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Integrating science through literature

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INTEGRATING SCIENCE THROUGH LITERATURE

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SUMMARY

Reading and thinking strategies integrated in the social sciences and in science rather than in separate lessons about reading are the logical place for instruction according to the Commission on Reading in Becoming a Nation of Readers, (1985).

Whole language is a conceptual theory of learning and of language development. It is a view of teaching and the role of teachers and learners plus a language-centered orientation of curriculum (Goodman, 1986). It is a philosophy of teachers designing an integrated curriculum centering on thematic units, keeping language whole, with a child-centered emphasis, allowing the child to have choice or ownership of her learning. Integrated thematic units based on language are child-centered, allowing choices and pride of ownership.

Integration is a key principle for language development because it is my belief that language is learned best when it is

whole. Language development and content instruction in science are the curriculum.

With the focus of a year long theme, students can see the connections of science in their every day world. Content areas such a s science, history, language arts, health, math, and visual and performing arts should not be taught by themselves in a blocked off time period. They should be taught the way they are seen in society, that is interacting with each other.

ACKNOWLEDGEMENTS

I would like to acknowledge the love and support I have received from my parents, Walter and Mary Lou. They have encouraged me to dream and taught me to work hard. It is with their example that I am able to reach the goals I set for myself.

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STATEMENT OF THE PROBLEM

The science learned in elementary schools is very limited. By the time the information is put in print the material is often outdated. The state and district approved textbooks are supposedly designed to meet the frameworks and scope and sequence of mandated skills to be taught at each grade level. However, the textbooks cannot address topics in depth; most topics are addressed in a paragraph to a page in a text. By the time the textbooks are published the information is usually outdated. Science and Technology change almost over-night.

To completely cover a topic, it is necessary to go beyond the textbook and use literature, newspapers and magazines. Woodward, Elliot, and Nagel (1986) state that some of the scope and sequence and content presentations of textbooks are not consistent and not well-coordinated throughout the grade levels. While Anderson, Armbruster, and Kantor (1980) note the poor writing quality and the confusing formats found in some textbooks, they found the majority of tradebooks provide

in depth coverage of topics, tend to be more interesting, appear to be well-written, and offer greater appeal to student readers. Others, such as Crook and Lehman (1990), state trade books are diverse in subject matter and are appropriate for a wide range of reading abilities. Where texts have narrower reading level application, trade books address a wider reading level diversity.

There are a number of non-fiction books that will aid the teacher in integrating science into her curriculum. The California State Framework for Science (1990) lists a number of objectives for science instruction in elementary schools. These include: providing a balanced curriculum in physical, earth, and life science; integrating science with other subjects; reinforcing conceptual learning rather than rote learning; and at least 40% of the lessons are to be activity based (The California State Framework for Science, 160).

Further, the Science Framework lists ways themes can be used to enhance science curriculum including: assessment

should be thematically based, themes can be used to direct the design of classroom science activities, and themes should be used to integrate concepts and facts at all levels of the curriculum (33-36).

Reading and thinking strategies integrated in the social sciences and in science rather than in separate lessons about reading are the logical place for instruction according to the Commission on Reading in Becoming A Nation of Readers, (1985). It is the goal and objective of this project to provide models for instruction of first grade students in science using a year long integrated thematic unit. This unit will cover the areas of curriculum study designated by the California State Framework on Science (1990). It will provide a balanced curriculum in the areas of Earth, Life, and Physical Science in each of the eight components of the year long theme "The Revolving Earth". The components tied to this theme are: My Place on earth, Reflecting on the earth, Time changes on earth,

Tomorrows earth, Growing on the earth, The wet earth, Sharing the earth, and A piece of earth.

Integrating Science with other content areas through Language Arts is a wonderful idea. Goodman (1986) said integration is a key principle for language development; other wise language development and content instruction become dual curriculum for the teacher. Teaching Language Arts through Science will save teachers time instead of piling additional curriculum on top of a teachers already to full lesson plan book. By helping children to become better at science, you can help them become better readers (Brunworth, 1988). Brunworth takes the position that integration can be accomplished through science experiments in which students can see through order and logic the steps to problem solving. Then the students could see the direct results of reading the clues or directions carefully. As many of the lessons are multisensory, the students become aware of their own senses and generally

improved in reading.

In developing an integrated Science and Language Arts program, it is essential to understand the orientations that underscore reading instruction. "A theoretical orientation is a particular knowledge and belief system held toward reading that influences many of the decisions made by teachers and pupils relative to reading" (Harste & Burke, 1980, 112). Current theoretical views of reading can be organized into three philosophies and be perceived as falling along a continuum (Harste & Burke, 1980).

The first is a sound/symbol system of reading conceptualized as a pyramid cluster, the base of which is a sound symbol system of relationships. Learners develop through learning sounds associated with symbols, developed into words, and meaning is given to the words. The largest emphasis is given to development of the sound/symbol relationships, the smallest is given to meaning. The placement of this model on

the continuum of reading is on the far left side.

The second orientation presented by Harste and Burke is defined as the skills oriented model cluster of reading. Here the student learns through a sequential process of skills learned. Equal emphasis is given to letter sound relations, vocabulary, and meaning components. In actual practice, experience shows that most content areas are taught in this way. On the reading continuum the skills model falls a the center point.

The third of these philosophies is called whole language. It views reading as one of the ways in which the abstract concept of language can be achieved. The beginnings of this movement can be traced to John Dewey and his philosophies of integrating language (Dewey, 1943). The whole language model conceptualized as a sphere with meaning at the center of the sphere. A layer of syntax structure surrounds the meaning and the entire model surrounds a letter-sound system. Language is

the focus for all instructional purposes and all three components are utilized simultaneously. In this model of reading comprehension is always the main focus. The teacher uses the students existing language. The whole language model is viewed on the far right hand side of the reading continuum.

I would place my philosophies on the right of the continuum as a whole language teacher. I am a holistic teacher because I believe that students at any age should be active participants in what they want to learn. Teachers need to generate the need to learn and then guide the learning. If students are spoon fed the information it seems they just spit it out and never digest or internalize it. To be able to digest the knowledge students need the subject area to relate to them and their interests. By choosing the area within the teachers topic, students can learn through real life experiences.

Labeling myself as a holistic teacher does not mean that I do not teach skills or decoding. I do teach both skills and

decoding in the context of a piece of literature that we are studying. I teach the writing process and reading through Readers Workshop. I met the parents half way in Spelling. I disagree with lists of spelling words because they are out of context and therefore placed in short term memory. Instead, I assign three sentences with simple words and punctuation and call them "Spelling Sentences." It is against my philosophy but at least the words are in context and have some meaning.

I am not where I would like to be yet in my philosophy. I regress some days when the centers are a mess and when I feel unappreciated by some "professional parents." Also, I would like to have even more student choice in my classroom. In the last two years my beliefs have gotten stronger and I have been able to support them easier.

The curriculum that I have designed supports my belief that knowledge is generated best from first hand experience. Knowledge is also generated from other experiences and from

reading. The units list the key points which are the objectives that meet the framework requirements and the facts that I want my students to know at the end of the unit. The inquiries are the activities that the students will do to learn and understand the key points. There are inquiries for whole group, cooperative small groups, independent groups and student choice groups.

A few of the purposes for teacher-led whole class group are to introduce new strategies and concepts, to share related background knowledge, to build common experiences, review previous presented ideas, to learn from difficult text, and to participate in enrichment activities (Pardo & Raphael, 1991).

A few of the purposes for cooperative small groups are for students to practice their new strategies, apply their new learned concepts to further study in their chosen area, to work collaboratively to create texts such as reports, questions, or interviews, and to engage in discourse about the content and the

process they are learning (Pardo & Raphael, 1991).

A few of the purposes for individual groups include reflecting on their ideas, texts and interactions. Setting individual goals and purposes, applying and practicing strategies learned, and providing information regarding individual progress (Pardo & Raphael, 1991).

Giving students choices in the activities they become an active participant and in return the students have a invested interest and are excited about the experiences.

Writing this curriculum has done the same for me. I am excited about teaching "The revolving earth". By focusing and selecting the key concepts that I feel the students need to learn, I also have learned a great deal. I am stimulated by the inquries I chose because I feel through the different groups the students will receive a large variety of experiences and will see how science is not just another subject but it is something that is happening around us at all times.

REVIEW OF THE LITERATURE

Being a first grade teacher my number one responsibility is to teach my students to read and the basic social skills they will need throughout their lives. Teaching at a science and math magnet school it is equally important to teach the content areas. Using whole language I am able to teach reading through the content areas and supply the students with experiences to build upon. Using centers to explore and cooperative groups to communicate, my students are developing their language as well as their social skills.

Therefore, this literature review will include materials available on the topic of a year long integrated thematic unit using literature and experiences to teach science.

Theoretical Orientations

In developing an integrated Science and Language Arts program, it is essential to understand the orientations that underscore reading instruction. "A theoretical orientation is a

particular knowledge and belief system held toward reading that influences many of the decisions made by teachers and pupils relative to reading" (Harste & Burke, 1980, 112). Current theoretical views of reading can be organized into three orientations and be perceived as falling along a continuum (Harste & Burke, 1980).

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Teachers who teach beginning readers from this sound/symbol model believe that phonics is the most important part of reading. The sounds are drilled and the students are

taught the different phonics rules. When having a problem reading a word the students are asked to "sound it out".

The second philosophy presented by Harste and Burke is defined as the skills oriented model cluster of reading. Here the student learns through a sequential process of skills learned. Equal emphasis is given to letter sound relations, vocabulary, and meaning components. In actual practice, experience shows that most content areas are taught in this way. On the reading continuum the skills model falls a the center point.

A skills teacher is known to give students flash cards with sight words on them. Spelling is very important in this model as is the parts of words such as prefixes and suffixes. When a student askes a teacher from the skills model what a unknown word is the teacher might respond with "what is the root word?"

The third of these clusters is called whole language. It views reading as one of the ways in which the abstract concept

of language can be achieved. The beginnings of this movement can be traced to John Dewey and his philosophies of integrating language (Dewey, 1943). The whole language philosophy conceptualized as a sphere with meaning at the center of the sphere. A layer of syntax structure surrounds the meaning and the entire model surrounds a letter-sound system. Language is the focus for all instructional purposes and all three components are utilized simultaneously. In this orientation of reading comprehension is always the main focus. The teacher uses the students existing language. The whole language philosophy is viewed on the far right hand side of the reading continuum.

A teacher of the whole language philosophy creates an environment for students to learn at their own level. There is little drill and practice if any and no ability groups. The holistic teachers emphasis is on meaning. She wants her students to learn from experiences and from literature. Basals

are used in enrichment activities, not as the sole source of information. Inventive spelling is encouraged, writing and reading are happening throughout the entire day even in a Kindergarten classroom, and the room appears to be unorganized because of the choices that the students have and because of the active noise level. When the observer looks closer, she will see that it is organized and that the noise is a result of students learning and the teacher providing the opportunities to learn. A holistic teacher does not feed the information to the students, she guides the students to the information. When a student askes for a unknown word while reading in a holistic classroom the facilitater might respond, "skip it, read on, and then come back to it and try the sentence again."

I would place my philosophies on the right of the continuum as a whole language teacher. I am a holistic teacher because I believe that students of all ages should be active participants in what they want to learn. Teachers need to generate the need

to learn and then guide the learning. If students are spoon fed it seems they just spit it out and never digest or internalize the information. To be able to digest the knowledge, students need the subject area to relate to them as well as to their interests. By choosing the area within the teachers topic, students can learn through real life experiences.

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I have found that parents want their children taught the

way they learned. It is pointless to fight parents but it is necessary to educate them and to share the reasons for my belief system.

The Beginning Reader

Before teaching a student to read the student needs experiences. Socialization is built around communication according to Heilman. "Comprehension is building bridges between the new and the known" (Pearson and Johnson 1978, 24). The more meanings a student brings to reading, the more she gets from it. These meanings, or schemata, are the student's cognitive store of concepts derived from experience with her environment.

Parents need to help their children gain experiences. The Right to Read Program has developed a pamphlet for parents in which many suggestions for helping their young children prepare for reading are discussed. One area touched upon is that of "discovery." The authors urge parents to help their

children by offering several general examples. "In the community, help children observe. In the woods, feel the bark. At the farm, ask questions about the animals. In the park, make a hula hoop be a picture frame and observe the 'grass picture' closely" (Wright, 1976, 4).

Both the parents and the teachers need to create a non-threating environment for which the students may seek answers. The emotional phase of human growth and development needs to be considered when looking at a child's reading readiness. Jeanne Chall argues, "We are less concerned with the social and emotional phases." (Chall, 1967, 72). Students are always asking questions and we often brush them off. We need to listen, respond and then praise. We are often negative and give directions rather than suggestions. Heilman points out, "Their language mirrors their needs, feeling, aspirations, and fears; and if one's job is to help children grow, knowledge of these emotional aspects is essential" (Heilman,

page 42).

The experiences build oral language. Written language is very abstract to the beginning reader. The more oral language a student has been exposed to the less abstract written language will be. In her book A Parent's Guide to Children's Reading, Larrick (1975) gives a suggestion for parents to help their children become ready to read. The suggestion is to surround the child with experiences with oral language. The richer the background experiences the more likely a child will use and understand oral language to the fullest extent. Children who have a rich background experience in oral language will be able to make sense out of their language when they hear it spoken, when they begin speaking, and when they see it in print.

A major misconception about reading readiness is that every student is ready to read when they are 4.9 years old. Arthur Heilman states that reading readiness is "As a child grows and matures in all phases of human growth, intellectual,

social, emotional, and physiological--he is gowing into reading." (Heilman, 1967). It is the background experiences and individual growth that decides when a student is ready to read not the age or grade of the child.

There are many ways to teach reading. As a teacher from the whole language philosophy it is my belief that teachers and parents need to guide students into reading by making reading easy. Smith has one cardinal rule and guideline for all reading instruction. "Make learning to read easy - which means making reading a meaningful, enjoyable and frequent experience for children" (1979, 143). Making learning to read easy would include the following: 1. Read to children that which they cannot read for themselves. 2. Read from a variety of materials with a high interest level - stories, poems, riddles, jokes - all of which are fun for the beginning reader. 3. Provide a reading environment with an abundance of reading materials. 4. Have older proficient readers tape stories for a

listening center. 5. Provide flannel boards and cut outs for children to tell stories with. 6. Have writing materials available. 7. Provide time to engage in all of the above activities. 8. Provide a multitude of hands-on experiences for children to do and to talk about. 9. Provide information and help as the child requests. 10. Begin to prepare language experience stories; the writing process. 11. Provide more time in frequently spaced periods for them to read. 12. Continue to share books with the whole group by reading daily. (Smith, 1979).

When a beginning reader is taught from the skills model reading is seen as an abstract puzzle for new readers to put together. But, when taught from the wholistic philosophy, reading is much like science, in that the reader needs to predict and confirm. Kenneth S. Goodman (1967, 1970) described reading as psycholinguistic "guessing game" involving an interaction between thought and language by

which the reader attempts to reconstruct the author's meaning. Beginning readers bring to the task a store of meaning and attitudes derived from experience, and they also have a repertoire of basic knowledge of skills in oral language. Reading then, according to Yetta Goodman and Dorothy Watson, becomes "an active process in which readers use the strategies of sampling, predicting, confirming or correcting, and integrating information in order to derive meaning from the graphic, syntactic and semantic cues provided by the author" (1977, 869).

Integration

Integration makes the connections from one subject to another as well as the connection from one unit to another. "All things are interrelated whether in nature or learning or life" (Kovolik, 57). After studying about the earth for a year the student should be able to look out the window and see life, physical, and earth science integrated as they are in real life.

It is time to think of curriculum as an integrated meaningful whole. "To see subjects in terms of concepts and to utilize all the basic skills to support and clarify those concepts, giving students a once in a lifetime opportunity to develop their personal learning power" (Kovolik, 57).

The Commission on Reading reports "The idea that reading instruction and subject matter instruction should be integrated is an old one in education. But there is little indication that such integration occurs often in practice... The most logical place for instruction in most reading and thinking strategies is in social studies and science rather than in separate lessons about reading" (Anderson, 1985, 73).

Informational books and biographies can be used to expand reading choices in all areas of curriculum including the arts, natural and social sciences, and mathematics. Alfonso (1987) adds that when paired with literature, a paragraph in a history book becomes a significant event resulting from

decisions and personalities of real people.

Sanacore (1990) suggests including literature as a part of the instructional program in content area classes, reading aloud to students, and supplying a wide variety of print materials for the students to read will improve the attitudes towards content area books.

By using Harste's authoring cycle as an organizational frame for social studies, science, math, and the other content areas, art, drama, and dance become vehicles for learning rather than objects of study in their own right (Harste, et *al.*, 36).

The students need to decide what they want to study. "Curriculum is not so much a course of study as it is a transaction between learners in a language setting. Curriculum is negotiated rather than given and only reaches fruition over time and with repeated opportunities for engagement" (Harste, et *al.*, 48).

Whole language is a conceptual theory of learning and of language development. It is a view of teaching and the role of teachers and learners, plus a language-centered orientation of curriculum (Goodman, 1986). It is a philosophy of teachers designing an integrated curriculum centering on thematic units, keeping language whole, with a child-centered emphasis, allowing the child to have choice or ownership of his learning. Integrated thematic units based on language are child centered, allowing choices and pride of ownership.

Integration is a key principle for language development because it is my belief that language is learned best when it is whole. Language development and content instruction are the curriculum. The four areas of language arts: reading, writing, listening, and speaking are continually taking place within the context of the content area throughout the classroom.

Thematic Units

"This framework is about connections. As James Burke

writes, 'This interdependence is typical of almost every aspect of life in the modern world. We live surrounded by objects and systems that we take for granted, but which profoundly affect the way we behave, think, work, play, and, in general, conduct our lives and those of our children' (Burke, 1980). The framework embodies this sense of connections: Each section draws on and contributes to those that precede and follow it" (The California State Science Framework, 1990, viii). The framework also calls for the thematic presentation of science concepts so that students regard the connections across science disciplines and learn how science relates to the other areas of study.

Themes are the big ideas of science, larger than the key points and the concepts; they link the theoretical structures of the various scientific disciplines. Themes integrate the overarching concepts of science into a curriculum (The

California State Science Framework, 1990).

Themes are necessary in the teaching of science because they are necessary in the doing of science. "In order for science to be a philosophical discipline and not merely a collection of facts, there must be a thematic connection and integration" (The California State Science Framework, 2).

Literature and hands-on activities should reflect the theme being studied. "Themes in science should direct the design of classroom activities. They can connect classroom activities and provide them with a logical sequence and scope of instruction" (The California State Science Framework, 2). Thematic units were chosen as the tool for the integration of science, literature, and all content area subjects for this model project.

Thematic units can be used for any age or group of students. Davis (1990) reports the success of using carefully chosen, well planned thematic units to teach returning high

school former dropouts. These were students who had only experienced failure in school.

The model thematic unit demonstrates that the use of literature including picture books, informational books, and science tradebooks are of high interest for students of all ages. Literature is used to expand reading choices in all areas of curriculum including the arts, natural and social sciences, and mathematics. These materials are used within the curriculum of thematic units (Alfonso, 1987).

Grouping

When organizing a classroom the teacher needs to instruct her students in different ways. Whole group, cooperative small groups and independent groups. Using groups within classrooms has a long history, dating back almost 80 years to when ability was first used as a basis for forming small groups (Barrs, 1989). Ability grouping has continued to dominate reading instruction in spite of research suggestions

that the instruction received in the lower achieving groups differs substantially from, and is inferior to, that received by higher achieving children.

Issues of grouping are often ignored in content area instruction, where a single textbook is typically used for students of all reading abilities, and instruction centers on whole class lessons. Yet research indicates that students earn higher grades, develop more skill in critical thinking, and become better decision makers when they study in small cooperative learning groups (Slavin, 1985).

Pardo tells us how her students study subject matter. "First, students needed to develop a general concept of the topic. This would give them a shared understanding and vocabulary to use in discourse about the general topic and related subtopics. Second, students gathered information both about general concepts and their specific subtopics, using a variety of information sources and comprehension strategies.

Third, students organized and synthesized the information through charts and summaries. Fourth, students drafted and shared their final reports. Student's success in each of these phases was enhanced by their participation in reading and writing activities within appropriate grouping arrangements." (Pardo & Raphael, 1991).

A few of the purposes for teacher-led whole class discussion are to introduce new strategies and concepts, to share related background knowledge, to build common experiences, review previous presented ideas, to learn from difficult text, and to participate in enrichment activities (Pardo & Raphael, 1991).

A few of the purposes for cooperative small groups are for students to practice their new strategies, apply their new learned concepts to further study in their chosen area, to work collaboratively to create texts such as reports, questions, or interviews, and to engage in discourse about the content and

the process they are learning (Pardo & Raphael, 1991).

A few of the purposes for individual groups include reflecting on their ideas, texts and interactions, setting individual goals and purposes, applying and practicing strategies learned and providing information regarding individual progress (Pardo & Raphael, 1991).

Conclusion

The conclusion of this holistic teacher is that all content areas should be taught through integrated thematic units. With the focus of a year long theme, students can see the connections of science in their every day world. Content areas such as science, history, language arts, health, math, and visual and performing arts should not be taught by themselves in a blocked off time period. They should be taught the way they are seen in society, that is interacting with each other.

In the units that I have designed for my first grade classroom I take science as a thread and I weave it through all

content areas. Science is used as the experiences to build oral and written language. It is used to challenge the students in math, history and health. With the use of information books the students research and go through the writing process.

The year long theme is "The Revolving Earth". Each month we study one component of the year long theme. The components are as follows: My place on earth, Sharing the earth, Growing on the earth, Reflecting on the earth, A piece of earth, The wet earth, Time changes on earth, and Tomorrows earth. Each Component is broken down into weekly units to help the teacher stay within the time limitations. There are only eight components. This gives the teacher three weeks to do her own thing, catch up or prepare for special performances or mandated tests.

Each component integrates earth, life and physical science. Fiction as well as non-fiction books are used to integrate the different requirements of the state frameworks.

The use of tradebooks and picture books can increase the motivation and add interest to subjects being studied by the students.

Students are able to build new concepts and ideas from existing prior knowledge. This makes the students successful. These successful students have a positive experience relating literature and science and continue to choose reading as a leisure time activity, and by learning to explore books they have learned about life and can relate the information they learned to their lives and the world around them.

This project has been written with three of the components of the year long theme "The Revolving Earth". The components are consistent with the guidelines of the California Sate Framework on Science for the first grade.

GOALS AND LIMITATIONS

It is the goal and objective of this project to provide instruction for first grade students with a curriculum integrating science through language arts. The curriculum is centered around the year long theme "The Revolving Earth". Each month long component ties back to the year long theme and meets the requirements set by the California State Framework on Science (1990). The curriculum is balanced in the areas of earth, life and physical science and is designed to be at least 40% hands on activities.

The project provides a use of literature as a model as well as a resource. The literature uses multicultural considerations, and encourages all areas of the language arts: reading, writing, listening and speaking.

The curriculum provides a rationale for using literature that is not content text oriented to enhance interest and intensify content learning. It includes books classified as

core, extended, informational (non-fiction), and recreational (fiction).

This project is a documented use of literature based strategy for conceptual learning and teaching science as there is a lack of support for this approach in the existing literature. The rationale for using thematic curriculum is cited, and this project uses concepts from research and the California State Framework requirements for Science. Thematic curriculum organizes and articulates a scope and sequence at the school level that provides a platform for integrating science with other subjects.

This project provides teachers with a model and framework that is an in depth study of a topic not available in a short portion of a textbook. The students use literature to build upon past experiences so new learning will be faster and more meaningful. This model is to make connections between experiences as well as from component to component. The

students will see science happening all around them in their world as a result of this integrated year.

The final goal within this project is for the inquiries to meet each individual student's level. The project is complete with large group inquiries, cooperative group inquiries, individual group inquiries and choice inquiries. With student choice and the variety of activities, each student, whether she is at the remedial or gifted level will be challenged and yet succeed.

The two limitations that I see are support and resources. At my sight I have the support of my principal and about half of our personnel. Having the support of your staff is a big advantage, not having it is a challenge. I believe in my program and I am open to sharing it with the other teachers at our sight. The support that I feel I am lacking is the support of the parents. Because little completed work goes home the parents arn't seeing what their children are doing in my class. They

would like to see a text book come home with assigned page numbers. The solution that I have found is to keep the parents informed. It is unfortunate that our economy doesn't allow many parents to have the time to come into the classrooms to wittness first hand but technology has given us the opportunity to video tape our students day to share with their parents. Another way I keep parents informed is to send home a news letter every Monday, and homework that ties into the unit.

The resources available are more limited to those who are less organized. By following these components and having a list of books and resources needed, the teacher can plan ahead of time and check out the books from the school library as well as the local libraries. Resources other than books might be limited to the school site and the imagination of the teacher and the students.

EVALUATION

Evaluation is very important in the theme studies approach to learn what level of development the student has reached, what attempts the child has made to learn, and what areas the child has mastered. Evaluation helps the teacher see what experiences the child needs in order to make progress and in what areas the most effort should be put. Evaluation helps provide us with a plan for teaching.

All aspects of learning within theme studies are open to evaluation. In addition to content learning, I evaluate students in reading, writing, oral communication skills, math, thinkng ability, and social skills. Even though these components are integrated for theme study, they must be separated for analysis on the report cards.

Language arts and math are the only grades that are not based on effort on our first grade report cards. These two content areas need more analysis than the others to support

the grade given on the report card. Each grade level and district have their own objectives in both areas that they feel each student must meet.

Portfolios of student work,Anecdotal records, student made books, written reaction journals, reader response journals and video taped reports and performing arts are kept and used to evaluate student growth.

When assessing students in math and in the language arts area I keep anecdotal records along with samples for each of the four areas: reading, writing, listening and speaking. I carry 30, five by eight reciepe cards ringed together. Each card has a student's name on it and a list of dates when they met set requirements. I feel it is very important to keep track of the concepts and the dates when those concepts "clicked" for each student. This is why I walk around with my reciepe cards. I mark down things like when the student first realizes that every sentence starts with a capital letter or when a child can

count dimes by tens to a dollar. Because we do very little commercially produced worksheets and a lot of hands on experiences, I can not rely on my memory to tell me who has which concepts and who needs more time to develop them.

The portfolios of student work are in folders hung on our wall with their name on it. When they are researching for our monthly component they keep their writing samples in them. After they have started a few ideas they are ready to choose one that they would like to go through the writing proccess with. The others remain in the folder and the chosen one ends up in a book that they publish with peer support.

Everyday we write in our journals. We date our journals and I save them until the end of the school year to share the growth of each student with their parents. The student may respond to something I read to them, something they read, self evaluate a project they are working on or they may simply use it as a written reaction to their emotins or feelings. The

growth I see from the beginning of first grade to the end is spectacular! The year generally starts with pictures and by the end of the year the students are writing stories that go on for pages. We share our journals with our classmates and respect the right to have a "private" entry one day a week.

Again, because I teach at a math-science magnet school I do have a lot of technology available to me. A video camera belongs to each grade level giving the teachers the opportunity to use it daily if wanted. Because so few parents can see their child in the classroom setting I video tape most of our performing arts and the sharing of our reports and projects. The students are no longer camera shy and do not even seem to notice when the camera is focused on them. Performing for their classmates builds the students self esteem as well as evaluating their progress on the component. Performences include plays, skits, news broadcasts, puppet shows and other reactions to literature.

Often teachers think of evaluation only as tests in the math, science, history, or reading books. We forget that the importance of evaluation is to see what the students have learned and what we need to do to challenge them further and to guide our teaching. Evaluation should not be thought of as a negative thing or as something we have to do just to fit into the small box on a report card. The truth is we could sit down with a child for ten minutes and figure out what letter needs to be placed in that tiny box, but that will not help us decide what we need to teach our students tomorrow or the day after.

The most important part of evaluation is for the teacher to evaluate herself. We need to evaluate ourselves so we can adjust our teaching to the students needs. A way that I evaluate my teaching is to go back to the list the students made at the begining of the component about what they wanted to learn and we answer the questions we had. If we do not know the answers to our original questions than I have not met

the goals the class set. Having a list of things that we know and what we want to learn helps the students and myself stay on track.

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Appendix A

REFLECTING ON THE EARTH

1. Sun.....
2. Heat....
3. Sound..
4. Light...

CONCEPT: The sun is the basis for all living things.

REFLECTING ON THE EARTH

SUN

KEYPOINTS

*The sun is the center of the solar system.

*Most of the energy used on the earth comes from the sun.

*The sun gives us light and heat energy.

*The sun warms the earth's surface.

*The sun heats the earth by radiation. (Heat spreads from the source.)

*The sun is a star.

*Long ago ancient people thought groups of stars formed pictures in the sky, these pictures are called constellations.

*The sun is made of gases.

*The earth rotates around the sun.

*The rotation (orbit) of the Earth around the sun results in the seasons.

*The Earth spins around once in twenty four hours to make night and day.

*The sun warms the Earth. (It is usually warmer in the daytime, than at night, it is warmer in the summer than in the winter.)

*Different places have different climates depending on their position from the sun.

*The sun hears water (which covers most of the earth). The water evaporates into the atmosphere to form clouds (condensation). Clouds precipitate and fall to the ground. (Water cycle).

*The sun and its effects on the ocean and the atmosphere result in our weather.

WHOLE GROUP INQUIRIES

Discuss what students know about the sun.

Discuss what the sun is made of and that the sun is a star.

Experiment with a light bulb and observe the way the heat radiates and warms the air.

Observe the globe and note the tilt of the axis.

Model the Earth on its axis tilting to create the seasons.

Identify constellations. (On an overhead transparency and in the sky and star lab.)

Visit the Star Lab.

Create a water cycle and observe it.

Using a globe model the earth's rotation and the effect of the tilt of the axis on the climate of various places.

Discuss the sun's effect on the ocean and the atmosphere and the relationship they have to weather.

SMALL GROUP INQUIRIES

Read Sun up, Sun Down.

Demonstrate the rotation of the Earth around the sun using a globe and a light.

Create a model of the solar system using a viriety of materials (choice).

Build a hot dog solar cooker.

Read Me and my shadow by A. Dorros.

Create a skit which dramatizes the story and present it.

Given a specific vocabulary term from the story, develop an activity that illustrates and teaches the meaning of the term.

INDEPENDENT INQUIRIES

Observe the sun at different times during the day.

Write in a daily journal about the sun observations. (location, intensxity, safety, feelings, things learned.)

Create a pictoral essay domonstrating how energy is used and how it is directly or indirectly related to the sun.

Create a constellation and make up a story on how it came to be.

CHOICE INQUIRIES

Simulate through drama what the world would be like without the sun.

Pretend you are a kindergarten teacher, prepare a lesson for your class on the importance of the sun.

Create a story about how the sun came to be and publish it.

HEAT

KEYPOINTS

*Heat energy is the random motion of molecules.

*Heat energy can make changes happen.

*The hotter something is the faster the molecules move.

*Heated substances expand.

*There are different sources of heat.

*Friction produses heat.

*Friction occurs when on object rubs against another.

*Rough surfaces create more friction.

*Heat is transferred by conduction.

*Metal is good thermal (heat) conductor.

*Hot air expands and rises (convection).

*Heat spreads from the source (radiation).

*Humans produce heat by metabolizing foods.

*Heat can be measured (Celsius and Fahrenheit).

*Temperature measures heat (how fas molecules move).

WHOLE GROUP INQUIRIES

Observe boiling water and cold water, demonstrate how heated water moves.

Create heat by friction rubbing together a variety of objects (hands, balloons, plastic, sandpaper, etc.)

SMALL GROUP INQUIRIES

Prove hot air rises and the human body produses heat by making a bubble rise from a tin can warmed by body heat.

Experiment with an ice cube to determine the amount of time it takes to melt.

Using a variety of objects, determine which objects conduct heat.

Create a hot air balloon.

INDEPENDENT INQUIRIES

Investigate sources of heat in the home and list them.

Measure the temperature inside the class and outside the room in Fahrenheit.

Using a line graph, record the data.

Compare the data with three other people.

Calculate the differences in the results.

Explain why differences might exist.

CHOICE INQUIRIES

Measure the temperature of your home (Celsius and Fahrenheit.) Record the data (student choice on how recorded.)

Experiment with a variety of objects and find other materials that are good thermal conductors and record the data.

Create an insulator that slows down the rate at which an ice cube melts.

SOUND

KEYPOINTS

*Light and heat are forms of energy and energy is also carried in sound waves.

*Sound is produced by object vibrating back and forth.

The speed of a vibration will determine whether the sound is high or low.

*Sound travels through solids, liquids and gases.

*The sense of hearing involves the ear, eardrum, auditory nerve and the brain.

*In the human body the organ that produces sound is the larynx.

WHOLE CLASS INQUIRIES

Listen to the sounds outside and inside.

List the sounds you hear.

Discuss how sound is made.

Experiment with a tuning fork to demonstrate how sound is produced.

Determine that differences in the pitch of water filled bottles is dependent on the amount of water in the bottle (the amount of water the sound travels through.)

Using a balloon, simulate the larynx and compare the balloon model to the body.

SMALL GROUP INQUIRIES

Create a mini ukelele to explore sound.

Demonstrate the ability sound has to travel through water, wood and metal.

Memorize and recite Voice Box (Reader's theatre).

With a partner, estimate the distance that a whisper can be heard (Inches).

Determine the distance a shisper can be heard.

Convert the inches to feet, then centimeters.

Brainstorm the reason different people will have different answers.

Explain how could this be done more accurately.

INDEPENDENT INQUIRIES

Diagram the ear.

Write a haiku about sounds in nature.

Identify sounds made by a variety of objects.

Record the data.

CHOICE INQUIRIES

Experiment at home with a variety of objects to see if they conduct sound.

Create a telephone with cups and string.

Invent a musical instrument.

LIGHT

KEYPOINTS

*Plants need light in order to live.

*Humans are able to see objects by means of relected light to our eye.

*With no light source we are unable to see.

*Light enters through our pupil.

*The pupil adjusts to the amount of light by expanding or contracting.

*Most objects do not emit their own light but reflect light from other sources.

*Light energy travels in a straight line.

*When light strikes an object it might be blocked (opaque), it might pass through the object (transparent), or partly pass through (translucent).

*When light strikes an object and is blocked (hits an opaque object) a shadow is cast.

*A solar eclipse occurs when the moon's shadow falls on the earth.

WHOLE CLASS INQUIRIES

Brainstorm sources of light from the world around us.

Discuss the relationship between light and heat.

Compare how light reflects off of a paper bag and aluminum foil.

Make and compare body shadows.

Play Shadow Tag.

SMALL GROUP INQUIRIES

Experiment with a variety of objects to determine whether or not the objects are opaque, transparent, or translucent.

Observe the eyes of a partner, with and without light.

Experiment with light to observe the contracting and expanding of the pupils.

Experiment with different objects and compare the amount of light feflected from each object.

Measure the length of a shadow every hour.

Explore changes in shape, size, color or width of a shadow.

Prove plants need light by growing a plant with and without light.

INDEPENDENT INQUIRIES

Draw the eye observed (with and without light). Label the parts.

Label the parts of the eye (outer and inner structures.)

Survey classmates to determine their eye color.

Graph the results on a bar graph.

Make a picture dictionalry demonstrating the meaning of newly acquired science vocabulary (reflect, transparent, translucent and opaque.)

CHOICE INQUIRIES

Create a book that shows how light energy is used.

Create a collage to display different light sources.

Write a "Magic School Bus" story about a trip to the sun.

REFLECTING ON THE EARTH

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Appendix B

SHARING THE EARTH

1. Classification.....
2. Animal Needs.....
3. Endangered.....
4. Whales.....

Concept: We share the earth with other living things. We are related to animals and are apart of the mammal classification. We are apart of the food web and apart of the problem of endangering animals.

Sharing the Earth

CLASSIFYING ANIMALS/NEEDS OF ANIMALS

KEYPOINTS

Reptiles:

*Scaly-skinned animals such as alligators, turtles, and snakes are called reptiles.

*Some reptiles live in water and some on land.

*Most reptiles are found in the warmer parts of the world.

*There are six main groups; lizards, snakes, worm lizards, turtles, and tortoises, crocodiles and alligators, and the tuatara.

*Tortoises and turtles are the only reptiles with shells.

*Lizards make up the largest group.

*Reptiles are among the most ancient of all animals.

*The ancestors of today's reptiles were the dinosaurs.

*Reptiles are cold-blooded - they need the warmth of the sun to give them the energy to move.

Fish:

*The first fish had no scales, fins, or jaws.

*The range of fish that live in our rivers, lakes, and seas are from the great whale shark to the tiny pygmy goby.

*Some fish live in fresh water.

*Other fish live in salt water.

*Some skitter just below the surface.

*Other fish dart about in the depths.

*A covering of slimy scales and mucus protect fish from parasites and helps them slip rapidly through the water.

*Fish propel themselves along by their tail, and steer an maneuver with their fins.

*Fish were the first animals on Earth to have backbones.

*All fish can breathe by absorbing oxygen from the water through gills - flaps on each side of the head.

*Bony disks called scales are embedded in the skin.

Birds:

*The only animals with feathers are birds.

*Feathers protect the birds body.

*Feathers fit together to form a smooth, airtight surface for gliding.

*Tail feathers provide balance and help the bird steer in midair.

*A few birds can not fly.

*Birds do not have teeth.

*Birds have a strong light bill, or beak.

*Most birds of prey, have good eyesight and hearing.

*Their sense of smell is poor.

Amphibians:

*Amphibians are a group of creatures that are able to live both on land and in the water.

*The group includes frogs, toads, salamanders, newts and caecilians.

*Frogs are the most widespread amphibians, surviving in deserts, rain forests, and mountainous regions.

*Frogs can swim, hop, and climb trees using their long back legs.

*Most amphibians breed in water, where they lay eggs that develop into tadpoles.

*While they are tadpoles they breathe through gills.

*As adults they develop lungs for breathing on land.

*Some frogs and salamanders have glands in the skin that produce poisons to ward off predators.

Insects:

*The insects make up the largest group of animals.

*There are at least one million different speices, including beetles, butterflies, ants, and bees.

*Insects are found in almost every kind of habitat.

*All insects have six legs and a body covered by a hard exosheleton.

*They vary enormously in size and shape.

*Flies spread disease, and weevils and locusts eat farm crops.

*Parasites such as ticks and lice live and feed on farm animals and sometimes on humans, too.

*Insects pollinate flovers and are an important source of food for many birds, bats, and reptiles.

Arachnids:

*Few animals are more feared but less understood than spiders and scorpions.

*We often cll these scurrying little creatures insects, but they really belong to the group of animals called arachnids, along with ticks and mites.

*Arachnids have eight legs.

*All arachnids are carnivores (meat eaters).

*Scorpions hunt down their prey and kill it with their pincers.

*If the prey is big, or struggles, the scorpion uses the sting in its tail.

*Many spiders capture insects by spinning a silken web.

*The silk of some webs is stronger than steel wire of the same thickness.

*Not all spiders spin webs, some catch their prey by dropping a net of silk onto it.

*A few spiders, such as the trap-door spider, rush out at their victim from a burrow.

*Some scorpions and several spiders are dangerous to humans.

Mammals:

*The heaviest animal is the elephant.

*The tallest animal is the giraffe.

*The fastest animal is the cheetah.

*All of which are mammals.

*Humans, mice, whales, rhinoceroses, and bats are also mammals.

*All mammals are covered in fur or hair.

*All mammals feed their young on milk.

*All mammals have a unique type of jawbone.

*Mammals have vertebrates.

*Some mammals are carnivores - flesh eaters.

*Some mammals are herbivores - plant eaters.

*Some mammals are omnivores - flesh and plant eaters.

*Mammals live nearly everywhere on Earth.

*Mammals live on land, in the sea, and in the sky.

Animals; general vocabulary

*Antennae are used to smell, taste, feel, and sometimes hear.

*Adapting is when they change to fit the environment.

*An organism's ability to blend in with the environment is called camouflage.

*A carnivore is an animal that eats meat.

*An animal that can not maintain a constant body temperature independent of the outside temperature is a cold-blooded animal.

*Insects, reptiles, fish and amphibians are cold-blooded. higher level organisms that get their food from other living things is a consumer.

*Gills are organs in fish that seperate dissolved oxygen from water.

*A habitat is the environment in which an animal lives.

*A herbivore is an animal that eats only plants.

*An invertebrate is an animal without backbones.

*A life cycle is a series of stages through which an organism passes.

*To shed the outer skin or exockeleton is molting.

*As an insect grows, it sheds its skin several times before it reaches the adult stage.

*A nymph is the immature stage of an insect that goes through incomplete or simple metamorphosis. It looks like the adult but is much smaller.

*An animal that eats both plants and animals is an omnivore.

*A predator is an animal the eats other animals.

*Animals that serve as food for another animal are prey.

*Producers are green plants that are able to make their own food.

*A spider is an arthropod that has two main body parts, eight legs, and fangs. Spiders are related to insects.

*The thorax is the middle section of an insect's body to which the legs and wings are attached.

*Animals with backbones are vertebrates.

*Animals that are able to maintain a constant body temperature independent of the outside temperature is warm-blooded.

*Birds and mammals are warm-blooded.

WHOLE GROUP INQUIRIES

Discuss what the students know about the classification of animals.

Discuss what we would like to learn about animals.

Discuss where we can find the information.

Discuss what all animals have in common.

Classify the classroom animals.

Read The very hungry caterpillar by E. Carle.

Sequence the story.

Give a note card to each student with a name of an animal on it and do the food chain using yarn.

Take a vote on our favorite animal and graph it out.

The class will create a animal miral for our back wall.

Teacher will read James and the giant peach by R. Dahl.

A parent who raises birds will come in to speak to the class.

Someone from the humane society will come to speak to the class.

Students will play a tag game to experience the relationships between predators and their prey in a food chain.

Our class will take a field trip to Sea World.

SMALL GROUP INQUIRIES

Students will cut out pictures from magazines and sort them according to their classification.

The students will identify several critters and their environmental needs and assign them to appropriate homes so we will have a critter zoo in our classroom.

The students will learn external differences in the bodies of insects and spiders by observing and constructing.

The students will use science process skills to become familiar with mealworms and their life cycles.

The students will observe and record data for a changing population of mealworms.

The students will collect and observe an earthworm and its habitat.

Each group will make an eartworm book recording their observations.

The students are to determine whether earthsworms prefer an environment that is wet or dry, rough or smooth, dark or light.

Each group will make an animal covering book.

Students will have their group snail compete in four Olympic style events.

Each group will make a animal camouflage poster.

INDEPENDENT INQUIRIES

Students will make a pop-up spider and insect, identifying the body parts of each.

Students will make a web using string and glue.

Students will keep a reaction journal while observing the class zoo.

Students will make qualitative and quantitative observations of gummy worms using their five senses and simple measurement tools.

Students will make a snail book based on observation and experimentation.

Students will observe the various parts of a snail and measure its height, length and mass.

Students will determine how the angle of a ramp affects the rate at which a snail pulls a load up the ramp.

Students will construct a goldfish model that shows all its fins and simulates its breathing.

Graph the classification of pets on the students block.

CHOICE INQUIRIES

Visit a pet store and find out if they have animals of all classifications.

Write a pet store for information on taking care of your pet.

Interview different pet owners to get opinions on advantages and disadvantages of owning a pet.

Interview a pet store owner or manager to find out which pet is the easiest to care for, which is the most difficult to care for, which is the most popular and which is the most expensive.

WHALES

KEYPOINTS

*Humpbacks belong to a group of whales known as the baleen whales.

*Baleen whales don't have teeth.

*Baleen whales have rows of filters, called baleen, that strain shrimp and other small creatures from sea water.

*An average humpback is about 40 feet long and weighs 35 tons. (That's as long as three large cars sitting end to end - and as heavy as five or six elephants.)

*They swim as fast as a person walking.

*Whales sometimes make noise by slamming their tails down on the water surface.

*Whales swim almost all the time and sleep only in short naps.

*They swim in nearly freezing water.

*Their body temperature is about the same as humans.

*They keep warm by continous movement.

*Whales are isolated by a layer of fat just under the skil.

*The whales flippers and tail act as radiators. Flippers and tails have little blubber, so blood pumped through them cools off quickly.

*Humpbacks spend the winter breeding season in the waters around Bermuda and Hawaii.

*About a year after mating, the female gives birth to a single youngster, called a calf. They live into their 70's.

*Humpbacks "songs" have patterns.

*Humpbacks spectacular leaps out of the water is called breaching.

*No whales have been hunted to extinction, but many are endangered.

*Whales are mammals.

WHOLE GROUP INQUIRIES

Read about Humphrey the Humback whale.

Make predictions to why Humphrey keeps getting stuck near shore.

Visit Sea World and see a whale show.

Listen to whale tapes and find the patterns.

Measure out the size of a whale on the black top and chalk it out.

Read Whales by J. W. Watson. Where would you classify a whale?

SMALL GROUP INQUIRIES

Using coffee filters, experiment to find out how baleen works.

Take your temperature, run in place for five minutes, take your temperature again. Do you feel warmer? Did your temperature change? Talk about why whales keep moving.

Read Hungry, hungry sharks by J. Cole.

Make some salt water.

Read Under the sea from A to Z by A. Doubilet.

Make a whale book.

INDIVIDUAL INQUIRIES

Read Endangered animals by Ranger Rick. Write a reaction to why whales are endangered.

Find out which whales are endangered.

Write a book about your favorite kind of whale.

CHOICE INQUIRIES

Write Sea World and ask for information on how they take care of whales.

Write a water park and ask them where they get the whales.

Write "Save the Whales" for more information.

Find some library books or magazines about Humphrey the Wrong Way Whale.

ENDANGERED ANIMALS

KEYPOINTS

*Dinosaurs were once endangered animals now they are gone forever.

*The dusky seaside sparrow is almost extinct.

*Extinct means gone forever.

*Life on earth is always changing.

*Extinction is natural for some species, or kinds of animals.

*Elephants have replaced some dinosaurs who were giant plant eaters.

*The new, unnatural extinction is caused by people.

*Creatures that are in danger of disappearing are called endangered animals.

*When people destroy foresets they endanger animals and plants.

*Chemicals used to protect crops hurt eagles and other birds by causing them to lay eggs with shells that crushed too easily.

*Taking the animals and their eggs for food has endangered sea turtles.

*We can still save endangered animals and plants.

*The koala is one Australian animal that has made a comeback. It is no longer in danger of becoming extinct.

*It is important to the food chain to leave animals in their natural habitat.

*All kinds of rhinoceros are endangered. Their only enemy is man.

*Some lare cats are endangered: Snow Leopare, Jaguar, Cheetah, and Clouded Leopard.

WHOLE GROUP INQUIRIES

Read Ranger Rick's Endangered animals.

Talk about what we can do to help.

Read For kids who love animals: A guide to sharing the planet.

Recycle cans and donate the money to the "Adopt a Whale" program.

SMALL GROUP INQUIRIES

Make a list of things we can do to help.

Make a list of thing we should not buy because they were taken from the wild.

INDIVIDUAL INQUIRIES

Choose one endangered animal to research.

Go through the writing process and make a book on that animal.

CHOICE INQUIRIES

Write to one of the following for more information about endangered animals and what we can do about it.

Bat Conservation International (BCI), P.O. Box 16203, Austin, TX 78716.

The Center for Plant Conservation, 125 Arborway, Jamaica Plain, MA 02130.

Heart, Box 681231, Houston, TX 77268-1231

The International Crane Foundation, E-11376 Shady Lane Rd., Baraboo, WI 53913-9778.

Friends of the Sea Otter, Box 221220, Carmel, CA 93922

Save the Manatee Club, 500 N. Maitland Ave., Suite 200, Maitland, FL 32751.

Whale Adoption Project, 634 N. Falmouth Hwy., Box 388, N. Falmouth, MA 02556.

World Wildlife Fund (WWF), 1250 24th St., NW, Washington, DC 20037.

SHARING OUR EARTH

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Appendix C

MY PLACE ON EARTH

1. My Family.....
2. Self Esteem.....
3. My Toys.....
4. Skeleton and Teeth....

CONCEPT: All people are equal and share the earth. We all have the same skeleton and body systems though our skin and eye color and size and shape may vary. Everyone is an individual and has their own special talents. Our society and toys change constantly.

MY PLACE ON EARTH

MY FAMILY

KEYPOINTS

*We belong to many groups.

*We have many families.

*We have the people we live with.

*We have an extended family of which we are related to but do not live with.

*We have our classmates as a family.

*Extra-curricular activities that we are involved in are also families.

WHOLE GROUP INQUIRIES

During the first week, for fifteen minutes a day, the teacher will read Call it courage.

Read The pain and the great one. Talk about the two different sides of the story.

Talk about what families do for each other and why they sometimes argue.

SMALL GROUP INQUIRIES

Sort tanograms for math. If we were to sort us, how many groups would we need? Make a class list of the different groups that we belong to.

Graph out the different groups.

INDEPENDENT INQUIRIES

Research and display your family tree.

Write a story about the person in your family that you most admire.

CHOICE INQUIRIES

Interview a grandparent about what it was like when she was growing up.

Interview a parent about what it was like when she was growing up.

Interview an older neighbor about what it was like when she was growing up.

SELF ESTEEM

KEYPOINTS

*Everyone is an individual.

*Everyone is really good at something.

*Everyone is loveable and good.

*Our friends usually share our interests.

*There is beauty in everyone and everything.

*It is important to love yourself.

*We can make changes to feel better about ourselves.

*We can help others feel better about themselves.

*We have many things to be thankful for.

WHOLE GROUP INQUIRIES

Read Willy the Wimp to the class. Talk about the dangers of name calling. Talk about the things that made Willy special.

Make a list of nick names that the class has heard.

Read The ugly duckling. Perform this skit for the other first grade classes.

Each student will list one thing about each classmate that they like about them, including themselves. The teacher will then have them help make a class chart on each student and hang it up to be read.

Make a list with the students of things they do to take care of themselves and the things they do to look and feel good.

Read Peace begins with you.

SMALL GROUP INQUIRIES

Have sets of four of all the Mercer Mayer books and of Crow boy available for the groups to choose from during readers workshop.

The groups will give themselves a nick name and tell why this name fits them.

Do small group compliment circles, then rotate so the the students are in different groups. Do this three times.

Make a list of thing that the group is thankful for and create a beat that you can rap it to.

INDEPENDENT INQUIRIES

Each student is to list only two things that they would like to be better at.

Each student is to list ways that they can become better at going these things and then set a goal and go for it.

Each student is to list the ten best things about themselves.

Each student is to write a "All about Me" book to share with the class.

CHOICE INQUIRIES

Write a compliment letter to someone that you look up to. Read either The berenstain bears and the in-crowd, Mind you manners, The legend of the bluebonnet, Today was a terrible day, How to get rid of bad dreams, Leo the late bloomer, I like you, if you like me, or How to deal with friends and give a book bait on it.

MY TOYS

KEYPOINTS

*Toys are machines.

*Toys change over time.

*Everyone has their own favorite toy.

*Toys can help us learn.

WHOLE GROUP INQUIRIES

Read Lyle and the birthday party. Talk about the importance of expensive presents.

Read Alexander, who used to be rich last Sunday. Chart out what happened to Alexander.

SMALL GROUP INQUIRIES

Cut out toys from magazines and paste them on posterboard in categories (electric, non-electric, wheels, no wheels, etc...)

Take apart an old toy donated to the school and try to put it back together.

Build with the building objects in the class.

INDIVIDUAL INQUIRIES

Write a story about your most favorite toy that you had when you were a baby.

Write a story about your most favorite toy that you have now.

Bring both toys (if possible) to school to share.

CHOICE INQUIRIES

Make a toy from garbage (things that are found at home and no longer needed).

Interview a senior citizen about their favorite toy as a child.

SKELETON AND TEETH

KEYPOINTS

*Everybody has bones.

*Bones are hard and stiff.

*You have more than 200 bones in your body.

*Your skull protects your squashy brain.

*Your ribs protect your heart and lungs.

*The bending places are where two bones are joined.

*The bending places are called joints.

*Strong, stretchy bands, like big rubber bands, hold the bones together.

*These bands are called ligaments.

*Hips, ankles, knees, shoulders, elbows, and wrists are joints.

*Joints help you twist and turn.

*Your backbone is made of many little bones called vertebrae.

*Your bones are getting harder and bigger as you grow.

*Some of the things you eat help your growing bones get harder and stronger.

*Even though bones are strong, bones can break.

*Bones help make your blood.

*There are 206 bones in the human skeleton and every bone has its own name.

*Bones are white.

*Teeth are used to bite, chew, crunch and grind food.

*Teeth can break just like bones.

*A tooth has three main parts, a crown, neck, and root.

*Sugary foods are damaging to the teeth and cause tooth decay.

*Teeth should be cleaned with a toothbrush, toothpaste, and dental floss after every meal.

*A full set of adult teeth consists of 32 teeth.

*Children have a first set of 20 milk teeth, which usually all appear by about two years of age.

*During childhood these teeth gradually fall out and are replaced by a second set of permanent, or adult, teeth.

WHOLE GROUP INQUIRIES

Make a chart showing how many children have lost teeth.

Read A book about your skeleton. And discuss the different bones.

Make a large chart with all the bones labled.

SMALL GROUP INQUIRIES

In pairs have the student trace each other and then cut out their paper bodies to hang on the wall. One bone at a time cut out of paper and glue onto the paper body.

Keep a graph of who has all lost teeth in the group. How many teeth has the class lost?

Read Little rabbit's loose tooth and Arthur's tooth in readers workshop. Take a vote on which one was the favorite.

INDEPENDENT INQUIRIES

Make a paper tooth and glue on a tooth each time you loose one in first grade.

Count your teeth. Figure out the names of the ones you are missing.

Make a book on how to take care of your teeth and bones.

CHOICE INQUIRIES

Interview five friends of different ages on how many teeth they have today. Make a chart showing the results.

Find a book about your skeleton, body or teeth at home or at the library. Read it, and give a book bate on it at the end of the unit.

MY PLACE ON EARTH

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