

# Cool Cucurbits

## Objective

Students will learn about the group of vegetables known as cucurbits and use cucurbits in a variety of creative activities:

- writing plays using cucurbits as characters
- playing a hiding game in which students must perform math and reading activities
- writing haikus and interpreting cucurbit-related poetry
- mapping
- math—nonstandard units of measure, practice with fractions, estimation, graphing, probabilities
- scientific experiments with squash
- still life art

## Materials

- assorted summer squash (zucchini, crookneck, pattypan)
- assorted winter squash and ornamental gourds
- world maps
- box
- sharp knife and mallet or small hand saw (for cutting winter squash)
- cutting board

## Procedures

1. Bring samples of summer squash to class.  
—Students will write and act out plays with the squashes as superheroes having the characteristics of the nutrients listed in the background.
2. Celebrate “Zucchini Sneak” week.  
—Start with five zucchini, and place them in five students’ desks with a secret message wrapped around each one.  
—Students who get the zucchini must complete the tasks printed on the message before getting permission from you to sneak the zucchini into the desks of another five students, with instructions to complete additional tasks.  
—Tasks could include defining words related to zucchini (cucurbit, gourd, prolific, etc.) creating zucchini math problems, writing three adjectives to describe “zucchini,” finding three zucchini history facts online, finding zucchini nutrition information, finding the name for zucchini in Spanish (calabacita) and French (courgette), etc.  
—Finish the week with a Family Cucurbit Night with all cucurbit activities and curcurbit snacks. Late August through early October, parents with gardens may have zucchini to share.
3. For each 4-5 students provide one winter squash or ornamental gourd and a list of the vocabulary words.  
—Discuss haiku.

## Oklahoma Academic Standards

### PRE-KINDERGARTEN

Speaking and Listening: R.1,2,3,4; W.1,2. Print Concepts: 2,3,4,5. Reading and Writing Process: R; W. Critical Reading and Writing: R.3,4; W. Vocabulary: R.1,2,3; W.1,2  
Measurement: 2.1,2,3. Data: 1.1,2

### KINDERGARTEN

Speaking and Listening: R.1,2,3,4; W.1,2. Print Concepts: 2,3,4,5. Reading and Writing Process: R.1,3; W.1,2. Critical Reading and Writing: R.3,4; W. Vocabulary: R.1,2,3; W.1,2  
Life Science: 1-1  
Measurement: 2.1,3. Data.1.1,2,3

### GRADE 1

Speaking and Listening: R.1,2,3,4; W.1,2. Print Concepts: 1,2. Fluency: 1,2. Reading and Writing Process: R.1,3; W.1,2. Critical Reading and Writing: R.1,2,4; W.1. Vocabulary: R.1,2,3; W.1,2  
Geography: 2  
Life Science: 3.1  
Measurement: 2.1,2,3,4,5. Data: 1.1,2,3  
Creating: 2. Connecting: 4

### GRADE 2

Speaking and Listening: R.1,2,3,4; W.1,2. Print Concepts. Fluency: 1,2. Reading and Writing Process: R.1,3; W.1,2. Critical Reading and Writing: R.1,2,6; W.1. Vocabulary: R.1,3; W.1,2  
Geography: 2  
Life Science: 2-1  
Measurement: 2.1,2. 1.2,4  
Creating: 2. Connecting: 4

### GRADE 3

Speaking and Listening: R.1,2,3;  
W.1,2. Critical Reading and  
Writing: R.1,4,7; W.1. Vocabulary:  
R.1,3,5; W.1,2  
Geography: 1AB  
Number & Operation: 3.2,3,4.  
Geometry: 2.3,4. Probability: 1.1  
Physical Science: 2-1. Life Science:  
1-1; 4-2  
Creating: 2. Connecting: 4

### GRADE 4

Speaking and Listening: R.1,2,3;  
W.1,2. Critical Reading and  
Writing: R.1,4,7; W.1. Vocabulary:  
R.1,3,5; W.1,2  
Geography: 1,3,4  
Numbers & Operations: 2.1,3,4.  
Geometry: 2.4. Probability: 1.1  
Life Science: 1-1  
Creating: 2. Connecting: 4

### GRADE 5

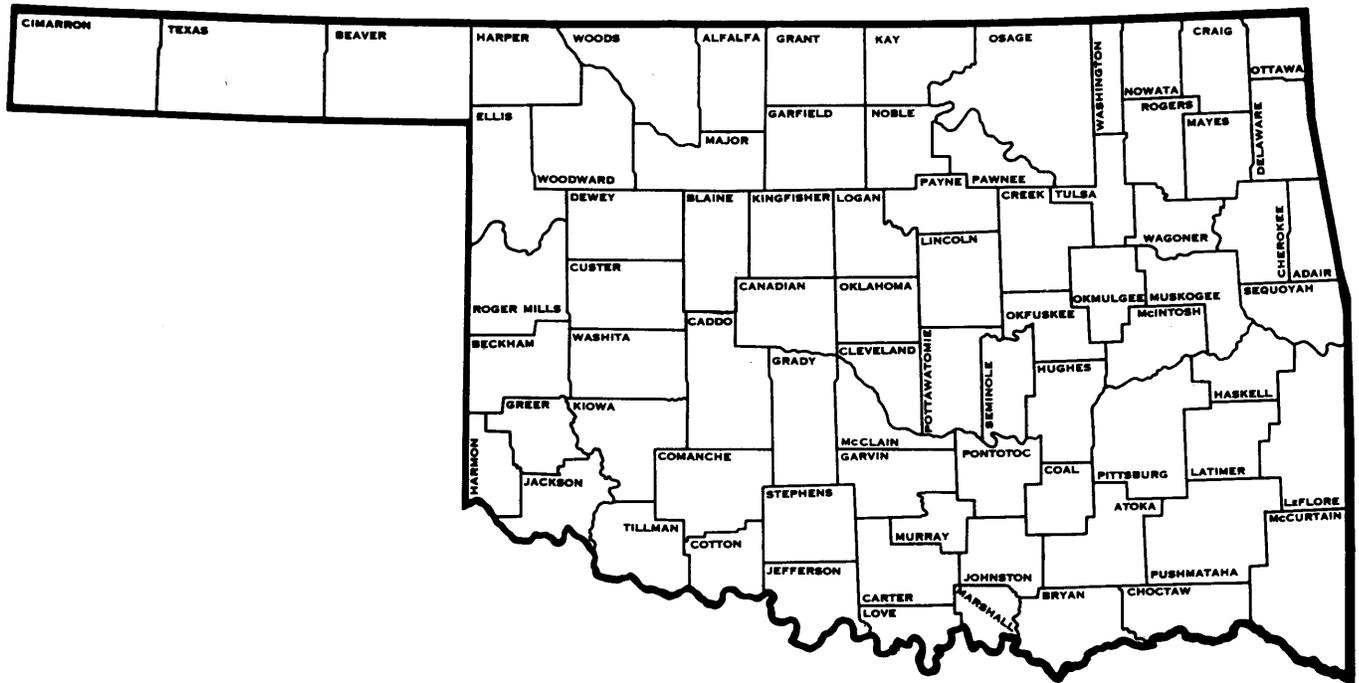
Speaking and Listening: R.1,2,3;  
W.1,2. Critical Reading and  
Writing: R.1,4,7; W.1. Vocabulary:  
R.1,3,5; W.1,2  
US History: 2.6  
Physical Science: 2-1. Life Science:  
1-1; 2-1,2  
Creating: 2. Connecting: 4

- Each student will write a haiku about the squash, using at least three of the vocabulary words.
- 4. Bring in an assortment of winter squashes and hide them in plain sight around the room.
  - Show one of the squash to students and ask them to guess what it is.
  - Tell students there are more of the squash hidden around the room, and tell them how many.
  - Students will stay in their seats while searching for the hidden squash and draw maps showing where the squash is located as they find them.
  - Use a timer to signal “Time’s up.”
  - Divide students into groups. Groups will take turns hiding the squash and mapping their locations for other groups to find.
- 5. Divide students into Cucumber Geography teams. Provide a World map for each team. As you name the places in the statements below where cucumbers have travelled, teams will compete to be the first to find the locations on the map.
  - The cucumber is believed native to **India**, and evidence indicates it has been cultivated in **western Asia** for 3,000 years.
  - From India it spread to **Greece** and **Italy**, where the Romans were especially fond of the crop, and later into **China**. It was probably introduced into other parts of **Europe** by the Romans.
  - Records of cucumber cultivation appear in **France** in the 9th century, **England** in the 14th century, and in **North America** by the mid-16th century.
  - The **Spaniards** brought cucumbers to **Haiti** in 1494. In 1535 Cartier found “very great cucumbers” grown on the site of what is now **Montreal** in Canada. Captains Amidas and Barlow found cucumbers in Native American gardens in **Virginia** in 1584. They were also being grown by the Iroquois (on the **east coast of the US**) when the first Europeans visited them.
- 6. Provide copies of the Oklahoma map worksheet, Where Does It Grow? included with this lesson. Students will complete the worksheet to find the areas in the state that grow the largest numbers of cucurbits.
- 7. Use zucchini or cucumbers as a nonstandard unit of measure to measure the perimeter of student desks.
- 8. Use zucchini or cucumber for practice in fractions. (Cut into halves, fourths, etc.) Make sure students wash their hands and use clean cutting utensils. Eat as a nutritious raw snack, with or without dip.
- 9. Students will estimate how far they can roll zucchini, then have a zucchini roll.
  - Measure and record the length of each student’s roll.
  - Students will calculate the average. Estimate and count rotations as well

10. Place assorted winter squash in a box where students cannot see them, with more of one kind than the rest.
  - Review the kinds of winter squash.
  - Students take squash from the box without looking.
  - Students record the kinds of squash as they are drawn from the box.
  - Students determine the probability of drawing one kind of squash from the box as opposed to the other kinds.
  - Students list all the permutations by which the different squash can be combined (acorn/ acorn/ butternut, butternut/ turban/ spaghetti, etc.)
11. Bring acorn squash to class.
  - Students write descriptions of the squash and predict what they will find inside. (What color will it be? Will there be seeds? Where will the seeds be located? What will it smell like? How will it feel?)
  - Students design charts that will allow them to compare their predictions with results.
  - Use a very sharp knife and a mallet or a small handsaw and a cutting board to slice each squash in half. (Winter squash is difficult to cut, so take safety precautions. **DO NOT ALLOW STUDENTS TO CUT.**)
  - Students smell, feel and taste the squash.
  - Students record observations on their charts.
  - Discuss results.
12. Summer squash grows to maturity in 40-50 days and can be planted for a fall garden as late as September 1 in Oklahoma.
  - Students make hills in a sunny spot and plant 4-5 seeds per hill.
  - After the plants have acquired their second set of leaves, students pull all but three per hill.
  - As an alternative, start plants in large container in the classroom and send home with students.
  - Students keep journals to record the growth of their squash plants and watch for:
    - Leaves—The first leaves of squash plants are very large and robust compared with other seedlings.
    - Flowers—Species of cucurbits are usually monoecious, with separate pollen-bearing (staminate) male flowers and seed-bearing (pistillate) female flowers on the same plant. Squash blossoms are edible. Find a recipe and let students try eating them, or just offer them raw.
    - Insects—The spiny, sticky pollen is not windborne and requires insects for pollination. The most common pollinator insects appear to be beetles and bees. As an alternative you may provide Q-tips or small paint brushes and have students carefully transfer pollen from the male flower to the female.
13. Some insects are harmful to the squash plant.
  - Students research to learn about squash pests (cucumber beetle, squash vine borer, squash bug).
  - Students research to learn non-chemical means for controlling cucurbit pests. (Row covers before flowers appear, Removing insects from plants by hand, planting before or after prime time for insects)
14. Students arrange the squash and/or gourds and do still life drawings, paintings or digital photographs.
  - Use the works of art to illustrate haiku from Language Arts Activity #3.

Name \_\_\_\_\_

# Where Do They Grow?



1. Color in the counties where the cucurbits grow in Oklahoma.
  - Cucumbers grow on farms in Pottawatomie, Rogers, Oklahoma and Wagoner Counties.\* Color the counties that grow the most cucumbers green.
  - Pumpkins grow on farms in Coal and Woodward Counties.\* Color the counties that grow the most pumpkins orange.
  - Squash grows on farms in McClain, Major, Marshall, Creek and Tulsa Counties.\* Color the counties that grow the most squash yellow.
2. Which county grows more than one kind of cucurbit?
3. Create a legend for the map to show the following:
  - Locate and label your community. Your community is located in which county?
  - Locate and lable the major metropolitan centers and cities in Oklahoma. The major metropolitan centers and cities are located in which counties?
  - How close are counties that produce cucumbers, pumpkins and squash to the major metropolitan centers and cities?
  - Which direction would you travel from each city to get to the closest county that produces these foods?

County Data from 2012 Census of Agriculture: [https://www.agcensus.usda.gov/Publications/2012/Full\\_Report/Volume\\_1,\\_Chapter\\_2\\_County\\_Level/Oklahoma/st40\\_2\\_029\\_029.pdf](https://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_2_County_Level/Oklahoma/st40_2_029_029.pdf)

Oklahoma Ag in the Classroom is a program of the Oklahoma Cooperative Extension Service, the Oklahoma Department of Agriculture, Food and Forestry and the Oklahoma State Department of Education.