

# HOW TO FEED A PLANT: WHAT A PLANT NEEDS TO GROW



## Module 3 Student Handouts

Instructions: It is easiest to print this document **double-sided, on short-edge**. Print 1 copy for every 2 students in your class.





# ACTIVITY #1: PLANT ELEMENTS

2

NUTRIENTS & SOIL



WATER



SUNLIGHT

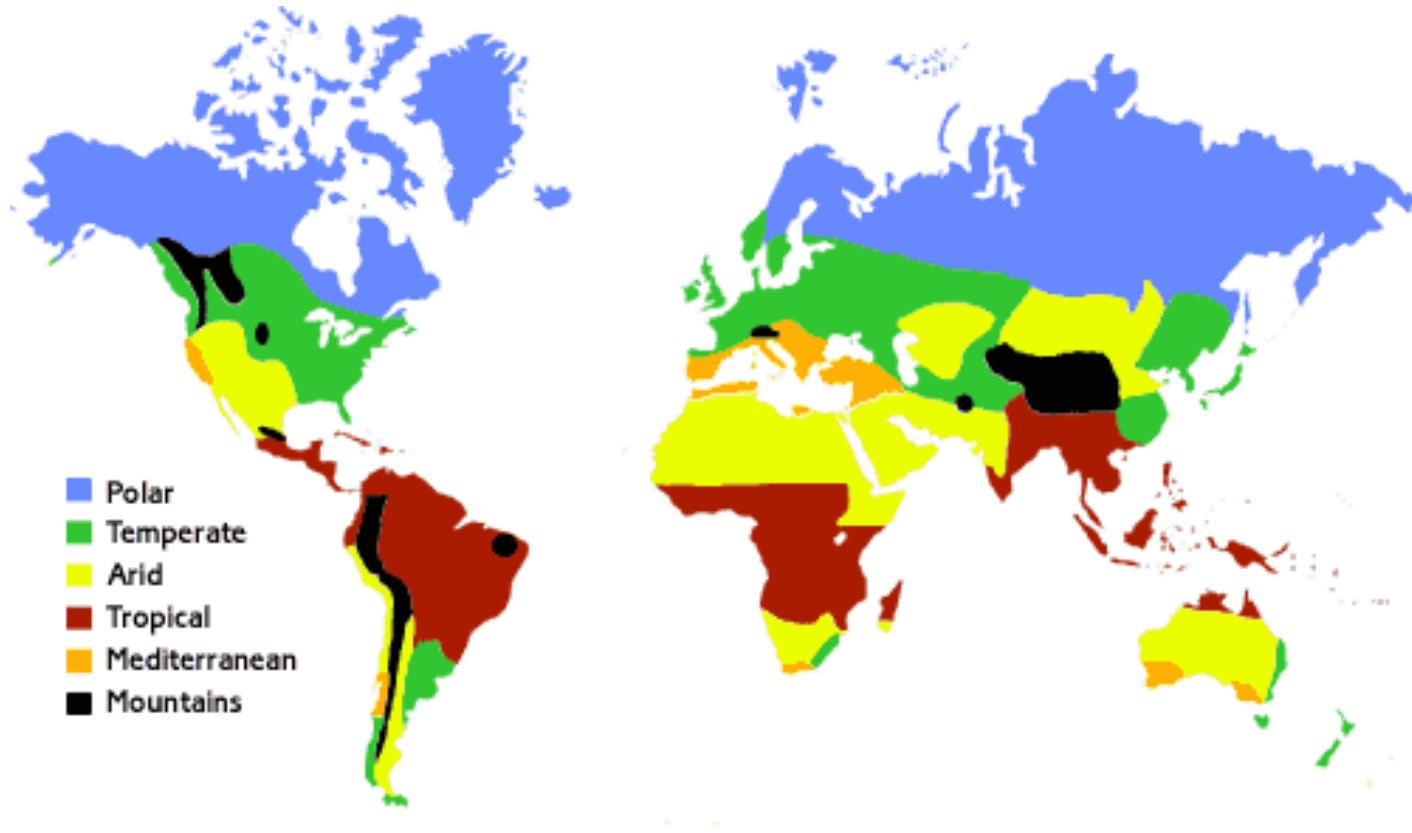













































































































































AIR





# ACTIVITY #1: CLIMATE MAP



Polar	Summer	Winter	Summer	Winter
<p><b>Polar climates</b> are found near the North and South Poles. They also occur on high mountains at lower latitudes. The summers are very cool, and the winters are frigid. Precipitation is very low because it's so cold.</p>				
<p><b>Temperate</b></p>				
<p><b>Temperate climates</b> have moderate temperatures. They vary in how much rain they get and when the rain falls. Rainfall can be sporadic.</p>				
<p><b>Arid</b></p>				
<p><b>Arid climates</b> are dry and receive very little rainfall. They also have high rates of evaporation. This makes them even drier. Most, but not all, arid climates are near the Equator and have hot weather.</p>				
<p><b>Tropical</b></p>	<p><b>KEY:</b>     </p>			
<p><b>Tropical climates</b> are found around the equator. As you'd expect, these climates have warm temperatures year round. Tropical wet climates occur at or very near the equator. They have high rainfall year round. <b>Tropical rainforests</b> grow in this type of climate.</p>	<p>Frigid      Temperature      Hot</p>			
<p><b>Mediterranean</b></p>				
<p><b>Mediterranean climates</b> are found on the western coasts of continents (ex: California). Temps are mild and rainfall is moderate. Most of the rain falls in the winter, and summers are dry. To make it through the dry summers, short woody plants are common.</p>				
<p><b>KEY:</b>     </p>				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				
				

# ACTIVITY #1: CLIMATE PLANT CARDS: FRONT



# ACTIVITY #1: PLANT CLIMATE CARDS: BACK

## **Corn**

Corn needs well distributed rainfall in sunny, moderately warm weather. It takes from 60 to 100 days to grow from seed to harvest.

## **Wheat**

Wheat needs moderately warm weather with rain from time to time. It takes about 4 months to grow from seed to harvest.

## **Pineapple**

Pineapple plants live for 2-3 years, but die if temperatures dip below 28degrees Fahrenheit. They require lots of water, humidity, and heat.

## **Bananas**

Bananas grow on trees that live for about six years. They require consistent heat and heavy rainfall.

## **Watermelon**

Watermelon can withstand long droughts and extreme heat.

## **Dates**

Dates can withstand long droughts and extreme heat.

## **Kale**

Kale requires low to moderate rains and is frost tolerant.

## **Highbush Cranberries**

Highbush cranberries are sweetest picked right after a frost.

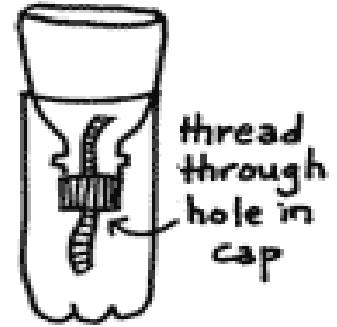
## **Grapes**

Grape vines have woody stems to help them survive a season of drought, but require moderate rainfall and heat during the summer when grapes are fruiting.

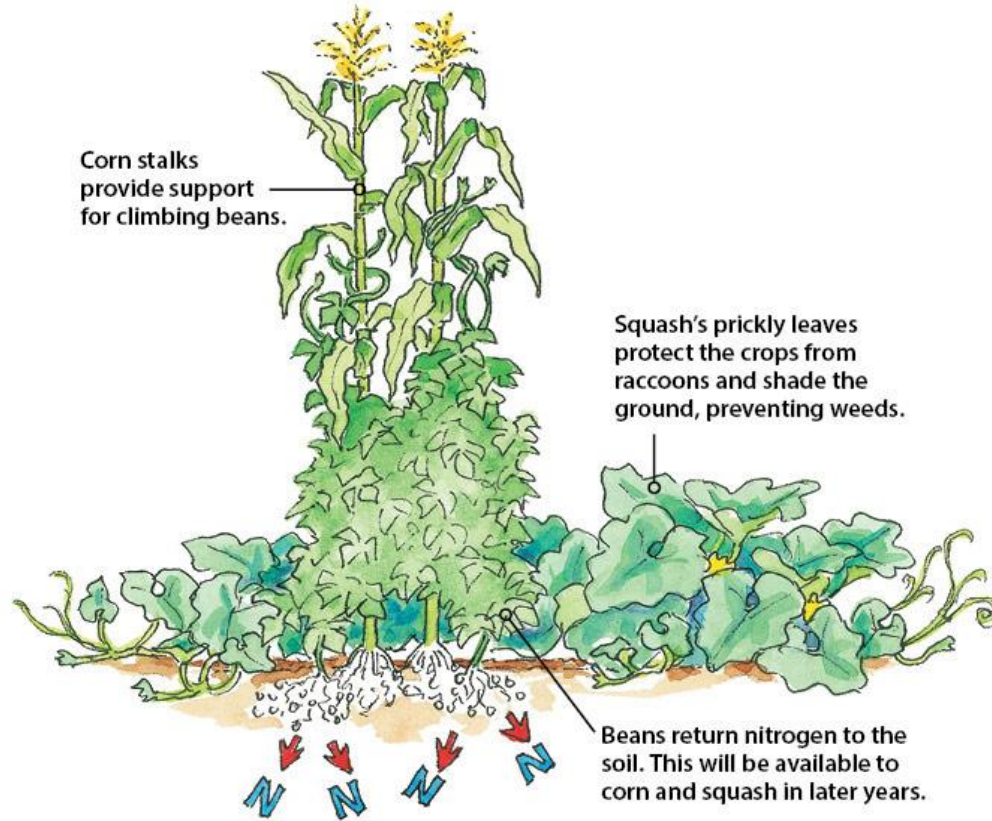


## ACTIVITY #2: HYDROPONIC GROWING

1. Remove the label from the bottle
2. Cut around the circumference of the bottle at the mark
3. Saturate the wick by dipping it in the water bowl
4. Thread the wick through the cap (about halfway)
5. Fill the bottom of the bottle with about 2" of water.
6. Flip the top of the bottle over and rest it inside of the bottom part of the bottle.
7. Hold the cotton strip straight up while scooping potting soil into the top of the bottle (this ensures that the water will wick from the bottom of the bottle into the soil at the top)
8. Plant the plant in the soil so that the root is completely covered in soil.
9. Lightly water the plant



# ACTIVITY #4: THREE SISTERS GRAPHIC



## ACTIVITY #4: LEGEND OF THE THREE SISTERS 1

There once was a family of a mother, father and three sisters. The parents worked hard at providing for the family, but constantly had to beg the daughters for help. They also had to continually stop them from arguing and fighting. The three sisters were different from each others and also unique in their own way. The eldest was tall and slender with long, silky, shiny hair, the youngest was small but muscular and attractive, and the middle sister was average in height and looks but was beautiful in her giving nature. For whatever reason, although they loved one another as sisters, they would disagree on any little thing and be distracted from doing any work because of these quarrels. The parents tried and tried to get the sisters to help in the garden and help with the chores. When working together they would always fight and when they were apart they would complain about the eachother. The work wasn't getting done and the parents were worried that if it kept up, they wouldn't make it through another winter. When it came planting, work had to be done, but the sisters continued to fight instead work. The parents needed help, and it was given to them, but not as they imagined. As the sisters argued in the field, they were transformed into three plants. The first a long, tall plant with silk tassel-like hair, the second a broad-leafed plant low to the ground, and the third a medium-height plant with gentle vines. The plants—or the three sisters—were corn, squash, and beans.

## ACTIVITY #4: LEGEND OF THE THREE SISTERS 2

This is the Iroquois Legend of the Three Sisters. It was said that the Earth began when “Sky Woman,” who lived in the upper world, peered through a hole in the sky and fell through to an endless sea. The animals saw her coming, so they took the soil from the bottom of the sea and spread it onto the back of a giant turtle to provide a safe place for her to land. This “Turtle Island” is now what we call North America.

Sky woman had become pregnant before she fell. When she landed, she gave birth to a daughter. When the daughter grew into a young woman, she also became pregnant. She died while giving birth to twin boys. Sky Woman buried her daughter in the “new Earth.” From her grave grew three sacred plants—corn, beans, and squash. These plants provided food for her sons, and later, for all of humanity. These special gifts ensured the survival of the Iroquois people.