Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
2006 Volume VI: Anatomy and Art: How We See and Understand

Your Amazing Body

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Introduction

In this unit I will introduce my students to basic anatomy and how our body systems are interdependent on one another. The unit shows the body's systems and how we can help to make these systems healthy. We will examine how artists depict bodies. We will also explain how these systems work through various activities, writing, and artistic creations. Finally we will explain what we have learned through group projects. The curriculum will allow the students to be introduced to anatomy in an accessible and creative way.

This unit is intended for early elementary classrooms. The unit can take as little as a week or two or as long as a few months. It is dependent on how long the teacher wants to spend or how much time they have for the unit. Due to the various constraints and mandates that urban elementary teachers have to adhere to, I deliberately constructed this unit in a flexible framework so that it would be accessible to teachers with all types of curriculums and constraints.

Reasoning for this Unit

I find that it becomes increasingly more difficult to fit things like art and physical movement into elementary school level curriculum. Our public schools curriculums have become more and more focused on preparing for the tests that come in the later grades. With this development, things like physical ability and artistic expression become secondary in most schools and non-existent in others. This is extremely detrimental to students in the younger grades. Movement and art are extremely helpful in creating healthy children both emotionally and physically. They also are the most useful way for some students who have different learning styles to process information. I believe that it becomes more and more important for teachers of all levels to incorporate physical activity into the classroom. It allows us to teach the required curriculum in a differentiated way, letting us reach more students. It will also allow the students to have art and exercise included in their school experience. These are forms of expression that can be crucial to students' emotional and physical development. Children need to be given tools such as art and exercise to help them develop as well rounded human beings. Although these subjects have come to be regarded as extracurricular, they can

save nontraditional students from failure in a traditional school system, and truly insure that no child is left behind. As educators we need to concern ourselves with these areas of our students' development as ardently as we do with our test scores. I am hoping through this unit to help to bring two neglected areas in our students' development, kinesthetic and artistic, into the classroom.

In my short teaching career I have taught in two schools. Neither one of these schools had recess. At both schools it was not uncommon for students to have one session of gym a week for thirty minutes. Many young students are at school from seven thirty in the morning to five or six in the evening. It is appalling that we are allowing our young students to spend this much of their time without physical activity. Therefore I would like to use part of my unit exploring different ways teachers can incorporate movement into their unit.

Writing a unit about anatomy that incorporates physical activity, and teaches about health issues has allowed me to explore ways to tackle one of the issues I feel most passionately needs to be improved for children today. The health crisis of obesity that is facing our country's youth today is one that is currently not addressed in any meaningful way by our public school system as a whole. In fact, in many inner cities, where the crisis is most prevalent the school systems have been culprit to exasperating the crisis rather than helping to remedy it. Many schools are similar to the two I have taught in, in that they have no recess. Also, enrichment subjects such as gym and music are given minimal time and/or resources. Many classes can expect no more than thirty minutes of gym a day in a typical urban elementary school. I have known teachers who report that their classes have gone entire semesters with no gym or recess. There also is often a lack of space and classes are overcrowded. This can force teachers to need to enforce strict rules to limit movement within the classroom.

I have noticed that school lunches often lack nutritional value as well. While there are currently some programs aimed to improve the quality of school meals in many parts of the country, it is still an area that needs much to be desired in many of our school systems. In the school I currently teach in, breakfast for my first graders consists of either cold cereal or a muffin or breakfast tart. All of these options contain an enormous amount of sugar, a substance that is a key factor in the obesity crisis our country faces.

As a teacher who is particularly concerned with this current health crisis, I try to find as many ways as I can to include physical activity into my classroom. I also try to take opportunities to teach about nutrition and healthy foods. You will find some examples of the ways that I have successfully done this in the lessons portion of the unit.

Through teaching about anatomy and art I plan to address two neglected aspects of education, physical fitness and the arts. I expect that with a better understanding of their bodies and how to portray them, it will not only allow my students to open up artistically, but also help them to make healthy choices in their lives. I also anticipate that the unit will be a useful resource to other teachers. I hope they will be empowered to find ways to bring physical activity back into school, and help to allow our students to indeed have healthy minds and bodies.

The Organization of the Unit

The core part of the unit will focus on teaching most of the major anatomical systems, and how to keep these systems healthy. The students will use drawing and activities to learn about these systems. They will also be given an opportunity to draw and write about each system to further their understanding. To help them to understand how artists depict the body we will look at a variety of artists work and discuss what each artist seems to think about the bodies portrayed, and what he or she might want us to think. Through this I also hope to open up the possibility of portraying emotion through physicality to my students. I want them to get an understanding of how feelings and our bodies are interconnected, but I also want to give them a new way to think about drawing and what they are able to convey through art.

Given how much of today's curriculum is scripted and mandatory, I tried to make the structure of this unit as flexible as possible. I try to give teachers ideas and resources that they can use as they see fit. I try to make the unit adaptable to all types of classrooms and schedules. By doing this I am hoping to make this unit as accessible to all teachers, regardless of how regimented their current curriculum is.

Also, in our present education system it is expected that literacy will always be a primary focus in early elementary classrooms. In order to address this, I will have the students keep journals throughout the unit. They will be expected to write and/or draw in the journal each time we have a lesson for the unit. This journal will allow me to incorporate literacy and art on a daily basis. It will allow students to reflect on their learning using these two mediums. It will also give them a chance to solidify their understanding of each system by independent writing and/or drawing.

Sometimes I will have the students write a reflection after the lesson has been taught. Sometimes I will have them write expectations before it begins. I will also vary what type of prompt they will get for each journal entry. Sometimes they will be given very specific instructions on what to write, and sometimes I will leave the possibilities for the entry more open. In my final curriculum unit I will include a list of possible journal entries. Including journals will allow for literacy to be a key component in the unit. It will also be a strong tool in allowing children to reflect on their learning.

I am hoping that a stronger knowledge of anatomy will help students in a number of ways. Primarily I want them to have a better understanding of their own bodies and how they work. I also hope this knowledge will encourage them to understand healthy lifestyles, and the importance of physical activity. It is my belief that if they have a better understanding of what certain foods or habits, such as exercise are able to do for their bodies, they will be more likely to make healthy choices. Finally I want a better understanding of the body to help my students develop artistically. I am hoping that since people are one of young children's favorite subjects for drawing that a better understanding of the body and its parts will allow them to make more detailed and imaginative drawings.

Art

Recently my class did a unit on dinosaurs. Along with reading about dinosaurs and discussing them, we also took a trip to the Peabody Museum to look at the skeletons of these fascinating creatures. My students were truly intrigued by these skeletal structures and asked endless questions of the proctor about what these creatures had really been like and why they had become extinct. Our guide patiently informed the students of what we know of dinosaurs, such as their size and that some walked upright, and also what we don't, such as the color of their skin and why they became extinct. He also showed us an artist's interpretation of what the world of the dinosaurs was like. The award winning mural on the wall showed many of the dinosaurs set in a world that was probably the setting of that time.

Inspired by the mural, when we returned to class, we decided to make one of our own. As my students created dinosaurs and landscape for our mural I was excited how many incorporated what they had learned into their artwork. It not only lent itself to beautifully detailed artwork, but also solidified the facts and concepts that my students had learned during the unit.

Because of the obvious amount of knowledge this hands on experience gave my students, I realized that art was not only worthwhile for arts sake. It also gave my students a medium to express what they learned. I realized that not only did this type of project give them a wonderful product but also allowed them to solidify their learning. It was this project that made me realize how powerful an art and anatomy unit could be for my students. The human body and its diversity and possibilities have always been a favorite exploration of artists. When I realized how meaningful artistic activities could be with a unit on science I realized how to approach final projects in an anatomy course. I thought that combining looking at art and giving the students an opportunity to create their own drawings and sculptures would really give a whole understanding of anatomy.

At the end of this unit I list some of the resources for art that I found useful. I am careful to choose art that is appropriate for students to use. I try to keep away from nudes, as I found ,and I am sure many early childhood teachers will agree with me, that nudity is simply too distracting. Nudity in our culture is simply too taboo. At the same time, I do not necessarily shy away from art that is in some way gory or frightening. I feel that looking at these pieces will not have the same emotional effect on students as they might otherwise once they are immersed in a unit about anatomy. I also find that many students will find examining things they are fearful of a useful way to conquer those fears. The fact that some of these pictures and paintings may disturbing will allow us to examine why they are as such, and make them a little more conquerable. In the end, I suggest when exposing students to art, simply use your judgment. Teachers are the best assessors of what their classroom community can and cannot handle. Make sure that you have looked carefully at the art you choose to use in order to best judge whether it is your best choice for your particular class. I usually do some research on the artist's intent and the history of the piece so that I can talk about these briefly as well.

For each body system I suggest using only a few pieces of art for examples of how people have depicted them. While I would definitely use more than one piece for comparisons sake, I wouldn't use more than three or four pieces for each system. In this way, students will be able to really examine and get to know these pieces. It also can be quite overwhelming to young children to have more than a few examples of anything. Art is something that many of them will have very little frame of reference for. Asking them to use this medium as a way to look at a scientific concept is, while rewarding, challenging. I would choose two or three pieces to use for each system. . In the lessons portions I illustrate more concretely how I would use art when explaining the circulatory system. You will an example of how, for each system, I would try to pick pieces that

were in great contrast to one another. This way the students could see how differently artists perceive things. I hope it would also give them a freedom in their own artistic expression, as they may see that many interpretations and styles are viable in art.

A note about the student's journals and the artwork: As students work in their journals you may see students try to copy the artwork. I would not discourage this type of exploration. Copying art can be extremely useful for learning artistic technique, plus it may help students to more fully understand how the artwork ties into the rest of the unit. Instead celebrate your students' curiosity, it shows they are enjoying this new medium of expression!

Introduction to the Lessons

In the following pages I will describe ways to give students an understanding of some of the major systems in the body. My focus stays on what the function of each system is. I want the students to understand why each system is critical and how the systems are interdependent. Therefore I will stay away from too much terminology, and keep to simple explanations of the systems function. With each system I will introduce it using as many representations of it as possible (anatomical drawings, x-rays, models etc.), but I will make certain that all of the visual interpretations that I use are simple and clear. I will not use examples that show too much complexity or labeling, because again, the core function of the system is my focus.

Journals

I like to incorporate writing into every subject area whenever possible. For this unit I would have a set amount of time for students to write or draw about what they learned after the initial lesson and activity. It will help the students to truly absorb and remember the function of the system taught and ultimately help them with the final project. It will give students a chance to practice writing about nonfiction, and help prepare them for using notes later in their academic career. This journal also can serve as an assessment tool, and is a meaningful keepsake of the unit for the students to have once it has been completed. Since I am encouraging the use of art in this unit I would not discourage students from drawing about what they learned. Instead I would encourage them to use both mediums to express their learning.

Lessons

For the first two systems that are presented in these lessons I will give an explicit account of how I would teach the system in my own classroom. The following systems will be more of a suggestion of what could be taught, and activities that are included. I expect there are a variety of ways the content of this unit could be taught, and would encourage teachers to use the material in a way that is most beneficial to their own class.

Circulatory system

Young students will often have a fascination with the circulatory system because of their natural curiosity about blood. All children have at some point injured themselves where they bled and so blood is something they know is in their bodies, although rarely do they understand its function. Also many students will have a fear of blood, and understanding its function may lessen that fear. Knowing the purpose of the circulatory system will also help children to understand why it is so important to take care of their hearts.

To introduce my class to the circulatory system, I would first ask students to give me a "thumbs up" if they had ever cut themselves. I would then pick one student to describe what happened. I would then explain to the students that today we would be learning why blood is in our bodies and why it is so important.

When explaining the circulatory system, I think the most important thing for students to understand is that the circulatory system is a delivery system. Like the postal service delivers mail, the blood stream delivers all the things that they need to work, nutrients and air etc., to our organs. There are quite a few similes that you could use to help young students understand this concept. I would explain it to my class as being like a giant factory that works all day and night. The heart of course is the center where all the blood moves out of. From this central office, the blood delivers food and other energy sources to all the other parts of the body so they can continue working and doing their job. I would then show the class a simple anatomical drawing of the circulatory system so that the students are able to see how it was spread over the entire body. Evan-Moor has published some simple and informational 81/2'x11" cards of the Human Body that work well for a visual resource for this lesson, (Moor, 1998).Then I would remind them of the important function of the heart within the circulatory system, and how it was the headquarters for the entire system.

Explaining to the class that the heart is a muscle, I would have everyone flex and relax a muscle. Using the fist is especially meaningful as it is a very similar shape and about the same size as our actual heart. I would explain that the heart's job is to pump like this all the time to move the blood all over the body so that it could reach all the parts of the body. . I would also tell them the basic structure and function of the heart. The heart has two pumps, one pumps blood to the lungs where it receives oxygen. The other then pumps blood all over the body. I would show them an anatomical chart of the heart alone so that they could see the valves and chambers.

At this point in the unit I would have the students partake in a physical activity to illustrate how our heart works. One of the best things about teaching the circulatory system is the heartbeat. This is because it is tangible evidence to young students that there is something going on inside of their bodies all the time. Because of this I would have do a few exercises that allow them to hear and think about heartbeats. Using our ability to hear this system will make it more realistic for the students.

I would have the students find their heart beat and practice counting the beats. Then I would have them perform a few different activities such as running in place, touching their toes, walking around the room, and sitting reading a book. We would then compare how our heartbeats differed for each of the activities. We would talk about how being active and exercising keeps our heart in shape and then I would show a list of foods that were beneficial to the hearts health. I would have this list on a piece of large chart paper in the room. To keep students thinking about all the systems throughout the unit I would encourage them to add to the lists of food for each system as they discovered other foods that weren't listed on the chart initially. These charts could also be displayed during the presentation of final projects.

I would then prepare students for a drawing project that they would complete with a partner. I would once again show them a simplified anatomical drawing of the heart. I would show how one part pumps blood to your lungs so that oxygen is taken into the blood. Then we would look at how another part pumps the blood into the main artery to be taken to all the parts of the body. One side pumps the oxygenated blood into the body and the other is where the blood returns to the heart.

I would explain to the students that with their partner they were now going to create a paper cut picture of the heart. Then I would have the students look at Matisse's paper cut artwork *Jazz.* I would have the students look at how the artists used paper to make a picture. Keeping the art and anatomical drawings of the heart up I would explain to the students that they needed to make a picture of the heart. I would instruct them to use red for the side where the oxygenated blood was pumped out into the arteries and blue for the side where the veins brought the blood back. After distributing colored construction paper and large white or oak tag paper for them to use, along with scissors and glue, the students would be encouraged to use the resources for reference and inspiration, and with their partner create a paper cut picture of the heart.

Once the students had completed their pictures, the class would gather for a culmination of the activity. Students could share what they created, and are always encouraged to share how their partner contributed or helped them through the process. We would review what we had learned about the heart and the circulatory system. I would then have the students return to their seats and write and draw a reflective entry in their journals.

The following is a list of possible alternative activities to use to illustrate the circulatory system. There are many possibilities besides those listed below, but I would keep it to a few activities that really help to illustrate the concept of what the circulatory systems function is within the body.

· Have students find their own pulses. Have them count their pulse and find the rhythm.
· Use a stethoscope to hear and compare heartbeats. You can use a tube from a paper towel as a stethoscope if it is not possible to obtain a real one.
· Vary exertion in physical activity and graph the change in pulse.
· Dramatize the blood's trip through the body.
· Create drawings of the heart on it's own labeling the major parts

Skeletal System

Many students will think of skeletons as spooky, or associated with ghosts. Explaining the importance of our bones, and that everyone has a skeleton under their skin may help to relieve the fears some students have associated with this imagery. Explaining not only how the skeletal system protects parts of our bodies, but

also how it works with other parts of the body will help students understand why it is important to keep their bones healthy.

After explaining to the students how our skeletal system gives us structure and form. I would show them both an anatomical drawing of the skeletal system and also an artist's depiction of a skeleton. We would talk about the differences and similarities in the two depictions. We would talk about the functions of the skeletal system. Using the drawings and our own bodies I would have the students start to explore the important functions of the skeletal system. I would show the ribs on the anatomical picture and have them find their own. The students would be asked to respond to what they thought the ribs were protecting. I would then have them stand straight and tall for a minute. I would ask how their skeleton helped them to do that. I would them have them walk around the room for a moment. I would ask how their skeleton helped them to do that. I would then explain that our skeleton helps us by protecting us, by giving us form, and by giving our muscles a place to attach.

In this lesson I would like to include two journal entries. This first journal entry would be done at this point in the lesson, and is intended to be brief, but it is a simple and fun way for the students to illustrate the importance of the skeletal system. I would invite the students to draw a silly picture in their journals of a person with no bones. After this was completed I would begin to explain to the students their partner project.

Before delving into the project we would talk again about how to keep the system healthy. After showing them how a child's skeletal system is much different from an adult through anatomical drawings or x-rays, I would explain that it is because of the amount of cartilage present. I would touch briefly on the role of cartilage. This could help to explain why eating calcium rich foods like milk, cheese, and spinach help grow strong bones. We would then create a chart of healthy foods for this system, which the children could also add to throughout the unit.

Once we had the chart established I would explain briefly to the students about our joints, why we need them and the different types we have. I would have the students then use their bodies to understand how each type of joint works. The shoulders and hips can illustrate the ball and socket joint, the neck shows the pivot joint's movement, and the elbows, knees, and jaw demonstrate the hinge joints.

Students then will create a ball and socket joint with a partner. Using straws as the bones and clay for the cartilage and joint apparatus, the students will work with a partner to create this joint. I would model how to make the joint explicitly as well as having one made ahead of time, to insure students are successful in their model. When deciding whether or not to use modeling clay or play dough, I decided on modeling clay. Although modeling clay tends to be a little hard to manipulate, it also tends to hold its form a little more adequately for this project. To make the joint simply create a ball with colored piece of clay and attach it to the top of a straw by simply pushing it on to the end. You can make it look more like a bone by adding clay around the sides of the ball and smoothing it down around the straw. This bone will create the ball portion of the joint. Then attach a different colored piece of clay to another straw in the same way. But, this time, instead of creating a ball at the end form the clay at the end into a cup like form to enclose the ball portion of the joint. The cup should be slightly larger than the ball, so that the ball fits nicely within the socket portion. Once these to portions have been made, the students can fit them together and use the straws to manipulate them to recreate how the joint functions.

Once the students had completed their models, the class would again gather for a culmination of the activity. We would share projects and partner contributions as I described in the circulatory system lesson. We would then go over what we had learned about the bones and the skeletal system. I would then have the students

return to their seats. For this journal entry I would have the students create a list for me, either in drawing or writing of how they were going to maintain a healthy skeletal system.

The following activities would also be useful in explaining how the skeletal system functions.

· Go over, and have the students write in their journals about how and why bones must be lightweight and strong.
· Learn and label major bones in the body. Compare bones that help us move to bones that protect us.
· Measure our bones and compare the results.

Lesson Structure

It made be noted that my lessons tend to follow a format. When creating a unit I try to keep a set format for the structure of class lessons. I find that if the lessons have a set format that the students can know and expect they tend to concentrate and absorb the content more readily, because the lesson's organization is second nature.

In this unit each lesson would have a whole group lesson to introduce the system. It would then have a physical activity, and then a small project to be completed in partners. Then we would come together to look at our results and the students would return to their seats for independent work or reflection.

Other Systems

The following section explains briefly other systems I would teach in this unit. It gives possible activities for each system. It also gives a brief synopsis of what I believe are the important points of each system to emphasize to the students.

Respiratory system

When students begin learning about the respiratory system, I would start with doing some breathing exercises. A simple but pointed way to show the importance of the respiratory system. Have the students remember anytime they tried to hold their breath, and ask how long they could do it for. Explain how our

bodies need to be breathing all of the time. We need air more urgently then we need food or water, and oxygen is necessary for all the parts of our bodies.

When showing the diagrams or other visual components of the respiratory system, explain the pathway that air takes into the body. Explain how the lungs are filled with little sacs like balloons that fill up with air and let it out. Lungs can hold as much air as a basketball! Explain that the diaphragm is a muscle, like the heart, and its function is to support the lungs and help them with the breathing process. Students can feel their diaphragm working by placing their hand directly below their sternum and taking a few short rapid exhales. Lastly remind students of the important relationship between the circulatory system and the respiratory system.

The following is a list of possible activities to help illustrate the function of the respiratory system. As with the circulatory system, keep focus with a few activities that lend to the understanding of the concept of the systems function and importance within the body.

· Show how air goes in and out of the lungs using a plastic bottle colored water (which will represent air), clay (which will represent the throat), and a straw as your windpipe. Pushing on the bottle will make the bottle smaller and the water will come out. Releasing makes the bottle big again allowing the water to fill up again.
· Feel our own bodies work. Press on ribcage when breathing in and out. Feel the diaphragm working using varying forceful breathes.
· Experience and talk about how our breathing changes depend on our level of activity.
· Use balloons to illustrate capillaries and lung capacity.
· Make a collage of things that help or hinder breathing.
· Illustrate and explain the difference between aerobic and anaerobic activity.

Nervous system

The most popular and tangible exploration of the nervous system with primary students is through the senses. The senses provide a wonderful and exciting way to explore how body receives and reacts to stimuli. There is a wealth of information and units devoted to the senses. Because of this I have decided to focus on how to teach students how the nervous system works within the body. I will use some of the senses to illustrate this function, but the senses themselves will not be the focus. I have included some resources that focus on the senses at the back of this unit, but here I will concentrate on how the system works in the body and within the other systems we are exploring.

The brain works like a computer and answers questions and sends messages all over the body. The nerves are the brain's messengers. When exploring the nervous system make a brainstormed list of all the messages the nervous system needs to bring back and forth from the brain. This will not only show the complexity of the system, but how all the other systems rely on it.

The following activities are useful for students to have a full understanding of how the nervous system works. More activities can be found in the websites listed under 'The Senses' in the resources section.

· Using diagrams and knowledge of their functions compare the circulatory system to the nervous system. It might be useful to dramatize the nervous system if this was done with the circulatory system
· Do experiments with recognizing and remembering. Play memory games.
· This exercise will prove nerves are all over the body and all of them must return their messages to the brain. Have the students use a stop watch and compare how long it takes them to react to a command given to the shoulder and then one to the foot.
· Play Simon says to show how the nervous system helps the muscles.
· List ways that our nervous system helps us to be safe.
· Differentiate between conscious and unconscious activities.

Muscular System

Bones, of course, are useless on their own. They need muscles to help them stay together and move. You can let students know that muscles make up half the weight of our bodies. Students probably will associate muscles with strength. This part of the unit can really lend itself to lessons with a lot of movement and activity. This of course is very appropriate for a unit that is intended to help students learn to live healthier lives.

It is important that students understand how the muscles work with and support the skeletal system. Explain how muscles are stretchy, like elastics, and work in pairs to pull bones forward and back. Muscles help organs stay in place. Muscles need food high in protein as this is what they are. Proteins give us energy.

The following activities would be useful in examining how muscles work. It will show how varied their tasks are and why it so important to keep them healthy and strong to keep our bodies working properly.

· Move! Find as many different ways to use muscles and talk about all the ways we know of and

discovered.
· Run, walk, skip, feel and journal how we use the same muscles in different ways.
· Use our face muscles to create different facial expressions. Use our bodies to convey different emotions. This will illustrate how our muscles help us to communicate.
· Define strength, endurance and flexibility. Talk about while all three are important. Try exercises that help with each one.
· Compare and contrast cubist art to real body shapes.

Skin

Skin is not actually a system but an organ. It is actually the largest organ in the body. Because skin protects and covers our entire body, it is important that we know how to take care of it. The skin is made up of two layers. These are the dermis and the epidermis. The epidermis is a smaller outer layer. This part is different colors on different people. The larger, inner layer is the dermis. This is the same on everyone. Have students look at the skin on their arms and hands and compare and contrast them. Talk about hair, the different types we have, and how it also helps protect us.

Help the students make a list of the ways that we can take care of our skin. Here are a few more activities that focus on the skin:

· Have the students examine and peel an orange to understand how skin works. Have students compare orange skin to our own.
· Have students make fingerprints and examine them. Have them make designs around them and display them.
· Make a cut out paper doll of someone else in the class showing the clothes they could wear to protect themselves during a particular season.
· Examine hair and skin cells under a microscope.

Teaching the systems

These are just a few examples of the systems that primary students would be interested in exploring. Each of these systems should be learned, not only for its own individual function, but how it interacts and is dependant on the other systems within the body. Other systems such as the digestive system, the immune systems, and our skin would be appropriate systems to explore. I would decide which systems to explore, and how many to cover according to class dynamics and the length of time you are planning to spend on the unit.

Final Project

As a final project students will work in groups to create life-size murals of each of the systems. These murals will be displayed and presented by each group to their peers and parents with the help of the teacher.

The students would be grouped at the teacher's discretion and assigned one of the body systems. Each group would get large paper, such as butcher paper, and the materials to create a mural of the system they are drawing. You may treat these murals as collages and have the students glue the systems on using various materials. This would create an interesting three-dimensional effect. You could also have them use markers paint, crayons or pastels. Whatever materials you use make certain that the materials are bright and beautiful on the paper so that students feel successful with their creation.

Give the students access to their journals, any visuals used and websites if possible. Depending on your class dynamics you can have them decide who will do what task, or you can assign specific tasks for each person in the group. Each group will be in charge of one of the systems. They will need to create a life-size piece of the system that portrays what they learned and observed about that system. The students can trace one another for the shape of the body, and use the materials you've chosen to design the mural. When the mural is displayed and presented the students will be responsible for explaining the system's primary function and its relationship to other systems. They will also need to explain why they created the mural they did.

I like final projects to be celebratory. They encourage pride in hard work and allow students to celebrate their successes and learning. Because of this unit's artistic influence the final presentation could mimic an art opening. I would send invitations to parents and administrators and whoever else we planned on inviting. I would have students or parents bring food that was healthy for each system. After the presentations there would be a feast for our anatomical systems.

Assessment

I have ongoing assessment of students' progress in all units I teach in my classroom. In this way I am able to assist students who are having difficulty grasping key concepts during the unit. I usually have the students keep a portfolio of work related to the unit that I can peruse to see if they are successful in their

understanding. I keep this type of assessment fairly informal. I find that looking at students independent work gives a pretty accurate read on how well they are comprehending the material, and if there are any particular areas that they are struggling with. I then will have conferences or work individually with students to help them along. This type of informal assessment not only allows me to keep track of my students' progress, but it also can be very influential in how I set up my lessons and what I focus on in the follow up material.

Students would be more formally assessed in the final project and the work in the journal. Students would be assessed with rubrics both individually and as a group on the group project. The journal, while part of the informal ongoing assessment, would get much more concrete feedback. I would make sure to respond to journal entries as often as possible. I would leave room to write to students in the journals, and offer suggestions as well as encouragement.

Bibliography and Resources

The World's Best Anatomical charts, Lippincott, Williams, Wilkins

Detailed and realistic charts.

Malchiodi,Cathy A. *Understanding Children's Drawings.* Guilford Press, 1998

A useful book to help with understanding development in children's drawings.

Lazear, David . *Intelligence Builders For Every Student* . Zephyr Press, 1997

This book useful resource for differentiated instruction.

Siegfried,Donna. Rae *Anatomy & Physiology for Dummies* . Hungry Minds Inc., 2002

This book was helpful in simplifying explanations for lessons about how the body systems work

Siepak,Karen Lee. Body *Systems and Organs. Step by Step Science Series* . Carson-Dellosa Publishing Company, Inc.

Bender,Stephen and Newtons,James and Skinner-Hache,Selene and Sorochan,Walter. *Teaching Health Science* . James Bartlett Publishers, 1997

Carratello,Patricia. *My Body* . Teacher Created Resources, student edition 1999

This book has simple text and cartoon drawings for children about body systems.

Moor,JoEllen. *How Your Body Works* . Evan Moor Publishers, 1998

This book is a very understandable book about how the body works for children.

Alexander, Heathe. *Look Inside Your Brain* . Gossett&Dunlap, 1998

This is a fun and interesting picture book with cut outs about how we learn and the brain works.

Web sites

http://www.kidshealth.org/kid/body

A good internet resource for kids about the body and staying healthy

http://www.thehumanbody.ecsd.net

This is one second grade classes project on the body

http://www.medtropolis.com/VBody.asp

This site is a virtual body in English and Spanish

http://yucky.kids.discovery.com/flash/body/pg00029.html

This site explores various systems of the body and bodily functions explained in kid friendly terms

http://www.innerbody.com

Human Anatomy online

http://library.thinkquest.org/2935/ site aimed for high school students but with some in depth look at systems and nice organization

http://webarchive.org./web/20020207013327/http://www.stfrancistopeka.org/64trivia.htm Health trivia

http://www.educationworld.com/a_lesson/lesson065.shtml

A site of resources and interesting facts

Senses

http://www.sedl.org/scimath/pasopartners/senses/welcome.html

Thorough examination of senses incorporating literature

http://www.atozteacherstuff.com/Themes/5_Senses/index.shtml

Good source for a variety of ideas and links about the five senses

http://www.ed.uiuc.edu/ypl/97-98/97-98_units/mini-unit/MCurtiss_FiveSenses/table_content.htm

This unit is written specifically for first and second grade. With each lesson it is noted which subject areas it incorporates.

http://www.edhelper.com/five_senses.htm

This site has printable worksheets and stories for all senses in the subjects of reading and math.

Art Websites

http://www.moma.org

This websites provides links for all types of art and art activities. It also has a link to another interesting art museum called PS1

http://www.metmuseum.org

This website is a great link for ancient art and has many resources for the classroom. The explore classroom portion is particularly interesting

http://www.nga.gov/education/classroom/

This website connects art and curriculum.

http://www.pbs.org/arts/arts_fineart.html

This portion of the PBS website is dedicated to helping teachers with ideas to bring fine arts into the classroom.