

## Daily Lesson Plan (DLP)

<b>Topic. Sketch your space.</b>		Day :1
<b>Grade: 4-5</b>	<b>Lesson Name: Where is the water source?</b>	<b>Time :(60 Mins.)</b>

Topic	Where is the water source?		
Weekly key words	Architecture, sidewalks, safety, front path, flagstone, etc.		
Seating plan	<input type="checkbox"/> Individual	<input type="checkbox"/> Pairs	Group of 4
Skill development	<input checked="" type="checkbox"/> Reading <input type="checkbox"/> Reflection <input type="checkbox"/> Other (Specify)	<input checked="" type="checkbox"/> Writing <input type="checkbox"/> Illustration	<input checked="" type="checkbox"/> Discussion <input type="checkbox"/> Presentation <input type="checkbox"/> Collaboration <input type="checkbox"/> Observation <input type="checkbox"/> Research

<b>Objectives:</b> ➤ The students will be able to:	➤ Develop knowledge about the water source for garden area
<b>Teaching Resources:</b>	Multimedia/projector, laptop, YouTube, writing board, notebook, piece of paper, pen/pencil, plants, worksheet, journal
<b>Teaching Learning Strategies</b>	
<p><b>Introduction:</b> 5 mins. Start the lesson by asking the students to share the ways the plants can be watered. Listen to their responses and give feedback.</p> <p><b>Methodology:</b> (20 mins.) Show the following link to the students related to the topic and let them discuss it in groups.  <a href="https://youtu.be/v8vhlTa3L90">https://youtu.be/v8vhlTa3L90</a>            The teacher will discuss how plants can be watered.</p> <p>Not just water, but <i>consistent</i> water is key to your gardening success. Rainwater is best but tends to be unpredictable or, in some places, far too rare a resource. Vegetables and fruiting plants thrive on regular and reliable watering schedules, so unless you get</p>	

exactly 1 to 2 inches of rainfall a week each and every single week, read on to find out the best way to add water to your raised-bed vegetable garden.

### **Ways to Water a Raised-Bed Garden**

There are a few different ways you can deliver consistent water to your kitchen garden to supplement when you're not receiving rain. Your watering options include:

- **watering by hand with a hose or watering can**
- **attaching a spigot connection**
- **burying an Oya**
- **setting up a formal irrigation system**

There are benefits and challenges to each method, so choose the one that works best for you and your lifestyle. Even once you've made your choice, it's important to stay flexible and jump in to alter your system as needed.

### ***Hand Watering a Raised Bed Garden***

Watering by hand is one of the best ways to conserve water... because it's a bit of a chore, and you're less likely to do it unless it's necessary. You might have once had visions of yourself smiling and walking plant to plant with watering can in hand. It's a nice image, but heading outside every morning and schlepping a can back and forth to your garden can get old quickly.

1. Hand watering tends to be less consistent than other forms of delivering water to your plants, which means your plants are liable to get stressed out if you forget to water or delay watering a couple days due to travel or life getting in the way.

### ***Tips To Water Your Garden By Hand***

Aim the water at the soil and hold the watering can head or hose as close to the soil level as possible so that the water can be absorbed by the roots. Avoid spraying the leaves of your plants. I like to gently lift the leaves of my big leafy greens out of the way so I can water right at the base of each plant.

Hand water in the early mornings to give your plants plenty of time to dry out through the day.

Use a spray attachment if you're watering with a hose and switch to the softest spray. Your goal is to imitate gentle rainfall, *not* give your plants a good power wash. A gentle spray also prevents soil from washing out of the top of your beds.

### ***Using a Spigot Connection for a Raised Bed Garden***

This option works best if you've installed your garden close to a spigot or rain barrel. If you've got a spigot nearby, then connecting a timer and drip hose to that spigot is the closest you can get to automation without actually having a formal irrigation system. It's also a great way to deliver consistent water to your plants (meaning on a watering schedule).

Drip irrigation kits are available at most hardware stores. I recommend also grabbing a Y-connector to attach to the spigot so that you can still use the water line for other things.

### ***Supply List to Create Your Own Automated Watering System***

**drip irrigation kit**

**Y-connector**

**battery-operated timer**

**pressure regulator**

**PVC or poly tubing (with no holes)**

**elbow brackets (1 for each raised bed)**

### ***STEPS TO SET UP A SPIGOT CONNECTION TO WATER RAISED BEDS***

Attach the Y-connector to your spigot.

Add a battery-operated timer to one side of the Y-connector.

Attach a pressure regulator to the timer to prevent too much pressure coming into the drip line at once.

Run PVC or poly tubing without holes to carry the water from the spigot to the garden area.

Once your line has reached the garden area, pull tubing up into each garden, making sure each tube is securely connected to the source.

Cover the installed line with soil, then add an elbow bracket and attach drip tubing on top of your soil bed.

If you want your irrigation lines hidden under your garden beds, you can dig trenches during the garden installation process and bury your water lines. Dig your trenches 4 to 6 inches deep to protect your irrigation tubing.

Observe your watering system and adjust the timer to water for longer or more frequently as needed.

### ***Using Oyas for a Raised Bed Garden***

A garden olla (pronounced "oya", like the well-known brand) is a porous terracotta pot that allows moisture inside to seep slowly out to water surrounding plants right at their roots. Because it delivers water exactly where plants need it, a little bit of water goes a long way. This is ancient plant irrigation technology that still works great in a modern garden.

If you're someone who travels frequently or who doesn't have much time to check on the garden during a busy work week, ollas are a great watering method for you. You can go up to 7 to 10 days without refilling your pot. This little vessel really takes the guesswork out of how often to water raised garden beds because you simply refill it when it's near empty.

Plus, you don't have to worry about having too heavy a hand with water because plants only take what they need.

### ***How to Use An Oya***

Dig a small hole and bury your Oya up to its neck in the center of your planting area.

Plant in circles around the Oya, placing plants that prefer more moisture and those with smaller root systems closer to the olla, and plants that prefer drier soil conditions and those that have larger root systems farther away.

Fill your olla to the top with water. Close the lid.

Water your garden by hand for 1 to 2 weeks after installation of the Oya to give the roots of your plants time to grow toward the new water source. Eventually, your edible plants' roots will attach themselves to the outside of the pot and pull water whenever they need more.

### **Refill your Oya every 2 to 7 days, as needed.**

Water the surface of your soil anytime you sow seeds or add transplants to your vegetable garden until their roots have established.

### **When to Water a Raised Bed Garden**

Picture this: The sun is high overhead, and you're gazing out your kitchen window to admire your garden when you discover the leaves of your cucumber plant wilting in the heat. While it might be tempting to rush outside and pull out the hose, watering your plants in the middle of the day could cause more harm than good.

Each water droplet left behind on your plants acts like a miniature magnifying glass, meaning the sun could scorch your wet leaves. That's why the middle of the day is actually the worst time to water your plants.

The best thing to do would be to wait and then water your garden thoroughly the next morning. Your plants are resilient and will make a comeback once their thirst has been quenched.

### ***The Best Time Of Day To Water Your Plants Is Early In The Morning***

The best time to water your garden is almost always the early morning when your plants are nice and rested. Overnight, they restore their energy and grab nutrients from the soil, and the morning is when they prepare for their day of growing ahead. By getting water to them at dawn, you can help them take full advantage of sunlight.

I wake up early and use a watering can or hose to soak the soil of my raised beds. If you have drip irrigation or low-spray sprinkler heads installed, you might set your timer to water before you even wake up, around 4 or 5 a.m.

While you can water at dusk, once the sun is no longer as strong, you don't want your garden to be wet at night, when most pests show up to attack your plants.

If you have a plant that's showing stress, you can always come out in the evening and just water around that plant, not the entire garden.

### **Activity: (30 mins.) (Group Work)**

#### **Materials**

Garden soil -Six to eight shallow buckets or containers -Water -Watering cans

**Preparation** Put dry garden soil in each of the shallow buckets or containers. Add water to half of the buckets and mix until the soil is very damp.

**Garden Activity** Take children to the garden. Bring your shallow buckets of soil. Guide children in taking turns feeling the dry soil and the wet soil. How does each of them feel? Cool, warm, crumbly, clumpy? Give the children time to play in the soil. Ask children to gently put their fingers in the soil of the garden bed without disturbing the plants. Does the soil feel wet or dry? If the soil feels dry, demonstrate watering plants by "drawing" a circle around each plant multiple times with the stream of water. Let the children take turns watering with the watering can if the soil feels dry. Have children retest the soil with their fingers to feel the difference in how it feels after watering. After teaching the watering lesson, select three children as "watering leaders" each week. Guide those children in testing the garden soil and watering the garden every day of the week. Rotate through the entire class.

**Wrap up (5mins.):** Wind up the lesson by asking the students randomly to share their findings.

#### **Home Assessment:**

The students will do the worksheet as homework.

#### **Worksheet**

#### **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 ☐

### Worksheet Day

Name: \_\_\_\_\_

Class: \_\_\_\_\_

Topic: Sketch the Place

Subject: Science

➤ Write down three ways of watering raised garden beds

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