



Farm Tour - Second Grade

TEKS Overview:

English Lang. Arts: 1D, 2A, 3C, 4A, 13A **Math:** 2.9A, 2.10A, 2.11A, 2.13A

Science: 1A-B, 2A-F, 4A-B, 5A, 6C-D, 8A-B, 9A-B **Social Studies:** 5A-B, 7B, 8A&D, 16B

Health Ed. 1C-D, 4D, 5C **Physical Education:** 1A, 4C

Objectives:

- Students will see how plants and animals live and learn what they need to survive
- Students will learn where their food comes from
- Students will understand that hunger is an important issue
- Students will use their five senses to experience a working farm

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Introduction

TEKS: English Lang. Arts: 1D, 2A, 3C, 4A, 13A Science 1A-B

- Students gather in the Education Building and sit on the floor. Leaders welcome them to WHRI, introduce themselves, and explain the purpose of WHRI. *[Teachers and students should already be familiar with WHRI purpose and mission by way of the pre-tour information sheet – if for some reason they did not receive or use the information you will need to spend more time with introduction.]*
 - Ask students what they know about farms. What are the types of things that farmers do and what do they expect to see on a farm?
 - Dialogue briefly about what farmers do and what they will see on the WHRI farm. Mention: growing food/vegetables, taking care of animals, etc.
 - Explain that the students will see many of the “normal farm things” at WHRI but they will also see many things that are different because we are more than just a farm, we are also a kind of school
 - Use the analogy of a school, showing that the farm has teachers and students just like they do except at WHRI we are learning to take care of the land, gardens, and animals so that we can help people all over the world feed themselves and their families. Here at WHRI we are interested in plants and animals because we want to be able to teach hungry people how to use them to feed their families.
 - Take one or two questions if there is time but assure the students that you will be explaining these things more while they walk around the farm.
 - Tell students some of the things that they will be able to see and do today at the farm. *[Be sure to emphasize those things that will create anticipation and excitement in the students, i.e. baby animals, tasting vegetables, planting seeds, etc)*
 - Leader establishes the rules or *agreements* for the students’ visit to the farm. Have students repeat after each. (*Show poster).
 - ✓ I agree to stay with the group.
 - ✓ I agree to be gentle and quiet with the animals.
 - ✓ I agree to walk and NOT run.
 - ✓ I agree to use my quiet voice and NOT shout.
 - ✓ I agree to raise my hand if I have a question or I need to use the bathroom.
 - ✓ I agree to have fun.

Landscape/Native Plants

TEKS: English Lang. Arts: 1D, 2A, 3C, 4A, 13A Science: 6C-D, 8A-B

- Begin tour at the front of the Education Building, focusing on the landscape.

- **Native Plants:** Explain to students that most of the plants used in this landscape are native to Texas, which means that they are adapted to the hot dry weather and don't require as much water to stay alive. This is one way that we are working to conserve water on our farm – by encouraging the growth of plants that naturally belong on our farm-not trying to bring in plants that are not adapted to living in Texas.

What do plants need to survive?

1. Light
2. Air
3. Water
4. Soil

- **Living vs. non-living:** Ask students to point out living and non-living things in the landscape.
 - Ask students how they know if something is living or non-living.
 - Can it eat, drink, breath, grow or move?

Scientifically a living thing is anything that is now, or ever has been alive. Living things grow, reproduce and need food, air and water.

- **Plant Types, Parts and Variety:** Walk through the landscape showing students several plants to touch. Point out the different parts of the plants and then ask the students to name the parts on other plants as you make your way through the landscape. Emphasize the diversity and variety in the plants found in the landscape, reminding them that these plants are all native to Texas and of their ability to thrive in our area.

Basic Parts of a Plant:

1. Roots
2. Stems
3. Leaves
4. Flowers
5. Fruits
6. Seeds

- Catmint - not native to Texas, but to the Mediterranean which has a similar climate to this part of Texas, names so because cats are attracted to the smell of the plant
- Roses -
- Grasses -
- Rosemary – not native to Texas, but to the Mediterranean which has a similar climate to this part of Texas so it does very well
- Vines on the trellis, if growing
- Buffalo grass – a native Texas grass, point out the numerous dense stolons by which the grass spreads
- Mexican plum – beautiful white flowers, small red fruit that birds really like, very hardy so it is often used for root stock in this area.
- Desert willow – not related to the weeping willows but the leaves look very similar, hummingbirds really like their flowers

- **Sensory Exploration:** Ask students to name the five senses; point to eyes, ears, etc. to prompt them -guide the students to explore the landscape using their five senses.
 - **Sight:** Ask which plant looks the prettiest to them, point out to the students ways in which the look of the plants will change through the seasons of the year; which one would they build a nest in if they were a bird, which one would they like to eat if they were a goat, etc. Have them describe the differences between the way the buffalo grass and the catmint look in the classroom area of the landscape – if age appropriate help them understand why those differences are important for each plant. Have each student examine a leaf of catmint up close – try dividing it into equal parts.
 - **Smell:** Ask the students if they can smell any of the plants. If there is time allow the students to walk through the landscape to find which plants have the strongest smell. Encourage them not to pick any flowers. Show students how crushing leaves or petals make the smell stronger. Ask the students which plant smells the best. Good plants to focus on are any flowers blooming at the time, catmint, rosemary, hoja santa (crush for more distinctive smell).
 - **Sound:** Ask the students if they can hear any of the plants. Explain that while very few plants make noises all by themselves that we can hear many plants make noises when they are moved by the wind, by animals or by people. Have the students pull the variegated grass through their hands until it squeaks or brush it until it rustles.
 - **Touch:** Guide the students to explore textures of soft plants, prickly plants, rough plants and smooth plants. Compare the way the catmint, rosemary, grasses and trees feel. Show them the thorns on the roses and explain their importance for the rose bushes.
 - **Taste:** Ask the students if any of the plants in the landscape look like they would taste good. Explain that while we don't grow vegetables in our landscape that there are several plants in the landscape that can be used in cooking. Point out the catmint, the rosemary, the garlic chives and *hoja santa*.
- Ask if there are any last questions before leaving the landscape area.

Nicaragua House

TEKS: English Lang. Arts: 1D, 2A, 3C, 4A, 13A Social Studies 7B, 8A,D, 16B

- Ask students if they know where the country of Nicaragua is? *[Depending on the age of the students – here is an easy way to tell them where Nicaragua is located: have them all turn to face Houston – roughly southeast, and tell them if they walked to Houston, almost 200 miles, and then just kept walking through Houston and across the Gulf of Mexico for another 1300 miles they would eventually end up in Nicaragua very wet and very tired.]*

- Explain that people in Nicaragua just like people all over the world have the same basic needs that they have. Ask the students if they can think of what those needs might be.
 - Food
 - Water
 - Shelter
 - Clothing



- Explain that this is an example of the type of house you might find in the country of Nicaragua. Ask the students if they have ever heard of Habitat for Humanity – an organization that helps build houses all over the world for people who do not have homes of their own, including in Waco, TX and in the country of Nicaragua – this is an example of the type of house that Habitat for Humanity builds in Nicaragua.

- Ask the students why they think we have a house like this.
 - Explain that we want to learn and experience how people live in other parts of the world.
 - Remind them of our mission to fight hunger and that an important part of that mission is learning how people in other cultures and countries live. This helps us to better understand them, it helps us to learn things from them and it helps us better understand how we might be able to help them.

Habitat for Humanity has built over 3,500 homes in Nicaragua and 30,000+ in the United States!

- Allow the students to step inside the house and encourage them to look around. *[If people are currently living in the Nic House make sure the students stay in the entrance to the house and are respectful of the residents' belongings.]*

- Ask the students to look around and name some ways that this house is just like the house where they live (Ex: roof, door, floor, a stove, a bed, etc)
- Ask the students to look around and name some of the ways that this house is different from the places they live. (Ex: no electricity, phone, TV, bathroom, kitchen, air conditioning, or glass in windows, only one room, etc)

- Ask the students if they think that this house meets the needs that people have for shelter - even if this house is different from where they live and even if it does not have some of the things that we think that we need in our houses.
- Outdoor Kitchen:
 - Ask the students if they know what this building is used for
 - Explain how food is prepared in a kitchen like this and some of the challenges involved in doing so.
- Rainwater catchments/Shower/Water Conservation
 - Take the students to the back of the house and show them the shower there. Ask them what they think this area is used for. Ask them where they think the water comes from.

- Almost 1/3 of the world does not have access to safe, clean water.
- In the U.S. we use an average of 100 gallons of water a day!
- 2/3 of the world gets by on only 13 gallons a day or less.

Education Garden

TEKS: English Lang. Arts: 1D, 2A, 3C, 4A, 13A Science: 6C Social Studies: 7B, 16B
Math: 10A, 12A Health Ed: 1C-D, 4D

- The raised beds in the Education Garden area are a great place to let the students interact more closely with plant and vegetable production.
 - Herbs:
 - Without telling them what it is give each student a piece of mint leaf and ask them what it smells like.
 - Point out other herbs that the students can touch and or smell (will vary as to season)
 1. Basil
 2. Rosemary
 3. Lambs Ear
 4. Lemon Balm
- Show plants in various stages of growth.
 - Bring along some seeds of plants that are growing in the garden and show them to the students.
 - Point out plants that are at different stages of growth, especially those that are now producing fruit.
 - Let students harvest something from the garden, if possible. (Students must wash their hands and the vegetables before eating.)
- Roof-top gardening:
 - Explain to the students that many of the people in the world that are in danger of being hungry live in cities and therefore they do not have land where they can grow food. However, there are many creative ways that you can grow fresh vegetables for your family to eat even if you do not have a place to plant them in the ground. Many of these creative ways involve recycling materials that we might normally think of as trash but which can be transformed into small gardens!
 - Explain to the students that this is a simulated rooftop, similar to one you might find all over the world. Ask them to name some of the things that we are using to grow food in on the rooftop:
 - Tires
 - Swimming pool
 - Used bags
 - Benefits of roof-top gardening:
 - Makes use of existing space/materials – you do not have to spend money renting land to grow food or buying materials.
 - Out of the reach of animals that might eat the plants
 - Plenty of sunlight!
 - Easy to manage – no need to travel far from home to tend crops

Vegetable Garden

TEKS: English Lang. Arts: 1D, 2A, 3C, 4A, 13A Science: 6C Social Studies: 7B, 16B

Math: 10A, 12A Health Ed: 1C-D, 4D

- Point out the vegetable rows. Help students identify various vegetables that they have eaten before and those that they have never eaten.
 - Ask students to name as many vegetables as they can think of. Ask students what their favorite vegetable is.
 - Ask what role gardens play on a farm. What would happen if we didn't have gardens? Emphasize the connection between gardens just like this one and the food they eat at home or buy in the grocery store.
- Let students harvest something from the garden, if possible. (Students must wash their hands and the vegetables before eating.)
 - Ask what plants need to grow.
 - Ask what our bodies need to grow. (Some of the same things as plants!)
 - Ask if vegetables are good for their bodies. Why?
- Ask how farmers can take care of their plants.
 - Water/Irrigate
 - Mulch
 - Ask students to describe the weather and conclude what kind of weather is good for the plants/farmers.
 - Ask a student to evaluate the temperature using a simple air thermometer. (Do this again, at the end of the tour, inside the education building.)
- Show plants in various stages of growth.
 - Bring along some seeds of plants that are growing in the garden and show them to the students.
 - Point out plants that are at different stages of growth, especially those that are now producing fruit.

What do plants
need to survive?

1. Light
2. Air
3. Water
4. Soil

Rabbits/Vermicompost

TEKS: English Lang. Arts: 1D, 2A, 3C, 4A, 13A Science: 1D, 2A-F, 5A, 6D, 8A, 9A-B
Math: 9A, 12A

[Tour leaders should be aware that depending upon the age/maturity of the students some groups will be more sensitive to the idea of rabbits as a food source as opposed to the pets that they usually are in American culture, so tread gently especially with younger students.]

- As you approach the rabbit cages take the opportunity to remind the students to the rules you all agreed to – especially those regarding being very quiet around the animals, and the need to be especially quiet around the rabbits, as they frighten very easily.
 - Have the students gather on one side of the cages, with further reminders not to touch the cages/rabbits while you remove one of the rabbits from its cage to hold while you talk to the students.
 - Ask what they know already about rabbits.
 - Ask what role the rabbits play in their habitat. Do they affect any other organisms?
- As you hold the rabbit point out characteristics of the rabbit:
 - Ears – *[importance of]*
 - Teeth – *[connection to diet]*
 - Nose – *[importance of for survival]*
- Have the students form a line and allow them to pet the rabbit, 1 at a time.
 - Hold the rabbit's head hidden in your elbow to keep it calm.
- Ask the students why they think we have rabbits on our farm, why would they be important for hungry people around the world – what do rabbits give us?
 - Food
 - If age appropriate, mention that with only two female rabbits and one male rabbit over the course of one year a family can have the same amount of meat that they would get from a cow. But there are decisive benefits to being able to acquire meat from rabbits as opposed to meat from cows – ask if they can think what that might be. In developing contexts one of the biggest benefits is that a rabbit can be eaten/prepared in one meal/day and thus there is no need for refrigeration (a scarce resource in many developing contexts) or preservation as would be needed if you butchered a cow.
 - Fertilizer

Female rabbits are does, males are bucks, baby rabbits are kits or kittens and a group of young rabbits is called a kindle. Does usually have litters of 6 to 10 kits at a time with a gestation period of 28-31 days.

- Fertilizer/Vermicompost

- Many people around the world depend on their gardens for the food they eat. They don't have the money (or the store!) to buy what they need. So growing vegetables and fruits are very important for the health and survival of their family. Fertilizers help plants grow by providing them with nutrients that they need to grow bigger and faster. Many fertilizers are very expensive and they are made from materials that might not be healthy for the soil or for people, so many people can't and don't use these chemical fertilizers. However there are fertilizers that they can use that are free and safe – and rabbits help these farmers produce these fertilizers.

- Scrape away the top layer and take a shovel full of worms and bedding from the vermicompost.

- Ask the students what they see.
- Explain to the students that the type of fertilizer that the rabbits help us make is called vermicompost – which is just a fancy way of saying that the fertilizer is made by worms. Ask the students if they know how worms could help us make fertilizer?
 - Explain that rabbits eat grasses, weeds, hay and even fruit and vegetable scraps (teach them the word 'herbivore') and then turn their food into poop/manure. The worms eat the rabbit droppings and the leaves which we mix in for them and then turn their food into worm poop or *worm castings* – these worm castings are in fact the beginnings of little pieces of soil and all over the world, under the ground worms are doing the very same thing all the time. The worm castings help make great, nutrient rich soil and that helps our plants grow – remember what we said about rabbit manure, it is very high in nutrient content because of the way the rabbits digest their food, and thus some of those nutrients make their way back into the soil with the help of the worms! Rabbits and worms take things that we think of as waste (scraps and droppings) and turn them into something very useful for helping us to grow food.
 - Why is rabbit manure such a great source of nutrients for fertilizer? Unlike most animals that eat grasses, rabbits are not ruminants – meaning that they don't have stomachs that are specially designed to break down the very hard to digest plant fibers. Thus when rabbits eat grasses some of the plant passes through the rabbits system undigested and thus, still containing many of the nutrients. Some of the rabbits manure is thus undigested grass and the rabbit will eat this again, attempting to get the remaining nutrient content – animals that do this are called coprophagous.
 - Show students the finished vermicompost pointing out that it looks, feels and smells like dirt – because that is what it is!

Red wigglers are the worms most commonly found in vermicompost because they thrive in rotting vegetation and manure, so much so that they are rarely found in soil.

Rather than chewing their cuds rabbits pass two types of feces: a hard fecal pellet and a soft cecal pellet which they re-ingest to extract nutrients.

- Ask what students do at home with fruit and vegetable scraps. Remind them about recycling with the rabbits and tell them about the process of composting. Ask what is different about the soil with worm castings and soil without them.
- Allow students to hold a worm in their hands.
 - Ask what the worm feels like.
 - Worm secretions – the “slime” that the worm leaves on your hand is a combination of proteins and nitrogen that serves several purposes: it keeps the worm from drying out and enables it to tunnel through the dirt; and along the way it helps collect/aggregate the soil and casting particles that make up our soil.
 - Ask if the students can tell which end is the head and which is the tail. The head will be the end that is most actively moving around – the worms head/anterior is very sensitive to light and it is this sensitivity towards light that is the source of the worms navigation.
 - Explain that worms are hatched from tiny white cocoons – point these out if any are in the vermicompost.
 - Explain that in the process of making all of this great fertilizer for us that worms will eat at least their weight in food every day! Ask how much food they would have to eat to do the same thing!
- Have students place their worms on their ‘measurement bookmarks’ and mark the length. (leader should bring the bookmarks and some crayons in his or her pocket.)
 - Ask students to explain/share about their measurements.
 - Ask students to sort their worms from shortest to longest.
- Ask students to make a big circle with their fingers. Review the nutrient cycle they have learned about: plants-animals-droppings-worms-soil-plants. *Each part depends on each other.

Chickens/Eggs

TEKS: English Lang. Arts: 1D, 2A, 3C, 4A, 13A Science 2A-F, 5A, 6D, 8A, 9A-B

- Guide the students to make observations about the chickens and their environment.
 - Ask the students how many different types/colors of chickens they see.
 - Explain that just like with cats and dogs there are many different breeds of chickens and that they have different characteristics.
 - Ask what they notice about the chickens. What are the chickens doing to the ground? Why?
 - Ask which are the female chickens and which are the male.
 - Why does the rooster crow? Protection (Which is why he is probably crowing right now!). Wakes the chickens up in the morning and calls them back to their home at night for safety.
 - If possible take a chicken out of the laying box. Hold it firmly and allow students to feel its feathers and feet.
 - Point out the parts of the chicken (head, feet, wings, claws, beak) and ask students why each part is important/what it is used for.
 - Ask how chickens help us here on the farm – what do chickens give us?
 - Eggs
 - Help us control bugs and weeds by scratching around and eating them
 - They also help us fertilize our fields by leaving behind all that nutritious poop/manure.
 - Meat
 - Explain to the students that for all these reasons chickens are very important to us here at the farm and for the very same reasons they can be important to hungry people all over the world, so by learning all about how to take care of our chickens we can help other people do the same thing.

Chicken breeds at WHRI:

- Ameraucana
- Barred Rock
- Rhode Island Red
- Leghorn
- Australorp

The crest on a chicken's head is called a comb and the flaps of skin underneath the beak are called waddles, both help the chicken to cool off on hot days.

Dairy/Goats and Cows

TEKS: English Lang. Arts: 1D, 2A, 3C, 4A, 13A Science 5A, 6D, 8A, 9A-B Health Ed 5D

(It may be helpful to have another person waiting nearby with a goat already on a lead for students to view, or to leave one goat in the dairy barn so that younger students may see the goats up close.)

- Goats: Hold one of the goats by the collar or hold a small kid in your arms while you talk to the students.
- Ask students what goats need to stay alive. (food, water, minimal shelter)
- What do goats like to eat?
 - Grasses
 - Woody shrub and tree leaves
 - Ok, just about any plant
- Show the students the goats teeth:
 - When fully grown goats will have eight bottom teeth and no upper front teeth, but a dental pad instead – against which they will mash the grass and leaves they eat to begin the digestion process.
- Ask how goats help us - what do goats give us.
 - Milk
 - Ask the students if they think a goat or a cow produces more milk?
 - Explain how fresh milk can help small children who are not very healthy grow much faster and stay healthy, so we want to learn how to help families raise their own goats and give milk to their children.
 - Meat
- Ask what we can make out of milk.
 - Cheese, yogurt, butter, ice cream, etc.
- If possible, show students how we milk the goats or describe the process to them by walking them through the dairy.

Female goats are called does, male goats are bucks (castrated males are wethers), and baby goats are kids.

WHRI goat breeds:

- Alpine
- Saanen
- Nubian

Contrary to popular belief goats will not eat anything and everything, including metal cans. They have a very wide diet which allows them to eat a little bit of just about any plant. It is their extremely curious nature and their natural habit of using their upper lip and tongue, much like a dog, to explore anything new or unfamiliar that gives rise to this myth.

Fair Trade

- Explain the concept of fair trade and its importance:
 - Place fair trade within the context of WHRI's mission: Most of the day-to-day work that we do here at the farm has to do with the production of food and the care of livestock so that we can work with other people around the world to help them feed themselves, their families and their communities. However, when we talk about people being hungry, and especially about those who are trapped in extreme hunger, often these people need help with more than just getting food on their table. They need help getting access to the kinds of things we often take for granted but which are often simply not available to people in developing countries. Things like: the chance to go to school, to get a job, to go to the doctor, to save money for the future, etc.
 - Finding solutions to these problems is also part of the answer to helping people emerge out of hunger and poverty for the long run – not just for a few meals! One way that we encourage ourselves and others to help with these bigger picture issues is to purchase what are called “fair trade goods.” Not everyone is going to be able to actually go to a country like Nicaragua and help the people there but we can all help by making decisions about the things we buy.
 - We all know that many of the things that we buy come from different places all over the world. You may be wearing a shirt that was made in Indonesia, or shoes that were made in Chile or a watch that was made in Vietnam. The people who make these things are just like you and I, and they have the same needs, dreams and hopes for their family that we have for ours.
 - Unfortunately, many of the things that we buy are made by companies who don't pay their workers enough money to feed their families. Many are made in factories and workshops that are very dangerous to work in because the owners do not make them safe. This often means that they are doing things that are very bad for the environment as well. Some of them are even made by boys and girls just like you who aren't allowed to go to school but instead work long, hard, often dangerous jobs even though they are so young. Some of them are so bad in fact that the people who work there are treated more like slaves than employees.
 - We don't think these are good situations for people to live and work in, so we don't want to buy things that are made like this. If these companies get our money it will encourage them to keep making things in a way that takes advantage of the people who are working for them. Sometimes it is hard to know what to buy, but one way that you can know that you are not buying products that hurt people is to buy products that are labeled “fair trade.” If you see the words “fair trade” on something it is a promise that the people who made that product were paid the right amount of money to feed their families, that they were not in danger of being hurt while they were making things and that children were not forced to do the work. Buying fair trade is one way that we can all help fight hunger and poverty. You can ask your parents what they know about the things that they buy.
 - Tell them that you learned about fair trade today and ask them to help you learn more!

TEKS Referenced:

English Language Arts and Reading, Grade 2.

(1) Listening/speaking/purposes. The student listens attentively and engages actively in a variety of oral language experiences. The student is expected to:

(D) listen critically to interpret and evaluate

(2) Listening/speaking/culture. The student listens and speaks to gain knowledge of his/her own culture, the culture of others, and the common elements of cultures. The student is expected to:

(A) connect experiences and ideas with those of others through speaking and listening

(3) Listening/speaking/audiences/oral grammar. The student speaks appropriately to different audiences for different purposes and occasions. The student is expected to:

(C) ask and answer relevant questions and make contributions in small or large group discussions

(4) Listening/speaking/communication. The student communicates clearly by putting thoughts and feelings into spoken words. The student is expected to:

(A) use vocabulary to describe clearly ideas, feelings, and experiences

(13) Reading/culture. The student reads to increase knowledge of his/her own culture, the culture of others, and the common elements of culture. The student is expected to:

(A) connect life experiences with the life experiences, language, customs, and culture of others

Mathematics, Grade 2.

(2.9) **Measurement.** The student directly compares the attributes of length, area, weight/mass, and capacity, and uses comparative language to solve problems and answer questions. The student selects and uses nonstandard units to describe length, area, capacity, and weight/mass. The student recognizes and uses models that approximate standard units (from both SI, also known as metric, and customary systems) of length, weight/mass, capacity, and time.

The student is expected to:

(A) identify concrete models that approximate standard units of length and use them to measure length;

(2.10) **Measurement.** The student uses standard tools to estimate and measure time and temperature (in degrees Fahrenheit).

The student is expected to:

(A) read a thermometer to gather data;

(2.11) **Probability and statistics.** The student organizes data to make it useful for interpreting information.

The student is expected to:

(A) construct picture graphs and bar-type graphs;

(2.12) **Underlying processes and mathematical tools.** The student applies Grade 2 mathematics to solve problems connected to everyday experiences and activities in and outside of school.

The student is expected to:

(A) identify the mathematics in everyday situations;

(2.13) **Underlying processes and mathematical tools.** The student communicates about Grade 2 mathematics using informal language.

The student is expected to:

(A) explain and record observations using objects, words, pictures, numbers, and technology;

Science, Grade 2.

(1) *Scientific processes.* The student conducts classroom and field investigations following home and school safety procedures. The student is expected to:

- (A) demonstrate safe practices during classroom and field investigations; and
- (B) learn how to use and conserve resources and dispose of materials.

(2) *Scientific processes.* The student develops abilities necessary to do scientific inquiry in the field and the classroom. The student is expected to:

- (A) ask questions about organisms, objects, and events;
- (B) plan and conduct simple descriptive investigations;
- (C) compare results of investigations with what students and scientists know about the world;
- (D) gather information using simple equipment and tools to extend the senses;
- (E) construct reasonable explanations and draw conclusions using information and prior knowledge; and
- (F) communicate explanations about investigations.

(4) *Scientific processes.* The student uses age-appropriate tools and models to verify that organisms and objects and parts of organisms and objects can be observed, described, and measured. The student is expected to:

- (A) collect information using tools including rulers, meter sticks, measuring cups, clocks, hand lenses, computers, thermometers, and balances; and
- (B) measure and compare organisms and objects and parts of organisms and objects, using standard and non-standard units.

(5) *Science concepts.* The student knows that organisms, objects, and events have properties and patterns. The student is expected to:

- (A) classify and sequence organisms, objects, and events based on properties and patterns;

(6) *Science concepts.* The student knows that systems have parts and are composed of organisms and objects. The student is expected to:

- (C) observe and record the functions of plant parts; and
- (D) observe and record the functions of animal parts.

(8) *Science concepts.* The student distinguishes between living organisms and nonliving objects. The student is expected to:

- (A) identify characteristics of living organisms; and
- (B) identify characteristics of nonliving objects.

(9) *Science concepts.* The student knows that living organisms have basic needs. The student is expected to:

- (A) identify the external characteristics of different kinds of plants and animals that allow their needs to be met; and
- (B) compare and give examples of the ways living organisms depend on each other and on their environments.

Social Studies, Grade 2.

(5) *Geography.* The student uses simple geographic tools such as maps, globes, and photographs. The student is expected to:

- (A) use symbols, find locations, and determine directions on maps and globes; and
- (B) draw maps to show places and routes.

(7) *Geography.* The student understands how physical characteristics of places and regions affect people's activities and settlement patterns. The student is expected to:

- (B) explain how people depend on the physical environment and its natural resources to satisfy their basic needs.

(8) *Geography.* The student understands how humans use and modify the physical environment. The student is expected to:

- (A) identify ways in which people depend on the physical environment, including natural resources, to meet basic needs;
- (D) identify ways people can conserve and replenish natural resources.

(16) *Science, technology, and society.* The student understands how science and technology have affected life, past and present. The student is expected to:

- (B) explain how science and technology have changed the ways in which people meet basic needs.

Health Education, Grade 2.

(1) *Health behaviors.* The student understands that personal health decisions and behaviors affect health throughout the life span. The student is expected to:

- (C) identify food groups and describe the effects of eating too much sugar and fat such as knowing that sugar causes dental cavities;
- (D) identify healthy and unhealthy food choices such as a healthy breakfast and snacks and fast food choices;

(4) *Health information.* The student understands the difference between sickness and health in persons of all ages. The student is expected to:

- (D) apply practices to control spread of germs in daily life such as hand washing and skin care.

(5) *Health information.* The student recognizes factors that influence the health of an individual. The student is expected to:

- (C) identify personal responsibilities as a family member in promoting and practicing health behaviors.

Physical Education, Grade 2.

(1) *Movement.* The student demonstrates competency in fundamental movement patterns and proficiency in a few specialized movement forms. The student is expected to:

- (A) travel independently in a large group while safely and quickly changing speed and direction;

(4) *Physical activity and health.* The student knows the benefits from involvement in daily physical activity and factors that affect physical performance. The student is expected to:

- (C) identify foods that enhance a healthy heart;