

Daily Lesson Plan (DLP)

Topic: Research your growing zone		Day :1
Grade: 4-5	Lesson Name: Research your growing zone	Time :(60 Mins.)

Topic	Research your growing zone		
Weekly key words	Frost dates, growing zone, warm-season plants, nurture, etc.		
Seating plan	<input type="checkbox"/> Individual <input type="checkbox"/> Pairs <input type="checkbox"/> Group of 4		
Skill development	<input checked="" type="checkbox"/> Reading <input checked="" type="checkbox"/> Writing <input checked="" type="checkbox"/> Discussion <input type="checkbox"/> Presentation <input type="checkbox"/> Reflection <input type="checkbox"/> Illustration <input type="checkbox"/> Collaboration <input type="checkbox"/> Observation <input type="checkbox"/> Research <input type="checkbox"/> Other (Specify)		

Objectives: ➤ The students will be able to:	➤ learn the first and last frost dates of the growing zone ➤ tips for the winters ➤ levels of freezing and damage
Teaching Resources:	Multimedia/projector, laptop, YouTube, writing board, notebook,
Teaching Learning Strategies	
<p>Introduction: Oral Discussion: Take students' prior knowledge about "gardening" and encourage them to share their views about it. Listen to their responses and give feedback. 05 mins.</p> <p>Methodology: Discuss that many people turn to gardening as a hobby or to grow their own food. They feel delighted to see seeds growing as plants in the growing season. It is easy to become addicted to watching life sprout from tiny seeds they have nurtured. Many plants, vegetables, and annuals are easy and economical to grow from seeds such as tomatoes, pepper, etc. that take longer time to plant. Open the following link to show the video to the students, using a projector, multimedia, or a laptop. https://youtu.be/xQjIRDUKipk</p> <p>Group Work: Make each group of 4 students and encourage them to discuss the content shown in the video. (10 mins.)</p> <ol style="list-style-type: none"> 1. what is the first date of frost in your garden? 2. What is the last date of frost in your garden/growing area? <p>After 15 minutes of group discussion, the teacher will ask questions related to the video just shown in the classroom. (10 mins.)</p> <ol style="list-style-type: none"> 1. <i>How knowing first and last frost date is the first step in planting?</i> 2. <i>How can you quickly find the dates in your growing area?</i> 3. <i>How to use them to plant vegetables in your garden?</i> <p>The teacher will write down the definition of frost date, about first and last frost date on the writing board and make sure the students read and understand it clearly.</p> <p>A frost date is the average date of the last freeze in spring or the first light freeze in fall.</p> <p>Being a gardener, it is the duty to take good care of plants, and making it sure to take best possible care of plants. This includes protecting and avoiding plants from damage that might occur when the weather starts to get too cold or freezing. So, it is advised to keep reading to learn about frost dates in the gardening area.</p> <p>What are Frost Dates? There are two frost dates: The first frost date and the last frost date. Tips for winter</p>	

First frost date is the date when the air temperature reaches 32F or lower. It is simply the average day in the area when the temperature reaches 32F.

Similarly, the last frost date is the average last day for the area where the temperatures no longer get colder than 32F. These dates vary year to year and, also depend on the area/location.

Discuss the first and last frost dates of the area. The gardener can determine the first frost date by using thermometer to check if the temperature of the garden area is below 32F or below. A layer of frost can visibly be seen on the plants. But, this method is not always helpful as the gardener could probably try to get something in the ground before the first frost occurs.

Therefore, it is suggested to look up for the first and last frost dates estimates published by local extension office or can use a site where you can enter zip code to find the first and last frost dates of your area zone.

For example, in Great Brighton, the last frost date could be as late as 20 May or as early as 25 September. Knowing that the soil may be too cold for planting or gardening for the plants even after the spring last frost date and soils remain warmer later than the first frost date for fall. The teacher will discuss how the first and last frost dates matter in planting/gardening, the importance of knowing frost dates, levels of freezing and damage, average frost dates of some major cities, and some tips to stay ahead of possible damage. (20 mins.)

Why do they Matter?

Plants are strong but they may need a little help when they are being planted or grown out of their native growing zone. For example, a tropical plant banana can be grown well in zone 8 too, but it is needed to be protected or to be taken inside in cold to avoid damage. On the contrary, a pine tree can bear cold. Therefore, it is necessary to choose the correct plants, and knowing what type of care the plants will need is vital for success.

The Importance of Knowing Frost Dates of the growing Area:

- Having acquainted with frost dates allows growing plants and vegetables in your area at the proper time ensuring they can flourish.
- You can grow cool-season plants or crops as long as frost is not expected in spring anymore: Such plants fade or die immediately in heat of summer. A second time span for planting cool-season crops comes in late summer and early fall. Once these species of plants are matured, they can stay light frost.
- In mild climates, they may even keep producing in the months of winter.
- Warm-season crops are grown about six weeks after the last frost, blossoming through summer and becoming brown as the first frost of fall arrives.

Levels of Freezing and Damage:

1. A light frost (29F-32F) can harm or even kill delicate, newly grown or sensitive plants such as aloe Vera, banana, and elephant ears.
2. Modest frosting is a little colder, like 25F-28F, and can be damaging for the vegetation which is not prepared for the cold. Leaves of such plants may turn brown or black and can be limp with no structure.
3. A severe/extreme freeze is categorized when the temperature is colder than 24F. At these temperatures, the plants can face severe damage or even death which are not growth-friendly in those temperatures.

The teacher will show the video to the students and give them some time for group discussion.

<https://youtu.be/Du4Q-yQTVuE>

The teacher will discuss the points of the video one by one: (10 mins.)

Activity: (20 mins.) (Group Work)

California Gardening ~ Vegetables | When should I plant my garden? | Frost dates Subject: Approximate First and Last Frost Dates in California Description: California has many climate zones and the number of frost days will vary within small areas. However, there are historical references available from the National Weather Service that can approximate when the first and last frost date might occur in your area. These dates help you to know when you might safely plant frost-tender vegetables in your garden or the length of your growing season. The following table provides approximate dates where there is a 10% chance and a 50% chance for frost (temperatures that are 32° F or lower) and the number of days at 32° F and 28° F and above for various communities in California.

Note: The table is attached below for use in the activity.

Wrap up (5mins.): Wind up the lesson by asking the students randomly to assess their understanding of the topic.

Individual Work:

Ask each student randomly to share their understanding of the first and last frost dates of the growing zone. Is it helpful for gardening in their own growing zone?

Home Assessment:

Write down 10 different average frost dates in major cities in their notebooks or journals.

Worksheet (Day1)

Lesson Evaluation:

- Teacher was able to accomplish all aspects of the lesson well ☐
- Teacher was not able to do warm up activity ☐,
- develop lesson plan well ☐,
- do the learning activity ☐,
- do wrap up ☐,
- accomplish lesson objective ☐,
- manage time well ☐,
- manage class well ☐

Name: _____

Class: _____

Topic: Gardening

Subject: Science

Approximate Frost Dates in California						
Community	Probability of Frost (Spring) (month/day)		Probability of Frost (Fall) (month/day)		# of Frost Free Days* at 32° F or higher	# of Days* at 28° F or higher
	50%	10%	10%	50%		
Alameda	--	1/17	12/26	--	365	365
Auburn	2/18	4/02	11/09	12/01	232	312
Bakersfield	1/25	2/24	11/15	12/11	277	321
Berkeley	--	1/18	12/25	--	365	365
Bishop	5/04	5/25	9/29	10/15	137	157
Chico	3/21	4/24	10/29	11/14	196	258
Davis	2/26	4/08	10/31	11/28	226	282
Eureka	1/27	3/12	11/13	12/16	274	365
Fairfield	2/07	3/16	11/14	12/06	255	306
Fresno	2/04	3/20	11/06	12/03	246	300
Half Moon Bay	--	3/07	12/09	--	306	365
Lakeport	4/16	5/07	10/11	11/03	163	197
Lompoc	2/08	3/23	11/11	12/14	259	329
Long Beach	--	1/08	12/23	--	365	365
Los Angeles	--	--	--	--	365	365
Marysville	1/25	2/26	11/17	12/09	280	320
Modesto	2/01	3/03	11/16	12/08	268	313
Mendocino	2/19	4/12	11/05	12/07	229	332
Monterey	--	1/27	12/18	--	365	365
Napa	2/22	4/06	11/05	12/05	277	310
Palm Springs	1/04	3/07	11/29	2/01	309	359
Pasadena	--	2/08	12/12	--	365	365
Paso Robles	4/05	5/14	10/11	10/29	160	217
Placerville	4/10	5/10	10/20	11/09	171	214
Riverside	1/26	3/07	11/18	12/23	272	365
Sacramento	2/10	3/20	12/04	1/01	250	306
Salinas	7/22	3/01	11/17	12/10	217	365
San Bernardino	1/21	3/09	11/23	12/24	265	365
San Diego	--	--	--	--	365	365
San Jose	1/11	2/10	11/24	12/26	301	365
San Luis Obispo	1/24	3/29	11/10	12/30	247	352
San Rafael/Marin	1/24	4/15	11/19	1/02	242	365
Santa Rosa	2/21	4/05	11/05	12/07	228	291
Sonoma	4/19	5/17	10/11	11/04	164	200
Stockton	2/13	3/14	11/14	11/30	254	293
Ukiah	3/18	4/17	10/29	11/16	203	266
Victorville	4/02	4/24	10/22	11/03	189	226
Visalia	1/28	3/02	11/12	12/06	267	315
Woodland	1/31	2/28	11/13	12/04	267	307