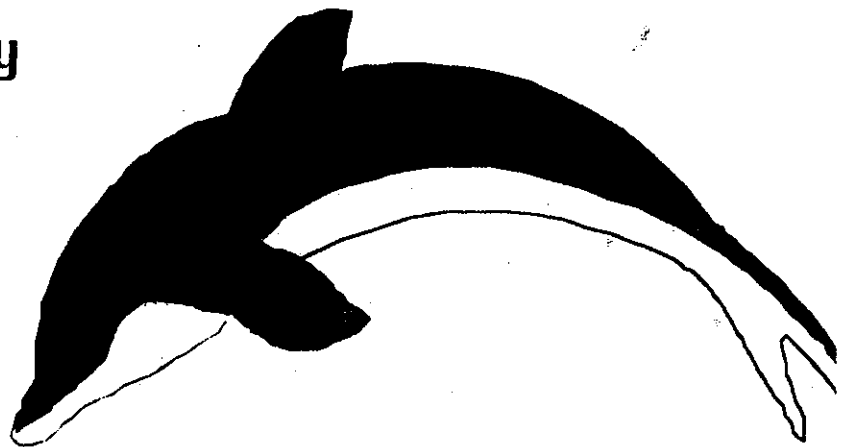


Sounds of the Sea

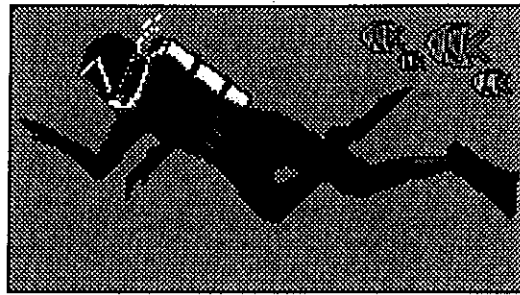


**An Interdisciplinary
Unit for
Science and Music**



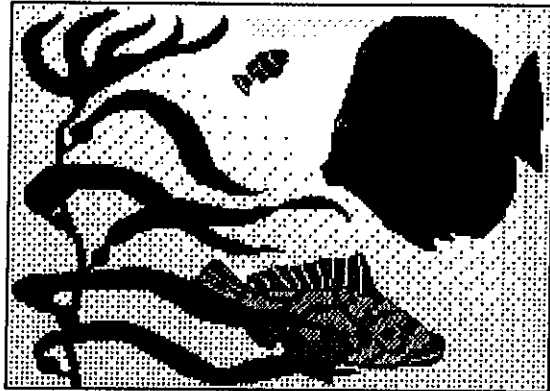
Jennifer G. Williams

TABLE OF CONTENTS



<u>TOPIC</u>	<u>PAGE</u>
Goals and Objectives.....	1-2
Course Outline.....	3-4
Lesson Plans/ Science and Music: Weeks 1-10	5-24
Sample Worksheet #1.....	25
Sample Worksheet #2.....	26
Resource List.....	27
Bibliography.....	28
Group Self-Evaluation Form.....	29
Audience Feedback Form.....	30

Goals and Objectives



Any program which motivates students to improve attendance, brings parents into the school, and integrates subject areas to enhance learning is essential to a school; **Sounds of the Sea** meets these criteria plus more. Many educational studies have demonstrated that improved attendance and the inclusion of parents in school activities aids in dropout prevention. This interdisciplinary project combining hands-on activities in science and music, in the study of the sights and sounds of the sea, not only increases attendance rates through a series of monitored rewards, but involves parents in a biweekly newsletter, multimedia presentation of student activities, and research done in class with their child.

Students can achieve success in many ways. Self-esteem and self-confidence increase in small group learning situations where students can feel free to explore answers to questions in a low risk climate, where making a mistake is part of the learning process. Students learn songs about the sea and work at their own pace to improve achievement levels in science and music using computer software related to the topic. As all students actively participate in searching, solving, and sharing science/music investigations, critical thinking and problem solving skills improve, both necessary for success in school and success in life. Students and parents will embark on a journey of discovery and exploration into the wonders and beauty of sea life that will promote learning as they search the high seas for adventure and knowledge.

THE PROJECT

Sounds of the Sea is an exciting combination of Science and Music for at-risk fourth grade students. Critical thinking and problem solving skills are developed as small groups design scientific experiments, participate in hands-on activities with classroom aquariums and then examine, sing, and create songs about life on the high seas. Parents and students will have a "whale of a time" as they discover and explore the diversity of aquatic life and its sounds in the ever changing sea.

DCPS MAJOR SYSTEM PRIORITIES:

Parental Involvement, Critical Thinking and Intergroup Relations

BLUEPRINT 2000 GOALS:

Student Performance and Learning Environment

COMPETENCY-BASED CURRICULUM

Each weekly lesson and its corresponding activities in Science and Music correlates directly with the fourth grade Competency-Based Curriculum. Students are engaged in higher-order thinking and problem solving when using the science process skills in hands-on group investigations and during the creating and performing of music and songs about life on the ocean waves.

COURSE OUTLINE

The Search/Solve/Share model used in this project enhances and applies critical thinking skills, such as inferring, comparing, judging and hypothesizing using a problem-solving project in each class meeting. In the **Search** section, cooperative learning groups select a question to research in Science or Music. The group then decides how to **Solve** the question by: stating the problem, writing a hypothesis, designing an experiment, recording data and drawing a conclusion. How the group **Shares** its findings is up to them; they can demonstrate the experiment, write and sing a song, draw an illustration, make a journal, video tape a presentation or create a sharing experience of their own for a chosen audience. The audience can be fellow students, parents or other classes and their teachers. Each member of the group is active in the Search/Solve/Share investigation including the production of a classroom sea mural depicting sea life in the Florida and/or California waters.

Fourth grade students meet two times per week for 45 minute sessions of Science and Music for 10 weeks. This is a flexible schedule; students may meet one time per week for a longer time and the project time line can be expanded or shortened. The class is divided into five or six member cooperative learning groups; these groups may modify the Search/Solve/Share questions. Grades are based upon Group Self-Evaluation and Audience Feedback Forms, as well as Teacher Observation Checklists.

Sounds of the Sea improves attendance by rewarding students for attending school. Prior to the start of the unit, data is collected on the absentee rate of each student; students with the highest absentee rates are given an Attendance Contract. This is an agreement to increase attendance rates by 20% in exchange for special jobs in class. If these students maintain and improve attendance, they will have the job of caring for the classroom fish and animal tanks.

This project also strives to increase parental involvement by bringing parents into the school and by increasing communication between home and school. A student produced biweekly newsletter is sent home

detailing what the Search/Solve/Share groups have accomplished. Students produce newsletters on classroom computers or write and print them on the school copy machine. Parents are invited to do research with the Search/Solve/Share groups during the school day. A **Sounds of the Sea** schedule is sent home with each student with an invitation to the parents to participate in classroom activities. Sign-in sheets are available for parents to log hours spent in school; these hours are compared to previous time spent in school. Parent hours spent in school are expected to increase by 10%. Many activities conducted during the project can be videotaped and shown during the final activity, **Save the Seas Day**.



Save the Seas Day is a day of celebration and sharing. Students will showcase their projects and scientific experiments, demonstrate software and perform their musical creations for parents. A video tape of classroom activities can also be shown to the participants.

Sounds of the Sea attempts to increase student achievement in Science and Music through these methods: the Search/Solve/Share model of investigation, a self-paced software science program and hands-on activities involving classroom sea life. For example, a classroom aquarium of local freshwater fish, a hermit crab habitat, and a mini life lab containing snails, gold fish, water plants, a crab and a newt are available in the classroom for student observations and research. Scores from a Science/Music skills and concepts pretest and post test are be compared; a 10% increase in scores is expected.

This project is very adaptable to the varied classrooms of our diverse school system. If there is only one computer in your classroom, simply purchase a single software package of *A Field Trip into the Sea*, and use the computer as a small group learning station. If space is a problem, one fresh water aquarium is enough to use for sea life observation and research. The school music teacher may have the words of sea shanties and recordings and check them out to you. School media centers have a wealth of videos and books on the ocean.

Week 1: Seaside Invertebrates

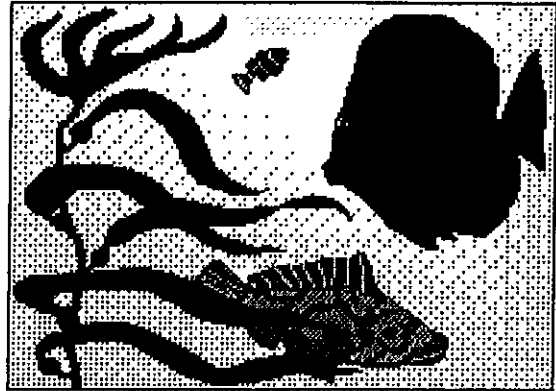
Search/Solve/Share/:

How does the size of its shell affect the size of a snail and a hermit crab?

(hypothesizing)

Hands-on:

Groups observe and collect data on classroom hermit crab and snails.



Component:

4.1.A.2

Objectives:

1. Compare and contrast observations, inferences, and predictions.
2. Discuss the differences between invertebrates and vertebrates.
3. Ask students what invertebrates they have seen; have them think about the shapes of some of these invertebrates: slugs, ants, butterflies, and earthworms. Ask students to compare invertebrates of the sea with invertebrates in the classroom: hermit crab and snails.
4. Students will explore the pictures of invertebrates in *Field Trip into the Sea* and complete: **Seaside Invertebrates**.
5. Collect data on size of shells of hermit crab and snails
6. Groups will conduct a single manipulated variable investigation hypothesizing if the size of the shell of a hermit crab and snail determines the size of the animal: will the animal grow along with its shell or will it change shells as it grows?

Competency:

After using the science process groups will conduct a single manipulated variable experiment using the scientific method and share results with classmates in method of their choosing

Materials:

hermit crab tank and snails, *Field Trip into the Sea*

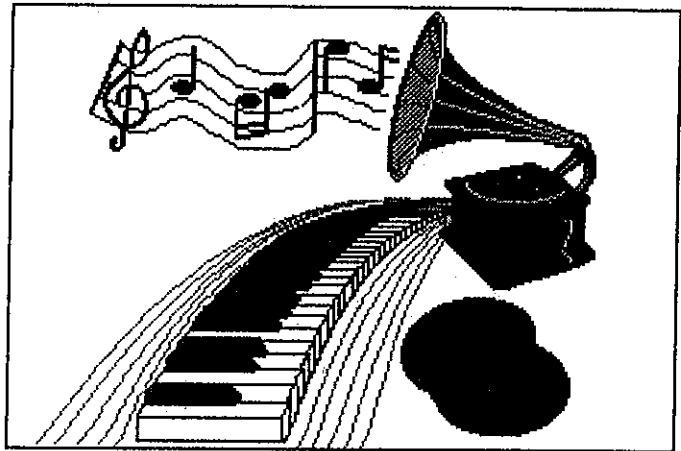
Week 1: La Mer by Debussy

Search/Solve/Share:

What do you think caused the composer to name this music La Mer? (causality)

Hands-on:

Groups will listen to and discuss music.



Component:

4.III.A.1

Objectives:

1. Discuss how rhythmic and melodic patterns influence the style, mood and general character of music.
2. After listening to La Mer, each group will describe the rhythm and melodic patterns and answer:
 - Was the rhythm simple or complex?
 - Did the rhythm have a feeling of 4/4 or 3/4 meter?
 - Did the rhythm make you think of the sea?
 - Was the melody stepping or skipping?
 - Did the melody make you think of the sea?
3. As groups listen to music, they draw pictures of what the music makes them feel
4. Share pictures with class and describe
5. Each group tells why this music is called La Mer.

Competency:

The student can describe as a listener, verbally and through art work, how rhythmic and melodic patterns affect the mood, general character, style, and name of a piece of music.

Materials:

La Mer tape or CD, paper, pencils, crayons or markers

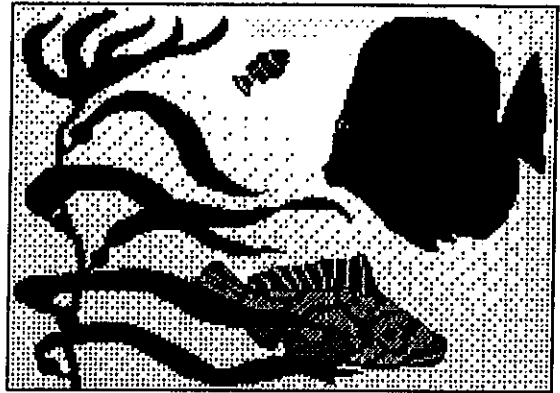
Week 2: Follow a Senorita Fish
Search/Solve/Share:

How does the camouflage of a daphnia
differ from that of a seniorita fish?

(comparing)

Hands-on:

Groups observe and collect data on daphnia
fish in Aquatic Lab.



Component:

4.V.A.2

Objectives:

1. Compare and contrast observations, inferences, and predictions.
2. Class discussion about the many diverse life forms in the sea.
3. Observe how an animal's structure and behavior is modified to help it live in a particular environment.
4. Have students assume that they are cemented to the floor; ask them how they will protect themselves from predators; discuss what methods would be most successful and which animals would survive.
5. Complete *A Field Trip into the Sea : Follow a Seniorita Fish*.
6. Compare the camouflage of the daphnia to the camouflage of the seniorita fish; define: biodiversity.
7. Describe the environment of the daphnia (fresh water) and seniorita fish (salt water).

Competency:

The student will discuss how the environment of the daphnia and seniorita fish determines their camouflage and survival.

Materials:

Aquatic Lab with daphnia, *A Field Trip into the Sea*

Week 2: Une Barque sur l'océan

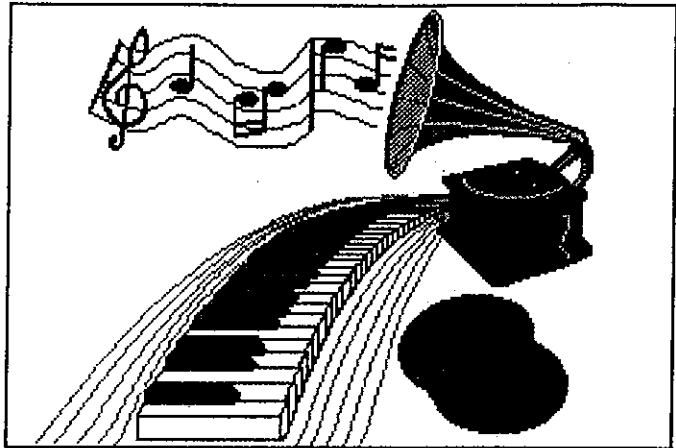
by Maurice Ravel

Search/Solve/Share:

How do you suppose tempo, dynamics, and /or words differ between sea songs and other songs? (comparing)

Hands-on:

Groups will listen to and discuss music.



Component:

4.III.A.2

Objectives:

1. Identify and respond to different degrees of tempo (lento, andante, allegro, accelerando, ritard) and dynamics (forte, mezzo, piano, crescendo, decrescendo).
2. Groups will make flash cards with definitions of music terms: lento, andante, allegro, accelerando, ritard, forte, piano, mezzo, crescendo, and decrescendo.
3. Discuss the meaning of tempo and dynamics and how differences in speed, loudness, and softness affect music.
4. Members of group will take turns holding-up appropriate card to describe music during listening.
5. Groups will compare music of the sea and other kinds of music and share with class using a method of their choosing.

Competency:

The student can describe as a listener, verbally, how the expressive characteristics of tempo, dynamics, and/or words affect the general mood and style of the music in Une Barque sur l'océan and other types of music.

Materials:

flash cards, dictionaries, Une Barque sur l'océan tape or CD, recordings of various kinds music

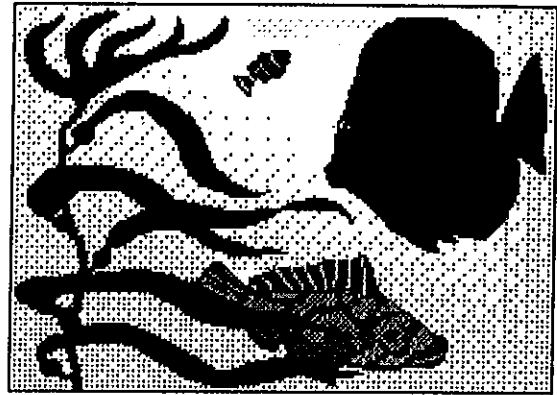
Week 3: Giant Kelp Habitat

Search/Solve/Share:

Which animals are best adapted to the kelp forest, and which animals are best adapted to the coral reef? (judging)

Hands-on:

Groups observe and collect data on class aquarium of Florida fish and plants.



Component:

4.V.A.3

Objectives:

1. Describe and classify South Florida's ecological communities.
2. Discuss habitats with the class: a habitat is the place where a species lives. It provides the things necessary to sustain that organism's life.
3. Ask the students what things are in their own habitat to keep them alive. Ask them to think about the needs of the organisms in the kelp forest and what that environment provides.
4. Groups complete *Field Trip into the Sea: Giant Kelp Habitat*.
5. Groups investigate the animals and fish in classroom aquarium; compare the South Florida and kelp forest environments. Describe the characteristics of a South Florida habitat for fish and plants.

Competency:

The student will discuss how an organism's environment determines its survival and share comparison between coral reef and kelp forest as part of a group in method of their choice.

Materials:

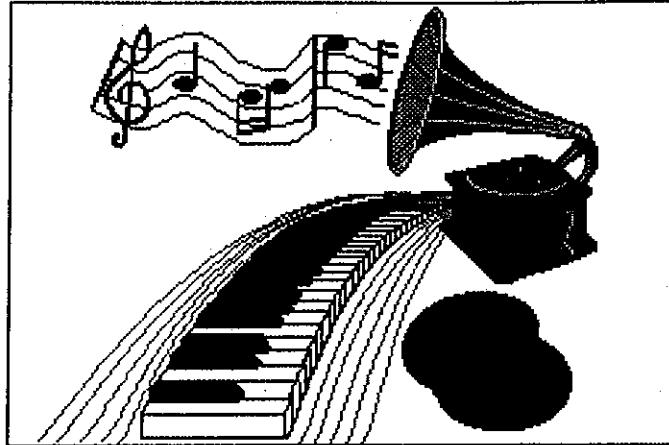
Classroom aquarium containing fish and plants of South Florida,
A Field Trip into the Sea

Week 3: **La Mer** by Claude Debussy

Search/Solve/Share:
Distinguish between types of instruments heard in **La Mer**.
(categorizing)

Hands-on:

Groups will listen to and discuss music.



Component:

4.III.A.11

Objectives:

1. Distinguish among aurally presented instrumental groups.
2. Name the instrument families: string, woodwind, brass and percussion.
3. Using magazines and newspapers, ask groups to cut out pictures of each of the groups of instruments, glue on paper, and label.
4. As students listen to **La Mer**, ask them to point to the instruments they hear.

Competency:

The student can describe as a listener the different families of instruments: string, woodwind, brass, and percussion.

Materials:

magazines, newspapers, scissors, glue, paper, **La Mer** tape or CD

Sounds of the Sea

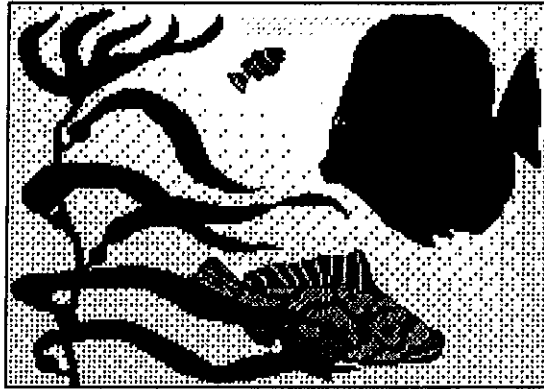
Week 4: Organisms, Waves, and Tides

Search/Solve/Share:

Why can't larger fish and plants survive without microscopic life forms? (inferring)

Hands-on:

Groups use micro slides to study one-celled life forms.



Component:

4.II.A.1

Objectives:

1. Use a micro slide to observe a simple one-celled organism.
2. Have students discuss physical factors that affect their lives; ask them, "What changes for a sea creature when tides are low?" Give some reasons why it might be an advantage to live above the tide line.
3. Complete *Field Trip into the Sea: Organisms, Waves, and Tides*. Describe organisms: Tube Worm, Sea Anemone, Mussel, and Kelp.
4. Groups use microscopes to observe one celled organisms that live in the sea and describe size, shape, and number of cells on slide.
5. Groups determine why larger plants and animals depend upon microscopic organisms (food). Share results with class.

Competency:

The student will observe and communicate an understanding of cells that live in the sea.

Materials:

Micro slide viewers, slides of one celled organisms, *Field Trip into the Sea*

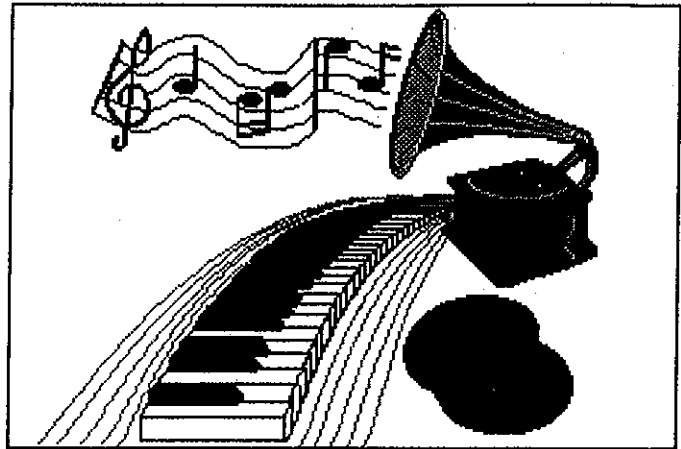
Week 4: **Folk Songs of the Sea**

Search/Solve/Share:

Create and play a percussion part for a song. (creating)

Hands-on:

Play rhythm sticks, maracas, and tambourines with music



Component:

4.III.B.29

Objectives:

1. Play percussion music for melodies
2. Listen to song **Haul Away Joe**
3. Read and repeat words of song
4. Sing along with the song
5. Demonstrate how to play rhythm sticks, maracas, and tambourines to class. Ask students to name instruments.
6. Pass out instruments to students who want to play, if there are not enough, groups can take turns playing
7. Groups will sing song and make-up a rhythm part for the percussion instruments
8. Students will explain how they decided on particular rhythms

Competency:

The student can create and perform a part for a percussion instrument.

Materials:

Rhythm sticks, maracas, tambourines, tape deck or CD, tape or CD of **Folk Songs of the Sea/Haul Away Joe**

*other sea songs may be substituted; borrow percussion instruments from the Music teacher or a Kindergarten teacher.

Week 5: Symbiosis: Interdependence of Plants and Animals

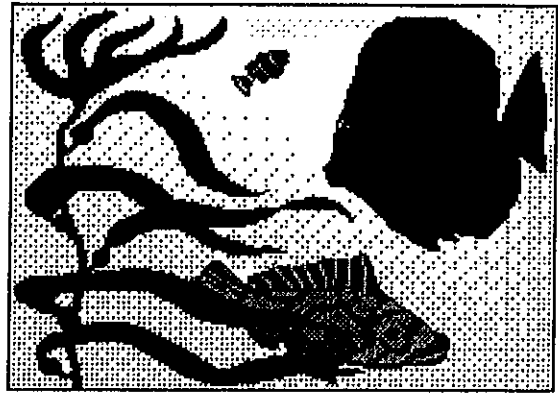
Search/Solve/Share:

If microscopic plants and animals are destroyed through pollution, can other life forms survive?

(speculating)

Hands-on:

Groups use micro slide viewers



Component:

4.II.A.2

Objectives:

1. Collect and observe common aquatic, microscopic organisms.
2. Have students discuss symbiotic relationships. Go over the explanations of interdependency. Ask them to describe their relationship with their parents. Ask them to give examples of interdependence in the community.
3. Complete *Field Trip into the Sea: Symbiosis*.
4. Groups go to microscopes and continue investigation of microscopic sea life.
5. Groups discuss the interdependency between these tiny creatures and other sea life (food, oxygen, protection, and so on).
6. Groups share their results with class in a method of their choosing.

Competency:

The student will observe and communicate an understanding of cells and the interdependency between tiny and larger organisms.

Materials:

Micro slide viewers, slides, *Field Trip into the Sea*

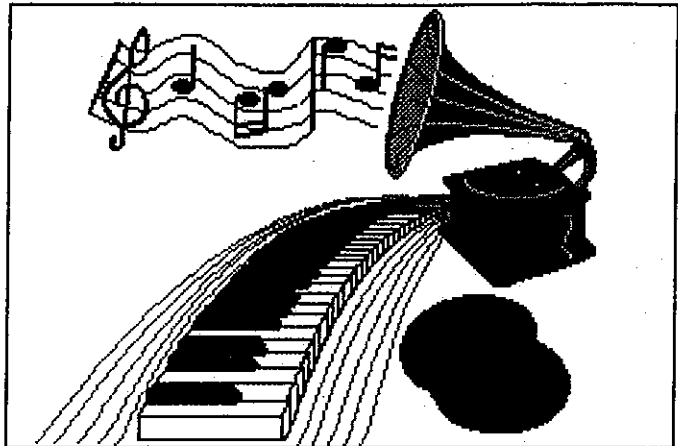
Week 5: **Folk Songs of the Sea**

Search/Solve/Share:

Compare melodic patterns of songs (comparing)

Hands-on:

Listen to songs and sing



Component:

4.III.A.6

Objective:

1. Communicate, through listening and singing, the idea of melodic patterns of a song.
2. Listen to **Haul Away Joe** and **Shenandoah**.
3. Ask questions:
Is the melody skipping from note to note?
Is the melody stepping from note to note?
What is the range of the song? (lowest note to highest note)
Is it a slow melody or a fast melody?
Do the notes repeat?
4. Read words of song, repeat.
5. Sing **Haul Away Joe** and **Shenandoah**.
6. Groups will compare songs and share results.

Competency:

The student can describe as a performer and/or listener how melodic patterns affect the general character of a song.

Materials:

Haul Away Joe and **Shenandoah** tape or CD

*Other sea songs may be substituted.

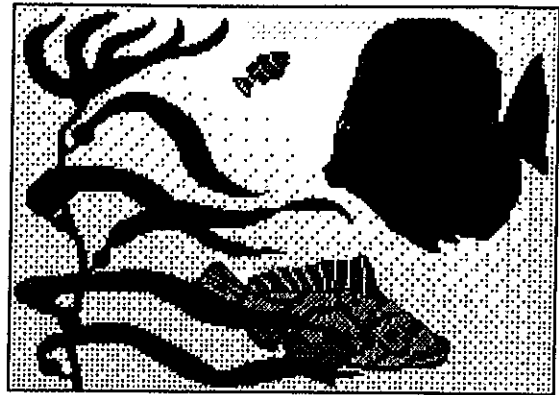
Week 6: Water Temperatures

Search/Solve/Share:

Do hot and cold water mix? (explaining)

Hands-on:

Experiment on water temperatures



Component:

4.I.A.4

Objectives:

Groups conduct experiment: Do Hot Water and Cold Water Mix?

- a. Make marks 5 cm and 10 cm from the bottom of the straw.
- b. Fill one cup almost to the top with blue ice water. Fill another with red hot water
- c. Place the straw down to the first mark in the blue water. Put your finger over the top of the straw. Lift straw out of the water.
- d. With your finger still on the straw, put the straw down to the second mark in the red water. Lift your finger off the straw so that the water in the straw will rise. Place your finger back over the top of the straw and lift the straw out of the water.
- e. Observe the two colors of water in the straw. Record.
- f. Have another member of group repeat steps 3-5, placing the straw in the red water first and then in the blue water.
- g. With you finger still on the straw, slowly tilt the straw so that it is horizontal. Observe what happens. Explain.

Competency:

The student will conduct a single manipulated variable experiment using the scientific method: Do Hot and Cold Water Mix?

Materials:

Blue ice water, red hot water, plastic cups, straw, marker, meter tape, observation log

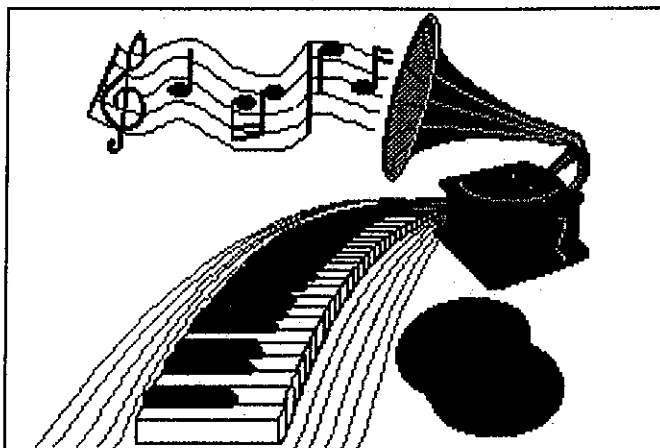
Week 6: **Away, for Rio**

Search/Solve/Share:

Learn and sing a song,
add a rhythm. (creating)

Hands-on:

Groups will listen, sing,
and play rhythm
instruments.



Component:

4.II.A.6

Objectives:

1. Accurately sing from memory a song learned by rote.
2. Listen to **Away for Rio**. Define: anchor, Southern Star, capstan, and heave away.
3. Read words of song, repeat words line by line.
4. Sing song along with music.
5. Pass out rhythm instruments: rhythm sticks, maracas, and tambourines.
6. Groups will add a rhythm part to song, take turns singing and playing.
7. Groups explain how they created particular rhythm part.
8. Groups play for class.

Competency:

Student can accurately sing from memory a song in classroom activities.

Materials:

Away for Rio tape or CD; rhythm instruments: rhythm sticks, maracas, and tambourines; dictionaries

*Other sea songs may be substituted; borrow instruments from Music teacher or Kindergarten teacher.

Sounds of the Sea

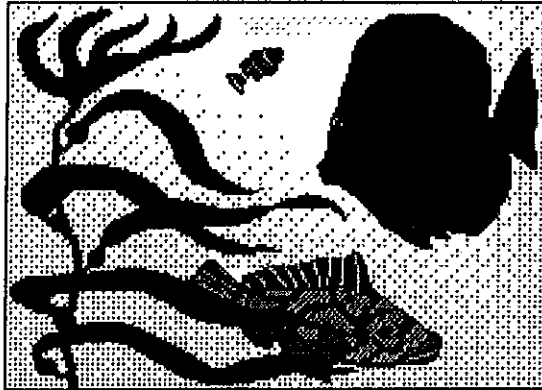
Week 7: Microscopic Life

Search/Solve/Share:

What might some of the differences be between aquatic and land microscopic life?
(hypothesizing)

Hands-on:

Groups use micro slides



Component:

4.II.A.2

Objectives:

1. Collect and observe common microscopic organisms.
2. Discuss how even a tiny drop of water is full of microscopic organisms, and they can be seen through a type of magnifying glass called a microscope.
3. Brainstorm where sea life organisms can be found: ocean, seaweed; rocks and where land organisms can be found: mountains, forests, fields, cities, lakes, rivers. Diagram.
4. Groups observe different microscopic organisms and compare/contrast their characteristics.
5. Groups present findings to class in a method of their choosing.

Competency:

The student will observe and communicate an understanding of one-celled organisms.

Materials:

Micro slide viewers and slides

Week 7: **Folk Songs of the Sea**

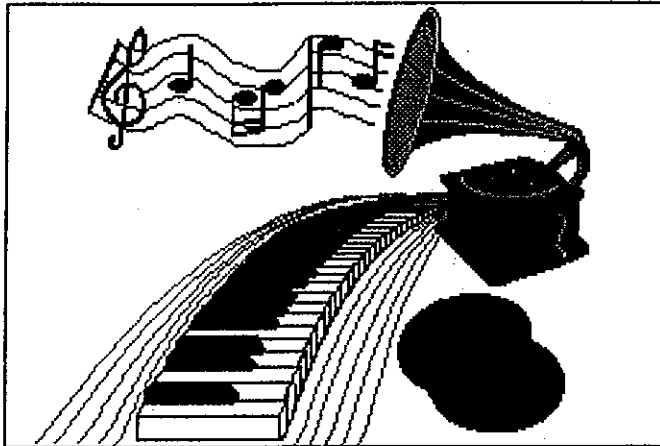
Search/Solve/Share:

After listening to several songs, decide which characteristics they have in common.

(analyzing)

Hands-on:

Listening to songs



Component:

4.I.F.31

Objectives:

1. Read, write, identify and use music vocabulary.
2. Groups will define: tempo, dynamics, meter, key, melody, rhythm and lyrics.
3. Groups will listen to: **Haul Away Joe**, **Shenandoah**, **Away for Rio**, and **Blow the Man Down**.
4. Groups will identify how the songs are similar/different. Ask:
 - a. Is the tempo (speed) fast, slow, getting faster, getting slower?
 - b. Is the music getting louder, softer, or staying the same?
 - c. What key is the song in (sharps and flats)?
 - d. Is the melody stepping or skipping?
 - e. What kind of rhythm (simple or complex)?
 - f. What words are used?
5. Groups will present data.
6. Sing songs.

Competency:

The student can identify, read, and write music vocabulary.

Materials:

Folk Songs of the Sea tape or CD, dictionaries

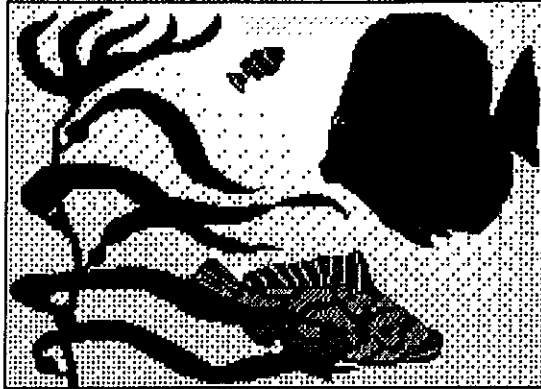
Week 8: Food Chains

Search/Solve/Share:

Arrange animals and plants into food chain. (sequencing)

Hands-on:

Groups observe and collect data on classroom aquarium and aquatic life lab



Component:

4.V.A.3

Objectives:

1. Describe and classify South Florida's and California's coastal ecological communities.
2. Discuss food chains. Point out the circular nature of food chains. Plants use energy from the sun to produce food. Animals get their energy from the food they consume. Some of the energy used by plants and animals escapes into the environment as heat. Scavengers that clean up dead and decaying organic materials complete the cycle.
3. Ask students where they fit into food chain. Have them trace the energy flow from the sun to themselves, using something they ate for dinner.
4. Complete *Field Trip into the Sea: Food Chain*.
5. Groups compare a food chain from South Florida waters with a food chain from the coastal waters of California.
6. Groups present findings to class.

Competency:

The student can discuss how an organism's environment determines its survival in part of a food chain.

Materials:

A Field Trip into the Sea and classroom animals and plants

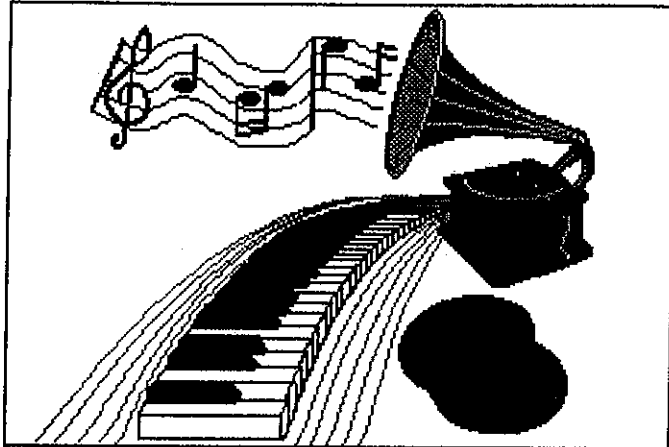
Week 8: Folk Songs of the Sea

Search/Solve/Share:

Which folk song of the sea best describes life on the high seas? (judging)

Hands-on:

Listen to and sing songs



Component:

4.III.B.5

Objectives:

1. Sing and listen to a variety of music including sea shanty or folk songs of the sea.
2. Groups will listen to songs studied: **Haul Away Joe**, **Shenandoah**, **Away for Rio**, and **Blow the Man Down**.
3. Groups will list sea terms of songs and define: bullies, capstan, heave, anchor, sails, bow, stern, and haul.
4. Students will listen to and sing above sea songs.
5. Groups will decide which of the songs best describes life on high seas and explain results to class.
6. Group will perform their choice for class.

Competency:

The student can perform the expressive characteristics of a repertoire of vocal literature: sea chanteys.

Materials:

Dictionaries and **Folk Songs of the Sea** tape or CD

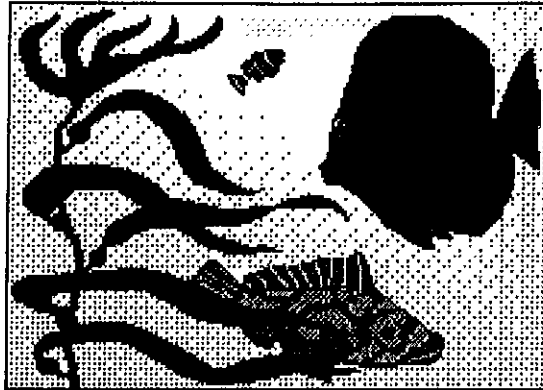
Week 9: Water Salinity

Search/Solve/Share:

How do different amounts of salt change the properties of salt water? (explaining)

Hands-on:

Water Salinity Experiment



Component:

4.I.A.4

Objectives:

1. Plan and conduct a single manipulated variable experiment.
2. Discuss with class the effect of different concentrations of salt in water. Compare salt water with fresh water.
3. Fill four of the cups half full of water.
4. Add yellow food coloring and 1 tsp of salt to one cup. Add red food coloring and 2 tsp. salt to another cup. Add blue food coloring and 3 tsp of salt to a third cup.
5. From the bottom of the straw, make a mark every centimeter for 4 cm.
6. Gently place the bottom of the straw 1 cm below the surface of the blue liquid. Seal the top with your finger. Lift the straw out of the cup.
7. With your finger still on top of the straw, place the bottom of the straw 2 cm down in the clear liquid. Lift your finger off the straw and then put your finger back on the straw. Lift the straw out of the water.
8. Observe the water in your straw. Draw and label your observations. Put the liquid in the straw into the empty cup. Continue with other cups. Compare and share results. Answer: What happened when you put two different liquids in the straw?

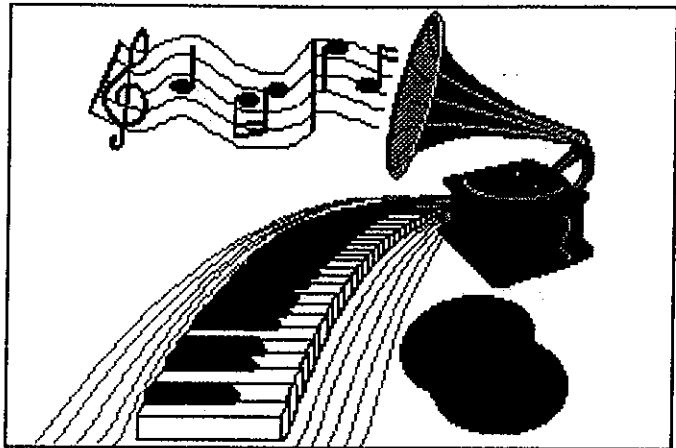
Competency:

Student can conduct a single manipulated variable experiment.

Materials:

Plastic cups, salt, food coloring, marker, small spoon, straw, meter tape

Week 9: Create a Rhythm
Search/Solve/Share:
Compose and play a rhythm
(creating)
Hands-on:
Groups will use percussion
instruments.



Component:
4.I.E.29

Objectives:

1. Compose, notate, and play percussion music for melodies performed.
2. Groups will listen to various Folk Songs of the Sea: Away for Rio, Blow the Man Down, Haul Away Joe, Shenandoah, and Cape Cod Shanty.
3. Groups will compose and write down rhythms they want to use in the songs.
4. Pass out percussion instruments.
5. Groups will practice and play rhythms along with songs.
6. Groups will perform their compositions for class and explain why particular rhythms and instruments were used.

Competency:

The student can create, notate, and perform music for percussion instruments.

Materials:

Folk Songs of the Sea tape or CD, rhythms sticks, maracas, tambourines, paper, and pencil.

*Instruments may be borrowed from Music teacher or Kindergarten teacher; other sea songs may be substituted.

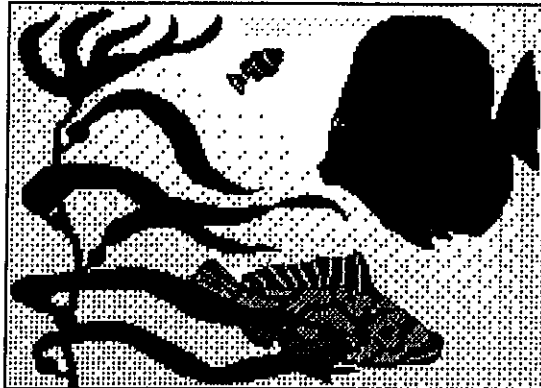
Sounds of the Sea

Week 10: Resources of the Sea
Search/Solve/Share:

After researching the interdependence of plants and animals, decide which resources are renewable and nonrenewable. (hypothesizing)

Hands-on:

A Field Trip into the Sea and classroom animals



Component:

4.V.A.4

Objectives:

1. Distinguish between renewable and nonrenewable natural resources.
2. Create two webs on blackboard: one for renewable resources and one for nonrenewable resources. Students must defend and explain web choices.
3. Groups will share results with class.
4. Complete *Field Trip into the Sea: Animals and Protection*
5. Observe classroom animals and list adaptations.
6. Discuss how adaptations and the environment are linked and how adaptations help animals and plants survive.
7. Groups will predict what will happen to ocean environment if a. nonrenewable natural resources are destroyed and b. renewable resources are prevented from renewing themselves.

Competency:

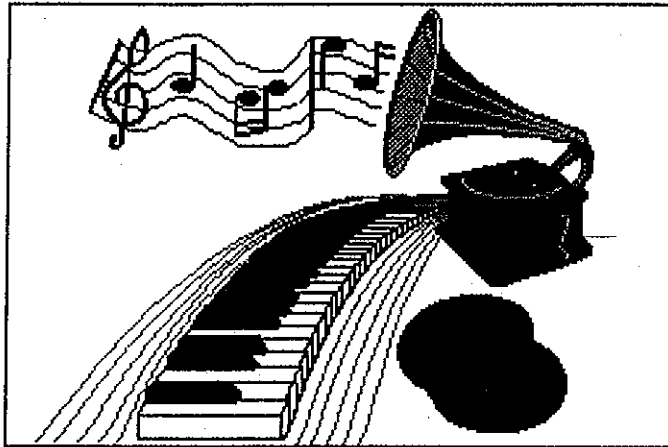
The student can discuss how an organism's environment determines its survival and identify types of natural resources.

Materials:

A Field Trip into the Sea and classroom animals

Sounds of the Sea

Week 10: Write a song
Search/Solve/Share:
How could you use what
you have learned to
create a song? (applying)
Hands-on:
Write and sing a song



Component:
4.I.E.28

Objectives:

1. Make up lyrics for existing songs and student composed melodies.
2. Groups review sea songs they have learned and discuss the special lyrics of songs about the sea and sea life.
3. Groups sing songs of the sea learned in class.
4. Groups can choose to write new lyrics for an existing song, such as **Oh, Susanna** or **Polly Wolly Doodle** to create their own sea chantey or they can create their own composition.
5. Groups may add classroom percussion instruments (rhythm sticks, maracas, and/or tambourine) to song
6. Groups will perform songs for class.

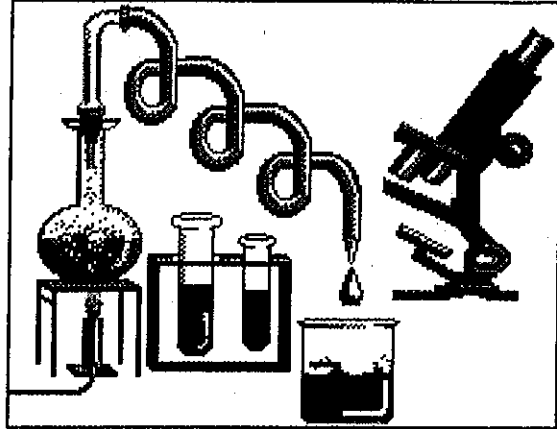
Competency:

The student can create and perform music for singing and/or playing.

Materials:

Classroom percussion instruments and **Songs of the Sea** tape or CD

WORK SHEET



Do Hot Water and Cold Water Mix?

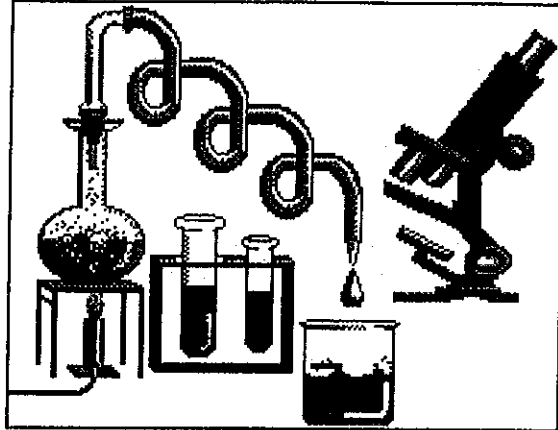
Collect some blue water in the straw. Then collect some red water in the straw. Observe the water in the straw and record your observations.

Now collect the red water first in the straw. Then add the blue water. Tilt the straw so it is almost horizontal. Observe what happens and record.

What Happened?

1. What happened when you put the hot water in the straw first?
2. What happened when you put the cold water in the straw first?
3. What happened when you tilted the straw?
4. Which water is heavier? Give reasons.
5. How did the water react differently depending on the order of the cold and hot water in the straw?
6. List one factor that determines how heavy water is.

WORKSHEET



How Can You Layer Liquids?

Draw a picture of what each straw looked like after completing the layering using the blue liquid first. Record observations.

Draw a picture of what each straw looked like after completing the layering using clear liquid first. Record observations.

What Happened?

1. What two things happened when you put two different liquids in the straw?
2. How did you arrange the colors of liquids from the bottom of the straw to the top of the straw?
3. Why do some of the liquid combinations mix in the straw while others form layers?
4. Which is heavier, fresh or salt water? Why?
5. How did the different amounts of salt change the salt water?



RESOURCE LIST

ITEM	SUPPLIER	COSTS
<i>A Field Trip into the Sea</i> (Macintosh software)	Sunburst	\$199.00 lab pack \$79.00 single
Aquatic Life Mini Kit	Delta Education	\$48.95
Tank and Hermit Crab	Delta Education	\$9.75
Student Micro slide Viewers (10 Viewers)	Delta Education	\$67.00
Plankton and Tiny Creatures Slides	Delta Education	\$25.95
Fresh Water Aquarium	K-Mart	\$39.00
Fresh Water Fish/Food	Pet Supermarket	\$10.00
<u>La Mer</u> by Claude Debussy <u>Une Barque sur l'océan</u> by Maurice Ravel cassette	Spec's	\$12.00
Materials for sea mural, presentations and experiments	MacFrugal's	\$35.00
Percussion instruments	School site	N/A

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Group Self-Evaluation

Group Members _____

Investigation _____

Circle the Number that Best Fits Your Work

High Low

4 3 2 1 1. Our group used its own ideas to carry out its search.

4 3 2 1 2. Our group collected data and arranged it in an organized way.

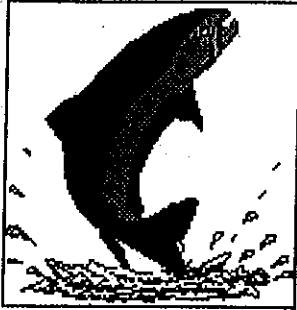
4 3 2 1 3. All team members took part in research and sharing.

4 3 2 1 4. Our group was well organized and prepared to present.

4 3 2 1 5. Our group spent its time on task.

4 3 2 1 6. Our group shared the materials.

4 3 2 1 7. Our group respected and cooperated with each other.



Audience Feedback Form

Group Members _____

1. What parts of the project/presentation did you like? Why?
2. Do you have any questions about what the presenters did?
3. What parts of the project/presentation would you like to share with someone else?
4. What is something you wish they would have included but did not?