

At-Home Science

Fifth Grade Investigations

SPRING is in the air. Everywhere around you spring is starting to take hold. You can find **evidence** of spring all around where you live.

Investigation:

1. Be sure to ask an adult for permission to go outside and look around your home.
2. Look for signs of spring.

Here are some ideas of what to look for:



3. Use a Science Notebook (pieces of paper stapled together is perfect) to draw and write about what you see.
4. Now draw your favorite Spring activity. What do you like to do in the springtime? Be sure to draw and write about your favorite activity in the Spring. My favorite activity in the Spring is gardening!

5. Try at home: try to grow some seeds at home.

- a. Soak a bean seed in water for a few hours.
- b. Then place on a wet paper towel. Put this in a plastic bag. Be sure to keep damp.
- c. How long does it take the seeds to sprout?
- d. Plant these seedlings in some soil and watch them grow!

6. Think about these questions:

- a. What parts start growing first (leaves, stem, roots)?
- b. How tall do your seed grow? You can measure each day.
- c. What do you notice about your seeds? Record observations every day.
- d. How many leaves does the plant have? How do the leaves help the plant?
- e. Does the bean plant grow any flowers?
- f. What grows out of the flowers? Ah, is this a life cycle!

7. Draw your plant every day. Tell how it changes.

8. Finally, draw the life cycle of your plant. How did it start and what happened to it as it grew?

9. Think of questions you might have about other plants. Here are a few to get you started:

- a. Do all plants grow the same way?
- b. What do plants **need** to grow into healthy plants?

- c. How do the different parts of a plant help the plant grow?
Each part has a different job!
- d. Would your bean plant grow if left in the dark?
- e. Would your bean plant grow if you didn't water it?

10. Time to make your own experiments using seeds.

Think of your own question. Design your own investigation. What will you test? How will you record your data?

11. Be sure to share your steps (procedures) so that another scientist can test your results.

12. Finally, create a CLAIM-EVIDENCE- REASONING document to share your finding.

Claim: What you were testing?

Evidence: Your data. What you found out?

Reasoning: Your explanation about what happened and why?

Our planet has lots of people to feed. So how do we keep the planet healthy while providing enough nutritious food for all the people. Read the article from

ReadWorks: <https://www.readworks.org/article/Healthy-Eating-Healthy-Planet/4970c2a6-e688-4107-97f2-3854273e66b9#!articleTab:content/>

13. How can you lower your food footprint on the Earth? What steps can you and your family take to reduce our impact? Write an article to inform others.

- a. What steps do you recommend for people to take to reduce our global impacts?
- b. How can people make better choices for the Earth?
- c. Try to convince someone to take your advice.

14. Read this article from ReadWorks about Reducing Waste. <https://www.readworks.org/article/Reduce-Waste/88eee1f5-47c0-427b-9d8a-7a028cf3b241#!articleTab:content/>

15. Earth Day is April 15th but really every day should be Earth Day. Create an **Earth Day Poster**.

- a. Be creative and send your message about caring about the Earth.
- b. Make your poster pleasing to look at: colorful and inviting.
- c. Include at least two facts about caring for the Earth.
- d. Check your writing and spelling before publishing your poster.
- e. Hang your poster where others can see it.

Healthy Eating, Healthy Planet

BEING HUMAN

Humans are unlike any other animal on Earth. Our unique brains and bodies allow us to use the world's resources in ways no other animal can. No other animal can claim it's been to the bottom of the deepest ocean, to the top of the tallest mountain, *and* even up and out of Earth to the moon. On a simpler level, do you know of any animal that can build a two-story, single-family brick home with an attached garage?

Or just make one of the toilets in the house?

While exercising our profound abilities (like making toilet bowls), we have fundamentally changed our planet and, in many ways, we've made it *our* planet. We've cut down entire forests to construct towns and cities. We've replaced the trees and plants with buildings, and paved over the forest floor with roads. These activities help us live, but they also create pollution that affects the air we breathe and the water we drink.

EATING FOR A HEALTHIER PLANET

Luckily, we can reduce the impact our activities have on the planet. One such activity is growing food. Think of all the land, equipment and work that go into a potato farm, an apple orchard or a cattle operation. By eating the right foods grown in the right way, we can limit the effects our farms and ranches have on the environment and eat our way to a healthier planet!

EAT LIKE SQUIRRELS

A great way to limit your impact on the planet is to follow other animals' way of eating. Squirrels, for instance, eat nuts found close to their tree house. Elephants eat the trees and bushes that grow around them. Killer whales eat the fish swimming with (and away!) from them. What these animals are doing is eating in-season and locally. We can do the same.

EAT IN-SEASON

Most of our favorite fruits and vegetables don't grow year-round and have their own natural season. Modern farming techniques have changed that, and we can have almost anything any time of the year. But when this produce is grown during its natural off-season, it may not taste the same. If we eat with our foods' natural seasons, we are eating in sync with nature.

EAT LOCALLY

Eating locally means consuming produce that is grown close to your home. It will definitely limit your choices, but it will ultimately lower the impact you and your eating habits have on the environment. An easy way to get local produce is to shop at a nearby farmer's market.

Love to eat grapes? Well, you can eat them in-season and locally...if you moved around the world a lot to follow the seasons! Grapes are a summer fruit so during the winter, many northern American supermarkets buy them from farmers in Chile, which is more than 4,000 miles away!

GROW YOUR OWN

One of the best things you can do to be a lower-impact animal is grow your own food. It may seem like a lot of work but people and communities all over the country grow some or all of their own food. There are many benefits to growing your own food.

One benefit is just learning about where your food comes from. Most produce found in your grocery store has stickers or signs that tell you where it was grown. Let's say you pick up a tomato and learn the tomato was grown hundreds of miles away before getting into your hand. If you grew a tomato in your backyard, school or local community garden, not only would you save a trip to the grocery store, you would save that tomato a long trip, and the planet a lot of resources.

Another benefit of growing your own food is that your food is fresher. It can take weeks for produce to get from the farm to your supermarket. By growing your own food, those weeks become just days, hours or even seconds. Now that's fresh!

COMMUNITY

When you buy food that is grown locally, you're also supporting your own community. The money you spend goes toward your neighbors' jobs and businesses and keeps your community strong and unique.

HEALTHY EATING, HEALTHY PLANET

Although human activities alter the planet, there are many things we can do to limit our impact. The impact of growing and raising our food on the planet is high but by eating locally, in-season, and even growing our own food, we can make the planet a better place while eating great food!

Reduce Waste

Reduce/Reduction: to make something smaller or use less, resulting in a smaller amount of waste.

"Source reduction" is reducing waste before you purchase it, or by purchasing products that are not wasteful in their packaging or use.

A key part of waste "reduction" is "conservation"—using natural resources wisely, and using less than usual in order avoid waste.

You can practice reduction by selecting products that do not have to be added to landfills or the waste stream in general. This is really easy to do...

- **First and foremost, buy and use less!** If all the other people on the Earth used as much "stuff" as we do in the United States, there would need to be three to five times more space just to hold and sustain everybody.... WOW! So buy only what you need and use all of what you buy. Or make sure that when you are through with something, you pass it along to other people who can continue to put it to good use. This is especially important when it comes things that can be dangerous to our environment, such as paint and chemicals.
- **Start making wise "package" selections.** Why is it important to consider how something is packaged when you consider what to buy? You can reduce waste by selecting products that are not wasteful in their packaging. Flashy and fun packaging costs more, usually adds little or no value to the product, and (worst of all!) can do considerable harm to our environment by creating more waste or waste disposal difficulties. Keep the following package-related tips in mind no matter what you are buying:
 - Recycle by purchasing products in materials/packaging that can be readily recycled. So whenever you have a choice, put plain and

recyclable packages high on your list to reduce packaging waste in our environment.

- **Avoid single-serve containers.** You can buy juice or water in large recyclable bottles or cans and then divide it up in reusable, washable containers as you need it at home or to take with you. And if you want to take juice or water with you on your bike rides or to the gym, just take it along in your own reusable sports bottle.
- **Before you buy bottled water, first find out if you really even need bottled water.** City water (and clean well water) is usually just as healthy, much cheaper, and may even be safer than bottled water products.
- **Refuse store bags!** When you buy one or two items at a store, carry them out in your hands; or take a reusable bag with you to carry the items you buy. And don't forget to take your old plastic and paper bags back to the grocery store for reuse or recycling. Most grocery stores have convenient paper and plastic recycling bins located near the entrance.

Hints for parents

Think BIG! Buying in "bulk" (a large amount that is not divided into separate containers) gives you the best "product to package" ratio. Many stores allow shoppers to scoop out the amount they need of bulk goods like nuts or coffee. This considerably reduces waste and packaging materials. Or you can buy in bulk by selecting bigger quantities in a single box or package—for example, buy the largest box of toothpaste, dishwasher detergent, or cereal, rather than a series of small boxes. This not only reduces the waste (from having to throw out the old containers) but it will also save you money. Packaging is expensive, so buying in larger volumes reduces the unit cost.

Buy concentrates rather than diluted products—the result is less waste for disposal when it is empty.

Use durable goods longer. Durable goods are sturdy things like furniture or household appliances that can (and should) be used for many years. You can save money and reduce waste by keeping these items longer and repairing them when they break, rather than buying new ones.

Use durable items rather than disposable items whenever possible. For example, select reusable razors rather than the disposable one that you can only use a few times and then have to throw away.

Say NO to junk mail! Call toll-free numbers in unwanted catalogs and ask to be removed from mailing lists. Whenever possible, use the Internet to obtain (and pay) bills, news, catalogs, stock reports and other information that usually comes to your house in a paper format. Reducing paper reduces waste.

Start a garden. Food that you grow yourself does not have to be "processed" or "packaged", and no fossil fuels are needed to get it to the store and then to your house.

Start a compost or vermiculture bin to transform your household garbage (food wastes, coffee grounds, etc.), into a rich earth-like material that can be added to a garden to help plants grow. Grass, leaves, paper, and some other types of food can naturally decay and turn into compost, and that compost can then be put to good use in your garden. Replace lawns with mulched gardens that are just as pretty, but are better for our environment.

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Comprehension Questions

1. According to the text, what is reduction?

- A. *the practice of using more of something, resulting in a greater amount of waste*
- B. *the practice of growing your own food and making your own clothes*
- C. *the practice of buying products that have flashy and fun packaging*
- D. *the practice of using less of something, resulting in a smaller amount of waste*

2. What argument does the author make in the text?

- A. *Reducing the amount of products and materials we use is hard but important.*
- B. *It's best to practice reduction in order to limit the amount of waste we produce.*
- C. *People should buy whatever products they want without worrying about how they are affecting the environment.*
- D. *People produce more waste today than they did hundreds of years ago.*

3. People can reduce waste by making smarter buying decisions. What information from the text best supports this statement?

- A. *You can reduce waste by selecting products that are not wasteful in their packaging.*
- B. *When you buy one or two items at a store, carry them out in your hands; or take a reusable bag with you to carry the items you buy.*
- C. *Whenever possible, use the Internet to obtain (and pay) bills, news, catalogs, stock reports and other information that usually comes to your house in a paper format.*
- D. *Grass, leaves, paper, and some other types of food can naturally decay and turn into compost, and that compost can then be put to good use in your garden.*

4. Based on the text, why is growing your own food a good way to reduce waste?

- A. *This food needs to be packaged and transported, so more energy and materials are spent.*
- B. *This food does not need to be packaged or transported, so less energy and fewer materials are spent.*
- C. *This food does not require other ingredients to be cooked, so less energy and fewer materials are spent.*
- D. *This food is more delicious, so people eat it all up and none of it is wasted.*

5. What is the main idea of this text?

- A. *Buying in "bulk" (a large amount that is not divided into separate containers) gives you the best "product to package" ratio.*
- B. *There are a number of ways you can reduce the amount of products you use and the waste you create.*
- C. *If all the other people on the Earth used as much "stuff" as we do in the United States, there would need to be three to five times more space just to hold and sustain everybody.*
- D. *You can save money and reduce waste by keeping durable items longer and repairing them when they break, rather than buying new ones.*

6. Read the following sentences from the text.

"Start a compost or vermiculture bin to transform your household garbage (food wastes, coffee grounds, etc.), into a rich earth-like material that can be added to a garden to help plants grow. Grass, leaves, paper, and some other types of food can naturally decay and turn into compost, and that compost can then be put to good use in your garden."

Based on the text, what does the word "transform" most nearly mean?

A. *to reduce*

B. *to increase*

C. *to change*

D. *to eliminate*

7. Choose the answer that best completes the sentence below.

You can practice reduction by selecting products that do not have to be added to landfills or the waste stream in general. _____, you can carry water in a reusable sports bottle instead of buying bottled water.

A. *However*

B. *In addition*

C. *On the other hand*

D. *For example*

WRITE ANSWERS IN SCIENCE NOTEBOOK

8. Describe at least one way parents can reduce the amount of products they use.

9. The text suggests that parents should "use durable items rather than disposable items whenever possible." Please explain whether this is an example of source reduction or conservation. Use information from the text.

10. Why is the information in this text especially helpful for people in the United States to learn? Use information from the text to support your answer.

