



Instructions by Siene Allen, Bright Box Farms Kodiak

ALASKA 4-H AT HOME FOOD SECURITY LESSON 3: MICROGREENS

SUPPLIES PROVIDED:

- Mesh tray
- Top tray
- Growing medium
- Seeds
- Spray bottle with plain water
- Grow light bulb

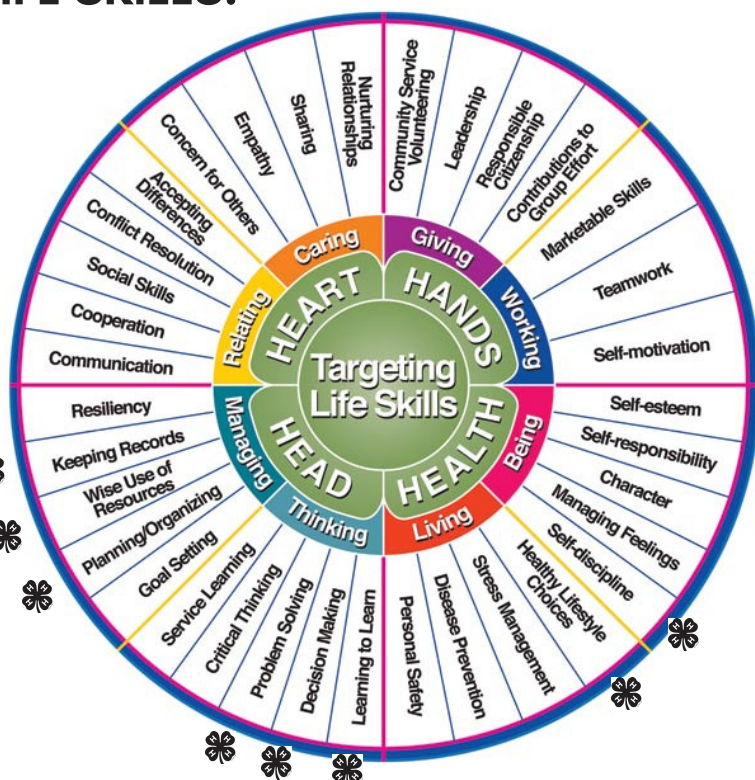
SUPPLIES NEEDED:

- Spray bottle from last week's project!
- A light fixture to put your bulb into
- A paper bag or tray

USDA/AFRI PRIORITY AREAS: AGRICULTURE SYSTEMS & TECHNOLOGY

TOPIC AREA: FARM TO TABLE, AGRICULTURE SYSTEMS, GARDENING & HEALTHY LIVING, PLANT HEALTH & PRODUCTION, MICROGREENS

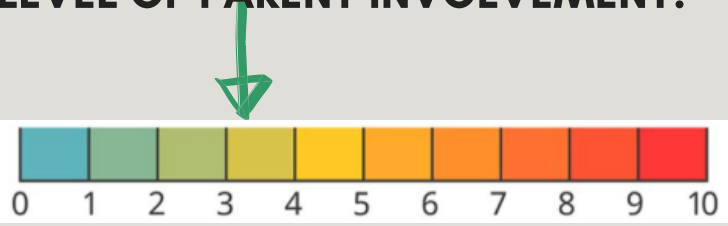
LIFE SKILLS:



SUGGESTED TIME AT HOME:

20 MINUTES FIRST DAY
5 MINUTES DAILY AFTERWARD

LEVEL OF PARENT INVOLVEMENT:



SUMMARY:

Youth will learn how to grow and take care of plants, using a microgreen system. They will use their plants in a variety of ways later in this unit.

DID YOU KNOW?

Microgreens are a fun DIY home growing project if you want to try your hand at growing but do not have a lot of space or time. It is a great way to get the whole family involved in learning about where their food comes from. Microgreens take about 10-14 days from start to finish, depending on the temperature of your home. The warmer it is, the faster the seeds will germinate and the sooner you will start to see your microgreens stretch and grow.

Microgreens contain up to nine times the nutrients of their full-size plants (1). A handful of these miniatures packs a concentrated punch of vitamins, minerals, and antioxidants. Adding these to your diet is an easy way to increase the nutritional value of your meals.

GROWING MEDIUM

There are many ways you can germinate your seeds. You can use hydroponic (soil-less) methods like coco coir, hemp mats, and nothing at all or you can choose to use potting soil. Hydroponic choices result in a cleaner product that requires less washing after harvest before consumption.

COCO COIR

If you are using coco coir, you will need to make it into your medium in the bucket. Break your coir up into chunks, add ½-1 cup of water at a time to hydrate, mix well, add more water, and repeat until all your coir is moistened.

TIP: Your coir should be moist and crumbly, not clumpy. If you can squeeze out water, it is too wet! Adding a little water at a time and mixing as you go will help you get the right consistency.

FIBER MATS

If you are using fiber mats, cut to the size of the tray.

POTTING SOIL - THIS IS WHAT WE'RE USING!

If you are using potting soil, you will need to have the bag handy with a scoop.

SEEDING INSTRUCTIONS

1 Get Everything Ready!!

- Figure out where you plan to set up your light for the microgreens once they have germinated. Get it ready so that you do not have to worry about it once they are ready for Stage II.
- TIP: Do not put your microgreens close to a window or exterior wall when germinating. It is usually colder, and since your seeds like it dark and moist, they will prefer a warm and cozy spot in your house for the first 4-5 days.
- Fill your spray bottle with cool clean water.
 - Adjust your spray setting to the fine-medium mist.
- Ready the trays.
 - Fill your mesh tray (white one) with the soil.. Spread the soil evenly in the tray, about 1/2 - 1 inch deep. Gently press to firm.

2 Plant Your Seeds

- Place half the measured seeds in the palm of your dominant hand. Sprinkle a light “dusting” of seeds from one side of the tray to the other. Take the other half of the seeds and repeat. Fill in the areas that have less seeds so that the tray is evenly covered with the seeds close together but not clumping.
- Add a thin layer of soil on top of seeds.



TIP!

The top of a refrigerator is a nice dark and warm place to germinate your seeds!

3 Water & Cover Your Seeds

- Spray the planted tray with your spray bottle. Evenly water until the seeds are saturated and the growing medium is moist. Avoid waterlogging your seeds! No puddles allowed.
- Cover your seeds with green tray to give your seeds a dark environment and double as humidity dome. Place the tray in a warm, dark place and let the seeds slowly do their thing!

GERMINATION TIPS!

- If you seed more than one variety in the same tray, be sure the seeds are approximately the same size for even germination and growth.
- Start with less seeds rather than more. If you sow too many seeds in the tray, they will clump together and encourage mold or fungus to grow. You want your microgreens to have some air circulation as they grow to avoid issues. No one wants to have to throw out a tray because of poor growth hygiene

4 Take Care of Your Seeds!

- Water twice a day.
- Your seeds need to stay moist to grow properly. This means that you will need to repeat Step 3 from the seeding instructions every 12 hours during germination.
- After 3-4 days, your seedlings will start to reach up searching for light. When they get to be about one inch tall, they are ready to get some light.

VEGETATION INSTRUCTIONS

After seedlings are about an inch tall, we are ready to move the tray under the grow light. Take the top tray and place it under your seedling tray as the base.

1 Give them light!

If you have your grow light set up, move your tray under it now. Keep the light centered over the plants to ensure even growth. A location with bright daylight will work too. Temperature is less important now, but ideally, you want temperatures between 60 and 70 degrees

2 Give them water twice a day.

Your seedlings still are delicate, and need lots of attention to keep them happy. Instead of misting, you will need to pour water directly into the bottom tray every 12 hours.



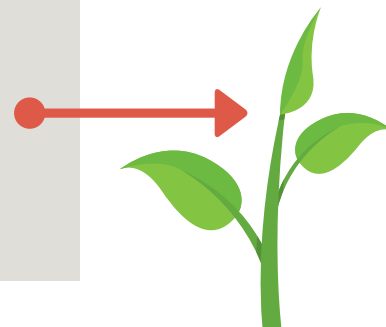
TIP:

Add only enough water to reach the bottom of the mesh tray. You do not want your seedlings submerged in the water; just the roots should be wet!

When is it time to harvest?

After 10 days or so, your plants should have grown over the top of the tray. When you start to see the "true" leaves pop out, you know they are ready to harvest.

True leaves grow out in the middle after the first leaves (cotyledons) are fully formed.



3 Harvest & Eat!

- Once your microgreens have reached this stage, you can harvest them.
- Store your cut microgreens in a sealable container glass or plastic reusable container, reusable plastic bag, or anything that will hold in some moisture. Keep them in the fridge but do not freeze them or they will turn mushy and go bad.
- Microgreens are the easiest veggies to prepare. Use them fresh in a smoothie, a sauce a salad, on your sandwich or burger, mixed with pasta, in soup, or just eat out of the bag.



TIP

Do not pull them out! Instead, keep your scissors sharp and cut about ½ inch or more above the medium to avoid messy cleanup.

- Keep everything to try again!! You can re-use your tray over and over again and continue to grow microgreens to add to your meals!
- We'll be asking you to make a salad with some microgreens added in toward the end of the project, so make sure you give yourself plenty of time!

We hope you have enjoyed this lesson on growing microgreens at home! For more information about our farm, visit www.brightboxfarms.com

A GARDENER'S JOURNAL

Gardeners keep records of things like plant dates, germination dates, harvest dates, frost dates, varieties, plant location, system used to grow, and the success of the plant overall.

The reason for this is so they can track from year to year if they want to repeat what they tried, or do something different.

YOUR GOAL: Keep Track of Each of the plants you are growing in this project. At the end, give your experience with that plant/system a rating (1=horrible, 10= wouldn't change a thing!)

Plant Name (lettuce, basil, etc)	Variety	System (greenhouse, hydroponics, microgreen	Plant Date	Germination Date	Harvest Date	Rating: 1-10
<i>Example Plant Lettuce</i>	<i>Perfect Green.</i>	<i>Windowsill Greenhouse.</i>	<i>3/12</i>	<i>3/19</i>	<i>4/19.</i>	<i>5</i>