

Oregon Public Charter School Application

**ARTHUR ACADEMY
PUBLIC CHARTER SCHOOL**

DATE:

Submitted to:

Copy mailed to:
Oregon Department of Education
Public Service Building
255 Capitol Street NE
Salem, Oregon 97310



TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
1.	The identification of the applicant	1
2.	The name of the proposed charter school	1
3.	A description of the philosophy and mission and how it differs from the district's current program and philosophy	1
4.	A description of any distinctive learning or teaching techniques	3
5.	A description of the curriculum.....	5
6.	A description of the expected results of the curriculum and the verified methods of measuring and reporting results that will allow comparisons with district schools	23
7.	The governance structure of the school; board membership, selection, duties and responsibilities	26
8.	The projected enrollment, ages and grades.....	28
9.	The target population of the students.....	28
10.	The legal address, facilities and physical location, if known.....	30
11.	A description of admission policies and application procedures	30
12.	The statutes and rules that apply to the school	33
13.	A proposed budget and financial plan; including evidence that the proposed budget and plans are financially sound.....	34
14.	The standards for behavior and description of discipline, suspension or expulsion of students	38
15.	The proposed calendar, including the length of day and year.....	45

<u>Section</u>	<u>Title</u>	<u>Page</u>
16.	A description of staff members and required qualifications of teachers	46
17.	The projected date the school would begin operating	49
18.	Arrangement for any special education services and Section 504	50
19.	Information on how the community may be involved in the planning and development process of the public charter school.....	52
20.	The term of the charter	53
21.	The plan for performance bonding or insuring the school, including buildings and liabilities	53
22.	A proposed plan for the placement of teachers, staff and students upon the termination or nonrenewal of a charter	56
23.	The manner in which the program review and fiscal audit will be conducted	56
24.	Not Applicable [conversion of district school to charter]	
25.	Additional Information	57

Schedule of Appendices

1. Mastery Learning Institute Bylaws (referred to in Section 7.1.1)
2. Proposed Charter Agreement (referred to in Section 7.1.1)
3. Arthur Academy Three-Year Operating Budget (referred to in Section 13)
4. Curriculum Alignment to State Content Standards

CHARTER SCHOOL PROPOSAL

1. The identification of the applicant

Mastery Learning Institute

an Oregon 501(c)(3) non-profit organization
Operating the Arthur Academy Public Charter Schools
13717 SE Division Street
Portland, OR 97236
503-762-6061

Board of Directors

Management

2. The name of the proposed charter school

3. A description of the philosophy and mission and how it differs from the District's current program and philosophy

3.1 Background. Mastery Learning Institute was started in 2000 in order to open a K-5 charter school in the David Douglas School District in 2002. At that time, operating this school was the only goal of the organization, but since then our vision has expanded. Since opening the first school in 2002, five more schools have been opened: Reynolds and Woodburn in 2004; Portland in 2005; and St. Helens and Gresham-Barlow in the fall of 2007. Currently close to 900 students are enrolled in six Arthur Academy charter schools.

3.2 Philosophy. The Arthur Academy Public Charter School (the Academy) will eventually be a K-5 elementary charter school of about 150 students. It will be based upon a simple, yet powerful philosophy: every single student, regardless of ethnicity, parental income, learning difference, culture, or native language, will become a fluent reader and will master the academic, intellectual and social/emotional skills necessary to succeed at the next level of schooling.

The Arthur Academy Charter Schools are driven by our instructional model, which defines our charter school option, attracts students, and motivates teachers to work at our schools. We believe that academic learning, by itself, can be highly motivating to young children, if taught

directly, right from kindergarten. Providing this model is based on the belief that a powerful way of teaching exists that is not being utilized in most schools, and therefore our charter schools offer it as a choice.

Our instructional model is guided by our belief that all children can learn and be successful if provided

- (1) well-designed, well-researched, and comprehensive lessons and materials;
- (2) lessons in foundational subjects that are constructed with small, incremental teaching progressions (from simple to complex);
- (3) lessons that broaden a child's knowledge base;
- (4) detailed and well-researched teaching practices that are clearly defined and prescribed to produce mastery from start to finish; and
- (5) skillful, motivating and inspiring teachers.

Our instructional model includes the use of Direct Instruction (DI) programs for basic subjects. These programs have been researched and developed at the University of Oregon. In each program, all objectives have been broken into very small increments and activities so that students can be successful in mastering everything that is taught as they progress through the programs. All activities are carefully sequenced and accumulated towards larger learning objectives. Each lesson is divided into small pieces that are presented in exacting and interesting ways so that the children are motivated to learn and so that all children can learn.

Our instructional model also includes the use of Core Knowledge programs developed by E.D. Hirsch of the University of Virginia. Core Knowledge programs complement DI programs by teaching more open ended, inquiry material in content subjects through high-interest themes, problem solving, and discovery/research projects. This kind of content where skills are applied in new areas is increased at each grade level. Together, these two bodies of material provide the best of both approaches to teaching, specifically sequenced instruction and more open-ended discovery instruction. The DI programs provide the skills that can be applied in the more open-ended activities. In turn, Core Knowledge programs help provide general knowledge that strengthen basic skills.

Teaching children to read is our hallmark. Our school motto is "Everybody Reads." Reading is the gateway academic skill, and our mission is to ensure that every single student becomes a fluent reader. While fluency in reading does not by itself guarantee academic success, the lack of fluency guarantees academic failure. Children who are academically successful gain empowerment and self-confidence.

3.3 Differences from District's Current Program. Arthur Academy differs from the District's current program in that, to our knowledge, the District has no program that contains all of the following characteristics:

- begins with an academic kindergarten, teaching kindergarten students to read and do arithmetic;
 - uses clearly defined and prescribed instructional programs and teaching methods that are based on incremental teaching progressions and mastery learning for basic subjects (reading, language, literature, and math);
-

- complements such programs with Core Knowledge programs in history, geography, science, music, art, and literature;
- retains a small size school overall (our maximum size at K-8 would be 225 students); and
- is open to any student without regard to location of residence.

3.4 Mission. The overriding mission of the Academy is quite simple: to establish and operate a successful K-5 charter school in the School District that accelerates the educational achievement and academic competency of all its students. Arthur Academy will provide the community with a uniquely effective and specialized approach to teaching that provides academic success for all our students every day and accelerate progress every year with academic programs that have both breadth and depth. This shall be done within a school environment that encourages individual personal development and positive social relationships under the direction and supervision of caring and skillful professional teachers. It has been observed that children are excited and gain self-confidence when learning academic skills and knowledge within this kind of environment.

This mission is entirely congruent with the District’s mission. Indeed, it is our belief that our mission will contribute to the School District’s mission of teaching all of its students successfully. The Academy’s academic model has been proven by long-term replicated experimental research to raise academic achievement of students and will provide School District with a valuable tool to meet its federal NCLB targets.

3.5 Long-Term Goal. Our mission to create a K-5 charter school in the School District is part of our organization’s long-term goal to create a network of high quality, academically focused, charter schools that:

- Increase the school options for families in the region,
- Are directly accountable to families,
- Are financially sustainable, and
- Become an effective and innovative model of instruction that can influence teaching practices in schools throughout the area.

We also hope to become a model in building positive and cooperative relationships with sponsoring school districts throughout the greater Portland metropolitan area.

We believe the process of becoming a model that can make a contribution to other public schools will take several years of an accumulative record, as we grow each school to its full capacity, and as we continue to improve the implementation of our programs.

4. A description of any distinctive learning or teaching techniques

The Arthur Academy teaching staff will use an incremental “mastery-learning” approach to teaching and learning foundational subjects of reading, math and language. The basis of mastery learning is that a child’s rate of progress is determined by the extent to which he or she masters carefully sequenced lessons and activities that lead to mastery of essential foundational skills and knowledge.

This requires that all content must be carefully arranged and clearly presented. Concepts and skills are taught and assessed incrementally from the simplest and easiest to the more difficult and complex. By doing so, skills and knowledge are gradually accumulated into larger and more difficult composite tasks.

It is essential that students demonstrate mastery of each bite-sized concept or skill, and that teachers carefully assess and track each student's progress. Because the content is arranged sequentially and incrementally, the normal classroom experience for students is one of success piled on top of success.

This kind of teaching is found in the Direct Instruction (DI) programs developed by Siegfried Engelmann and his team at the University of Oregon. Comprehensive programs are published in subjects of math, reading, and language skills for grades K-6. DI instruction stimulates high levels of student engagement with an academic focus during teacher-directed lessons using sequenced, structured methods and materials. A complete list of programs is provided below in Section 5.

E.D. Hirsch, of Core Knowledge, refers to this approach to teaching as systematic, analytical, and explicit. He states:

“If you want to learn fast – be explicit. Break down each domain to be learned into manageable elements that can be mastered. Then systematically build on that knowledge with new knowledge. This is the most efficient mode of learning for everybody, but it is the essential mode if the aim is making up for lost time in knowledge and vocabulary.”

A complete review of the research supporting this approach to teaching can be found in the publication, “Research on Direct Instruction: 25 Years Beyond DISTAR” by Gary Adams and Siegfried Engelmann (1996, Educational Achievement Systems). Complete reference details for this article and several hundred others will be provided upon request.

The Academy's classroom structure will seem, from outward appearances, like other classrooms. The difference will be what goes on inside. Paraphrasing from the Catalogue of School Reform Models:

The comprehensive Direct Instruction Model incorporates professional development, substantial training and in-class coaching. Teachers learn to define tasks clearly, preteach subconcepts and skills, work toward more complex concepts, present highly interactive lessons to large and small groups, elicit frequent oral responses, ensure a high rate of teacher praise for responses, monitor and correct errors immediately, and periodically review skills and concepts.

Mastery tests, given every few lessons, help teachers closely track student performance. Students are placed in appropriate instructional groups based on performance. Grouping may take place across classes and grades. Students who progress faster or slower than

expected are re-grouped accordingly. Those with special needs are included in regular classrooms except in the most extreme cases.

5. A description of the curriculum

The Academy plans to implement a comprehensive education program combining the Core Knowledge Sequence for history, science, geography, music, art, and literature with Direct Instruction programs for reading, language arts, and mathematics. These programs have a well-documented track record of success, and both programs have well-developed networks for technical assistance and professional development.

Our discussion of the curriculum is divided into three major subsections:

- 5.1 Core Knowledge Sequence; Direct Instruction Model; Alignment with State Standards.
- 5.2 Grade Level Summary of Curriculum Program Goals
- 5.3 Curriculum for Major Subject Areas

5.1 **Core Knowledge Sequence; Direct Instruction Model; Alignment with State Standards.**

5.1.1 Core Knowledge Sequence. Core Knowledge has been accepted by the National Clearinghouse on Comprehensive School Reform as one of 26 whole-school reform models that have met the criteria for inclusion in the Catalogue of School Reform Models. The Catalogue says:

“Core Knowledge focuses on teaching a common core of concepts, vocabulary, skills, and knowledge that characterize a “culturally literate” and educated individual. The purpose of the approach is to increase students’ receptive and productive vocabulary, increase comprehension, and help build a general knowledge base, thus increasing academic performance.

“Core Knowledge is based on the principle that the grasp of a specific and shared body of knowledge will help students establish strong foundations for higher levels of learning. Developed through research examining national and local core curricula and through consultation with education professionals in each subject area, the Core Knowledge Sequence provides a model of specific content guidelines for students in the preschool, elementary, and middle school grades. It offers a progression of detailed grade-by-grade topics in language arts, mathematics, science, history, geography, music, and fine arts, so that students build on knowledge from pre-kindergarten through grade eight. Instructional strategies are modeled for teachers, but the selection of strategies is left to the discretion of teachers.” (The Catalogue of School Reform Models, Northwest Regional Education Laboratory, 2003)

To be included in the catalogue, a reform model must demonstrate research-validated results. Space constraints prevent a complete discussion of the design and results of all the research, but

notable are three separate studies (Johns Hopkins, 1998, Taylor, 2000, and Schubnell, 1996), all of which showed Core Knowledge students outperformed control groups on academic achievement tests.

5.1.2 Direct Instruction Model. The Academy plans to use University of Oregon's Direct Instruction Model for reading, mathematics and language skills, which is another school-wide reform model that has been accepted for inclusion in the Catalogue of School Reform Models. No method for successfully raising student achievement has had more research validating its effectiveness than the Direct Instruction programs.

The Direct Instruction programs provide a model for teaching that emphasizes well-developed and carefully planned lessons designed around small learning increments and clearly defined and prescribed teaching tasks. It is based on the theory that clear instruction eliminating misinterpretations can greatly improve and accelerate learning.

In 1999, the National Education Association, in collaboration with the American Association of School Administrators and the American Federation of Teachers commissioned the American Institute for Research to conduct a comprehensive review of all the research regarding curricula that are commonly used in school-reform efforts, including Direct Instruction. Of the 26 models reviewed, Direct Instruction was one of only two elementary models that received a rating of "Strong." The following is an excerpt from their summary of the study:

"This guide is about separating real solutions--or at least programs with a track record for improving student achievement--from solutions that might work," says Marcie Dianda of NEA's Teaching and Learning staff. Only three of the approaches examined -- Direct Instruction, High Schools That Work, and Success for All -- provide strong evidence that they positively impact student achievement."

This study was repeated in 2005 by the American Institute for Research with the same results. The Oregonian wrote a report on both studies.

The Direct Instruction programs were also validated in the single largest experimental research study ever conducted, Project Follow Through, which began in 1967 under President Lyndon Johnson. Its express purpose was to study instructional methods that would lead to a reduction in the disparity between low-performing and high-performing students by improving the performance of low-performing students. It was ultimately concluded in 1995, conducting research on over 20,000 students nationwide. The reading portion of this study involved over 15,000 students and was designed to test the effectiveness of nine methods of reading instruction.

Of the nine methods tested in the Project Follow Through study, only Direct Instruction showed positive gains in the three areas tested: basic skills achievement, cognitive skills, and self-esteem.

An independent researcher conducted a meta-analysis of all studies on Direct Instruction programs from 1972 to 1995 (Adams & Engelmann, 1996). Out of some 350 publications, he identified 34 studies that met criteria for methodological rigor (e.g., pre-test scores, a comparison group). The 34 studies generated 173 comparisons between Direct Instruction and non-Direct

Instruction groups; in 87 percent of the comparisons, the difference favored Direct Instruction. The mean effect size was 0.97 (an effect size of 0.25 is generally considered educationally significant).

He also examined studies that tracked students taught with the Direct Instruction program into later grades. Several of these studies reported that Direct Instruction students continued to outperform control students in middle and high school, and two found that Direct Instruction students had higher graduation rates and college acceptance rates than control group students.

One further body of research that supports many DI instructional features is worth noting. Teacher Effectiveness Research, a part of Effective School Practices Research, is a collection of 33 large studies conducted by 7 independent groups. They attempted to relate teaching behaviors to student achievement. Summaries of these studies can be found in:

- Brophy, J. and Good, T. "Teachers' Behavior and Student Achievement." In Handbook of Research on Teaching, edited by M.C. Wittrock, 1986.
- Rosenshine, B. and Stevens, R. "Teaching Functions." (same publication)
- Northwest Regional Educational Laboratory, "Effective Schooling Practices: A Research Synthesis 1990 Update."

Rosenshine states that

"Classrooms that use effective teaching are academically focused using sequenced and structured materials. They use teaching activities where goals are clear to students, time allocated for instruction is sufficient and continuous, coverage of content is extensive, the performance of students is monitored, questions are at a low cognitive level so that students can produce many correct responses, and feedback to students is immediate and academically oriented."

The Northwest Regional Educational Lab's summary of effective instruction includes:

- Instruction is guided by a pre-planned curriculum
- High expectations for students and teachers
- Students are carefully oriented to lessons
- Instruction is clear and focused
- Learning progress is monitored closely
- Students are re-taught, if necessary
- Class time is used for learning
- Standards for classroom behavior are explicit
- There are smooth, efficient classroom routines
- Instructional groups fit instructional needs
- Student-teacher interactions are positive
- Incentives/rewards are used to promote excellence

For this kind of instruction to be put into use, well-designed materials are needed. The Direct Instruction programs apply these features to provided comprehensive effective instruction.

The founders of Arthur Academy also conducted a three-year project in the Reynolds School District in which all DI programs were used in a first grade and second grade classroom. This project provided valuable experience in starting and operating the new charter schools.

An extensive list of research conducted on the Direct Instruction Model can be provided upon request.

5.1.3 Alignment with State Standards. Both the Core Knowledge Sequence and the Direct Instruction Model have been fully aligned with Oregon curriculum standards. Oregon charter school law requires such alignment, and all six districts that have agreed to sponsor an Arthur Academy Charter School (David Douglas, Reynolds, Woodburn, Portland, St. Helens, and Gresham-Barlow) have been satisfied that this alignment requirement has been met. Additional information on the scope and sequence of these programs can be provided upon request. Alignment documents are included in the response to question 25.a.1).

5.2 Grade Level Summary of Curriculum Program Goals.

The curriculum model that Arthur Academy would like to achieve with its students at each grade would result in most children in grade five completing sixth grade reading programs and doing grade level work in math, written language, and other subjects. Most students who enroll at the Academy in kindergarten and continue through fifth grade will complete the following schedule of programs by the end of each year.

We want to emphasize that this schedule is only a desired goal. We stick to the schedule only if students demonstrate mastery of each step and level along the way. For those students who are unable to keep up to this schedule, we make accommodations (see discussion following this list).

<u>Kindergarten:</u>	Language for Learning Reading Mastery I Fun Math Core Knowledge
<u>First Grade:</u>	Language for Thinking Reasoning and Writing A Reading Mastery I (review) and II Spelling Mastery A Connecting Math Concepts A-B Core Knowledge
<u>Second Grade:</u>	Reasoning and Writing B-C Language for Thinking (finish) Reading Mastery II and III Literature Anthology Language Arts Guide with Lessons 51-75 Reading Mastery III Activities Across the Curriculum (correlated with RM lessons) Spelling Mastery B

Connecting Math Concepts B - C
Singapore Primary Math 2A & B (supplement)
Core Knowledge- Literature and Social Studies materials

Third Grade:

Reasoning and Writing C (finish)
Written language lessons in preparation for state writing tests.
Integrated Language Comprehension Program B-1 (CRP-Comp.)
Reading Mastery III and IV, Open Court Classics 3, and
Supplemental literature
Corrective Reading Decoding A or B1 (if needed)
Literature Anthology
Language Arts Guide with Lessons 71-140 in Reading Mastery III
Writing and Spelling Guide (correlated with RM lessons)
Activities Across the Curriculum (correlated with RM lessons)
Spelling Mastery C Morphographic Spelling
Connecting Math Concepts C-D
Singapore Primary Math 3 A & B (supplement)
Core Knowledge- Literature and Social Studies materials

Fourth Grade:

Reasoning and Writing D-E
Written language lessons in preparation for state writing tests.
Integrated Language Comprehension Program B-2 (CRP-Comp.)
Reading Mastery IV and V & Open Court Classics 4,
Supplemental literature
Literature Anthology
Language Arts Guide with Lessons 1-140 in Reading Mastery IV
Writing and Spelling Guide (correlated with RM lessons)
Activities Across the Curriculum (correlated with RM lessons)
Spelling Mastery D Morphographic Spelling
Connecting Math Concepts D-E
Core Knowledge- Literature and Social Studies materials
Corrective Reading-Decoding (if necessary)

Fifth Grade:

Reasoning and Writing E-F
Integrated Language Comprehension Program C (CRP-Comp.)
Reading Mastery V and VI & Open Court Classics 5,
Supplemental literature
Literature Anthology
Language Arts Guide with lessons 1-140 in Reading Mastery V
Writing and Spelling Guide (correlated with RM lessons)
Activities Across the Curriculum (correlated with RM lessons)
Spelling Mastery –E, Morphographic spelling
Connecting Math Concepts E-F
Core Knowledge- Literature, Social Studies & Science materials
Corrective Reading-Decoding (if necessary)

We anticipate that some children will not meet all of these levels according to the above schedule. Such students will be placed in reading groups that progress at similar rates. We teach reading at several levels in kindergarten and grades one, two and three in order to accommodate students who learn at different rates. Some students who initially enroll at the Academy in first grade or a higher grade may not meet these goals. New students who enter the Academy in grades two or three will be placed in the programs according to placement tests. If these children are behind in any of the programs, individual plans will be designed to help them catch up.

For students in grades 3-5 who are behind grade level, we will use portions of the program Corrective Reading: Decoding.

5.3 Curriculum for Major Subject Areas

In the following subsections, we will discuss these major subject areas:

- 5.3.1 Language Arts
 - (a) Direct Instruction Language Communications Skills Programs.
 - (b) Reading programs: Reading Mastery and Horizons Fast Track C-D.
 - (c) Direct Instruction Supplemental Literature and Research Materials.
- 5.3.2 Math
 - (a) Math Curriculum.
 - (b) Math Content and Skills at Each Grade.
- 5.3.3 Social Studies, Science, Music, P.E., Art.
 - (a) Curriculum.
 - (b) Social Studies Objectives Each Grade.
 - (c) Science Objectives Each Grade.
 - (d) Music, P.E., Art.
- 5.3.4 Direct Instruction Program for English Language Learners.

5.3.1 Language Arts

At Arthur Academy Language Arts is broadly defined to include reading, oral and written language comprehension, vocabulary, and oral and written communication. In fact, Language Arts skills are even required in the study of much of math instruction. Language skills are the basis for almost all academic learning. The goal for the Language Arts program is that all students will be able to communicate clearly and comprehend increasingly more complicated and diverse texts within a variety of subject areas.

Students are able to communicate clearly only when they think clearly. By starting at an early age to give students the critical thinking skills they need to analyze situations clearly and reach conclusions logically, Arthur Academy will equip them to express themselves with precision and clarity as they write.

However, Language Arts instruction at Arthur Academy will go far beyond communication skills. We agree with E.D. Hirsch about the “reading gap.” The reading gap has its roots in a

more comprehensive “language gap” or “verbal gap” that exists long before children are readers. In order to effectively close the reading gap, a firm foundation in vocabulary and language comprehension needs to be laid. Direct Instruction programs in reading, spelling and language, combined with Core Knowledge programs in content subjects, can provide the foundation for closing this gap.

We will discuss in subsection (a) the five Direct Instruction language communications skills programs in the bulleted list below, after which we will discuss reading programs in depth [subsection (b)] and Direct Instruction Supplemental Literature and Research Materials [subsection (c)]:

- Language for Learning (kindergarten),
- Language for Thinking (grade 1),
- Spelling Mastery (grades 1-5),
- Reasoning and Writing (grades 1-5), and
- Reading Mastery Plus Language Arts Guide (grades 3-5).

(a) Direct Instruction Language Communications Skills Programs.

▪ **Language for Learning**

Basic language skills provide the prerequisites for reading instruction and provide a solid foundation for literacy. The Language for Learning program is designed for kindergarten children, low performers in language, and ESL students in higher grades. We use the program to build a solid foundation with such students and make sure they have confidence to succeed in subsequent programs that will develop reading and other language skills.

A major premise of the Language for Learning program is that children must understand the language of instruction. The children’s social language may be fully adequate for their lives outside the classroom, but if they do not understand the meaning of the language of the teacher and classroom and the language encountered in the textbook, they are likely to fail in school.

Language for Learning is designed to teach the language of instruction. The program is based upon analysis of skills and concepts the child must understand to follow the variety of basic instructions presented both in workbooks and by the teacher. It consists of carefully programmed sequences of exercises grouped into daily lessons, including teacher-directed activities and independent seatwork. These lessons provide for continual review of all the concepts and skills that are taught, as well as their application in problem-solving situations.

This program does more than teach language skills. Students also learn to think. They learn to group objects in different ways, see the logic behind “rules,” and to know when and how to apply these rules.

The Language for Learning program helps students:

- Perform small actions and describe them in a phrase and in a statement using the appropriate pronoun: I-you, you-your, she-her, he-his, I-my, we-ours.
- Described actions using past, present and future tense verbs
- Name objects in the classroom and make a complete statement about them
- Learn the difference between singular and plural forms of nouns and verbs
- Learn pairs of words that are opposites like: full/empty, big/small, wet/dry, long/short, old/young, tall/short, hot/cold, sad/happy, open/close
- Know how to use the comparative forms of these terms
- Learn names of other children, teacher, school, city, days of the week, months, seasons, names of common objects and their parts
- Learn kinds of materials that common objects are made from
- Learn names of common occupations, places in the community and basic natural phenomenon: land, sky, sun, clouds, the Earth, ocean, lakes
- Learn how to use terms like: first/next/last, before/after, on, over, in front of
- Learn to use the concepts of same and different, some/all/none, or/maybe
- Discriminate between and answer where, who, when and what questions
- Learn the meaning of if-then statements and be introduced to deductive reasoning
- Learn common classifications terms (vehicles, food, containers, clothing animals, building, plants, tools, furniture) and the name of objects found in each class and learn to group objects that share common features
- Learn to apply many of these skills to solve problems in a new context
- Recognize an absurd situation by applying logical analysis related to function, parts and location
- Recognize and name colors and common shapes
- Follow a story and sequence of events that occurs in a story that is read aloud and respond to questions and instructions about the story
- Respond to questions about a poem or nursery rhyme and recite a poem or nursery rhyme

A review of the research supporting this program can be found in a separate publication.

▪ **Language for Thinking**

Language for Thinking, a continuation of Language for Learning, teaches children the words, concepts, and statements important to both spoken and written language. It emphasizes language as a means of describing the world and as a tool for thinking and solving problems. Language for Thinking extends this teaching to more advanced concepts. It offers children language instruction through carefully sequenced exercises that help them learn the concepts and skills they need to succeed in school.

Language for Thinking provides a basis for enhancing reading comprehension. The program's vocabulary, background, and knowledge-building exercises, as well as its statement analysis, questioning, and definitions exercises, prepare children for the literal and inferential comprehension of the books and other materials they will read both in and out of school.

Materials for Language for Thinking include a teacher presentation book, a student picture book and a student workbook. The student picture book functions as a student textbook that has only

pictures. The teacher directs the children to identify specific pictures and use them to deduce information or draw conclusions. The student workbook also contains activities, some of which are teacher directed and some are done as independent seatwork.

Concepts and skills are organized into seven groups:

- Review Lessons
- Information and Background Knowledge
- Reasoning and Critical Thinking
- Vocabulary Development
- Observing and Describing
- Comprehension Concepts
- Interpreting Graphic Displays.

▪ **Spelling Mastery**

The Spelling Mastery series is a basic spelling program for grades 1-6. In this program, students learn to understand the relationships among sounds, word parts, and spelling patterns. Three basic strategies are taught that encourage students to think their way through spelling rather than memorize weekly word lists. The three strategies are:

- Phonemic strategies that provide generalizations for spelling many words and word parts
- Morphographic strategies that teach spelling units corresponding to meanings that are combined to form whole words
- Strategies that teach high utility words with unpredictable spellings

The Spelling Mastery series progresses from phonemic strategies to morphographic spellings. Words with unpredictable spellings are spread throughout the program.

The assumption of this spelling program is that the teacher is the most effective medium for teaching spelling to children, not the use of self-study materials, computers, audio tapes, or unguided discovery, e.g. inventive spelling. Discovering the structure and meaning of words comes as a result of a teacher laying a solid foundation and not relying on chance.

▪ **Reasoning and Writing**

The Reasoning and Writing series of programs takes up where Language for Learning leaves off and overlaps, somewhat, with Language for Thinking in the first grade. To write well, students must think well. This is the simple premise behind this program, which introduces higher-order thinking skills at the earliest levels and uses them throughout a well-integrated program to teach effective communication.

- Exciting vibrant stories teach students to listen carefully, recognize logical categories, complete deductions, use clues to answer questions and understand story grammars.
 - The program teaches students to inform, persuade, clarify, explain, and make recommendations. They write narrative stories, reports, essays, directions, summaries, critiques, and letters.
 - Carefully planned lessons provide plenty of opportunity for students to apply and practice writing skills using editorial checklists to understand punctuation, capitalization, usage, and much more.
-

In Reasoning and Writing Level A, the prewriting stage, students learn to: follow instructions; recognize and master logical categories; use higher-order thinking skills; use clues to answer questions; discover alternative solutions; understand story grammars; and begin to write simple sentences. It also uses storytelling and other activities to help students develop an awareness of narrative structure and logical connections -- the foundations for reading comprehension and writing.

In Level B, students build on the skills developed in Level A and learn new higher level reasoning skills. At the completion of Level B, students will be able to: discuss and use the basics of sentence structure; detect and correct ambiguous references; perform sequencing operations; classify; and draw logical conclusions from data. This level expands reasoning activities and adds language concepts. Students learn to write complete sentences and begin to form simple paragraphs.

In Level C, students are actively involved in writing, as they apply what they have learned about communication and reporting. The emphasis in Level C is on describing events in narrative sequences. Students at this level will learn to: extend logical thinking abilities; perform sentence analysis; improve basic punctuation skills; revise for clarity and effectiveness; and edit for correctness. Level C introduces a complete narrative writing process, including drafting, revising, and editing for clarity. Students master important points in grammar, usage, and the mechanics necessary for effective communication.

In Reasoning and Writing Level D, instruction centers on expository writing. Students will learn to be critical thinkers as they analyze commentaries and advertisements to identify misleading claims, faulty or inadequate arguments, and contradictory statements. Students will also learn to: correct unclear parts of sentences; work with complex sentence structure; construct formal deductions; use evidence to support a conclusion; classify statements as general or specific; analyze problems with arguments; write business letters that express concerns; and write extended critiques. Level D focuses on various forms of writing, emphasizing the need for reading critically. Students learn to summarize what others say and then use the summary for writing comparisons and critiques.

Level E continues to develop persuasive, descriptive and other expository forms of writing. Students evaluate persuasive essays by (a) checking the accuracy of the evidence provided by comparing it with a reliable source, and (b) checking the logic of the argument. Research skills are introduced as students learn how to find sources and evaluate the reliability of the source.

Students learn how to write critiques of false-cause arguments, arguments with conclusions that are too general or too specific, arguments with misleading claims, and other types of weak arguments. Students learn to distinguish between contradictions, inconsistencies, unreasonable or improbable outcomes, and arguments that are just plain wrong. They learn to explain the problems in any of these arguments. Students also learn to develop plans to accomplish goals and to identify superior plans and choices based on a set of criteria.

A new retell track in Level E teaches students to listen carefully, take notes and organize and reproduce information accurately from a short oral presentation. In another track, students learn to use parallelism in writing: parallel verb forms, parallel sentence forms, parallel paragraph forms and other parallel organizations. They also learn parts of speech in a “transformational grammar” track that requires students to apply their skills of logical analysis to the problems of usage, meaning and sentence structure. Students also use sentence transformations to solve problems. The study of usage also emphasizes clear pronoun referents and appropriate pronoun case, verb tense agreement and subject-verb agreement.

▪ **Reading Mastery Plus Language Arts Guide**

The Reading Mastery Plus Language Arts Guide series for Grades 3-5 covers the following topics: Book parts, Capitalization, Comprehension Skills (cause and effect relationships, fact and opinion, main idea and details, location of words and phrases, time and order words and expressions, words and expressions that signal change), Grammar, Punctuation, Reference Sources, Vocabulary, Word Parts, Writing Skills (sentence structure, stories, persuasive writing, reports, author’s perspective, extended projects), Using Reference Materials, Figurative Language.

(b) **Reading programs: Reading Mastery**

To master the Reading Arts, students must be able to decode and comprehend, to apply thinking skills and background knowledge, and to love literature and language. These are the broad goals of the reading program.

The curriculum will include the Reading Mastery, published by SRA Macmillan/McGraw-Hill, copyright Science Research Associates, Inc. Reading Mastery consists of six levels that typically correspond to grades K-5. The objectives of this curriculum are to develop highly competent readers and therefore completely align with the reading section of the State Proficiency Test. Course objectives are listed in the material for each program level.

The success of this program is in large part due to the following simple principles.

- Along with the teacher, the program accepts complete responsibility for teaching every student how to read.
- All instruction is direct and unambiguous; tasks and activities are specified in detail.
- Every reading skill and strategy that students need is specifically taught, applied, and reviewed.
- Students receive consistent daily practice in reading, writing, listening, and speaking.
- Assessment is continuous; errors are corrected the instant they occur.

Phonics is always included as an integral part of the instructional plan, but it is only a beginning. The real test of a reading program is its success in developing fluency and comprehension skills. In Reading Mastery, comprehension is specifically taught early in the program. Fluency is developed gradually as skills are mastered.

Reading Mastery place particular emphasis on the teaching of thinking skills and the acquisition of background knowledge. Through step-by-step activities, students learn how to infer, predict, and conclude, and how to apply those skills to comprehension.

In these programs, students read some of the world's greatest literature by authors such as Mark Twain, Eleanor Clymer, and Langston Hughes. They also read such classics as the Wizard of Oz, Tom Sawyer, Charlotte's Web, Island of the Blue Dolphin, and various poems. Students also write early in the program. In first grade students write complete answers to questions; and in the third grade students write at least a paragraph each day about their reading.

Throughout the program, readings increase in length and complexity, questions become more probing, skill exercises more demanding, and writing assignments more challenging. Progress checks occur daily, and work is taken home on a regular basis.

Completion of the Reading Mastery program ensures a high level of mastery of the Reading Arts and prepares students for Benchmark Standards. At the second and third grade level (Reading Mastery III & IV), students read to learn about science and social studies as they extend their reading skills. In fourth grade and fifth grade students acquire an appreciation and understanding of literature.

At the beginning of the school year, students will be tested on their reading skills and placed within small groups at the appropriate level. It is possible for some students to progress through the levels faster than others. Yet, each student will always be placed in a small group with other students at their same approximate rate of progress and level of performance.

- **Reading Mastery: Levels I through VI.**

The Reading Mastery Program has six levels. We expect that most students who have started Arthur Academy in kindergarten will complete all six levels by the end of fifth grade.

Level I. Reading Mastery Level I contains 160 daily lessons that teach decoding and comprehension skills. Decoding is taught through an explicit phonics method that stresses letter sounds and blending of sounds. Students practice decoding by reading word lists and stories, both aloud and silently. Comprehension activities include answering questions about pictures, following directions, and responding to a variety of questions based on the stories.

Level II. Level II contains 160 daily lessons that expand basic reading skills. Students learn strategies for decoding difficult words and for answering interpretive comprehension questions. They also learn basic reasoning skills, such as making inference and drawing conclusions. The daily reading selections include realistic fiction and child fantasy stories.

Level III. Reading Mastery Level III contains 140 daily lessons that emphasize reasoning and reference skills. Students in the program learn how to apply rules in a wide variety of contexts and how to interpret maps, graphs, and time lines. The program also

introduces a number of complex sentence forms and a range of vocabulary activities. The daily reading selections include realistic fiction, fantasy, and factual articles.

Level IV. Level IV contains 140 daily lessons that emphasize problem-solving skills and reading in the content areas. Students in the program evaluate problems and solutions, learn facts about the world, and complete research projects. Many of the daily reading selections incorporate facts from science and social studies. (Horizons Fast Track C-D combines Reading Mastery III and IV)

Level V. Reading Mastery Level V contains 120 daily lessons that emphasize literary analysis and extended writing. Students read a wide range of classic and modern fiction and prose, including two full-length novels, and they learn how to analyze characters, settings, plots, and themes. The daily writing assignments focus on the meaning of literature and encourage students to think critically. Other program activities include making outlines, inferring word meaning from context, and interpreting reference materials.

Level VI. Level VI contains 120 daily lessons that focus on literary language, reasoning strategies, and extended writing. The reading selections include novels, short stories, poems, factual articles, biographies, and plays. Students in the program learn how to interpret complex sentence forms, figurative language, and literary irony; they also learn how to identify contradictions and rebut faulty logic. In addition, students write complete paragraphs on issues related to the reading selections, as well as short stories and poems of their own.

(c) Direct Instruction Supplemental Literature and Research Materials.

Recently, new DI materials have been published to expand the basic programs.

Reading Mastery I and II: Literature Collections now provide nine (9) titles for Reading Mastery I and ten (10) titles for Reading Mastery II, in addition to teachers' guides for instruction.

Reading Mastery III, IV, V, and VI: Student Literature Anthologies are provided for each level. These contain classic and contemporary stories, poems, and plays by well-known authors. Teaching materials for each include a Guide for providing meaningful discussions, activities to teach writing and reading-related skills, and activities that reach across a range of key content areas.

Language Through Literature, a resource guide for grades 3 – 5. This enables a teacher to use high-quality children's books to introduce students to story patterns, literary structures, and conventions of expository text. Students are strengthened in their abilities to engage in active listening, critical thinking, writing, discussions, and projects.

Research Projects is a CD-ROM program that uses science and social studies content from the Reading Mastery programs to plan extended projects, find information and organize presentations. Students gain information from a variety of sources: encyclopedias, magazines, newspapers, and the internet.

Learning Through Literature includes a thematic series and literature series. Themes include: mysteries, science fiction, realistic animal stories, and biographies. The literature series coincides with each Reading Mastery level from I to VI.

Level I,	People/Friends and Animals/Mice
Level II,	Caldecott Winners/Poetry and Fairy Tales/Folk Tales
Level III,	Ramona Quimby, Age 8 and Philip Hall Likes Me
Level IV,	Little House in the Big Woods and Stuart Little
Level V,	The Enormous Egg and Ben and Me
Level VI,	King of the Wind and Sign of the Beaver

Horizons Literature Collections, Levels A and B (k and 1st). Each level includes 15 titles, a teacher's guide, and black line masters with challenging activities.

Horizons Student Literature Anthology for levels C-D (2nd and 3rd) with teacher's guide and black line activity masters. Also included are two read-to titles: Little House on the Prairie and Julie Rescues Big Mack.

Open Court Classics for Grades 1 – 5. This series is for advanced students in each grade level to further develop higher-order thinking and comprehension skills through a collection of texts collected by E. D. Hirsch of Core Knowledge. It encourages independent inquiry and investigation of unit themes. It includes a Student Anthology, a teacher's edition, and a workbook at each level.

5.3.2 Math.

(a) **Math Curriculum.** Arthur Academy will implement the Connecting Math Concepts program (Copyright McGraw Hill 1996), which is the Direct Instruction math program for grades K-5, while using DISTAR Math 1 for kindergarten students.

- **FUN Math for Kindergarten**

The Fun Math program is being field tested in our Arthur Academy schools. It is a new Direct Instruction program that has yet to be published. Completion of this program places some students about a half-year above grade level by the end of kindergarten.

- **Connecting Math Concepts (CMC)**

Connecting Math Concepts (CMC) is a complete basal mathematics program. It has been designed so that all students will learn to compute basic math operations, understand basic math concepts and how they are related and connected, and apply what has been learned to solve common math problems.

The general characteristics of Connecting Math Concepts are:

- Lessons are organized around a number of topics rather than a single topic.
- Connections are made between important concepts.
- Instructional time is maximized, so that all students have the opportunity to learn and apply concepts.
- Concepts are introduced at a reasonable rate.
- There is both guided and independent practice.
- As in all Direct Instruction programs, all lessons have been extensively field-tested and revised before publication.

Connecting Math Concepts is a case study in ideally balanced mathematics instruction. CMC provides a balanced emphasis on symbolic mathematics (computation), manipulative activities, and problem solving, and it provides a balance between understanding and the type and amount of practice necessary to secure that understanding.

The research base for such balance is well established, as is the research base for many of the specifics of CMC, such as selection and sequence of examples, variation in instruction, focus on key concepts, discrimination practice, and so on. A review of research by Bob Dixon, supporting the Connecting Math Concepts program, is available.

- **Singapore Primary Math Program**

The Singapore Primary Math Program 2B and 3B will be used to supplement some areas of the Connecting Math Concepts program in grades two and three in order to meet state standards.

(b) **Math Content and Skills at Each Grade.**

By the end of the highest level of the math program, students will have successfully mastered all component skills (lower level, more basic), which enable composite skills (higher level, more complex), such as those listed below, that give them a firm foundation for continued development in math. These are merely samples of skills and concepts students will master in the math program.

Kindergarten. Some kindergarten math content.

- Rote counting and counting objects and events
- Basic math symbols: identification and writing
- Matching numerals and lines
- Equality
- Addition, algebra addition, counting backwards and subtraction
- Facts, problems in columns, figuring out facts
- More or less, story problems, ordinal counting

First Grade. Some CMC-A math content (for first graders)

- Writes numbers that are 2 or 3 more from and given number up to 100
 - Circles numbers on a number line that are more than a specified number
 - Writes numbers that are 1 or 2 less than a give number up to 100
-

- Writes problems from dictation or from number line
- Writes answers to orally presented problems with a 2-digit value and an addend of 0, 1, 2 or 3
- Writes and solves addition problems with tens numbers
- Writes answers to problems that add 10 and 20
- Says doubles facts
- Writes answers to problems that begin with 2-digit numbers and that -0 , -1 , -2
- Writes addition and subtraction facts from number lines
- Writes addition and subtraction facts based on number-family relationships
- Responds to mental arithmetic questions
- Understands 2-digit place value
- Solves action problems, comparison problems and joining problems
- From story problems, figures out whether to add or subtract
- Solves a mixture of the above kind of problems
- Solves 3-addend problems
- Solves two problems, then writes the sign that compares the answers
- Solves problems with multiple solutions
- Writes cents for a nickel, a dime or a quarter followed by pennies
- Measures rectangles
- Estimates to complete rectangles that approximate descriptions

Second Grade. Some CMC-B Math Content (for second graders)

- Counts by 2,5,10, 25, 100, 9, or 4
- Writes 3-digit numbers from description
- Writes column problems for number families that have 2-digit or 3-digit numerals
- Writes the missing addend in problems based on familiar number families
- Writes answers to problems that add or subtract 9
- Works mixed sets of addition/subtraction problems
- Works problems with length, time or money
- Works problems, some of which require carrying to tens column or the hundreds column
- Works 2- or 3-digit problems, some of which require borrowing
- Writes answers to multiplication problems
- Identifies shapes, figures out perimeters and areas of shapes
- Determines totals and interprets data in a table to answer questions
- Solves number-family story problems that involve 2- or 3-digit numerals

Third Grade. Some Advanced CMC-C skills (for grade three)

- Work 3-digit times 1-digit multiplication problems, most of which require renaming
 - Work division problems with 1-digit divisor, some of which have remainders
 - Complete equations that have a missing number or a missing sign
 - Solves comparison problems, some of which ask about a difference (how much more) and some of which ask about one of the values (how much)
 - Solves action problems
 - Solves word problems that require adding and subtracting fractions
 - Solves classification word problems
-

- Solves multiplication/division word problems with variation in sentence order
- Solves comparison problems with complex syntax
- Solves word and comparison problems using data from a table, fills in the missing numbers in the table, and interprets the data to answer questions
- Solves problems based on tables that involve multiplication
- Solves multi-step problems based on a table
- Relates fractions to division problems
- Writes numerical fractions from descriptions

The Singapore Primary Math Program 2B and 3B will be used to supplement some areas of the Connecting Math Concepts program in grades two and three

Fourth Grade. Some Advanced Fourth Grade Skills

- Works a set of problems that calls for different operations: addition, subtraction, multiplication
- Solves mental addition problems of the form: 56 plus what number equals 60?
- Solves column problems that multiply a 3-digits value by a 2-digit value
- Solves column subtraction problems. Then checks answers with a calculator
- Works division problems in which the last digit of the answer has a remainder
- Completes a table that has division problems and equations involving fractions and whole numbers
- Writes mixed numbers equal to decimals or decimals equal to mixed numbers.
- Rewrites fractions as equivalent decimal values.
- Works a set of fraction problems that require addition, subtraction and multiplication
- Solves multiplication problems that have a fraction and a whole number
- Compares fractions with like or unlike denominators to determine which is larger
- Works complete ratio word problems
- Works a mixed set of ratio problems involving units of time, weight and capacity
- Writes fraction number families for different diagrams of fractions
- Uses information displayed in a bar graph to generate numbers for a 3-by-3 table
- Solves number-family problems, some of which compare and some of which classify
- Solves fraction number-family word problems that ask questions about numbers and about fractions
- Computes the volume of a box
- Plots equivalent fractions on a coordinate system.
- Conducts an experiment that compares probability predictions with actual outcomes.
- Conducts a project involving graphs.
- Conducts a project that creates a function table for converting a cake recipe that serves 4 into a recipe that serves 12
- Works a variety of projects involving probability, ratios, geometry and tables

Fifth Grade. Some Advanced Fifth Grade Skills

- Works a set of division problems that have 1-digit and 2-digit divisors.
 - Completes a table to show hundredth fractions and their equivalent decimal and percent values.
 - Writes equations that show fractions and equivalent percent values.
 - Orders decimal values.
-

- Works unlike-denominator problems, some of which require rewriting only one of the fractions.
- Works column problems involving addition, subtraction and multiplication of fractions.
- Works equivalent-fraction problems in which one of the values is 1.
- Compares fractions with unlike denominators.
- Works addition and subtraction problems that have a whole number and a mixed number.
- Works division problems that have a decimal value in the dividend.
- Works a mixed set of word problems which require horizontal or vertical number families.
- Graphs a line on the coordinate system for a set of equivalent ratios and answers questions based on the line.
- Computes averages.
- Works ratio-table problems that involve percents.
- Uses inverse operations to solve word problems.
- Works problems that compare different units of measurement.
- Works ratio-table problems that involve probability.
- Finds the area and perimeter of parallelograms, rectangles and triangles.
- Finds the surface area and volume of a rectangle prism.
- Figures out the rule for vertically opposite angles formed by two intersecting lines.
- Works various projects that apply what has been learned.
- Uses ratio numbers to complete a table about the solar system and makes a scale model.
- Constructs a bar graph and circle graph to display percents for various geometric shapes selected as favorites by 20 different people.

5.3.3 Social Studies, Science, Music, P.E., Art.

(a) Curriculum. Core Knowledge materials provide most of the resources for these subjects. In addition to the general background book written by E. D. Hirsch, Jr., the following grade level resources are used. State standards in these subjects provide direction for selecting content within these materials.

- What Your Kindergarten – 6th Grader Needs to Know Grader Series
- The Core Knowledge Sequence
- The Core Knowledge Teacher Handbooks for Grades k-5
- Text Resource Packets
- Art Resource Packets
- Core Classics Plus, a series of 11 classic stories
- World History, Rats, Bulls, and Flying Machines (grades 4 and 5)
- Essential Poetry for Elementary School Students, Listen My Children.
- Pearson Learning/Core Knowledge History and Geography
- Kids Discover Life Science and Earth Science and Weather Series

Materials from the Singapore I-Science for grades 3-5 will also be used.

Core Knowledge developed its grade-level sequences from a survey of many state standards, but its content is so vast that we use the Oregon standards as guides in selecting which topics to study.
