creed, intelligence, disability, or age.

Possession or use of any weapon, explosive, or illegal drug, or any assault on CLC staff or students will result in automatic, permanent expulsion or dismissal.

The Code of Conduct will be finalized by the Board of Trustees prior to opening the school.

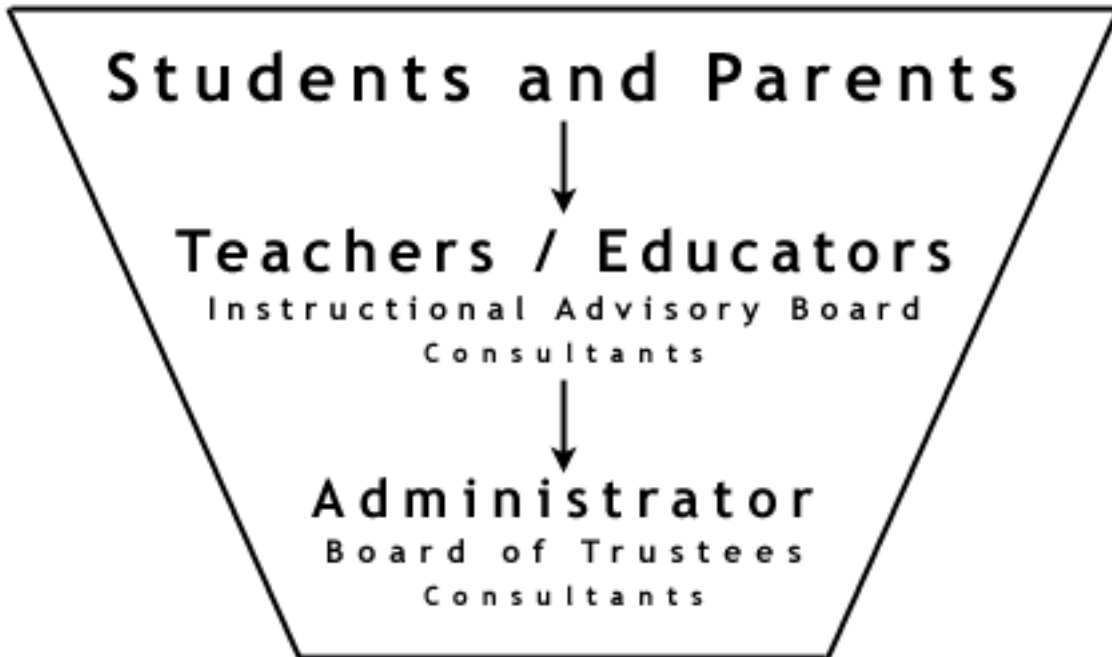
Section VII - Core Planning Group

Members of the core planning group of the CLC are:

- Dr. Kyle L. Peck
- Mark Toci
- Patricia and Charles Ryan (parents)
- Malena Moore
- Dr. Sheri Roberts
- Tom Keiter
- Nick Petnick
- Dr. Catherine Augustine

Section VIII - Governance / Organizational Structure

CLC Decision Making



A. Parents and Students

Parents and students are positioned at the top of the CLC organizational chart, and are encouraged to become involved in all aspects of the Centre Learning Community. As described below, there is a formal process through which parents and students can voice their thoughts and concerns. Perhaps more importantly though, is the ability of the parents and students to communicate with the teachers and administrator at any time, through a variety of channels including personal visits to the school, phone calls, and electronic mail. Parents will be *required* to maintain contact with teachers and the administrator to discuss student progress.

B. Teachers / Educators

We believe that the decisions made should reflect the needs of students, the concerns of parents, and the professional knowledge and experience base of the professional staff. With that said, primary decision making power with regard to academic issues is in the hands of teachers and other professional staff. Because of their training and experience, and the strong relationships and open communication channels they will form with students and their families, we believe that teachers are in the best position to make decisions about educational needs and instructional methods. Teachers are hired by the Board of Trustees following the recommendation of the CLC teachers and the Administrator.

C. Instructional Advisory Board

There will be times when CLC teachers will want to seek advice from a cadre of other professionals who understand the CLC's unique goals and environment. For this reason, we have established the "Instructional Advisory Board" -- a group of outstanding educators who will come to understand the CLC and serve as a "sounding board" for our teachers.

Each teacher proposes individuals to serve on this small board of respected professional educators, who agree to advise CLC teachers through Email, teleconferencing technologies, and (to the extent possible) through visits to the CLC. When our teachers consider new approaches or solutions to tough learning problems, they can count on the instructional advisory board to share their thoughts and experiences. The individuals listed below have been invited to serve on our Advisory board for the 1998-1999 school year:

- Chris Held, Founder of the Integrated Technology Classroom in Bellevue Washington, and Miliken Award Winner.
- Winnie Bolinsky, Technology Teacher of the Year for 1996, Miliken Award Winner, and 5th Grade Teacher at Fogelsville Elementary School.
- Bob Hughes, Educational Consultant, Formerly "Executive on Loan" from the Boeing Corporation to the Secretary of Education in Washington State.
- Bob Coldiron, Educational Consultant, Formerly Director of Assessment for the Pennsylvania Department of Education and Assistant Executive Director of the Central Intermediate Unit.
- Tom King, Professor of Education, University of St. Thomas, Saint Paul, Minnesota, and former Director and Founder of the Saturn School (an innovative magnet school).
- Josephine Pirrone, Innovative teacher and creator of "T.H.E.E. Option," a multidisciplinary program at the State College Area High School.

D. Administrator

It is the administrator's job to support the teachers and students, to maintain the school budget and other official records, and to work with the students and teachers to maintain all aspects of the physical plant. In general, the administrator's role is to enable the teachers and students to do what is necessary to accomplish their educational goals. The administrator is hired by the Board of Trustees following the recommendation of the teachers.

E. Board of Trustees

Overseeing selected aspects of the school and its operations is the CLC Board of Trustees. The Board, designed to serve the students and parents of the CLC community, will be composed of five Trustees:

- One student representative, elected by the students
- One parent representative, elected by the parents
- One teacher representative, elected by the teachers
- The Administrator; and
- One "Trustee At Large," elected by the other four Trustees.

The Board will be responsible for assessing overall school performance, for making decisions related to budget and personnel, and for other aspects of school operation at the request of the professional staff. Decision making related to curriculum and instruction and the day-to-day operation of the school will rest with the professional staff.

The Board Meetings will be run by the Board President, elected by the Board, or an elected Vice President in the President's absence. To the extent possible, decisions will be made by consensus. If it becomes obvious that attempts to gain consensus will be unproductive, any member of the Board may move that the decision be made by vote, rather than consensus. If a majority of the members agree with the motion, the issue is put to a vote. Meeting minutes will be recorded by the Administrator, or the teacher representative in the Administrator's absence.

Trustee elections will be held one month before the end of each school year, and new Trustees will take office one month after the end of the school year, to allow appropriate time for the outgoing Trustees to assess the operation of the school in the year just ended, and to allow time for new trustees to plan for the coming year. The following people have been invited to serve on the Board of Trustees for the first year of CLC operation:

Patricia Ryan	Parent Representative
Mark Toci	Teacher Representative
Kyle Peck	Administrator
Howard Wray	Member at Large

(Student Representative to be determined by 10/1/98)

All Trustees will serve one-year terms. There will be no limit to the number of terms a Trustee may serve. A Trustee may be replaced at any time, when a majority of the members of the constituency the Trustee represents vote to select a different representative.

F. Monthly Meetings

There will be two evening meetings held each month: one public "Board of Trustees" meeting (conducted in accordance with the "Sunshine Laws") and one "CLC Community meeting," designed to create a forum through which all stakeholders in CLC (parents, students, teachers, administrators, and Trustees) have an opportunity to share information, ideas, and concerns. During the first hour of this meeting, parents, teachers, and students will meet in groups to discuss issues that are directly related to their particular class. Following the first hour, the entire school community will assemble to discuss important news and issues that concern the CLC school as a whole. Student exhibitions demonstrating competency with selected academic standards may be held in conjunction with these meetings. The Board of Trustees meeting and the Community meeting will not be held during the same week.

Section IX - Emergency Plan

The CLC will provide a safe and secure environment for all students and staff. To accomplish this, at no time will students be left without appropriate adult supervision. The following paragraphs describe the emergency procedures students and staff will be trained to initiate.

Teacher/Staff Emergency

In the event of an emergency in which the teacher must leave the classroom or becomes incapacitated, the remaining teachers and educators are responsible for temporarily fulfilling the responsibilities of the absent teacher until he or she returns or a substitute arrives.

In the event of an emergency that requires action be taken by all teachers and educators, two Filmspace staff members who share the work and learning space and who have submitted appropriate Act 34 clearance, will temporarily fulfill the responsibilities of the teachers and educators until a substitute arrives.

Student Emergency

In the event of a student emergency, it is the teachers' responsibility to notify parent(s) and if necessary call the appropriate emergency response team.

If for some reason, all parents need to be notified (ex. school must quickly close due to water leak), a telephone tree and electronic mail notification system will be employed. This system will enable the administrator and the teachers to instantly send electronic mail to the parents who can be reached in that way, and will notify five to ten parents by telephone who will be responsible for notifying the remaining parents.

Section X - Substitute Plan

The CLC will create and maintain a list of substitutes that are available and are aware of the CLC's learning system. All CLC substitutes are required to be certified PA teachers. Prior to being placed on the CLC substitute list, potential substitutes must spend 6 hours observing at CLC. This will better prepare them to perform their duties when asked to substitute.

Section XI - Advertising and Recruitment

Each spring, the CLC will hold public meetings in order to recruit students. These meetings will be announced in a variety of ways including newspaper and radio advertising and interviews. We would also ask that State College, Bellefonte, and Bald Eagle Area School Districts send a note home with all 4th and 5th graders announcing the availability of the CLC Charter School and inviting parents and their children to attend an informational meeting.

The CLC will produce a video that introduces parents and students to the CLC curriculum and learning environment. This video will be distributed as a free rental by local video stores. Interested parties will also be able to contact CLC directly to obtain a copy of this videotape.

The CLC currently maintains and will continue to maintain an informational Web site that informs community members about the school and recent developments pertaining to the school.

The CLC will host a series of weekly meetings in a variety of accessible locations, during which the school's philosophy and instructional program will be the topic of conversation. Through this series of meetings the parent support network will grow.

The CLC will publish advertisements in the newspaper and on radio, and these advertisements will promote public meetings and the school website.

Appendix B: Anticipated Budget for Years One through Three

General Fund Budget
 For the Centre Leaning Community
 for the fiscal year ending June 30, 1999

<u>Data upon which budget is based:</u>	1998-9	1999- 2000	20
Number of Students	48	72	
Number of Teachers	2.0	3.0	
Salary: Teacher	\$45,000	\$46,800	\$
Percent of Increase: Salaries & benefits		4%	
Employees receiving benefits	2	3	
Social Security Rate	0.0765	0.0765	
Retirement Contribution rate	0.0604	0.0604	
Average Compensation per student	\$6,374	\$6,629	
Projected Number of Special Needs Students	8	12	
Average Cost of Educating Special Needs Students (determined by state)	\$4,000	\$4,160	
Projected number of Special Needs Students to be tested	4	2	
Average cost of testing special needs student	\$400	\$416	
Benefits			
Benefits: Health / Dental / Life, per full time empl. (SCASD pays \$4,041)	\$4,500	\$4,680	
Benefits: FICA (7.65%, but half comes back from the State)	7.65%	7.65%	
Benefits: Worker's Comp	1.00%	1.00%	
Retirement (6.04%, but half comes back from the State)	6.04%	6.04%	
Unemployment	1.00%	1.00%	
Tuition Reimbursement (per teacher)	\$950	\$988	
Facilities			
Number of Square feet per student	50	50	
Number of Square feet per faculty member	100	100	
Cost per square foot (includes heat, trash removal, repair, snow removal)	\$15	\$15	
Total Square feet of facility needed	2600	3900	
Utility Cost per square foot	\$0.72	\$0.75	
Insurance (based on estimates from Frost & Conn -- same as SCASD)			
Professional Liability (including Trustees) @ \$1,000,000	\$375	\$390	
General Liability @ \$1,000,000	\$350	\$364	
Business Personal Property @ \$45,000	\$175	\$263	

Telecommunications Costs		
Installation	\$7,000	\$2,000
Monthly Fees	\$1,000	\$1,400
Supplies		
Per Student	\$100	\$104
Per Teacher	\$100	\$104
Substitute Teacher Pay per Day	\$75	\$78
Days absent per teacher	10	10

Estimated Revenues and Other Financing Sources -- Detailed

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6900 Other Revenue from Local Sources (School District Contributions)	\$305,960	\$477,298	\$6
6901 Other Revenue from Local Sources (Special Education Funding)	\$32,000	\$49,920	\$
TOTAL REVENUE FROM LOCAL SOURCES	\$337,960	\$527,218	\$73

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7290 Other Program Subsidies (startup Grant from PDE @\$600 per student)	\$28,800	\$0	
7810 Revenue for Social Security and Medicare Taxes	\$3,443	\$5,370	
7820 State Share of Retirement Contributions	\$2,718	\$4,240	
TOTAL REVENUE FROM STATE SOURCES	\$34,961	\$9,610	\$1

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9900 Grants and Contracts	\$0	\$0	
TOTAL REVENUE FROM OTHER SOURCES	\$0	\$0	
TOTAL REVENUES AND OTHER FINANCING SOURCES	\$372,921	\$536,828	\$74

Budget Summary
Summary of Estimated Expenditures and Other
Financing Uses

	1998-9	1999- 2000	20
1000 Instru ction			
1100 Regul ar Progr ams			
100 Personnel Svcs. - Salaries	\$90,000	\$140,400	\$19
200 Personnel Svcs. - Employee Benefits	\$25,021	\$39,033	\$5
300 Purchased Professional & Tech Services	\$51,500	\$79,588	\$10
400 Purchased Property Services	\$81,322	\$120,715	\$16
500 Other Purchased Services	\$32,780	\$36,377	\$4
600 Supplies	\$38,547	\$27,853	\$3
700 Property	\$24,310	\$12,155	\$1
	Subtotal: \$343,480	\$456,121	\$60
800 Other Objects (840 Contingency)	\$29,441	\$80,707	\$14
	Total: \$372,921	\$536,828	\$74

ESTIMATED EXPENDITURES AND OTHER
FINANCING USES -- DETAILED

	1998-9	1999- 2000	20
1000 Instru ction			

1100 Regul
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100 Personnel Svcs. - Salaries	\$90,000	\$140,400	\$19
200 Personnel Svcs. - Employee Benefits	\$25,021	\$39,033	\$5
210 Group Insurance -- Medical, Dental, Vision, Life, Prescription	\$9,000	\$14,040	\$
220 Social Security Contributions	\$6,885	\$10,741	\$
230 Retirement Contributions	\$5,436	\$8,480	\$
240 Tuition Reimbursement	\$1,900	\$2,964	
250 Unemployment Compensation	\$900	\$1,404	
260 Worker's Compensation	\$900	\$1,404	
300 Purchased Professional & Tech Services	\$51,500	\$79,588	\$10
310 Official Administrative Services (Part time administrator)	\$0	\$5,000	
320 Professional - Educational Services (Instructional assistance)	\$10,000	\$15,000	\$
329 Professional - Educational Services (Substitute Teachers)	\$1,500	\$2,340	
329 Professional Educational Services - Other (Special Needs Testing)	\$1,600	\$832	
330 Other Professional Services (Special Needs Student Services)	\$32,000	\$49,920	\$
330 Other Professional Services (Auditors)	\$4,000	\$4,000	
390 Other Purchased and Professional Services (Assessment / Annual Report)	\$2,400	\$2,496	
400 Purchased Property Services	\$81,322	\$120,715	\$16
422 Electricity	\$1,872	\$2,920	
430 Other Miscellaneous Purchased Services (equipment maintenance)	\$3,000	\$3,120	
440 Rentals (Facilities Lease. Includes maintenance, trash, snow removal, heat.)	\$39,000	\$58,500	\$
442 Rental of Equipment (Leased Computer Equipment)	\$37,450	\$56,175	\$
500 Other Purchased Services	\$32,780	\$36,377	\$4
515 Public Carriers	\$4,800	\$7,200	
520 Insurance - General	\$900	\$1,017	
530 Communications	\$19,000	\$18,800	\$
540 Advertising	\$5,000	\$5,200	
550 Printing and Binding	\$1,000	\$1,040	

580 Travel	\$1,600	\$2,400	
599 Other Miscellaneous Purchased Services (Postage)	\$480	\$720	
600 Supplies	\$38,547	\$27,853	\$3
610 General Supplies	\$7,380	\$11,070	\$
635 Meals/Refreshments	\$1,200	\$1,800	
640 Books and Periodicals (includes \$10,000 Jostens ILS and other Software)	\$29,967	\$14,983	\$
700 Property	\$24,310	\$12,155	\$1
750 Equipment - Original and Additional	\$17,310	\$8,655	
790 Other Property (Furniture)	\$5,000	\$2,500	
790 Other Property (P.E. Equipment)	\$2,000	\$1,000	
Equipment Detail	Qty	Cost per	E
vacuum cleaner	1	\$350	
refrigerator	1	\$300	
3 Microwave Ovens	3	\$100	
3 VCR	3	\$200	
3 Monitors	3	\$140	
3 carts for vcrcs & monitors	3	\$50	
2 digital videocameras	2	\$1,500	
20 Multimedia Computers	20	\$2,000	
Server	1	\$5,000	
Networking Components	1	\$2,000	
2 CD recorders	2	\$400	
2 Laser Printers	2	\$1,500	
1 Color Laser Printer	1	\$4,000	
2 Scanners	2	\$500	
3 zip drives	3	\$200	
External Hard Drives	1	\$1,000	
Computer projector	1	\$5,000	
PA System	1	\$1,000	
4 Digital Still Camera	4	\$500	
Lighting system	1	\$1,000	
4 Microphones	4	\$125	
Four track tape recorder	1	\$1,000	
Dual Tape recorder	1	\$200	
Misc Cables	1	\$1,000	
Microphone Stands	3	\$30	
48 computers for student homes:			
	Subtotal:		\$1
Supplies			
Mobile White Boards	3	\$150	
Videotapes	150	\$4	

Magnetic Media (zip)	60	\$13	
Magnetic Media (CD)	100	\$2	
Magnetic Media (diskettes)	100	\$1	
Audio tapes	100	\$3	
Office and custodial supplies (paper, printer supplies, etc.)	50	\$100	
			Total: \$
Software			
Claris Home Page	16	\$54	
Director	8		
Hyperstudio	64	\$50	
Claris Works	64		
Adobe Photoshop	16	\$214	
Inspiration	64	\$70	
Netscape Navigator	64	\$0	
			Total: \$1

Appendix C: Sample Report from the Rubric Processor