

# Blogging about Tower Garden®



**Prompt:** The word is out that your classroom has Tower Garden! You want to be sure that everyone gets the real scoop on your garden, so you've decided to write a blog about it. What information will be interesting and help others understand what aeroponic gardening is all about?

**Plan** Include lots of concrete details as you explain each topic below. Use the back if you need more space.

## Facts about & Benefits of Aeroponic Gardening

## How Tower Garden Works

## What We Are Growing

## Activities Our Class Is Doing with Tower Garden

**Write:** Use your notes to write a blog post on another sheet of paper that tells about your class's Tower Garden. Include the details above.

Name \_\_\_\_\_

Solving math word problems (4.MD.A.1, 2; 5.NBT.B.7)

Date \_\_\_\_\_

# Wow, Does Your Garden Grow!



Use the information in the chart to answer the questions.  
Show your work on the back of this page.

## Value of Produce Grown in Tower Garden®



Growing your own food can save you money at the grocery store.

Tower Garden can hold up to 20 plants!

Plant	Price	Amount Grown in 6 Months	Value of the Produce (rounded to nearest dollar)
arugula	\$0.82/ounce	48 ounces from 1 plant	\$39.00
bell pepper	\$0.85/pepper	5 pounds from 1 plant	\$15.00
cabbage	\$1.69/head	18 heads from 1 plant	\$30.00
celery	\$1.19/bunch	12 bunches from 1 plant	\$14.00
cherry tomatoes	\$3.00/pint	25 pints from 1 plant	\$75.00
cucumber	\$0.79/cucumber	40 cucumbers from 1 plant	\$31.00
eggplant	\$2.00/eggplant	15 eggplants from 1 plant	\$30.00
kale	\$1.49/bag	18 bags from 1 plant	\$27.00
lettuce	\$2.99/bag	90 bags from 5 plants	\$269.00
squash	\$0.95/squash	24 squash from 1 plant	\$23.00
tomatoes	\$1.99/pound	25 pounds from 1 plant	\$50.00

- How many ounces of regular tomatoes can be grown from one tomato plant in 6 months? \_\_\_\_\_
- The fifth grade's Tower Garden includes four squash plants and three kale plants. What is the combined value of the kale and squash produced in six months? \_\_\_\_\_
- How many pounds of arugula can Tower Garden produce in six months? \_\_\_\_\_  
Nine months? \_\_\_\_\_
- According to the chart, how many bags of lettuce are grown in six months from one plant? \_\_\_\_\_  
What is the value of this amount of lettuce (rounded to the nearest dollar)? \_\_\_\_\_

- If the price of squash goes up to \$0.98/squash, what would be the value of the squash grown from one plant in six months (rounded to the nearest dollar)? \_\_\_\_\_
- Which has the greater value: 4 kale plants or 7 eggplant plants? \_\_\_\_\_  
How much greater? \_\_\_\_\_
- How many cups of cherry tomatoes does one plant produce in six months? \_\_\_\_\_  
How many ounces? \_\_\_\_\_
- If your class plants all of the plants in the chart, what would be the total value of the produce grown in six months? \_\_\_\_\_  
What would the average value be per month? \_\_\_\_\_
- Create your own word problem using the chart. Have a classmate solve it and write the answer in the blank. \_\_\_\_\_

# “Wow, Does Your Garden Grow!”

## Answer Key

1. 400 ounces
2. \$173.00
3. 3 pounds; 4½ or 4.5 pounds
4. 18 bags; \$54.00
5. \$24.00
6. 7 eggplants; \$102.00
7. 50 cups; 400 ounces
8. \$630.00; \$105.00
9. Problems will vary.



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# It's Great to Grow UP↑!



What are the benefits of aeroponic gardening compared to soil gardening?

- **Increases crop yield by an average of 30%**  
With aeroponic gardening, you can grow more food.
- **Plants grow up to three times faster**  
That means you can harvest sooner and grow more often.
- **Uses as much as 98% less water**  
Traditional gardening uses about 80% of our water. That's a lot of H<sub>2</sub>O, which could be a big problem in areas where water is scarce.
- **Uses 90% less space than a traditional garden**  
Developing less land as farmland is good for our environment. Plus more people will have space for gardening.
- **Fewer problems with pollution and pests**  
Since aeroponic gardens don't use soil, you don't need to worry about pollutants getting into your food from contaminated soil. Plants are also less stressed when grown using aeroponics. That reduces the need for pesticides and herbicides—another earth-friendly benefit.

Less space  
Less water  
Faster growing  
More food  
More earth friendly



# “It’s Great to Grow UP!”

## Mini Poster

### How to Use

To introduce the poster, have students stand at their desks. Number the first four students 1, 2, 3, and 4; then ask students 1, 2, and 3 to remain standing and student 4 to sit down. Repeat until you have counted every child and about three-fourths of the students are standing. Explain that more than 3 in every 4 American households participated in do-it-yourself lawn and garden activities, both indoors and out. The standing students represent those Americans.

Next, write the term *aeroponic gardening* on the board. Explain that aeroponic gardening is the growing of plants by suspending their roots in the air and spraying them with nutrient solutions. With aeroponics, plants typically are planted in a tall, vertical column like Tower Garden® rather than horizontally as in a typical soil garden. Divide the class into pairs and have each twosome spend five minutes brainstorming what they think might be benefits of aeroponic gardening as compared to soil gardening. Provide time for students to share their suggestions. Then use a document camera to project the mini poster onto the board. Review the benefits listed on the poster. Follow up the activity by having each student (or student pair) write a letter to a family member explaining why the class’s Tower Garden system is so beneficial.



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Name \_\_\_\_\_

Reading informational text (RI.4.1–4; RI.5.1–4)

Date \_\_\_\_\_



## The O'Hare Urban Garden



What does an airport have to do with gardening? As it turns out, a lot! Right in the middle of Chicago's O'Hare International Airport, you'll find the O'Hare Urban Garden. It is the world's first vertical aeroponic food farm inside an airport terminal. Aeroponics is the process of growing plants with only water, air, and nutrients.

Like most big airports, O'Hare International Airport includes restaurants that feed hungry travelers. The O'Hare Urban Garden supplies these restaurants with fresh produce. It features 26 vertical Tower Garden® growing systems. Each contains 44 slots for growing plants. The O'Hare garden has over 1,100 plants, including herbs, lettuces, greens, and other vegetables.

Each Tower Garden sits on top of a **reservoir**. The reservoir holds a 20-gallon solution of water and a special plant food. The plant food contains minerals and nutrients that help produce strong, healthy plants. A pump in the base moves the solution to the top of each Tower Garden. Then the solution drips back down the column and falls over the 44 sets of plant roots. This process is repeated continuously, recycling the water and nutrients. Very little water evaporates or is wasted. The gardens don't require the use of pesticides or chemicals. No soil is used.

Why is the O'Hare Urban Garden such a good idea? For one thing, it uses **sustainable** technology. That means the garden uses methods that do not completely use up or destroy natural resources like land or water. The O'Hare Urban Garden doesn't use herbicides and pesticides, and that is good for the environment. It also uses far less water and minerals than a traditional garden. The garden is close to the restaurants that use its food, so the produce is picked when it is freshest and most nutritious. There is also no need to store or ship the produce. One more thing: because the garden is not planted in soil, there's no weeding or digging either. Now that's a cool way to garden!

**Answer these questions on your own paper.**

**Include evidence from the text to support your answers.**

1. Who uses the food produced by the O'Hare Urban Garden?
2. True or false: An aeroponic garden uses soil, like a traditional garden.
3. How do you know your answer to question 2 is correct?
4. What is the best meaning for *reservoir* in the third paragraph?
  - a. large lake or pond
  - b. place where fluid collects
  - c. pump
5. What are three advantages of Tower Garden?
6. Why might the owners of restaurants at O'Hare International Airport like having their own Tower Garden?

# “The O’Hare Urban Garden”

## Answer Key

1. restaurants at O’Hare International Airport
2. false
3. The third paragraph states “No soil is used,” and the last paragraph states “Because the garden is not planted in soil,...”
4. B
5. Answers will vary but could include that it uses sustainable technology, it doesn’t completely use up or destroy natural resources, it doesn’t use herbicides or pesticides, it uses less water and minerals than a traditional garden, the produce is picked when it is freshest and most nutritious, there is no need to store or ship the produce, or there’s no weeding or digging.
6. Answers will vary.



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# “It’s Tower Garden® Time!”

## Science Journal Page

### How to Use

Have each student bind several copies of the pages together between construction paper covers to create a science journal. Ask each student to observe Tower Garden at least once a week and then complete a journal page. Guide the student to describe what he or she observes in detail and then draw and label a sketch. Then have the student describe any changes in Tower Garden and hypothesize why this change might be important. Have him or her list at least one question about the observations and suggest where to find the answer. If desired, have student pairs complete their journal pages together to encourage collaboration.



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