The Seasonal Cycle

Grade Level or Special Area:2nd Grade ScienceWritten by:Jacqueline Ranniger, Academy of Charter Schools, Denver, COLength of Unit:17 lessons, approximately 30 minutes per lesson

I. ABSTRACT

This unit was written with the intent that the seasons are taught when each season takes place; thus, there are four parts to this unit. Students will study the unique effect each season has on plants, animals, and people. As each season is studied, students will be piecing together a calendar that displays its characteristics. Students will also be gathering articles from newspapers and magazines and creating posters about each season.

II. OVERVIEW

A. Concept Objectives

1.

- 1. Students will understand that the seasons are caused by earth's tilt and its revolution around the sun.
- 2. Students will understand that each season has identifiable characteristics.
- 3. Students will recognize the effects each season has on plant, animals, and human activities.
- B. Content from the *Core Knowledge Sequence*
 - Second Grade Science: Cycles in Nature: Seasonal Cycles (p. 59)
 - a. The four seasons and earth's orbit around the sun (one year)
 - b. Seasons and life processes
 - i. Spring: sprouting, sap flow in plants, mating and hatching
 - ii. Summer: growth
 - iii. Fall: ripening, migration
 - iv. Winter: plant dormancy, animal hibernation
 - 2. Second Grade Language Arts: Poetry (p, 44)
 - a. Bed in Summer (Robert Louis Stevenson)
 - b. Bee! I'm expecting you (Emily Dickinson)
 - c. Something Told the Wild Geese (Rachel Field)
 - d. The Night Before Christmas (Clement C. Moore)
- C. Skill Objectives
 - 1. Students will identify what season the Northern Hemisphere is in when the earth is in a certain position around the sun.
 - 2. Students will identify how plants are affected by the seasons.
 - 3. Students will identify how animals' behaviors change as the seasons change.
 - 4. Students will identify how human activities are affected by the changing of the seasons.
 - 5. Students will find articles from newspapers and magazines that relate to the season being studied and will explain what characteristic of the season it relates to through discussion and writing.

III. BACKGROUND KNOWLEDGE

- A. For Teachers
 - 1. What Your Second Grader Needs to Know by E.D. Hirsch, Jr.
- B. For Students
 - 1. Kindergarten Science: Seasons and Weather (p. 20)
 - a. The four seasons
 - b. Characteristic local weather patterns during the different seasons

- 2. First Grade Science: Astronomy: Introduction to the Solar System
 - a. Earth and its place in the solar system
 - i. The earth moves around the sun; the sun does not move.
 - ii. The earth revolves (spins); one revolution takes one day (24 hours).

IV. RESOURCES

- A. Book of the Seasons by Usborne Books (Lessons Three, Eight, Thirteen)
- B. *Reasons for Seasons* by Gail Gibbons (Lessons Two, Seven, Twelve, Seventeen)
- C. *Nature All Year Long* by Clare Leslie Walker (Lesson Seven)

V. LESSONS

Lesson One: All Year Round (30 minutes)

- A. Daily Objectives
 - 1. Concept Objective(s)
 - a. Students will understand that the seasons are caused by earth's tilt and its revolution around the sun.
 - 2. Lesson Content
 - a. The four seasons and earth's orbit around the sun (one year)
 - 3. Skill Objective(s)
 - a. Students will identify what season the Northern Hemisphere is in when the earth is in a certain position around the sun.
- B. *Materials*
 - 1. World globe
 - 2. Flashlight
 - 3. Stool (backless)
 - 4. Index cards with each season written on them (four cards: spring, summer, fall, winter, for each student)
 - 5. Student calendars (see Appendix A for how to assemble them ahead of time)
 - 6. Appendix D: Parent Letter (one for each student)
- C. *Key Vocabulary*
 - 1. A *season* is one of four divisions of the year (spring, summer, fall, winter) marked by the earth's tilt and passage around the sun.
 - 2. *Revolve* means to orbit a central point.
 - 3. *Vertical* means to be at a right angle to the horizon.
 - 4. *Horizontal* means to be parallel to the horizon.
- D. *Procedures/Activities*
 - 1. Ask the students the following questions as a review about what they have learned in the previous grades.
 - a. How many seasons there are in a year? (*four*)
 - b. What are the four seasons? (*Fall, winter, spring, summer*)
 - c. Can anyone name the seasons in order? (It doesn't matter what season they start with as long as the seasons are in the correct order.)
 - d. What causes the changing of the seasons? (*Earth's tilt and movement around the sun.*)
 - e. Earth is divided horizontally into two hemispheres, North and South, by the equator. What hemisphere are we in? (*Northern Hemisphere*)
 - f. Tell the students that remembering that we are on the continent of North America will help them to remember that we are in the Northern Hemisphere. Point out North America on the world globe.

- 2. Tell the students that in this unit, they are going to study the four seasons and what characteristics define each season. They will also study how the seasons affect living things and the environment. First, they are going to review how earth's movement around the sun affects the seasons.
- 3. Take a flashlight and turn it on. Place it in the center of an open space on a stool. Turn off the classroom lights. Then take a globe and stand off to the side starting with the globe in the summer position. The globe should have its axis tilted toward the flashlight. The flashlight should be shining on the globe.
- 4. Tell the students that the earth's axis is not vertical; it is diagonal. Because of this, some parts of the earth are going to get more sun than others. When the earth is tilted towards the sun, the Northern Hemisphere is in the season of summer. Because the Southern Hemisphere is away from the sun, it is in the season opposite of summer; it is in winter. The Northern Hemisphere and Southern Hemisphere will always be in opposite seasons.
- 5. Go in a counter clockwise direction around the stool/flashlight until you are a quarter of the way around the circle to the next position where fall would be. The flashlight should be positioned so that it is facing the globe, but the globe should be tilted neither towards nor away from the flashlight. Ask the students what comes after summer. (*Fall*) Tell the students that in the fall, the earth is neither tilted toward, nor away, from the sun. That is why fall is not as hot as summer.
- 6. Move another quarter of the way around the circle to the next position where winter should be. The flashlight should be positioned so that it is facing the globe, but the globe should be tilted away from the flashlight. Ask the students what comes after fall. (*Winter*) Tell the students that in the winter, the earth is tilted away from the sun. Because of this, the Northern Hemisphere is getting less sunlight, thus, temperatures are much colder than any other season.
- 7. Move another quarter of the way around the circle to the next position where spring should be. The flashlight should be positioned to that it is facing the globe, but the globe should be tilted neither towards nor away from the flashlight. Ask the students what comes after winter. (*Spring*) Tell the students that in spring, like fall, the earth is neither tilted toward, nor away, from the sun. However, because the earth is not tilted directly away from the sun, spring is warmer than winter. Temperatures are warming up again.
- 8. Go through this process again, holding the globe in the position of a season and asking the students what season it is and why.
- 9. Turn the lights back on and give each student four index cards with each season written on them. Tell the students that while you place the globe in different positions, they need to pick the season that the Northern Hemisphere is in when the earth is in the given position. Then they need to hold the card up so only the teacher can see what the card says. Take about three to five minutes to complete this activity, depending on how well the students are answering.
- 10. Tell the students that they will be working on a calendar as they go through each season. Use Appendix A for reference. Give the students the calendar and have them fill out the seasons in the Northern Hemisphere on the cover of the calendar. Check the answers together.
- 11. Ask the students the following questions.
 - a. How long does it takes for the earth to completely revolve around the sun, or in other words, to go through all the seasons? (*One year*)
 - b. How many days are in a year? (365 days)
 - c. Are we in school all 365 days? (*No*)

- d. In what season are we not in school? (*Summer*)
- 12. Tell the students that each season is divided up into about three months. During the summer, students are not in school. Near the beginning of fall is when school starts. Because of this, fall is the first season that will be studied.
- 13. Pass out the parent letter on Appendix D to each student and tell him or her to give it to his or her parents. Thoroughly explain the two projects they will be completing for each season being studied. Tell the students that for each season studied, they will have the same two projects to complete. Be sure to assign these projects and hand out the rubric or directions at least a few days before you start each unit!
- E. Assessment/Evaluation
 - 1. Monitor students as they identify what season the Northern Hemisphere is in, using index cards and labeling the cover of their calendars.

Lesson Two: Fall, Part 1 (35 minutes)

- A. Daily Objectives
 - 1. Concept Objective(s)
 - a. Students will understand that the seasons are caused by earth's tilt and its revolution around the sun.
 - b. Students will understand that each season has identifiable characteristics.
 - c. Students will recognize the effects each season has on plant, animals, and human activities.
 - 2. Lesson Content
 - a. The four seasons and earth's orbit around the sun (one year)
 - b. Seasons and life processes
 - i. Fall: ripening, migration
 - 3. Skill Objective(s)
 - a. Students will identify what season the Northern Hemisphere is in when the earth is in a certain position around the sun.
 - b. Students will identify how plants are affected by the seasons.
- B. Materials
 - 1. World globe
 - 2. Flashlight
 - 3. Stool (backless)
 - 4. Student calendars (from Lesson One)
 - 5. *The Reasons for Seasons* by Gail Gibbons
 - 6. Leaves (a few for each student)
 - 7. Newspaper (one sheet for each student)
 - 8. Copy paper (one for each student)
 - 9. Crayons: red, orange, yellow, brown (one of each color for each student)
 - 10. Plant (one from the classroom with leaves will do)
 - 11. Paperclip
 - 12. Dark piece of construction paper (large enough to cover a leaf of a plant)
- C. Key Vocabulary
 - 1. *Fall* is a season, also known as autumn, that lasts from around September 21st to about December 21st.
 - 2. *Harvest* is a time when ripened crops are picked.
- D. *Procedures/Activities*
 - 1. Tell the students that in the fall, temperatures are not as cold as they are in winter but not as hot as they are in summer. The weather is often cool and windy. Ask

them where they think the earth is in position to the sun because of this. (*Earth is not tilted towards, nor away from, the sun.*)

- 2. Show the students the position of the earth in fall using the globe and flashlight from the previous day's simulation. Tell the students that the daytime and nighttime hours are also about the same.
- 3. Read the "Autumn" section of the book *Reasons for Seasons* by Gail Gibbons.
- 4. Ask the students what another name for fall is. (*Autumn*)
- 5. Ask the students if they remember when they said autumn or fall starts. (*September* 21st) Have the students mark this on their calendars.
- 6. Tell the students that this is the time of year when school starts again. Then, show the students that fall goes through the months of October, November, and December (until the 21st). Have the students mark this on their calendars.
- 7. Tell the students that in the fall, nature shows the changing season. Crops are ready to be picked now that they have had all summer to grow. Farmers will harvest them. Harvest means that crops are gathered because they are ripe or ready to be eaten. People with gardens will gather the last of their fruits and vegetables that have ripened. Often they will can these fruits and vegetables and store them by freezing them or canning them so that they can be eaten throughout the winter.
- 8. Ask the students what they notice about the trees. (*Leaves are changing colors.*) Tell the leaves on the trees begin to change color because they are receiving less sunlight. The trees need sunlight to make a chemical called chlorophyll, which gives the leaves their green color. Without chlorophyll, the leaves get dryer, the green fades, and the red, orange, yellow, and brown colors that have always been in the leaves, show through because they are not being covered up by the chlorophyll any longer. October tends to be the month the leaves show their fall colors.
- 9. Tell the students you are going to do an experiment to show how leaves that do not get enough sunlight stop producing chlorophyll and turn color. Take a dark piece of construction paper and cover the leaf of a plant. In a few days, uncover the leaf and see of the leaf has lightened.
- 10. Tell the students that when leaves fall to the ground they become shelter for small animals and like a blanket, keep them warm. The fallen leaves also break down to make new soil for the next year. They keep plant roots warm.
- 11. If the leaves are changing color and the schoolyard has leaves that have fallen, take the students outside to gather about three to four leaves. You may gather a bag of leaves ahead of time if you don't want to take the students outside. If the leaves are not changing color or the schoolyard does not have leaves in it, use leaf cut-outs. Tell the students that they are going to make leaf rubbings.
- 12. First, give each student a piece of newspaper to spread out on his or her desk.
- 13. Next, have the students put the leaves in a design or pattern on the newspaper on their desks.
- 14. Give students a sheet of copy paper and have them place it on their desks with the longest sides horizontal.
- 15. Tell the students to take out the crayons with the color red, orange, yellow, and brown. Tell them to peel the paper off the crayons they would like to use.
- 16. Have them hold down the paper with their left hand (or the hand they don't write with) and rub the flat surface of the crayon gently over the paper covering the leaves with their right hand (or the hand they use to write with). They may switch colors for different leaf rubbings if they like. Remind students that they

need to gently rub the crayon over the paper or the leaf designs will not show through.

- 17. When the students are finished, have them put their crayons away and throw away the leaves and newspapers.
- 18. Review with the students why the leaves change color and work with the students to write a few sentences below the picture to explain it.
- 19. Have the students paste this picture to the month of October.
- E. Assessment/Evaluation
 - 1. Students will write a few sentences about fall changes in leaves.

Lesson Three: Fall, Part 2 (35 minutes)

- A. Daily Objectives
 - 1. Concept Objective(s)
 - a. Students will understand that each season has identifiable characteristics.
 - b. Students will recognize the effects each season has on plant, animals, and human activities.
 - 2. Lesson Content
 - a. Seasonal Cycles
 - Seasons and life processes
 - a) Fall: ripening, migration
 - b. Poetry

i.

- i. Something Told the Wild Geese (Rachel Field)
- 3. Skill Objective(s)
 - a. Students will identify how animals' behaviors change as the seasons change.
- B. Materials
 - 1. Appendix E: Something Told the Wild Geese Poem (one copy for each student)
 - 2. *Book of Seasons* by Usborne Books
 - 3. Copy paper (one for each student)
 - 4. Student calendars (from Lesson Two)
 - 5. Glue (for each student)
 - 6. Crayons (for each student)
 - 7. Pint-sized milk cartons (rinsed out, one for each student)
 - 8. Birdseed (about 1/4 cup for each student)
 - 9. Ruler (one for each student)
 - 10. Scissors (one for each student)
 - 11. Thick yarn (two pieces about 15 inches long, for each student)
- C. Key Vocabulary
 - 1. When animals *migrate*, they travel great distances to spend their winter in warmer places where there is plenty of food.
- D. Procedures/Activities
 - 1. Tell the students that nature not only shows the changing of the seasons through plants, but also in animals as well.
 - 2. Have the students read the poem on Appendix E and ask them what they think the poem is saying about the wild geese.
 - a. What are the wild geese warned about? (*Winter is coming.*)
 - b. Where do you think the geese should go? (*They should go somewhere warm*.)
 - c. Where might they go to find warm weather? (*They might go somewhere* south along the equator or in the Southern Hemisphere where they are in the opposite season-spring.)

- d. Why do you think the geese should leave when everything is still green and ripe with color? (*They should leave before the cold and frost hit.*)
- 3. Tell the students that many animals leave their summer homes to travel great distances to spend the winter season in warmer places where there is plenty of food. This is called migration.
- 4. Read "Wildlife on the move" on pages 72 and 73 from *Book of the Seasons*. Read about the variety of animals that migrate. Use a large map of the world to point out where and how far these animals travel when they migrate.
- 5. Tell the students that other animals that migrate are robins, swans, blackbirds, hummingbirds, and some fish and whales.
- 6. Tell the students that the animals that do not migrate for the winter prepare for winter in different ways. Read "Preparing for winter" on page 74 of *Book of the Seasons*. Review what was just read with the following questions:
 - a. What are two ways animals prepared for the winter? (*They grew thick winter coats and they gathered and stored food.*)
 - b. What animal grows a think winter coat? (*Fox*) Tell the students that other animals that grow thick fur are rabbits, squirrels, and all other animals that stay around for winter.
 - c. What animals gather and store food? (*Birds and squirrels*)
- 7. Tell the students that they are going to cut out the poem on Appendix E and paste it to the month of November. Then they are to neatly draw and then color animals around the poem that are preparing for winter. They might draw other animals that migrate or animals that are storing food. Remind the students that these pictures are going on their calendar so they need to do their best work.
- 8. Give the students about ten minutes to complete this activity.
- 9. Tell the students that because animals are busy eating to fatten up to keep warm or for energy for the long trip south while they migrate, they need to eat a lot. The students are going to make bird feeders.
- 10. Give each student a pint sized milk carton. Have the students take their ruler and on one side, draw a horizontal line about an inch and a half from the bottom. Show the students how to measure this using ruler and pencil. Tell them to make another horizontal line about an inch and a half above the line they just drew. Have them do the same thing to the opposite side of the carton. Then, using scissors, cut out rectangles made between these two lines they drew. Do this for both sides. You will need to start a hole using a straight edge knife so students can finish cutting using their scissors. Then give each student about 1/4 cup of birdseed to put in the bottom of the feeder. You can also put the birdseed in a Ziploc bag and have the students put it in the birdfeeder at home. Give the students two pieces of string and tell them to use the students decorate the bird feeders.
- 11. Tell the students to check on the feeder every few days. They may need to clean it out if it has rained or the food will spoil. To refill the feeder, they can use other foods like sunflower seeds, wheat, cracked corn, oats, popcorn, or cranberries.

Assessment/Evaluation

1. Monitor students as they draw pictures of animals preparing for winter.

Lesson Four: Fall, Part 3 (25 minutes)

- A. Daily Objectives
 - 1. Concept Objective(s)
 - a. Students will understand that each season has identifiable characteristics.
 - b. Students will recognize the effects each season has on plant, animals, and human activities.
 - 2. Lesson Content
 - a. Seasons and life processes
 - i. Fall: ripening, migration
 - 3. Skill Objective(s)
 - a. Students will identify how human activities are affected by the changing of the seasons.
- B. Materials
 - 1. Whiteboard and markers
 - 2. Copy paper (one sheet cut in half to make two, for each student)
 - 3. Crayons (for each student)
 - 4. Student calendars (from Lesson Three)
 - Key Vocabulary
 - None

C.

- D. Procedures/Activities
 - 1. Tell the students that you are going to go through each month of fall and they are to think about the different kinds of activities that go on during these months. List the activities on the board as students come up with them. Activities you might list are:
 - a. Kids go back to school.
 - b. Crops are picked (harvest).
 - c. Trick or treating on Halloween
 - d. Kids carve pumpkins.
 - e. Thanksgiving
 - f. People rake leaves.
 - g. Kids jump in the piles of leaves.
 - h. Kids play football.
 - 2. Mark the holidays and other special events, such as student birthdays, on the student calendars.
 - 3. Once a good list of activities is posted, tell the students that they are going to make two pictures for the calendar months of September and December showing activities that go on in these months.
 - 4. Give the students two half sheets of copy paper and tell them to take one and place it so that the longest sides are vertical. Tell the students that since September was the first month of fall and that they started back to school, that they could draw a picture of themselves going back to school. Remind the students that their picture is going to be part of a calendar, so they need to do their best. They may use a pencil to draw out the picture before they color it. Then students need to write a sentence that describes what is going on in the picture. Give the students about ten minutes to complete this activity.
 - 5. Tell the students to turn their calendars to the month of September. Have them glue the picture of them going back to school on the right side.
 - 6. Next, have the students take the next sheet of copy paper and, again, place it with the longest sides vertical on their desk. This time they are to draw another activity that is done in fall. Then students need to write another sentence under the picture to describe what activity they drew for fall. Again, they may draw out

the picture before they color it to make it nice and neat for their calendar. Give them about ten minutes to complete this activity.

- 7. Then have them turn to the month of December and glue their picture of the fall activities on the left side.
- E. Assessment/Evaluation
 - 1. Monitor the students as they draw pictures of fall activities and write sentences for them.

Lesson Five: Fall, Part 4 (30 minutes)

- A. Daily Objectives
 - 1. Concept Objective(s)
 - a. Students will understand that each season has identifiable characteristics.
 - b. Students will recognize the effects each season has on plant, animals, and human activities.
 - 2. Lesson Content
 - a. Seasons and life processes
 - i. Fall: ripening, migration
 - 3. Skill Objective(s)
 - a. Students will find articles from newspapers and magazines that relate to the season being studied and will explain what characteristic of the season it relates to through discussion and writing.
- B. Materials
 - 1. Students' newspaper clippings
 - 2. Appendix B: Article Rubric (for teacher reference)
- C. Key Vocabulary
 - None

D. *Procedures/Activities*

- 1. Have the students take out their newspaper clippings and paragraphs. Tell the students that each of them will briefly share the article they found by telling what the article was about and how it relates to the season of fall.
- 2. As each student finishes talking about his or her article, gather the articles for a grade.
- 3. If there is time left over, ask students questions about fall to review for the test the following day. Tell the students to take home their calendar to help them study for the test. Remind them to bring their calendars back the next day.
- E. Assessment/Evaluation
 - 1. Students will discuss the article that relates to fall and it will be graded according to the rubric in Appendix B.

Lesson Six: Winter, Part I (25 minutes)

- A. Daily Objectives
 - 1. Concept Objective(s)
 - 1. Students will understand that the seasons are caused by earth's tilt and its revolution around the sun.
 - 2. Students will understand that each season has identifiable characteristics.
 - 3. Students will recognize the effects each season has on plant, animals, and human activities.
 - 2. Lesson Content
 - a. The four seasons and earth's orbit around the sun (one year)
 - b. Seasons and life processes
 - i. Winter: plant dormancy, animal hibernation

- 3. Skill Objective(s)
 - a. Students will identify what season the Northern Hemisphere is in when the earth is in a certain position around the sun.
 - b. Students will identify how plants are affected by the seasons.
- B. Materials
 - 1. World globe
 - 2. Flashlight
 - 3. Stool (backless)
 - 4. Student calendars (from Lesson Four)
 - 5. *The Reasons for Seasons* by Gail Gibbons
 - 6. Evergreen branches (if you don't collect any, have some pictures of them for students to see)
 - 7. Crayons (for each student)
- C. Key Vocabulary
 - 1. *Winter* is the coldest season of the year and lasts from around December 21st to about March 21st.
 - 2. *Plant dormancy* is when the plant's growth is inactive.
- D. *Procedures/Activities*
 - 1. Tell the students that in winter, temperatures are the colder than they are in any other season. Ask them where they think the earth is in relation to the sun because of this. (*Earth is tilted away from the sun.*)
 - 2. Show the students the position of the earth in winter using the globe and flashlight. Tell the students that nighttime hours are longer than the daytime hours.
 - 3. Read the "Winter" section of the book *The Reasons for Seasons* by Gail Gibbons.
 - 4. Ask the students if they remember when winter starts; remember when fall ends. (*December 21st*)
 - 5. Mark this on the student calendars. Then, show the students that winter goes through the months of January, February, and most of March (until the 21st).
 - 6. Tell the students that in winter, nature shows that changing season. Many plants die. Some plants, like trees, become dormant. This means that they stop growing, almost as if they are sleeping. Seeds, bulbs, and roots in soil are protected from winter weather. When spring returns, they will start growing again.
 - 7. Tell the students that there is another group of trees that do not loose their leaves in the fall and last throughout the winter. Evergreen trees are trees with leaves that are needle-shaped or scaly, short and spiked. These trees stay green throughout the winter because their leaves produce a chemical that prevents them from freezing. In winter, they continue to produce chlorophyll to keep them green. In ancient times, people believed these trees had special powers because winter did not kill them.
 - 8. Show the students some of the different evergreen branches you have collected or pictures of different evergreens from books.
 - 9. Have the students draw a picture of the different evergreens they saw.
 - 10. Work with the students to write a few sentences at the bottom of the picture about the evergreens.
 - 11. Tell the students to glue the picture to the month of January.
- E. Assessment/Evaluation
 - 1. Students will write a few sentences about evergreens.

Lesson Seven: Winter, Part 2 (30 minutes)

- A. Daily Objectives
 - 1. Concept Objective(s)
 - a. Students will understand that each season has identifiable characteristics.
 - b. Students will recognize the effects each season has on plant, animals, and human activities.
 - 2. Lesson Content
 - a. The four seasons and earth's orbit around the sun (one year)
 - b. Seasons and life processes
 - i. Winter: plant dormancy, animal hibernation
 - 3. Skill Objective(s)
 - a. Students will identify how animals' behaviors change as the seasons change.
- B. Materials
 - 1. Book of Seasons by Usborne Books
 - 2. Student calendars (from Lesson Six)
 - 3. Two thermometers
 - 4. Pictures of animals tracks (preferably in snow)
 - 5. Copy paper (one for each student)
 - 6. *Nature All Year Long* by Clare Leslie Walker
- C. Key Vocabulary
 - 1. *Hibernation* is when an animal goes into a sleep-like state for the winter.
 - 2. To be *camouflaged* means to appear to be apart of the environment or natural surroundings.
 - 3. *Predators* are animals that hunt for other animals to eat.
- D. *Procedures/Activities*
 - 1. Tell the students that, as we learned in our fall study, animals also show the changing of the seasons. Tell the students that while some animals migrate to warmer weather in the fall to prepare for winter, some animals hibernate. This means they go into a sleep-like state. When they do this, they find a spot that is well protected and hidden to sleep. While they are hibernating, they do not eat; remember that animals eat a lot during the fall because of the shortage of food in the winter. All the food they eat becomes an extra layer of fat on their bodies. It is like wearing a winter coat. While they are hibernating, their heartbeat slows down and so does their breathing. Their body temperature also drops. When these animals wake up in the spring, they are much thinner.
 - 2. Read "Surviving the winter" on pages 92 and 93 of *Book of Seasons*. Read about what else animals do during the winter. Review what was just read with the following questions:
 - a. What are other ways animals survive the winter? (*Some animals have thick winter coats and some change the color of their coats. Other animals continue looking for food.*)
 - b. What animals change the color of their coats? (*Some foxes, rabbits, and birds*)
 - c. Why would an animal change the color of its coat? (*Some animals do this to blend in with their environment.*) Tell the students that when animals do this, it is called camouflage. They blend in with their surroundings so it is harder for predators to find them.
 - d. What insects hibernate? (*Some moths and butterflies*)

- 3. Tell students that frogs and turtles hibernate in the bottom of ponds in the mud. Other animals that hibernate are bats, earthworms, and woodchucks. In a bee colony, only the queen survives by hibernating.
- 4. Also, tell the students that snow acts as insulation for animals underground. Take two thermometers and tell the students you are going to do an experiment to see if snow would really act as an insulator. Put one thermometer in the snow, preferably a snow bank. Put the other thermometer on a window ledge. Check on the thermometers after about twenty minutes.
- 5. Another activity to do if there is snow on the ground is to take the students outside and look for animal tracks in the snow. Show the students pictures of different animal tracks before going outside. Pictures of different animal tracks can be found on page nine in *Nature All Year Long* by Clare Walker Leslie. Take the students outside for about ten to fifteen minutes, look for tracks in the snow, and have the students try and figure out what animal made them.
- 6. Go back to the classroom and have the students draw pictures on copy paper of what different animals do to survive the winter. They may also draw pictures of the animal tracks they saw in the snow. Students also need to write a sentence for what the animals are doing in winter.
- 7. Have students glue this picture to the month of February.
- E. Assessment/Evaluation
 - 1. Monitor the students as they draw pictures of what animals are doing in winter and write sentences about it.

Lesson Eight: Winter, Part 3 (25 minutes)

- A. Daily Objectives
 - 1. Concept Objective(s)
 - a. Students will understand that each season has identifiable characteristics.
 - b. Students will recognize the effects each season has on plant, animals, and human activities.
 - 2. Lesson Content
 - a. Seasonal Cycles
 - i. Seasons and life processes
 - a) Winter: plant dormancy, animal hibernation
 - b. Poetry
 - i. The Night Before Christmas (Clement C. Moore)
 - Skill Objective(s)
 - a. Students will identify how human activities are affected by the changing of the seasons.
- B. Materials
 - 1. Appendix G: Night Before Christmas Poem (one for each student) (this poem was used because it fits with the winter season and it is a part of the Core Knowledge curriculum; however, if you are not allowed to discuss Christmas or there are students that cannot celebrate it, there are many other winter poems in the book *Swing Around the Sun* by Barbara Juster Esbensen)
 - 2. Whiteboard and markers
 - 3. Copy paper (a half sheet for each student)
 - 4. Crayons (for each student)
 - 5. Scissors (for each student)
 - 6. Student calendars (from Lesson Seven)
- C. Key Vocabulary None

- D. Procedures/Activities
 - 1. Tell the students that you are going to go through each month of winter and they are to think about the different kinds of activities that go on during these months. List the activities on the board as students come up with them. Activities you might list are:
 - a. Kids make snowmen.
 - b. People go skiing.
 - c. People go snowmobiling.
 - d. Kids go sledding.
 - e. People go ice-skating.
 - f. Christmas
 - g. New Year's
 - h. Kids play basketball.
 - i. Valentine's Day
 - 2. Mark any holidays, student birthdays, or other special events that happen during these months on the student calendars.
 - 3. Give the students a half sheet of copy paper and tell them they are going to make a picture for the calendar month of March showing activities that go on during winter. Then students are to write a sentence underneath the picture explaining the winter activity they drew.
 - 4. Have the students glue the picture to the left side of the month of March.
 - 5. Give the students the poem "The Night Before Christmas" in Appendix G. Read the poem and discuss it.
 - a. How does the poem describe the winter scene? ("The children were nestled all snug in their beds", "Had just settled our brains for a long winter's nap", "The moon on the breast of the new fallen snow")
 - b. How might this scene be described if it took place during any other season? (*Answers will vary.*)
 - 6. Have them cut it out the poem pages and glue them to the right side of the month of December. Glue the last page of the poem first. Then, add a little glue to the top of the first page and place it on top of the last page. So when the poem is read. The first page will be seen, and then the page is lifted to read the last page.
- E. Assessment/Evaluation
 - 1. Monitor the students as they draw a winter activity and write a sentence about it.

Lesson Nine: Winter, Part 4 (30 minutes)

- A. Daily Objectives
 - 1. Concept Objective(s)
 - a. Students will understand that each season has identifiable characteristics.
 - b. Students will recognize the effects each season has on plant, animals, and human activities.
 - 2. Lesson Content

a.

- Seasons and life processes
 - i. Winter: plant dormancy, animal hibernation
- 3. Skill Objective(s)
 - a. Students will find articles from newspapers and magazines that relate to the season being studied and will explain what characteristic of the season it relates to through discussion and writing.
- B. Materials
 - 1. Students' newspaper clippings
 - 2. Appendix B: Article Rubric (for teacher reference)

C. Key Vocabulary

None

- D. *Procedures/Activities*
 - 1. Have the students take out their newspaper clippings and paragraphs. Tell the students that each of them will briefly share the article they found by telling what the article was about and how it relates to the season of winter.
 - 2. As each student finishes talking about his or her article, gather the articles for a grade.
 - 3. If there is time left over, ask students questions about winter to review for the test the following day. Tell the students to take home their calendars to help them study for the test. Remind them to return the calendars the following day.
- E. Assessment/Evaluation
 - 1. Students will discuss the article that relates to winter and it will be graded according to the rubric in Appendix B.

Lesson Ten: Spring, Part 1 (35 minutes)

- A. Daily Objectives
 - 1. Concept Objective(s)
 - a. Students will understand that the seasons are caused by earth's tilt and its revolution around the sun.
 - b. Students will understand that each season has identifiable characteristics.
 - c. Students will recognize the effects each season has on plant, animals, and human activities
 - 2. Lesson Content

а

- The four seasons and earth's orbit around the sun (one year)
 - i. Spring: sprouting, sap flow in plants, mating and hatching
- 3. Skill Objective(s)
 - a. Students will identify what season the Northern Hemisphere is in when the earth is in a certain position around the sun.
 - b. Students will identify how plants are affected by the seasons.
- B. *Materials*
 - 1. World globe
 - 2. Flashlight
 - 3. Stool (backless)
 - 4. Student calendars (from Lesson Eight)
 - 5. *The Reasons for Seasons* by Gail Gibbons
 - 6. Vegetable seeds (may also include flower seeds, but make sure there are enough seeds for each student to plant about three of them in a cup)
 - 7. Medium-sized cups (one for each student if only doing vegetable seeds; if planting flower seeds also, each student needs two cups)
 - 8. Bag of soil (8 quarts is enough for a small class, use two bags if you have a class larger than twenty)
 - 9. Newspaper
 - 10. Spoons (one for each student)
 - 11. Water (about a half gallon)
 - 12. Copy paper (one for each student)
- C. Key Vocabulary
 - 1. *Spring* is the season that lasts from about March 21st to about June 21st.
 - 2. *Sprouting* is when plants being to grow and develop buds or shoots.

- 3. *Sap* is a watery fluid that circulates through a plant to carry nutrients to its different parts
- D. *Procedures/Activities*
 - 1. Tell the students that in spring, temperatures are not as cold as they are in winter, but not as warm as they are in summer. It is often muddy because the snow is melting. It can also be rainy and windy. Ask them where they think the earth is in position to the sun because of this. (*Earth is not tilted towards, or away from the sun.*)
 - 2. Show the students the position of the earth in spring using the globe and flashlight. Tell the students that the daytime and nighttime hours are also about the same. Ask them what other season they learned about that is like this along with the earth being in the same position in relation to the sun. (*Fall*)
 - 3. Read the "Spring" section of *Reasons for Seasons* by Gail Gibbons.
 - 4. Ask the students if they remember when spring starts. (*March 21st*)
 - 5. Using a yearly calendar, go through the months of March, April, May, and June (until the 21st) to show how long spring lasts. Mark the beginning and end of spring on the calendars.
 - 6. Tell the students that spring is a time when nature comes alive. Spring rains and warmer weather signal plants to begin sprouting, which means they begin growing from little buds or shoots. The sap, which is a liquid in trees that feeds the buds, begins to flow and this is when people tap the trees to make maple syrup. Plants are turning green again. This is the time of year that people plant their gardens and farmers plant their crops.
 - 7. Tell the students that as a spring ritual, they are going to plant some seeds. If you have a variety of seeds, let the students decide what type of seed they would like. I like to gather a variety of vegetable seeds and flower seeds that grow rather quickly- sprouting within a week. Then I let the students pick both a vegetable and a flower seed to plant.
 - 8. Divide the class into groups. One-half of the class will be drawing a picture of plants sprouting or people planting gardens or crops. Then they will write a sentence about the spring activity. The other half of the class will be planting their seeds. Give the group that is drawing first a piece of copy paper. Have them place their paper so that the longest sides are running horizontally.
 - 9. Take the other group that is planting seeds and have them come to the back table. Cover the table with newspaper. Hand each student a cup and a spoon. Show the students how to fill their cup about three-fourths full of soil using their spoon to dig the soil out of the bag. Then have them make a tiny hole in the center of the soil about a quarter inch deep. Place the seed in the hole and then cover it with soil. Water the soil to get it good and damp, but do not flood it. Have the students place the cup in a sunny spot in the classroom, preferably on a sunny windowsill.
 - 10. Then that group of students can go back to their seat to draw and the other group can plant their seeds.
 - 11. Have the students paste their picture to the month of April.
- E. Assessment/Evaluation
 - 1. Students will draw a picture and write a sentence about plants in spring.

Lesson Eleven: Spring, Part 2 (30 minutes)

- A. Daily Objectives
 - 1. Concept Objective(s)
 - a. Students will understand that each season has identifiable characteristics.

- b. Students will recognize the effects each season has on plant, animals, and human activities.
- 2. Lesson Content
 - a. Seasonal Cycles
 - i. The four seasons and earth's orbit around the sun (one year)
 - a) Spring: sprouting, sap flow in plants, mating and hatching
 - b. Poetry
 - i. Bee! I'm expecting you (Emily Dickinson)
- 3. Skill Objective(s)
 - a. Students will identify how animals' behaviors change as the seasons change.
- B. Materials
 - 1. Appendix I: Bee! I'm Expecting You! Poem (one for each student)
 - 2. Loose-leaf notebook paper (one for each student)
 - 3. Appendix J: Reply Letter (one for each student)
 - 4. Student calendars (from Lesson Ten)
 - 5. *Book of the Seasons* by Usborne Books
- C. Key Vocabulary
 - 1. *Personification* is giving human traits to non-human things.
- D. Procedures/Activities
 - 1. Tell the students that animals are very busy during the season of spring. Animals that have been hibernating wake up. Animals that migrated in the fall are now returning. Insects are making nests and having babies. Spring is a time of rebirth.
 - 2. Read "Spot the babies" on pages 28 and 29 in the *Book of the Seasons*. Read about the variety of animals that have their babies in the spring.
 - 3. Tell the students that not only are animals active in spring, but so are insects.
 - 4. Read the poem in Appendix I, and ask students the following questions:
 - a. In what form is this poem written? (A letter)
 - b. Who is writing the letter? (*Fly*)
 - c. Who is Fly writing the letter to? (*Bee*)
 - d. What does Fly write to Bee about? (*Fly tells Bee what he sees going on around him and that he hopes to see him soon.*)
 - e. What does Fly describe in his letter that are signs of spring? (*Fly says* that bees are expected to return, frogs are active again, birds are returning, and the clover is growing thick.)
 - f. Where have the bees, birds, and frogs been? (*They migrated to warmer places during the winter.*)
 - 5. Tell the students that the author Emily Dickinson used personification in her poem. Personification is making non-human things act human. In what ways does the author show that in her poem? (*She has the fly writing a letter and using action words like "was saying" and "I'm expecting you."*.)
 - 6. Tell the students that in they are going to write a reply to Fly's letter, pretending that they are Bee. Tell the students that they need to write to Fly about what they (as Bee) have been up to while they were away. First, they need to think about where Bee may have migrated. Remember that they migrated to somewhere warm for the winter. What kinds of things did they do or see while they were away? Some bees, like the queen bumblebee, hibernate in the soil. What things are they looking forward to back home for spring? Remind the students that they

are writing to Fly from the standpoint of Bee, not a student. Students my write their letter in the form of a poem or a regular letter.

- 7. Have students write their letter on a piece of wide ruled loose-leaf notebook paper. Then, after editing it, make their final copy in Appendix J.
- 8. Have the students paste both letters to the month of May. Fly's letter should be pasted on the left and their letter, or Bee's letter, should be on the right.
- E. Assessment/Evaluation
 - 1. Students will write a letter from the standpoint of an insect that is returning from migration or hibernation.

Lesson Twelve: Spring, Part 3 (25 minutes)

- A. Daily Objectives
 - 1. Concept Objective(s)
 - a. Students will understand that each season has identifiable characteristics.
 - b. Students will recognize the effects each season has on plant, animals, and human activities.
 - 2. Lesson Content

a.

- The four seasons and earth's orbit around the sun (one year)
 - i. Spring: sprouting, sap flow in plants, mating and hatching
- 3. Skill Objective(s)
 - a. Students will identify how human activities are affected by the changing of the seasons.
- B. *Materials*

C.

- 1. Student calendars (from Lesson Eleven)
- 2. Copy paper (two half-sheets for each student)
- Key Vocabulary
 - None
- D. *Procedures/Activities*
 - 1. Tell the students that you are going to go through each month of spring and they are going to think about the different kinds of activities that go on during these months. List the activities on the board as the students come up with them. Activities you might list are:
 - a. Kids fly kites.
 - b. People plant gardens.
 - c. Farmers plant crops.
 - d. Easter
 - e. May Day
 - f. People go on Spring break.
 - 2. Mark holiday, student birthdays, and special events that happen during the winter months on the calendars.
 - 3. Tell the students they are going to make two pictures for the calendar months of March and June showing activities that go on during these months. Students need to write a sentence at the bottom of each page explaining the spring activities.
 - 4. Have the students glue one sheet to the right side of the month of March. Glue the other sheet to the left side of June.
- E. Assessment/Evaluation
 - 1. Students will draw pictures and write sentences about activities people do in spring.

Lesson Thirteen: Spring, Part 4 (30 minutes)

- A. Daily Objectives
 - 1. Concept Objective(s)
 - a. Students will understand that each season has identifiable characteristics.
 - b. Students will recognize the effects each season has on plant, animals, and human activities.
 - 2. Lesson Content
 - a. The four seasons and earth's orbit around the sun (one year)
 - b. Seasons and life processes
 - i. Spring: sprouting, sap flow in plants, mating and hatching
 - 3. Skill Objective(s)
 - a. Students will find articles from newspapers and magazines that relate to the season being studied and will explain what characteristic of the season it relates to through discussion and writing.
- B. Materials

C.

- 1. Students' newspaper clippings
- 2. Appendix B: Article Rubric (for teacher reference)
- Key Vocabulary

None

- D. Procedures/Activities
 - 1. Have the students take out their newspaper clippings and paragraphs. Tell the students that each of them will briefly share the article they found by telling what the article was about and how it relates to the season of spring.
 - 2. As each student finishes talking about his or her article, gather the articles for a grade.
 - 3. If there is time left over, ask students questions about spring to review for the test the following day. Tell the students to take home their spring folder to help them study for the test.
- E. Assessment/Evaluation
 - 1. Students will discuss the article that relates to spring and it will be graded according to the rubric in Appendix B.

Lesson Fourteen: Summer, Part 1 (30 minutes)

- A. Daily Objectives
 - 1. Concept Objective(s)
 - a. Students will understand that the seasons are caused by earth's tilt and its revolution around the sun.
 - b. Students will understand that each season has identifiable characteristics.
 - c. Students will recognize the effects each season has on plant, animals, and human activities.
 - 2. Lesson Content

b.

- a. The four seasons and earth's orbit around the sun (one year)
 - Seasons and life processes
 - i. Summer: growth
- 3. Skill Objective(s)
 - a. Students will identify what season the Northern Hemisphere is in when the earth is in a certain position around the sun.
 - b. Students will identify how plants are affected by the seasons.
- B. Materials
 - 1. World globe
 - 2. Flashlight

- 3. Stool (backless)
- 4. Student calendars (from Lesson Twelve)
- 5. *The Reasons for Seasons* by Gail Gibbons
- 6. Pressed flowers such as pansies, larkspur, or violets (three to four flowers needed for each student)
- 7. Pressed ferns and/or leaves (one of each for each student)
- 8. Liquid glue (one for each student)
- 9. Copy paper, blue or white (one for each student)
- 10. Butterfly and bee stickers (one of each for each student)
- 11. Laminate (for each student's picture)
- C. Key Vocabulary
 - 1. *Summer* is the season that lasts from June 21st to September 21st.
- D. *Procedures/Activities*
 - 1. Tell the students that in summer temperatures are the hottest they will be all year. Ask them where they think the earth is in position to the sun because of this. (*Earth is tilted towards the sun.*)
 - 2. Show the students the position of the earth in summer using the globe and flashlight. Tell the students that daytime hours are longer than nighttime hours.
 - 3. Read the "Summer" section of the book *Reasons for Seasons* by Gail Gibbons.
 - 4. Ask the students if they remember when summer starts. (*June 21st*) Mark the beginning and end of summer on the student calendars.
 - 5. Tell the students that summer is a time for growth. Plants that sprouted in the spring are blossoming in the summer. Bees, butterflies and other insects are hopping from flower to flower to gather nectar and pollinate the flowers. The leaves are making food for the plant. The plants are producing fruits.
 - 6. Tell the students that they are going to make a picture using the flowers that have blossomed.
 - 7. Give students a piece of copy paper and have them place it on their desk so that the longest sides are horizontal.
 - 8. Next walk around and give each student about three or four pressed flowers and a pressed leaf or fern. Have them first arrange the flowers and leaves on their paper the way they would like them. Then, have students dab a little glue on the back of each flower and leaf and glue them onto their paper.
 - 9. Give each student a butterfly and bee sticker to put somewhere on their picture to remind them that during the summer these insects are busy pollinating these flowers.
 - 10. Have the students write a sentence under their picture about what is happening to plants in summer.
 - 11. You can have the pages laminated or use plastic film such as plastic wrap or cupboard paper to put over the picture to protect it.
 - 12. Have the students glue this page to the July calendar.
- E. Assessment/Evaluation
 - 1. Monitor students as they write a sentence about what is happening to the plants in summer.

Lesson Fifteen: Summer, Part 2 (30 minutes)

- A. Daily Objectives
 - 1. Concept Objective(s)
 - a. Students will understand that each season has identifiable characteristics
 - b. Students will recognize the effects each season has on plant, animals, and human activities.

- 2. Lesson Content
 - a. Seasons and life processes
 - i. Summer: growth
- 3. Skill Objective(s)
 - a. Students will identify how animals' behaviors change as the seasons change.
- B. *Materials*
 - 1. Student calendars (from Lesson Fourteen)
 - 2. Crayons (for each student)
 - 3. Loose-leaf notebook paper (one for each student)
- C. Key Vocabulary

None

- D. Procedures/Activities
 - 1. Tell the students that in summer animals are busy taking care of their families and babies that were born in the spring. By the end of the summer, baby animals have become adults and are surviving on their own. Bird choruses may have quieted in July because they are busy raising their young.
 - 2. Tell the students they are going outside on a little nature walk. Ask they go on their walk, they need to observe what animals and insects are doing. Their goal is to make as long of a list as they can of what they observe these creatures doing. Tell the students they need to take a pencil and either a hard binder or book so they can put the paper on it to write easier.
 - 3. Give each student a sheet of loose-leaf notebook paper and go outside. You may want to remind students of rules such as they are to watch, not touch. Students also need to keep quiet so they don't scare away the animals and insects.
 - 4. After about fifteen minutes, return to the classroom and discuss what they observed the creatures doing.
 - 5. Give the students the copy paper and have them draw a picture of what they observed and write a sentence about it.
 - 6. Have the students glue it to the month of August.
- E. Assessment/Evaluation
 - 1. Monitor students as they draw a picture and write a sentence about what animals and insects are doing in summer.

Lesson Sixteen: Summer, Part 3 (25 minutes)

- A. Daily Objectives
 - 1. Concept Objective(s)
 - a. Students will understand that each season has identifiable characteristics.
 - b. Students will recognize the effects each season has on plant, animals, and human activities.
 - 2. Lesson Content
 - a. Seasonal Cycles
 - Seasons and life processes
 - a) Summer: growth
 - b. Poetry

i.

- i. Bed in Summer (Robert Louis Stevenson)
- 3. Skill Objective(s)
 - a. Students will identify how human activities are affected by the changing of the seasons.
- B. Materials
 - 1. Appendix L: Bed in Summer Poem (one for each student)

- 2. Whiteboard and markers
- 3. Copy paper (half-sheet for each student)
- 4. Crayons (for each student)
- 5. Scissors (for each student)
- 6. Student calendars (from Lesson Fifteen)
- C. Key Vocabulary
 - None

1

- D. Procedures/Activities
 - Tell the students that you are going to go through each month in summer and they are to thing about the different kinds of activities that go on during these months. List the activities on the board as the students come up with them. Activities you might list are:
 - a. Families ride their bikes.
 - b. Families go on vacations together.
 - c. People celebrate the 4th of July.
 - d. People eat lots of ice cream.
 - e. People go swimming or to the beach.
 - f. Families go camping.
 - g. People play outdoor games like volleyball.
 - h. People play golf.
 - 2. Mark the holidays, student birthdays, and special events that happen during the summer months on the student calendars.
 - 3. Tell the students that they are going to make a picture for the calendar month of June showing activities that people do during the summer.
 - a. Why is the girl in the poem upset? (*She has to go to bed when it is still light out.*)
 - b. Why is the girl in bed if it is not dark outside? (*In summer, daylight hours last longer than night hours.*)
 - c. What would the girl rather be doing? (*She would rather be playing*.)
 - d. What does she hear people doing? (*She hears people walking in the street.*)
 - e. How many of you go to bed when it is still light outside?
 - 4. Give each student a copy of Appendix L. Read the poem aloud and discuss it.
- E. Assessment/Evaluation
 - 1. Monitor students as they draw a picture and write a sentence about what people do in summer.

Lesson Seventeen: Summer, Part 4 (30 minutes)

- A. Daily Objectives
 - 1. Concept Objective(s)
 - a. Students will understand that each season has identifiable characteristics.
 - b. Students will recognize the effects each season has on plant, animals, and human activities.
 - 2. Lesson Content
 - a. Seasons and life processes
 - i. Summer: growth
 - 3. Skill Objective(s)
 - a. Students will find articles from newspapers and magazines that relate to the season being studied and will explain what characteristic of the season it relates to through discussion and writing.

- B. Materials
 - 1. Students' newspaper clippings
 - 2. Appendix B: Article Rubric (for teacher reference)
- C. *Key Vocabulary*

None

- D. *Procedures/Activities*
 - 1. Have the students take out their newspaper clippings and paragraphs. Tell the students that each of them will briefly share the article they found by telling what the article was about and how it relates to the season of summer.
 - 2. As each student finishes talking about his or her article, gather the articles for a grade.
 - 3. If there is time left over, ask students questions about summer to review for the test the following day. Tell the students to take home their calendars to help them study for the test. Remind them to return them the next day.
- E. Assessment/Evaluation
 - 1. Students will discuss the article that relates to summer and it will be graded according to the rubric in Appendix B.

VI. CULMINATING ACTIVITY

- A. Students will take a test over each season that is studied. Each season takes about four days, with the fifth day being the day the season test should be given. You can find the season tests in the Appendices listed under "HANDOUTS/WORKSHEETS."
- B. Students will create a poster for each season that is studied. See Appendix C.
- C. You may use Appendix N as a test over all the seasons that were studied through the year. Use the student calendars as a review by going through each month and talking about what characteristics each season holds. You may also use the "What Season Am I?" riddles in Appendix O as a season review. To use these riddles, copy each riddle on an index card. Put the students into groups. Give each group a copy of the riddles and pass out the cards so that each person the group has a few. Each student will go around and read their riddle to the rest of the group. The rest of the students in the group have to guess what season fits the description in the riddle. The student that gets the answer correct gets the card. If no one gets the answer correct, the student in the end with the most cards wins.

VII. HANDOUTS/WORKSHEETS

- A. Appendix A: Student Calendar Directions
- B. Appendix B: Article Rubric
- C. Appendix C: Seasons Poster Rubric
- D. Appendix D: Parent Letter
- E. Appendix E: Something Told the Wild Geese Poem
- F. Appendix F: Fall Test
- G. Appendix G: The Night Before Christmas Poem
- H. Appendix H: Winter Test
- I. Appendix I: Bee! I'm Expecting Your! Poem
- J. Appendix J: Reply Letter
- K. Appendix K: Spring Test
- L. Appendix L: Bed in Summer Poem
- M. Appendix M: Summer Test
- N. Appendix N: Seasons Review
- O. Appendix O: What Season Am I? Riddles

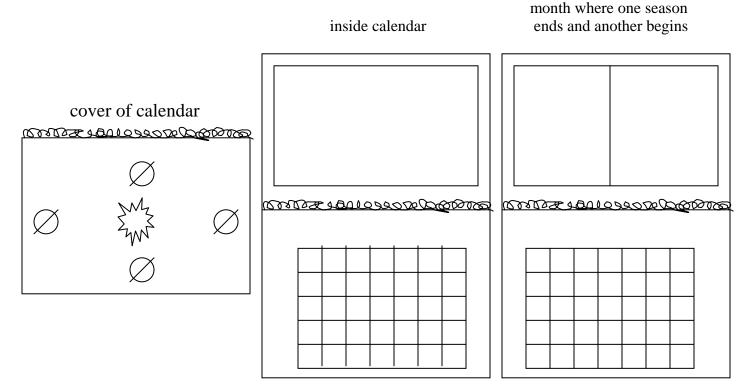
VIII. BIBLIOGRAPHY

- A. *The Big Book of Nature Projects*. New York, NY: Thames and Hudson, Inc., 1997 ISBN 0-500-01773-5
- B. Blackaby, Susan. *Catching Sunlight*. Minneapolis, MN: Picture Window Books, 2003, ISBN 1-4048-0111-1
- C. Darby, Gene. *What Is A Season?* Chicago, Ill.; Benefic Press, 1960, ISBN 59-8830
- D. Gibbons, Gail. *The Reasons for Seasons*. New York; Holiday House, 1995, ISBN 0-8234-1174-5
- E. Esbensen, Barbara Jester. *Swing Around the Sun*. Minneapolis, MN: Carolrhoda Books, Inc., 2003 ISBN 0-87614-143-2
- F. Hirsch, E.D., Jr. *What Your Second Grader Needs to Know*. New York: Dell Publishing, 1998, ISBN 0-385-31843-X
- G. *Holidays and Seasonal Celebrations*, Issue 6. Carthage, Ill.; Teaching and Learning Co., 1996
- H. Horsfall, Jacqueline. *Play Lightly on the Earth*. Nevada City, CA: DAWN Publications, 1997, ISBN 1-883220-68-8
- I. *Instructor*, March 2001. Scholastic
- J. Iverson, Diane. *Discover the Seasons*. Nevada City, CA: DAWN Publications, 1996, ISBN 1-883220-43-2
- K. Leslie, Clare Walker. *Nature All Year Long*. New York: Greenwillow Books, 1991, ISBN 0-688-09183-0
- L. Milord, Susan. *The Kids' Nature Book*. Charlotte, VT: Williamson Publishing, 1996, ISBN 1-885593-07-4
- M. *Project Learning Tree: Environmental Education Activity Guide*. Washington, D.C.: American Forest Foundation, 1993, 1994, 1995
- N. Riley, Peter. *Seasons*. Milwaukee, WI: Gareth Stevens Publishing, 2004, ISBN 0-8368-3719-3
- O. Usborne. Book of the Seasons. Tulsa, OK, ISBN 0-7460-4221-3

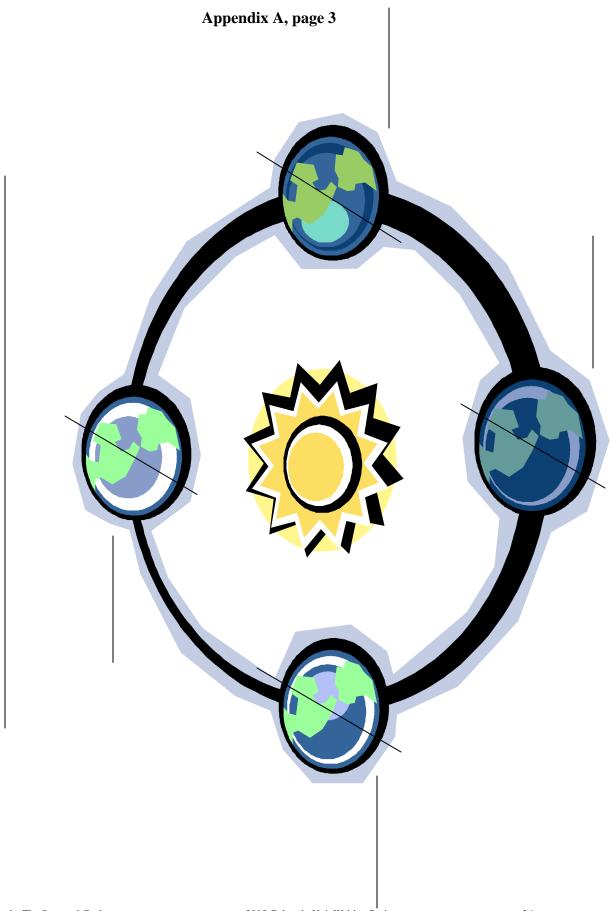
Appendix A, page 1

In this unit, students are going to complete a calendar for the year. As each season is studied, students will add pictures to the months of the season. These pictures will show characteristics that each season holds. Before beginning this unit, the calendar pages need to be put together. All twelve months will be apart of the calendar. You will need to label the month, dates, and days of the week for each month. This will take some time. Use the spreadsheet on the following Appendix as a template for each month. Make a copy of Appendix A, page 3 for the cover of the calendar. Then, make a copy of the months and the cover for each student and bind it. If there is not enough time to bind the pages for each student, you may have the students put the pages in a small binder or folder with clips instead. When the last season is studied, the students should have a calendar filled with pictures of the seasons throughout the year. I have the students draw on copy paper and then glue the pictures to the calendar rather than draw directly on the calendar. This way, if the student makes any kind of mistake, it is easier to correct than if it were directly on the calendar. You may also have the students tape pictures of themselves on the calendar months of each season.

Because the seasons do not start and the very beginning of a month or end at the very end of a month, I divide those months in half on the pictures. Half of a month will show something from one season; the other half of the month will show something from the following season. Feel free to alter the calendar activities as you see fit. See the diagram below as a reference for what the calendar should look like.



Appendix A, page 2						



Appendix B, page 1

In the News...

This activity should be assigned for each season that is studied. Students are to find one article in a newspaper or magazine that relates to the season being studied. They are to cut the article out, paste it to Appendix B, page 2, and write a brief paragraph that summarizes what the article is about and how it relates to the season being studied. For example, if summer is the season being studied, students might find an article that talks about places to camp or tips for a safe camping trip, the occurrence of forest fires due to drought or lightening, a new water park or amusement park going up, etc... anything that relates to the activities or topics on the season. This activity is intended to get the students aware of how the seasons affect people and the environment. It is to be used as a grade for each season. See the rubric below for how to grade this assignment.

	3	2	1
Newspaper Article	Article is directly related to the season being studied.	Article somewhat relates to the season being studied, but could the topic or event described could happen in any season.	Article does not relate to the season being studied.
Content of Paragraph	Student paragraph does a great job of summarizing what the article is about and how it relates to the season being studied.	Student paragraph is weakly written. It either weakly summarizes the main idea of the article <i>or</i> weakly explains how it relates to the season.	Student paragraph does not summarize the article <i>and/or</i> does not tell how it relates to the season.
Organization of Paragraph	Paragraph includes a topic sentence, at least three detail sentences, and a conclusion.	Paragraph is mostly complete, but is missing a topic sentence, a detail sentence, or a conclusion.	Paragraph is not complete. It is missing more than one of the required elements.
Mechanics of Paragraph	Paragraph is neatly written and there very few spelling, capitalization, or punctuation mistakes.	Paragraph is not written as neatly as student has potential for. It contains some spelling, capitalization, and punctuation mistakes that student should have caught.	Paragraph is hard to read and contains several spelling, capitalization, and punctuation mistakes. Student seems to have put in little effort to write a good paragraph.

Total Points: ____/ 12 Comments:

NAME: _____

In the News...

Find an article that relates to the season being studied in class. Paste or tape the article below. On the lines at the bottom of this page, write a paragraph that summarizes what the article is about and explains how the article relates to that season. The paragraph should have a topic sentence, at least three detail sentences, and a conclusion.

(Paste article here.)

Appendix C

Seasons Posters

For each season that is studied, students are to create a poster that displays characteristics belonging to that season. Students may draw the pictures, tape photographs, or cut out the pictures from newspapers or magazines. Each poster needs the following:

* The season needs to be written somewhere on the poster neatly and clearly.

* The student needs to draw two events and/or holidays that happen during the season or activities

that people do during that season. Each picture needs to have one short sentence describing it.

* The student needs to draw two things animals do during the season. Each picture needs to have one short sentence describing what the animal is doing.

* The student needs to draw one thing that plants do during the season. A short sentence needs to be written about the picture.

* The student needs to draw one picture of what people would wear during that season. A short sentence is needed to describe what is worn.

* The students also need to include a temperature chart and a sentence about the weather during this season.

	2	1	0
Season	Season is neatly labeled and	Season is not neatly labeled or	Season is not labeled.
	clearly displayed on the	clearly displayed on the	
	poster.	poster.	
Events,	Student lists 2 events or	Student either has only one	Student does not have any
Holidays,	activities that happen during	event or activity, or does not	events or activities that
Activities	the season with a short	have sentences describing	happen during the season.
Acuvities	sentence describing each.	each.	
Animals	Student lists 2 things animals	Student either has only one	Student does not include
	do during the season with a	thing animals do or does not	anything that animals do
	sentence for each.	have a sentence for each	during the season.
		drawing.	
Plants	Student has a picture of what	Student either does not have a	Student does not include
	happens to plants during the	picture of the plants or does	anything about what happens
	season with a sentence to	not have a sentence for it.	to plants during the season.
	describe it.		
Clothing	Student has a drawing of what	Student either does not have a	Student does not include
0	people wear with a sentence	picture of what people wear or	anything about what people
	describing it.	a sentence for it.	wear during the season.
Weather	Student has both a	Student has either a sentence	Student does not include a
	temperature chart and a	or a temperature chart about	sentence or temperature chart
	sentence about the weather	what the weather is like during	for the season.
	during the season.	the season.	
Neatness	Student obviously took extra	The poster is readable and can	Student seems to have not put
	time to make the poster	be understood.	it much effort. The poster is
	attractive. It is easy to read		difficult to read and
	and understand.		understand.

Use the rubric below for grading the poster.

Total: ____/ 14 Comments:

Appendix D

Dear Parents,

In science, students are beginning the study of the seasons. The first unit we will focus on is fall, because we are heading into the season of fall. As each season comes closer, we will learn about that season. Each season studied will take about a week. For each season being studied, there are two projects for each student to complete.

One project your child is to complete will be using newspapers and/or magazines. Your child is to find an article in the paper that relates to the season that the child is studying in school. The purpose of this project is to make students aware of the signs of the seasons in their surroundings and how the seasons affect plants, animals, and human activity. Because fall is the first season your child will study, he or she needs to find a current article in either the newspaper or a magazine that relates to fall. The article might be about plants, animals, or activities that people do in the fall. It might be about the change in weather, the changing of the colors of the leaves on trees and the best place to see this, or an article that relates to activities that happen in the fall such as a festival, Halloween, or Thanksgiving. Students are required to cut out the article and tape it to another paper (given by teacher) where he or she has to write a brief paragraph that explains what the article is about and how it relates to the season being studied. The paragraph needs to include a topic sentence, at least three detail sentences, and a conclusion. The project on finding a season article is due the day before the test date.

In the other project, the student is to create a poster about the season being studied. Students will receive a large piece of construction paper from the teacher to use for their poster. The poster needs to include the following:

* The season needs to be written somewhere on the poster neatly and clearly.

* The student needs to draw two events and/or holidays that happen during the season or activities that people do during that season. Each picture needs to have one short sentence describing it.

* The student needs to draw two things animals do during the season. Each picture needs to have one short sentence describing what the animal is doing.

* The student needs to draw one thing that plants do during the season. A short sentence needs to be written about the picture.

* The student needs to draw one picture of what people would wear during that season. A short sentence is needed to describe what is worn.

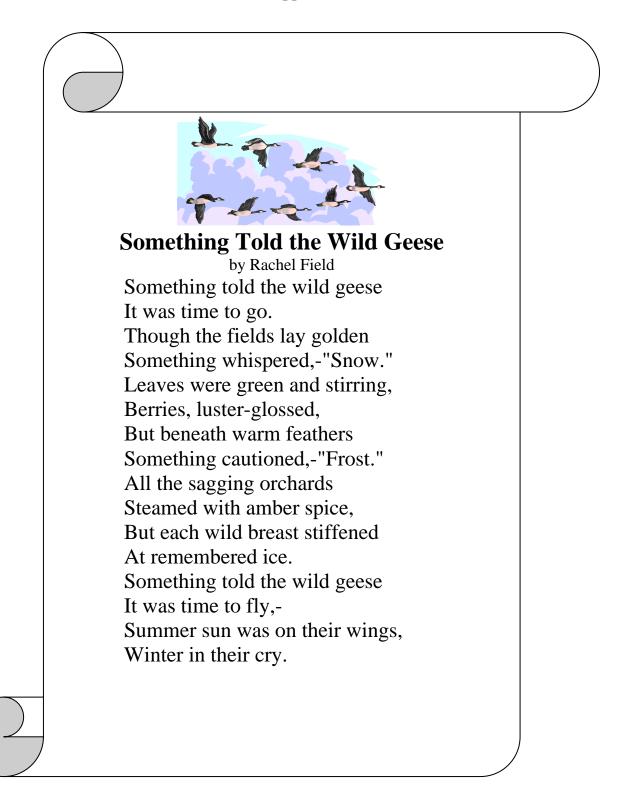
* The students also needs to included either a sentence about what the weather is like during this season or a temperature chart showing what the normal temperatures are for the season.

For this poster, students may draw and color the pictures themselves or cut out the pictures from a magazine or newspaper. The purpose of this project is for students to show what they have learned. It also serves as a form of study guide for the test. The project on the season poster is due the day of the test.

If you have any questions about either of these projects, please let me know. Please remember that these projects are part of a grade, but also, have fun with them! Thank you for your attention,

Miss Ranniger

Appendix E



NAME:

Fall Test

Circle the letter of the correct answer.

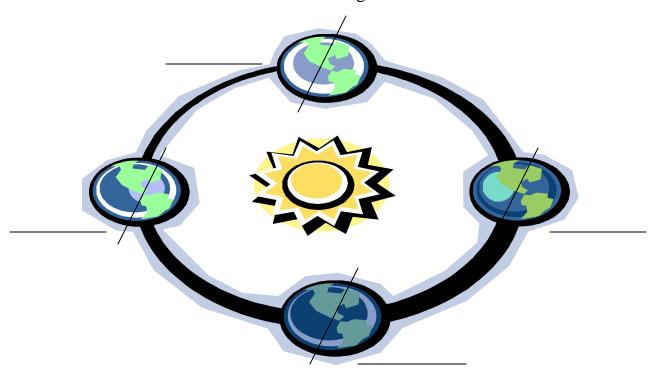
- 1. Another name for fall is:
 - a. Spring
 - b. Summer
 - c. Autumn
- 2. During fall, the earth is ______ the sun.
 - a. tilted neither towards, nor away from, the sun
 - b. tilted towards the sun
 - c. tilted away from the sun
- 3. Fall starts around _____ and ends around December 21^{st} .
 - a. January 21st
 - b. September 21st
 - c. May 21^{st}

4. A time when farmers pick their ripened crops is called ______.

- a. planting
- b. harvest
- c. gardening
- 5. Some animals ______ in the fall to find a place with warmer weather and to find food.
 - a. migrate
 - b. hibernate
 - c. harvest
- 6. Leaves on trees begin to change color due to less ______.
 - a. wind
 - b. rain
 - c. sunlight
- 7. Name three activities or events that people do or participate in, in the fall. Write your answers in complete sentences.

Appendix F, page 2

- 8. Name three things animals do in the fall to prepare for winter. Write your answers in complete sentences.
- 9. Write the each season where it belongs on the lines below.



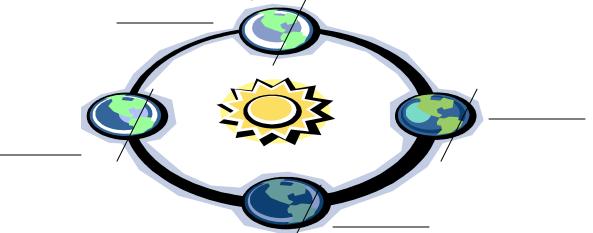
Fill in the blanks with the correct answer using the box below. Not all the words or numbers will be used.

	hours	4	year	8	minutes	365	
10.	There are seasons in a year.				in a year.		
11.	The earth takes one			to revolve around the sun.			
12.	There are			days in a year.			
13.	There are	e 24				in a day.	

Appendix F, page 3 Fall Test Answer Key

Circle the letter of the correct answer.

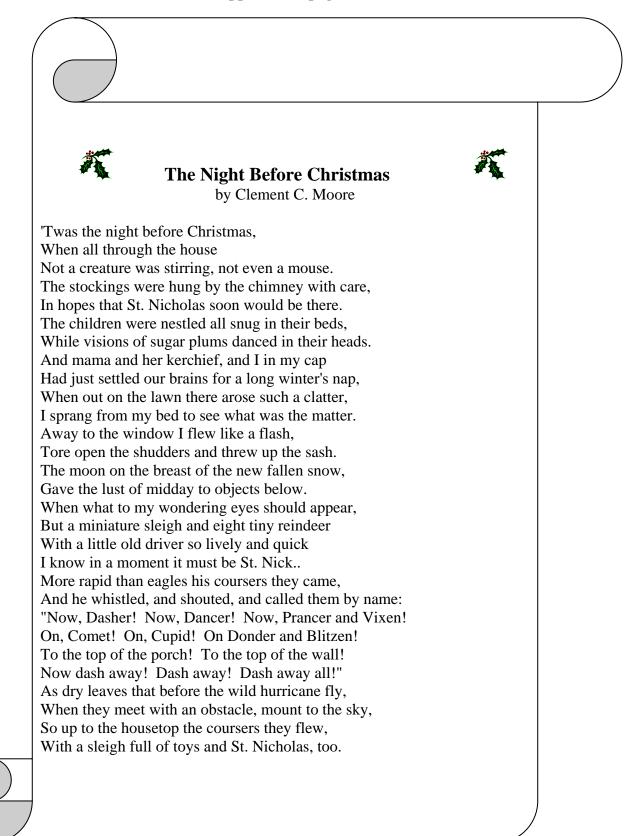
- 1. Another name for fall is:
 - c. Autumn
- During fall, the earth is _____ the sun.
 a. tilted neither towards, nor away from, the sun
- Fall starts around ______ and ends around December 21st.
 September 21st
- 4. A time when farmers pick their ripened crops is called ______.b. harvest
- 5. Some animals ______ in the fall to find a place with warmer weather and to find food. a. migrate
- Leaves on trees begin to change color due to less ______.
 sunlight
- Name three activities or events that people do or participate in, in the fall. Write your answers in complete sentences.
 <u>Answers will vary: Kids go back to school. People rake leaves and kids jump in them. Kids carve pumpkins and go trick or treating. Thanksgiving is celebrated. Crops are harvested. Kids play football.</u>
- 8. Name three things animals do in the Fall to prepare for winter. Write your answers in complete sentences. Some animals migrate to warmer places. Many animals grow thick fur coats and store food.
- 9. Write the each season where it belongs on the lines below.



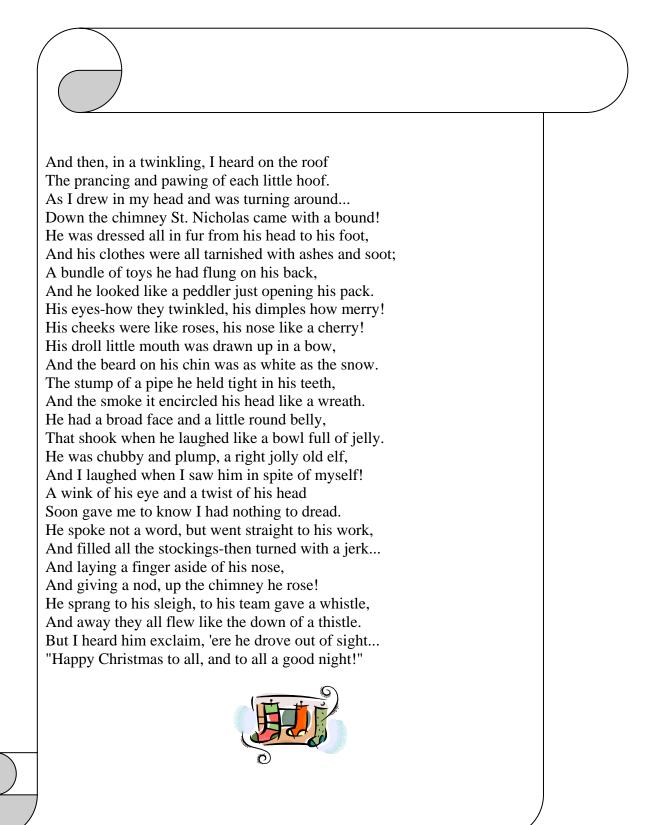
Fill in the blanks with the correct answer using the box below. Not all the words or numbers will be used. 10. There are 4 seasons in a year.

- 11. The earth takes one year to revolve around the sun.
- 12. There are $\underline{365}$ days in a year.
- 13. There are 24 hours in a day.

Appendix G, page 1



Appendix G, page 2



Appendix H

NAME:

Winter Test

Circle the letter of the correct answer.

- 1. During winter, the earth is ______ the sun.
 - a. tilted neither towards, nor away from, the sun
 - b. tilted towards the sun
 - c. tilted away from the sun
- 2. In winter, daytime is ______ nighttime.
 - a. longer than
 - b. shorter than
 - c. the same as

3. Winter starts around ______ and ends around March 21st.

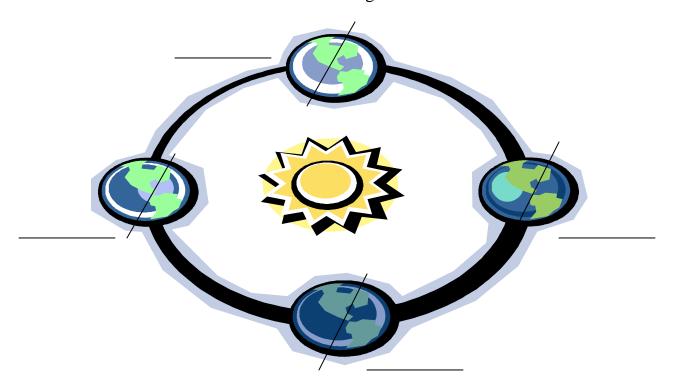
- a. December 21st
- b. September 21st
- c. $\operatorname{May} 21^{\mathrm{st}}$

4. In winter, many plants like trees become dormant. This means they _____.

- a. die
- b. stop growing
- c. sprout
- 5. Some animals _____ in winter. This means they go into a sleep-like state.
 - a. are born
 - b. migrate
 - c. hibernate
- 6. Name three activities or events that people do or participate in, in the winter. Write your answers in complete sentences.

Appendix H, page 2

- 7. Name three ways animals survive in winter. Write your answers in complete sentences.
- 8. Write the each season where it belongs on the lines below.

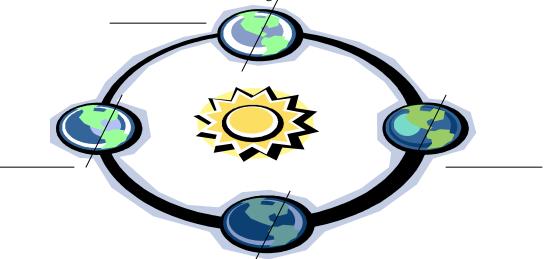


10. There are 24 in a day. 11. There are seasons in a year.		hours	4	year	8	minutes	365
11. There are seasons in a year.	9.	There ar	re			days in	a year.
	10.	There ar	re 24			in	a day.
12. The earth takes one to revolve an	11.	There ar	re			seasons	in a year.
	12.	The eart	th takes	one			to revolve a

Appendix H, page 3 Winter Test Answer Key

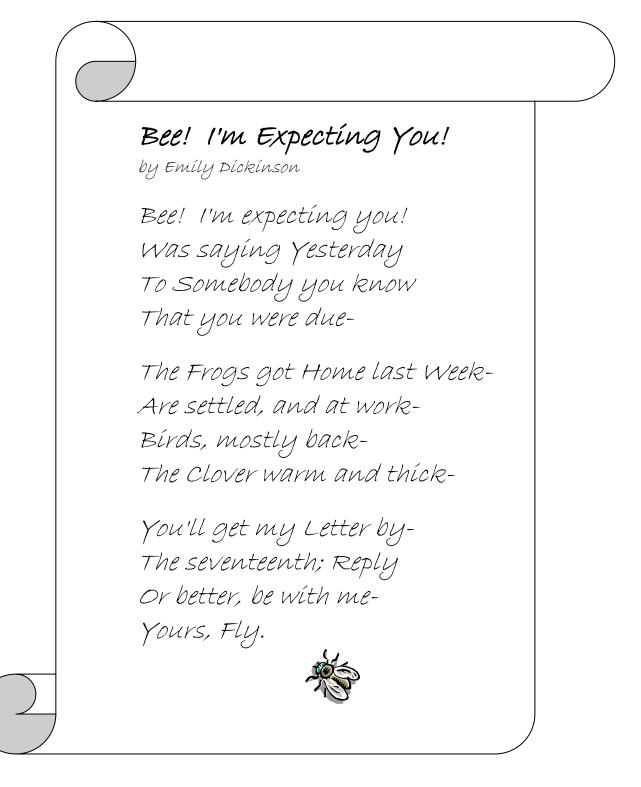
Circle the letter of the correct answer.

- During winter, the earth is ____ the sun.
 c. tilted away from the sun
- In winter, daytime is _____ nighttime.
 b. shorter than
- 3. Winter starts around $__$ and ends around March 21^{st} . a. December 21^{st}
- 4. In winter, many plants like trees become dormant. This means they ____.b. stop growing
- Some animals ____ in winter. This means they go into a sleep-like state.
 c. hibernate
- Name three activities or events that people do or participate in, in the winter. Write your answers in complete sentences.
 <u>Answers will vary. Many people go skiing, ice skating, and snowmobiling. Many kids go sledding and make snowmen. Christmas, New Year's, and Valentine's Day are celebrated.</u>
- 7. Name three ways animals survive in winter. Write your answers in complete sentences. <u>Many animals grow thick coats and some change the color of their coats to match their</u> <u>surroundings. Some animals hibernate.</u>
- 8. Write the each season where it belongs on the lines below.



- 9. There are $\underline{365}$ days in a year.
- 10. There are 24 <u>hours</u> in a day.
- 11. There are $\underline{4}$ seasons in a year.
- 12. The earth takes one <u>year</u> to revolve around the sun.

Appendix I



Appendix J

Dear Fly,	(date)	
	/	

adapted from Instructor, March 2001

Appendix K

NAME:

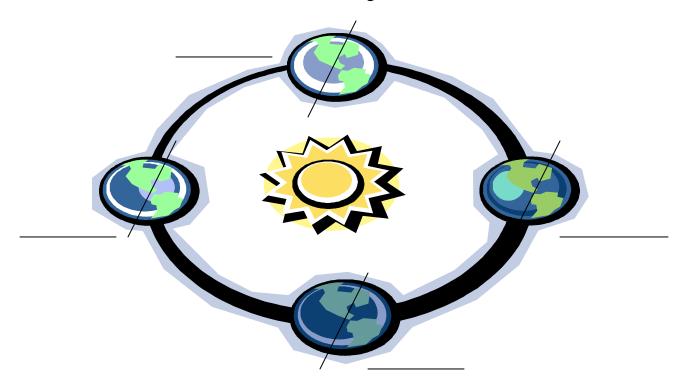
Spring Test

Circle the letter of the correct answer.

- During spring, the earth is ______ the sun. 1. tilted neither towards, nor away from, the sun a. tilted towards the sun b. tilted away from the sun c. In spring, daytime is ______ nighttime. 2. longer than a. shorter than b. c. the same as Spring starts around ______ and ends around June 21st. 3. a. December 21st September 21st b. March 21st c. In spring, many plants like trees begin to _____. 4. a. die stop growing b. sprout c. 5. Some animals ______ in spring. are born a. migrate b. c. hibernate
- 6. Name three activities or events that people do or participate in, in the spring. Write your answers in complete sentences.

Appendix K, page 2

- 7. Name three things animals do in spring. Write your answers in complete sentences.
- 8. Write the each season where it belongs on the lines below.

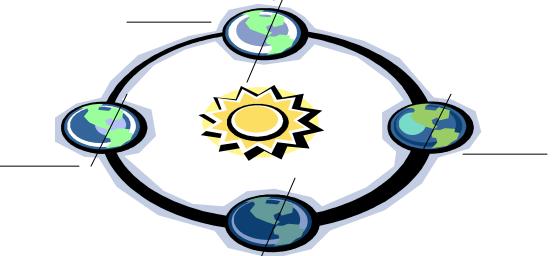


	hours	4	year	8	minutes	365	
9.	There are					_ days in a yea	r.
10.	The earth	takes	one			to revolve a	round the sun.
11.	There are	24				in a day	/.
12.	There are				seasons	in a year.	

Appendix K, page 3 Spring Test Answer Key

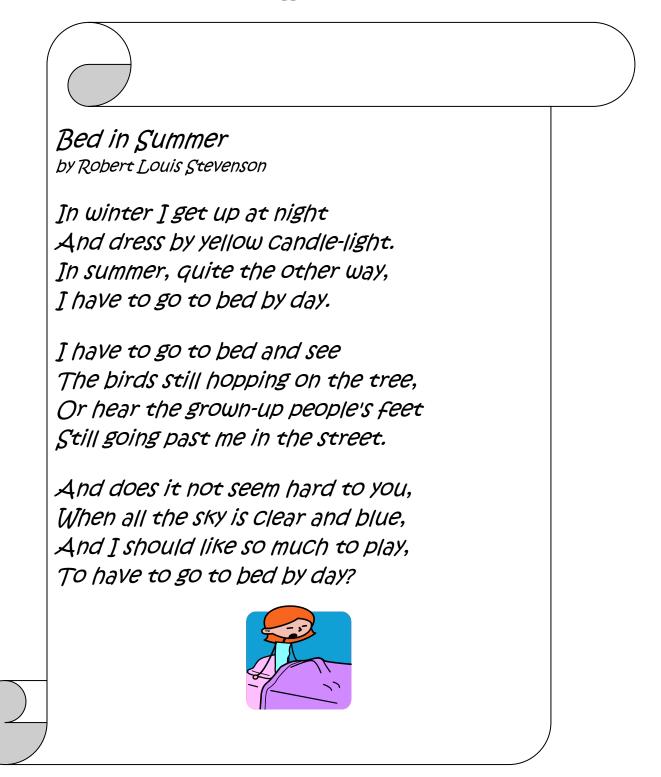
Circle the letter of the correct answer.

- During spring, the earth is ____ the sun.
 a. tilted neither towards, nor away from, the sun
- In spring, daytime is _____ nighttime.
 c. the same as
- Spring starts around _____ and ends around June 21st.
 March 21st
- 4. In spring, many plants like trees begin to ____.c. sprout
- 5. Some animals ____ in spring. a. are born
- Name three activities or events that people do or participate in, in the spring. Write your answers in complete sentences.
 <u>Answers will vary. Kids fly kites. People plant gardens. Farmers plant crops. People celebrate Easter and May Day. People go on Spring break.</u>
- Name three things animals do in spring. Write your answers in complete sentences. Animals return from where they migrated. Animals wake up from hibernation. Many animals are mating; babies are being born and are hatching.
- 8. Write the each season where it belongs on the lines below.



- 9. There are $\underline{365}$ days in a year.
- 10. The earth takes one <u>year</u> to revolve around the sun.
- 11. There are 24 <u>hours</u> in a day.
- 12. There are $\underline{4}$ seasons in a year.

Appendix L



Appen	dix	\mathbf{M}
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NAME:

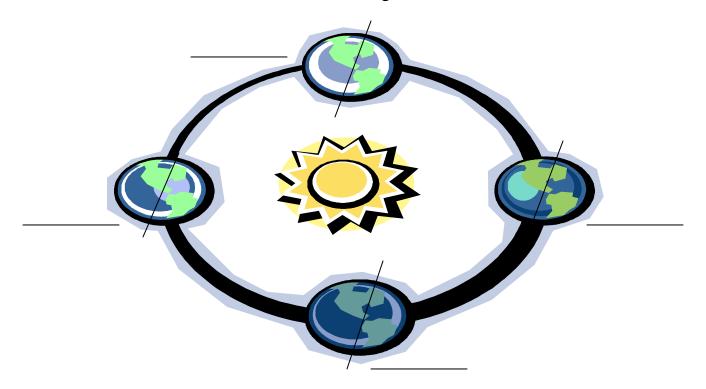
Summer Test

Circle the letter of the correct answer.

- During summer, the earth is ______ the sun. 1. tilted neither towards, nor away from, the sun a. tilted towards the sun b. tilted away from the sun c. In summer, daytime is ______ nighttime. 2. longer than a. shorter than b. c. the same as Summer starts around ______ and ends around September 21st. 3. a. December 21st b. June 21st March 21st c. In summer, plants are ______. 4. dormant a. growing b. migrating c. 5. Animals are ______ in summer. growing and raising their families a. migrating b. hibernating c.
- 6. Name three activities or events that people do or participate in, in the summer. Write your answers in complete sentences.

Appendix M, page 2

- 7. Name three things animals do in summer. Write your answers in complete sentences.
- 8. Write the each season where it belongs on the lines below.

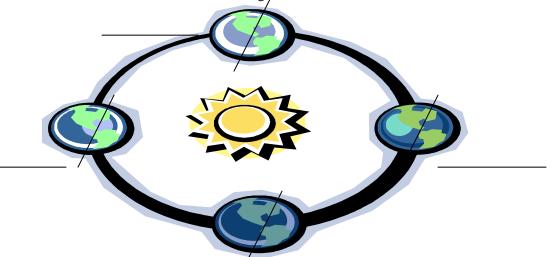


	hours	4	year	8	minutes	365	
9.	There are	e				days in a y	ear.
10.	The earth	takes	one			to revolve a	round the sun.
11.	There are					_ seasons in a y	year.
12.	There are	24				in a day.	

Appendix M, page 3 Summer Test Answer Key

Circle the letter of the correct answer.

- During summer, the earth is ____ the sun.
 tilted towards the sun
- In summer, daytime is _____ nighttime.
 a. longer than
- Summer starts around _____ and ends around September 21st.
 June 21st
- 4. In summer, plants are ____.b. growing
- 5. Animals are ____ in summer. a. growing and raising their families
- Name three activities or events that people do or participate in, in the summer. Write your answers in complete sentences.
 Families ride their bikes and go on vacations together. People celebrate the 4th of July. People eat lots of ice cream. They go swimming or to the beach. Families go camping. People play outdoor games like volleyball and golf.
- 7. Name two things animals do in summer. Write your answers in complete sentences. Animals grow and raise their families.
- 8. Write the each season where it belongs on the lines below.

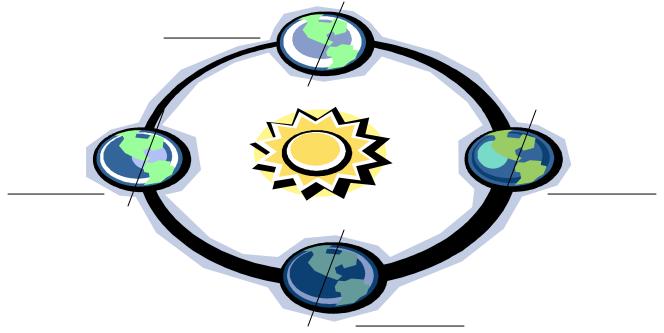


- 9. There are $\underline{365}$ days in a year.
- 10. The earth takes one <u>year</u> to revolve around the sun.
- 11. There are $\underline{4}$ seasons in a year.
- 12. There are 24 <u>hours</u> in a day.

NAME:

Seasons Review

Label each picture of the earth with the season it is in given its position around the sun.



Name the season on the line below its description.

In this season, the weather is the coldest it will be all year. Animals have thick winter coats and some are hibernating. Plants either have died or are dormant, except the evergreens. People are often staying indoors, with the exception of activities like skiing or sledding.

In this season, the weather is also mild and sometimes rainy. The animals are busy eating and storing food. Some are migrating. Leaves on the trees are changing color and falling off the trees. People are harvesting their crops.

In this season, the weather is mild, rainy, windy, and often muddy. The animals are having babies. Plants are sprouting. People are planting their gardens and crops.

In this season, the weather is the hottest it will be all year. The animals are busy growing and raising their families. The plants are green. People are doing many outdoor activities.

Second Grade, The Seasonal Cycle

What S	Season Am I? Season I	Riddles
Another name for my season is autumn. What season am I? <i>Fall</i> The leaves on the trees are	Some birds and animals are migrating to warmer weather during this season. What season am I? <i>Fall</i> Halloween and Thanksgiving are	Animals are gathering food for the winter. What season am I? <i>Fall</i> I start around September 21 and
turning colors. What season am I? <i>Fall</i>	during this season. What season am I? <i>Fall</i>	end around December 21. What season am I? <i>Fall</i>
I am the coldest season. What season am I? <i>Winter</i>	Many animals hibernate during this time. What season am I? <i>Winter</i>	During this season, daytime is shorter than nighttime. What season am I? <i>Winter</i>
People wear thick coats mittens, hats, and scarves during this season. What season am I? <i>Winter</i>	Christmas, New Year's, and Valentine's Day are in this season. What season am I? <i>Winter</i>	I begin around December 21 and end around March 21. What season am I? <i>Winter</i>
I am the hottest season. What season am I? <i>Summer</i>	During this season, daytime is longer than nighttime. What season am I? Summer	In this season more than any other, people have fun outdoors by swimming, going on picnics, riding bikes, and so on. What season am I? Summer
Animals are busy raising families and plants are the greenest they will ever be. What season am I? <i>Summer</i>	The 4th of July and Labor Day are during this season. What season am I? Summer	I begin around June 21 and end about September 21. What season am I? Summer
This is a good season to plant gardens. What season am I? Spring	Babies are born during this time. What season am I? Spring	The weather is more rainy and windy than the cold season before me. What season am I? Spring
You will find buds opening on trees in this season. What season am I? Spring	Easter is during this season. What season am I? Spring	I start around March 21 and end around June 21. What season am I? Spring

Appendix O What Season Am I? Season Riddles