

FROM THE GROUND UP
FAMILY ACTIVITY GUIDE:

SOIL AND HUMAN HEALTH

A recent study by the U.S. Department of Agriculture reported that 408 million acres of land in the U.S. is used to grow our food. That sounds like a lot, right? However, consider that the total acreage of all 50 states is nearly 2.3 billion acres. That means only 18 percent is set aside for cropland! The agriculture industry knows that it's important to take care of the soil. By acting as good stewards of the land, farmers help "sustain" – or support – an entire ecosystem, including us.

DID YOU KNOW?

The government defines "sustainable farming" in a specific way. Its definition is "an integrated system of plant and animal production practices having a site-specific application that will, over the long term:

- Satisfy human food and fiber needs;
- Enhance environmental quality and the natural resource base upon which the agricultural economy depends;
- Make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls;
- Sustain the economic viability of farm operations; and
- Enhance the quality of life for farmers and society as a whole."

This means that farmers must take care of the land they farm and the physical environment around them, while also working to make a profit and ensure the health of consumers.

To do this, farmers take advantage of certain strategies, including:

Growing more than one crop – Called "multi-cropping," this process includes crop rotation, or changing what is planted on a piece of land from season to season. Farmers also grow two entirely different crops close together during the same season. Both of these strategies can keep away weeds and pests. Avoiding growing a single crop also means one pest won't wipe out an entire crop.

Creating healthy soil – Farmers do extensive testing to make sure their soil has the nutrients needed to grow healthy crops. Those tests tell them which nutrients might be needed, depending on the crops they're growing. They also incorporate the 4Rs nutrient stewardship concept to applying fertilizer that contains those nutrients. The 4Rs are the right fertilizer source at the right rate, at the right time, and in the right place. Farmers also take advantage of "conservation" tillage, or plowing. That means leaving some of the crop that's being harvested – such as wheat stubble or corn stalks – behind in the field. The leftover organic matter helps keep soil from blowing away.

FAMILY CHALLENGE

How much do you and your family already know about smart farming practices? Try to answer these questions based on what you already know or can find on the Internet. You can compete against each other or work as a team. Give yourself one point for every correct answer!

1. Americans spend _____ of their incomes on food – the lowest of any nation.
A. 5 percent B. 10 percent C. 20 percent D. 30 percent
2. In the last reporting year, grassland pasture and rangeland accounted for _____ of the entire U.S. land area.
A. 18 percent B. 22 percent C. 27 percent D. 32 percent
3. A healthy farm is one that is “biodiverse.” What does this mean?
A. containing different species of plants
B. focused on one healthy crop
C. containing plants from a different environment
D. devoted to raising animals
4. When farmers change the crop that is planted on a piece of land each season, that is called _____.
A. crop management B. crop rotation C. crop loading D. crop retention
5. More than 80 percent of our food and fiber is grown by how many full-time U.S. farms?
A. 125,000 B. 150,000 C. 200,000 D. 210,000

ACTIVITY 1: IN THE ZONE

Most of the farms that feed our country are very large. However, people also grow sustainable gardens of their own in backyards, on rooftops, in vacant lots, and shared community gardens. You and your family can plant a patch of your own, too!

Like any farmer, you will first need to know what will grow best in your area. To do that, it’s helpful to know what planting zone you live in.

The U.S. Department of Agriculture maintains a Plant Hardiness Zone Map. The map divides the country into different planting zones, based on each area’s lowest extreme temperatures over a 30-year period. You can access the map at <http://planthardiness.ars.usda.gov/PHZMWeb/>. At the top, type in your ZIP code to find out your assigned zone.

Experts at the USDA have fine-tuned each state’s map so that the plants you choose have the best chance at thriving. But it also has some advice: Think about “microclimates.” Microclimates include areas within your zone that can be warmer, or cooler, depending on the specific area around your planned garden.

Family Challenge
Answer Key

1. B 2. C 3. A 4. B 5. D

Together, answer these questions to determine whether you are on the cooler or warmer side of your assigned zone.

1. Is your garden spot near concrete or a paved surface?
2. Is it placed against a western wall, where it will get lots of afternoon sun?

If you answered “yes” to the above questions, that might mean a warmer microclimate for your plants. You’ll need to be sure your plants do not scorch, and that you give them enough water. You may also be able to “stretch” your plant choices for a slightly warmer climate.

1. Are you located in a valley or other low spot?
2. Are you located on top of a hill?
3. Is your garden spot in an open field?

If you answered “yes” to these questions, that might mean a cooler or windier microclimate for your plants. You’ll need to be extra careful that your plants do not freeze. Your growing season might also be shorter. A fence or wall can help protect your plants.

For more information on your local microclimates, contact your Cooperative Extension System office. You can find the nearest one by using this map: <http://www.csrees.usda.gov/Extension/>. Master gardeners and other volunteers can answer your questions.

Now, it’s time to choose your crop!

ACTIVITY 2: **(GROW AND) EAT YOUR VEGETABLES!**

No matter what your planting area is like, there are many vegetables that are easy to grow. And if you don’t have a lot of ground space, you can even grow some of them in pots or other containers on a porch or balcony. That makes vegetables a good choice for a home garden.

Here is a list of the vegetables that are easiest to grow:

- Lettuce
- Watercress
- Green beans
- Carrots
- Spinach
- Cherry tomatoes
- Cucumbers
- Pumpkins

Besides having a lot of fun, you’ll get a lot of benefits from growing your own vegetables! Your family will save money by growing some of your food yourself, and you’ll have the satisfaction of helping a tiny seed grow into something that appears on your dinner plate!

Together, decide which vegetables might be best to grow based on the amount of space and time you have and your personal preferences. Don’t cross a vegetable off the list just because you haven’t tried it or haven’t liked it in the past. Growing it yourself can help you appreciate its color, flavor, and health benefits!

With your family, plan a trip to your county’s Cooperative Extension System office or a local plant nursery. The activity below will give you some tips on what to bring and the questions you might ask before picking out your plants.

ACTIVITY 3: **PLANT YOUR OWN PATCH**

Now that you know what planting zone you're in, you can choose plants for your garden area that will thrive and provide you with home-grown food!

If you have contacted your Cooperative Extension System office, you know that it can recommend plants for your area. It can also test your soil and answer other questions as you prepare to plant.

A good plant nursery is also a great place to ask questions and to see the seeds and plants that are right for your planting zone. Along with your family, take the following information to your local nursery:

- Your planting zone, and what you know about it
- A sample of your soil
- Any information on the microclimates around your garden spot, such as sheltered or open areas, paved areas, and its geographical direction
- What you want from your garden. Have you decided to grow vegetables? Or would you rather grow flowers or fruit? Are you anxious to harvest something soon, or are you patient enough to wait for more than one growing season?

Finally, before you visit the nursery, work with your family to make a map of your garden spot. Indicate any fences, walls, or sidewalks. Make sure to include your water source. If you've already decided what you want to plant, indicate where those plants will go.

All of this information will aid the nursery as they help you choose the best seeds and plants and ground-mulching options.

Now, you're ready to be a steward of your own land!

ADDITIONAL RESOURCES

Nutrients for Life Foundation

www.nutrientsforlife.org

USDA National Agricultural Library – Home Gardening

<http://www.nal.usda.gov/home-gardening>