

Seasoning the School Year Unit Plan

Unit Overview
Unit Title
Seasoning the School Year
Unit Summary
Students become botanists and climatologists, and investigate seasonal changes. This unit can be done in conjunction with the FOSS <i>Trees</i> science curriculum by studying a deciduous "class tree." Students observe the changes the class tree goes through as the seasons change. These changes are recorded in observation journals. Students contrast and investigate changes in the weather, changes in the length of the day, and changes in the personal accommodations they make due to seasonal change. With guidance, students create multimedia presentations and weather graphs to compare weather in other parts of the world. Students publish seasonal newsletters and class books for the National Arbor Day Foundation.
Subject Area
Language Arts, Math, Science
Grade Level
K–2
Higher-Order Thinking Skills
Analysis, Interpretation
Approximate Time Needed
Entire school year, 3 or 4 weeks per season, 30-minute classes, 3 or 4 classes per week
Unit Foundation
Targeted Content Standards and Benchmarks
Targeted Oregon State Standards/Benchmarks
Communication and Writing: K-3
<ul style="list-style-type: none">• Demonstrate ethical use of resources and materials (that is, copyright, citations of sources)• Analyze and evaluate information and ideas presented in written, oral, visual, and multimedia communications• Use a variety of written forms (journals, essays, short stories, poems, research papers) to express ideas appropriate to audience and purpose• Reflect upon and evaluate own writing
Math:
<ul style="list-style-type: none">• Read and interpret various scales (graphs)• Read, construct, and interpret displays of data (charts, tables, graphs) using appropriate techniques and technologies• Analyze data to determine strengths of relationships between sets, draw conclusions, and make predictions
Science
As stated in the FOSS <i>Trees</i> teacher's guide, students "gain early experiences that will contribute to their understanding of several pervasive themes that relate one scientific idea to

another: Structure, Change and Interaction"

Student Objectives/Learning Outcomes

Students will be able to:

- Identify the seasons—names, differences, and changes
- Compare and contrast the seasons from data gathered through measurement and observation
- Synthesize information gathered in seasonal books, newsletters, and presentations
- Begin to understand the planetary causes of seasonal changes, and compare seasons in another part of the world
- Use spreadsheet skills to enter text in a cell, duplicate and move pictures, gather and enter data, make a chart, and compare charts

Curriculum-Framing Questions

Essential Question

How does the world change during the year?

Unit Questions

- How do our lives change with the seasons?
- What is the weather like right now in other parts of the world?
- How can surveys help us collect and interpret information?

Content Questions

- How can we tell the seasons are changing?
- What are the four seasons?
- How do we represent data in different ways?

Student Assessment Plan

Assessment Summary

Questioning is used throughout the unit to help students develop their higher-order thinking skills and process content, and begins with tapping prior knowledge using the K-W-L chart. Quality of journal entries and students' individual contributions to graphs and class books help both teacher and students to monitor progress and understanding of content. Student knowledge of the seasons and their changes is assessed through the illustrations in individual tree observation journals, (before they are given to the National Arbor Day Foundation) the [picture match](#), and the seasonal class books. Group conferences are used to help monitor progress and assess work. Use the newsletter checklist to assess students as they contribute to the newsletters. Use the slideshow checklist to document students' completion and understanding of the criteria on those particular projects. Refer to the project rubric throughout to assess the project overall. Revisit the K-W-L chart to help assess what has been learned throughout the unit and offer recognition of student learning.

Assessment Timeline

Before project work begins		Students work on projects and complete tasks		After project work is completed	
<ul style="list-style-type: none"> • Questioning • K-W-L Chart • Journals 	<ul style="list-style-type: none"> • Student Graphs 	<ul style="list-style-type: none"> • Slideshow Checklist • Questioning 	<ul style="list-style-type: none"> • Newsletter Checklist • Class Books • Journals • Picture Match 	<ul style="list-style-type: none"> • Group Conferences • Questioning 	<ul style="list-style-type: none"> • Final Slideshow Checklist • Project Rubric • K-W-L Chart

Unit Details

Prerequisite Skills

Instructional Procedures

Summer

First Days of School (Day 1)

Explain to students that this year the class will be focusing on the Essential Question, *How does the world change during the year?* Tell students that one of the ways the class will see how the world changes this year is by watching the weather change.

Send the Seasoning the School Year brochure home to introduce parents to the unit.

Pose the Unit Question, *How do our lives change with the seasons?* Assess prior knowledge about the seasons and set the stage for new learning with a Know-Wonder-Learn chart.

Take a walk around the school and choose a deciduous tree to be the class tree. Explain that throughout the rest of the school year, the class will be watching the tree change with each new season. Take a photograph of the students with the tree for later use in the seasonal newsletter and tree book.

Explain to students what it means to be a botanist (someone who studies plants) and a climatologist (someone who studies weather). Tell students that they will become both botanists and climatologists this year. Have students make an observational drawing of the tree. Guide students in making careful observations of the tree and the area around it, noting leaves and leaf color, and seasonal signs, such as sunny skies and flowers in bloom. These pictures become the summer entry of the tree observation journals given to the National Arbor Day Foundation at the end of the project.

After returning to class, discuss trees in summer, and write vocabulary elicited by the discussion. Keep this vocabulary chart up for students to refer to throughout the unit. Start student journals, and have students copy season vocabulary. The journals are used throughout the season’s study.

Class Book (Day 2)

Read a book about summer. Hold a class discussion about summer experiences, and record

responses on chart paper. Have students draw a summer picture and dictate or write a caption for the picture. Encourage the use of seasonal vocabulary. Assemble an *In the Summer* class book using the students' pages.

Summer Banners (Day 3)

Read the *In the Summer* class book. Have students each draw a "summer" picture with a caption for a class banner that is hung in the room. (See the Art Procedures for **Summer, Day 3**.)

Sunflowers (Day 4)

Visit the school's sunflower garden, or use a cut sunflower and have students contribute descriptive phrases and similes (using an "A sunflower reminds me of..." prompt). Record student language for a class poem on chart paper. Have each child make a paper sunflower to put up on the bulletin board for "summer." (See the Art Procedures for **Summer, Day 4**.)

Gathering Data (Days 5 and 6)

Explain to students that throughout the year they will be gathering data (information) about what clothes students wear during certain seasons and what the weather is like here and in another city across the world. Tell them that they will be keeping track of the information they collect by using a variety of tools (tally, bar and picture graphs, and spreadsheets).

Seasonal Clothes Tally

Provide each student with a hard copy of the seasonal clothes tally spreadsheet. Ask students to tally the number of children who wore short sleeve shirts, jackets, hats, mittens, and so forth to school that day. Use an overhead transparency or the chalkboard to model for students how they should tally items on their individual graphs in groups of five. Have students fill in their tally each day for one week and label the season (for example, summer). Ask them the following questions:

- *What type of clothing was worn the most? The least?*
- *Why do you think this was? Do you think we would get the same results in the winter?*
- *What do you predict would be the type of clothing worn the most during the winter?*

Students should complete one tally over the course of one week during each season so that they can compare the types of clothes worn across the seasons.

Monthly Weather Calendar

Print the monthly weather calendar (after typing the month and year, and filling in the dates) for each student. Alternatively, have each student record the weather electronically using the monthly weather template, by having the student open the template; fill in the month, year, and dates; name the file; and save the changes. Teach students how to copy the icon that best represents the weather and paste it on the day of the month.

Ask students if they think the weather is the same in other parts of the world as it is in their hometown right now. Have students locate their hometown on a globe. Choose as a class a sister city from a country that is on the other side of the globe (encourage students to choose a city that has its seasons opposite of their own city). Have students use the monthly weather template to create another weather calendar for their sister city. Use weather data from the newspaper or an online source. Let students know they will compare the two weather graphs later in the unit. At the end of the month, have students use the weather bar graph template and the weather pictograph template to represent their monthly weather data. (See the sample weather bar graph and sample weather pictograph.)

Slideshow (Day 7)

As a class, make a "summer" slideshow presentation as students dictate. Connect the computer to a digital projector so all students can see. Have students tell you summer words to use to search for clip art. Add a title for a five-slide presentation. Use the slideshow checklist with the class to show them how to use a checklist. (This slideshow can run on a loop during back-to-school night.)

Newsletter (Day 8)

Develop a newsletter from student dictation, detailing the activities and learnings that have occurred during the study of summer. Include digital photos of the class tree and students at work on their seasonal activities, as well as data and graphs from clothing and weather data. Student artwork can be scanned for inclusion as well. Use the newsletter checklist to assess students as they contribute to the newsletter.

Fall

Class Tree, Photo, Observation Journal (Day 1)

After fall is well under way, discuss the seasonal changes students are experiencing. Walk around the school and observe changes in the neighborhood, particularly noting the changes in plant life and weather. Take a picture of the class tree, and have students make observational drawings, noting the changes from the previous season. Back inside the classroom, discuss the tree in fall, and record vocabulary for students to copy into their seasons journals. Discuss with students *why* they think the tree is changing. Explain why trees go through a yearly cycle of change. Use the journals to compare the fall descriptors to the summer descriptors.

Class Book (Day 2)

Create a fall class book. See **Summer, Class Book (Day 2)** for details and replace activities with fall ones.

Homework

Instruct students to find three leaves—one large, one medium, and one small. These leaves are used for a "fall" banner.

Fall Banners (Days 3 and 4)

On Day 3, share leaves from home. Discuss differences in size, shape, and texture. Sort leaves into deciduous and evergreen sets, and teach the difference. Sort leaves by criteria set by students, and make a graph. Make a fall banner, using leaves sponged with paint to print images. On Day 4, model the construction of traced leaves for the second side of the banner. (See the Art Procedures for **Fall, Days 3 and 4.**)

Fall Leaves (Day 5)

Read the class book *In the Fall*. Discuss how the leaves are changing colors and falling. Using direct observation of the leaves students brought, have them sponge paint paper leaves, using the variety of colors they see in the leaves. They will be surprised at the varying shades, from deep purple to acid green. (See the Art Procedures for **Fall, Day 5.**)

Data Gathering (Days 6 and 7)

Start a new seasonal clothes tally, filling it in for a week and a new monthly weather tally for their city and their sister city. At the end of the fall season, have students use the weather bar graph template and the weather pictograph template to represent their monthly weather data. Hold a class discussion to compare the clothes graph and the monthly weather graphs to the summer graphs.

Ask students the following questions:

- *What types of clothes were worn the most/least in the summer? Fall? Were the same types of clothes worn? What could account for the differences?*
- *What do you predict will be similar and different for the winter season?*
- *How does the weather compare for the fall and summer? What type of weather happened most often in the summer? Fall? Was the weather the same or different?*
- *What do you predict will happen in the winter? What type of weather will happen most often?*
- *How does your city's weather compare to your sister city's weather?*

Field Trip (Day 8)

Take a trip to a local park, looking for signs of fall. Birds may be passing through on migration,

squirrels may be storing nuts, the ground may be covered with acorns and leaves, shrubs may be bright with berries, and so forth. Return to school and create a *Signs of Fall at the Park* book. Scan student pages and add them to a "fall" slideshow presentation.

Slideshow (Day 9)

Make "fall" slideshow presentations. In small groups of four to six students, make slideshow presentations as students dictate. Have them tell you fall words to use to search for clip art. Tell them to be sure to include their weather data in the slideshow. Add a title for a five-slide presentation. Allow students to come up to the computer to click or type as appropriate. Use the slideshow checklist with each group to give students practice using a checklist. (The slideshows can run on a loop during back-to-school night.)

Newsletter (Day 10)

As on **Summer, Newsletter (Day 8)**, have students dictate newsletter items, and add graphics and scanned images to a newsletter for home. Include a picture of the class tree in the fall as well as data and graphs from clothing and weather data. Use the newsletter assessment to assess students as they contribute to the newsletter. Articles in the newsletter can include students' words and ideas about fall, descriptions of the clothing they wear in the fall, information about winter activities they participate in, explanations of how their lives change with the seasons, and comparisons noting the similarities and differences between the seasons they have learned about.

Winter

Class Tree, Photo, Observation Journal (Day 1)

Repeat procedures from other seasons. See **Fall, Class Tree, Photo, Observation Journal (Day 1)** for details.

Class Book (Day 2)

Create a winter class book. See **Summer, Class Book (Day 2)** for details. By now, some children may be able to write their own words on their winter class book pages. Assemble the class book.

Winter Banners (Days 3 and 4)

Have students work on the winter fingerprint stamping activity. On **Winter, Day 4**, discuss the changes of winter, and then model the light-on-dark drawing and glitter activity for the second side of the banners. Hang banners around the room. (See the Art Procedures for **Winter, Days 3 and 4.**)

Gathering Data (Days 5 and 6)

Start a new seasonal clothes tally and a weather calendar for the students' home town and sister city.

Snowflakes (Day 7)

Read the *In the Winter* class book to the class. Discuss how the weather has changed. Show students enlarged photos of snowflakes, describing lines of symmetry. Demonstrate how to fold paper and cut it to achieve symmetry. Make snowflakes with the class, and mount the snowflakes on the bulletin board around the tree. (See the Art Procedures for **Winter, Day 7.**)

Slideshow (Day 8)

Make "winter" slideshow presentations. Assist student pairs in making slideshow presentations. Have students type winter words generated from the class book (made on **Winter, Day 2**) to use to search for clip art. Have them type a title for the five-slide presentation by copying it from an index card. Allow students to sit side-by-side at the computer, and guide the pairs as needed in creating their presentations. For more advanced students, show them how to record their own voices describing the winter pictures they selected. Give each pair of students the slideshow checklist and help them use it to assess their work. (Set the presentation to loop so that other students can see what was created.)

Field Trip (Day 9)

Visit the park. See what changes have occurred since you were last there. Make another class book,

called *Signs of Winter at the Park*, using the same procedures and materials as before.

Newsletter (Day 10)

As on **Summer, Newsletter (Day 8)**, have students write or dictate newsletter items. Add graphics, insert a picture of the tree in the winter, insert data and graphs from the clothing and weather data, and send copies home to parents. Use the newsletter checklist to assess students as they contribute to the newsletter.

Spring

Class Tree, Photo, Observation Journal (Day 1)

This activity makes a great activity right after Spring Break. As before, photograph the tree, have students make observational drawings, and have students record observations in their journals.

Class Book (Day 2)

Create a spring class book, as described in the **Summer, Class Book (Day 2)** section.

Homework

Over the weekend, have students find and draw pictures of three things that show spring is coming. These are brought back to school on Monday.

Spring Banners (Days 3 and 4)

On Day 3, share the pictures students made for homework. Discuss similarities and differences. Use the pictures as a springboard for the creation of side one of the spring banners, watercolor painting. (See the Art Procedures for **Spring, Days 3 and 4.**) On Day 4, model the second side of the banner, construction paper flowers.

Spring Flowers (Day 5)

Read the *In the Spring* class book to the class. Discuss how trees are getting blossoms and leaves. Students make waxed-paper print flowers for the bulletin board. (See the Art Procedures for **Spring, Day 5.**)

Gathering Data (Day 6 and 7)

Start a new seasonal clothes tally and a weather calendar for the students' home town and sister city.

Slideshow (Day 8)

Make "spring" slideshow presentations. Assist individual students in making slideshow presentations. Have them type spring words generated from the class book (made on Day 2) to use to search for clip art. Have students type the title for a five-slide presentation by copying it from an index card. Guide individual students as needed in creating their presentations. Give students the slideshow checklist so they can check their work. (This lesson may be conducted in the computer lab. Have extra parent volunteers, teacher assistants, or even older students on hand to assist.)

Field Trip (Day 9)

Revisit the park, looking for signs of spring. Make a *Signs of Spring at the Park* class book. Hold a class discussion about what changes students observed and how they can tell that spring is here.

Newsletter (Day 10)

As on **Summer, Newsletter (Day 8)**, have students write or dictate newsletter items. Add graphics, add the seasonal clothes and weather data and graphs, insert a picture of the class tree in spring, and send copies home to parents. Use the newsletter checklist to assess students as they contribute to the newsletter.

Four Seasons

Class Book (Day 1)

As an assessment to gauge student understanding, ask students to complete the [seasons picture](#). Then, review the activities and student projects from the year, and discuss how seasonal changes affect us personally. Ask students to choose which season is their favorite and tell why. Have students draw pictures and write or dictate phrases about their favorite seasons. Collect and make into an *Our Favorite Seasons* book.

Class Graph (Day 2)

Make a class graph of favorite seasons. Have each student write his or her name on a piece of colored paper representing the season of choice (green for summer, blue for winter, and so forth.) and place it over the appropriate season heading on the graph. Compare most, least, how many more, how many less, and so on. Make a chart to show students how a computer can make a graph representing the same information. Copy the data into the favorite season spreadsheet, highlight the cells, choose the **Insert** menu, and select **Chart**. Follow the instructions, including labeling the graph. Compare the displays.

Graph Comparison (Day 3)

Compare the seasonal clothing and weather graphs for the year. Copy the data into the seasonal clothes spreadsheet and four seasons spreadsheet templates (see the seasonal clothes sample). Discuss what people wear in each season, and how and why clothing choices are different from the next and previous seasons. Ask students to compare the weather of the sister city to their hometown and discuss what they notice. You may choose to have students place weather temperature data into a spreadsheet (see the sample weather graph).

Slideshow (Days 4 through 6)

Remind students that they have become both botanists and climatologists this year. One important role of any scientist is to share what they have learned with others. Students share what they have learned by creating a season presentation. Student groups gather information about how our lives change with the various seasons. Each student produces one slide, either about one season or about how the seasons cause changes in weather, clothing, trees, animals, and human activities. They need to plan their slides, write or dictate the words, and choose the art, action, and sounds for their slides. Provide adult support for computer use, transcription, typing, and navigation as needed. Meet with each group and help them to assess their work by completing the slideshow checklist. In addition, include each of the class graphs. Include one observation from the class about each graph on the slide. If possible, send a disk home with each child with the slideshow on it. The season presentation could run as part of a year-end program or promotion ceremony.

Newsletter (Days 7 through 10)

Have small groups write articles and gather art for a newsletter. Students can use some of the same information that they used in the slideshow presentation. They should include data and graphs with comparisons. Print and copy it for the families. Use the newsletter checklist to assess students as they contribute to the newsletter. (See the Art Procedures.)

At this point in the unit, meet one-on-one with students to assess any criteria on the project rubric that has not been assessed through observation, questioning, and student work.

Final Celebration

Invite a National Arbor Day Foundation representative to your school and present the class books. Include thematic decorations and snacks to create a festive occasion.

After meeting with the National Arbor Day Foundation representative, revisit the Unit Question, *How do our lives change with the seasons?* Take out the Know-Wonder-Learn chart created at the beginning of the school year. Add student comments to the What We Learned slide.

On the last day of school, remind students that this year they focused on the Essential Question, *How does the world change during the year?* Explore ways that they saw the world change this year. Discuss how the world will change next year. *What changes do they expect will be the same, and what changes do they think will be different?*

Accommodations for Differentiated Instruction

Special Needs Student	<ul style="list-style-type: none"> • Provide adult assistance with most of the unit tasks involving writing or technology • Provide additional adult support, extra time to finish, and task modifications • Allow the student to work in pairs
Nonnative Speaker	<ul style="list-style-type: none"> • Work in conjunction with the ELL teacher to have basic terms translated into a dictionary that the student can use • Post translated terms around the room so all students can learn them • Have ELL teachers explain the scientific concepts • Have the student dictate journal entries to the ELL teacher or another student in class who is bilingual • Pair the student with another bilingual student • Accept assignments written in the student's first language (which can be translated later) or completed using pictures • Adapt or shorten assignments, or allow more time as necessary
Gifted/Talented Student	<ul style="list-style-type: none"> • Allow the option of either making an extra brochure to tell about each season or using presentation software to make a six-slide presentation for the class, with adult support as needed for keyboarding and adding clip art • Have the student serve as an expert (in technology, painting, center monitors, and so forth) and help others as needed • Allow the student to add additional multimedia (like a voice recording) when creating presentations

Materials and Resources Required For Unit

Technology – Hardware (Click boxes of all equipment needed)

<input type="checkbox"/> Camera	<input type="checkbox"/> Laser Disk	<input type="checkbox"/> VCR
<input checked="" type="checkbox"/> Computer(s)	<input checked="" type="checkbox"/> Printer	<input type="checkbox"/> Video Camera
<input checked="" type="checkbox"/> Digital Camera	<input type="checkbox"/> Projection System	<input type="checkbox"/> Video Conferencing Equip.
<input type="checkbox"/> DVD Player	<input checked="" type="checkbox"/> Scanner	<input type="checkbox"/> Other
<input checked="" type="checkbox"/> Internet Connection	<input type="checkbox"/> Television	

Technology – Software (Click boxes of all software needed.)

<input type="checkbox"/> Database/Spreadsheet	<input type="checkbox"/> Image Processing	<input type="checkbox"/> Web Page Development
<input checked="" type="checkbox"/> Desktop Publishing	<input checked="" type="checkbox"/> Internet Web Browser	<input checked="" type="checkbox"/> Word Processing
<input type="checkbox"/> E-mail Software	<input checked="" type="checkbox"/> Multimedia	<input type="checkbox"/> Other
<input type="checkbox"/> Encyclopedia on CD-ROM		

<p>Printed Materials</p>	<ul style="list-style-type: none"> • Belanger, C. (1997). <i>Songs for the 4 seasons: I like the rain</i>. Oxford, UK: Rigby. • Borden, L. (1989). <i>Caps, hats, socks, and mittens</i>. New York: Scholastic Inc. • Buscaglia, L. (1983). <i>Fall of Freddie the leaf</i>. Austin, TX: Holt Rinehart and Winston. • Gibbons, G. (1984). <i>The season's of Arnold's apple tree</i>. Hong Kong: South China Printing Co. Ltd. • Helldorfer, M. (1994). <i>Gather up, gather in</i>. New York: Viking Books. • Pearson, S. (1988). <i>My favorite time of year</i>. New York: HarperCollins Publishers.
<p>Supplies</p>	<ul style="list-style-type: none"> • Art supplies • Leaf press • Leaves collected by students • Trees near school property • If possible, an orrery—a crank chain-driven earth/sun/moon model—so kids can play with rotation, tilt, and so forth
<p>Internet Resources</p>	<ul style="list-style-type: none"> • Project Learning Tree www.oregonforests.org* Information about the Oregon Forest Research Institute, which “provides information about Oregon's forest practices and encourages sound forest management” • National Arbor Day Association www.arborday.org* Site designed to further the National Arbor Day Association’s goal to inspire people to plant, nurture, and celebrate trees • Audubon Society of Portland www.audubonportland.org* A good resource for learning how seasons affect nature—“The Audubon Society of Portland promotes the understanding, enjoyment, and protection of native birds, other wildlife and their habitats” • Teacher's Guide for Old Elm Speaks: Tree Poems http://kristinegeorge.com* Site designed by Kristine O'Connell George that includes thematic poems related to seasons and nature • The Weather Channel www.weather.com* Data about local weather and weather around the world
<p>Other Resources</p>	<p>Local park to visit and observe seasonal changes</p>

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