

Daily Lesson Plan (DLP)

Topic. Plot your Plants.		Day: 2
Grade: 4-5	Lesson Name: What is the weekly water requirement for each crop you are choosing to plant?	Time :(60 Mins.)

Topic	What is the weekly water requirement for each crop you are choosing to plant?		
Weekly key words	Peak-perod, perennial crops, seasonal crops, 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

Objectives: ➤ The students will be able to:	➤ Develop knowledge about the water needs of crops ➤ Learn about the influence of crops on daily water needs and seasonal water needs
Teaching Resources:	Laptop/multimedia, pictures, writing board, notebook, piece of paper, pen/pencil, plants, worksheet
Teaching Learning Strategies	
Introduction: 5 mins. Start the lesson by asking the students to share their knowledge about light/sun exposure to the plants. Listen to their responses and give feedback. Methodology: (20 mins.) The teacher will discuss influence of the crop type on the crop needs of water. Activity: (30 mins.)	

INFLUENCE OF THE CROP TYPE ON THE CROP WATER NEEDS

2.2.1 Influence of Crop Type on the Daily Crop Water Needs

2.2.2 Influence of Crop Type on the Seasonal Crop Water Needs

The influence of the crop type on the crop water need is important in two ways:

1. The crop type has an influence on the **daily water needs** of a fully grown crop; i.e. the peak daily water needs: a fully developed maize crop will need more water per day than a fully developed crop of onions.
2. The crop type has an influence on the duration of the total growing season of the crop. There are short duration crops, e.g. peas, with a duration of the total growing season of 90-100 days and longer duration crops, e.g. melons, with a duration of the total growing season of 120-160 days. And then there are, of course, the perennial crops that are in the field for many years, such as fruit trees.

While, for example, the daily water need of melons may be less than the daily water need of peas, the **seasonal water need** of melons will be higher than that of beans because the duration of the total growing season of melons is much longer.

The influences of the crop type on both the daily and seasonal crop water needs are discussed in the sections below.

Influence of Crop Type on the Daily Crop Water Needs

In this section it will be explained how the daily water needs of other crops can be estimated using as a basis the daily water need of the standard grass.

It will be easy to understand that a fully grown maize crop - with its large leaf area - will use more water per day than, for example, a fully grown crop of radishes or onions; that is when the two crops are grown in the same area.

When determining the influence of the crop type on the **daily** crop water needs, reference is always made to a fully grown crop; the plants have reached their maximum height; they optimally cover the ground; they possibly have started flowering or started grain setting. When the crops are fully grown their water need is the highest. It is the so-called "peak period" of their water needs.

For the various field crops, it is possible to determine how much water they need compared to the standard grass. A number of crops need less water than grass, a number of crops need more water than grass and a number of crops need more or less the same amount of water as grass.

How much water does maize need, compared to the standard grass?

Table indicates five groups of crops. The crops in column 1 need 30 percent less water than grass in their peak period. The crops in column 2 need 10 percent less water than grass. The crops in column 3 need the same amount of water as grass. The crops in columns 4 and 5 need respectively 10 and 20 percent more water than grass in their peak period.

Crop Water Needs In Peak Period Of Various Field Crops As Compared To Standard Grass

Column 1	Column 2	Column 3	Column 4	Column 5
-30%	-10%	same as standard grass	+ 10%	+20%
citrus	cucumber	carrots	barley	paddy rice
olives	radishes	crucifers (cabbage, cauliflower, broccoli, etc.)	beans	sugarcane
grapes	squash	lettuce	maize	banana
		melons	flax	nuts & fruit trees with cover crop
		onions	small grains	
		peanuts	cotton	
		peppers	tomato	
		spinach	eggplant	
		tea	lentils	
		grass	millet	
		cacao	oats	
		coffee	peas	
		clean cultivated nuts & fruit trees e.g. apples	potatoes	
			safflower	
			sorghum	
			soybeans	
			sugarbeet	
			sunflower	
			tobacco	

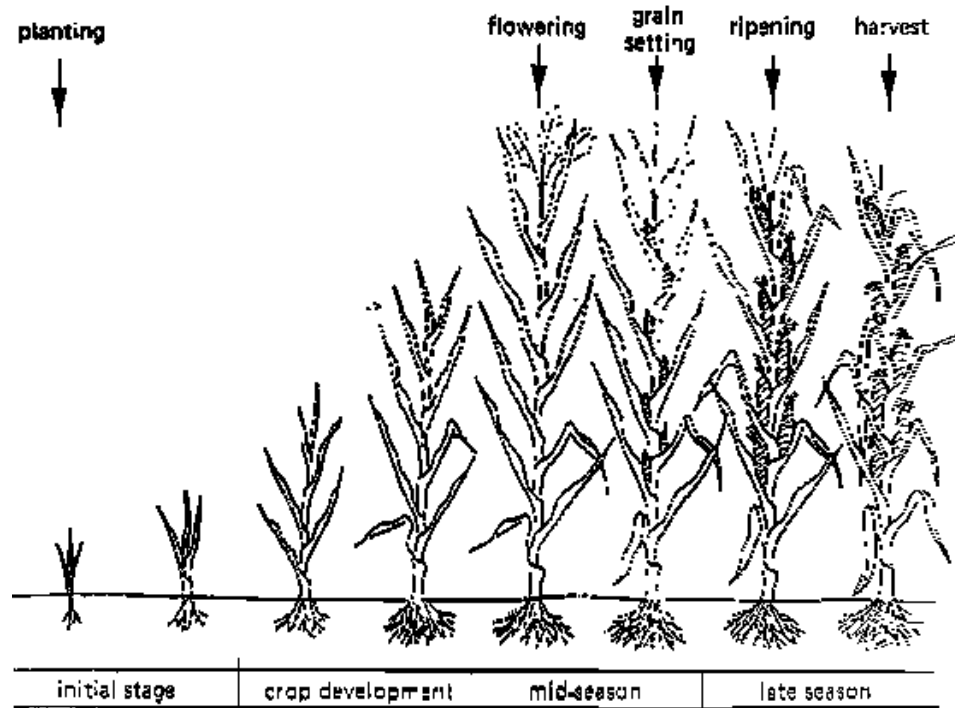
wheat

Influence Of The Growth Stage Of The Crop On Crop Water Needs

A fully grown maize crop will need more water than a maize crop which has just been planted.

As has been discussed before, the crop water need or crop evapotranspiration consists of transpiration by the plant and evaporation from the soil and plant surface. When the plants are very small the evaporation will be more important than the transpiration. When the plants are fully grown the transpiration is more important than the evaporation.

Figure shows in a schematic way the various development or growth stages of a crop.



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: Plot the Plants

Subject: Science

1. Compare the water need per day of maize crops and radish or onions grown in same region.
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