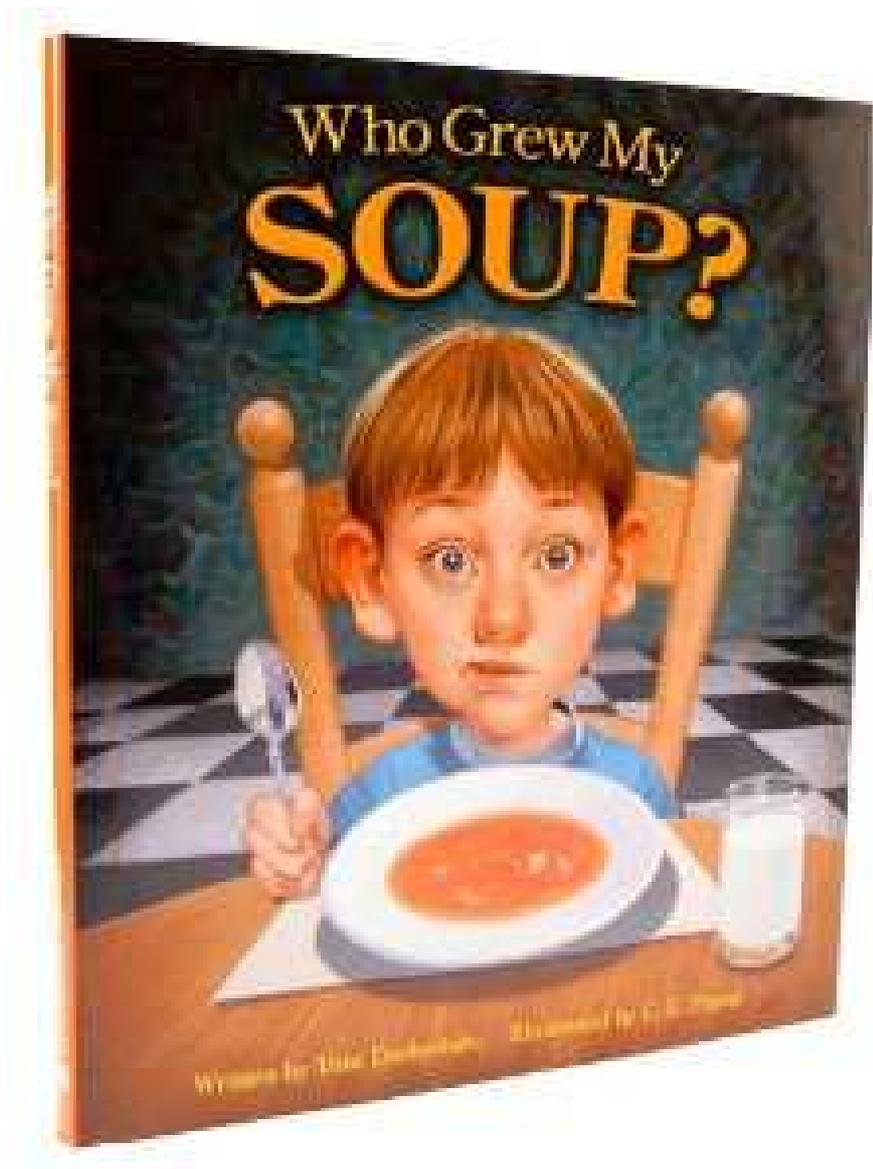


# *Who Grew My Soup?*

## **2013 Mesilla Valley Maze Curriculum**

Grades K-5

[www.mesillavalleymaze.com](http://www.mesillavalleymaze.com)



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# Notes to the Teacher

Common Core State Standards and Texas Essential Knowledge and Skills (TEKS) are correlated with each lesson. Many other standards will be covered dependent on the lesson extenders you choose to do with your class.

Many websites were used to compile these lessons. You will be asked to refer to certain websites to find specific templates. Also, some of the websites are very helpful for additional lessons.

- [www.agintheclassroom.org](http://www.agintheclassroom.org)- Illinois Ag in the Classroom website
  - Type the name of the lesson in the search on this website to find the specific template
- [www.aitc.oregonstate.edu](http://www.aitc.oregonstate.edu) Oregon Ag in the Classroom website
- <http://www.nmaitc.org/> New Mexico Ag in the Classroom website
- [www.mesillavalleymaze.com](http://www.mesillavalleymaze.com) Mesilla Valley Maze website

This curriculum was adapted from Illinois Ag in the Classroom "Who Grew My Soup?" by Tanna Miller, a teacher in the Las Cruces Public School District. Mrs. Miller received her Bachelors of Science in Animal Science from New Mexico State University and her Masters in Elementary Education from Western New Mexico University.



## Travel Tips-Before the Field Trip

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**Objective:** The students will be introduced to or expand their knowledge of the Mesilla Valley Maze and the importance of agriculture.

**Procedures:**

1. Previewing activity: Visit the Mesilla Valley Maze website at [www.mesillavalleymaze.com](http://www.mesillavalleymaze.com) with your students. Read about the maze activities together. This would be a good time to discuss students' behavior for safety while visiting the maze. Discuss how the maze is cut out of a cornfield. Click on the "Mazes" link to find the answers. Show students pictures of the previous mazes by selecting the "Past Mazes" button.
2. Have students create a K-W-L chart, provided in the curriculum. Complete the K and W sections first. The L sections will be completed when they return from the field trip.
3. Have students complete the "A'maze'ing Mesilla Valley Maze" comprehension sheet found on the following page.

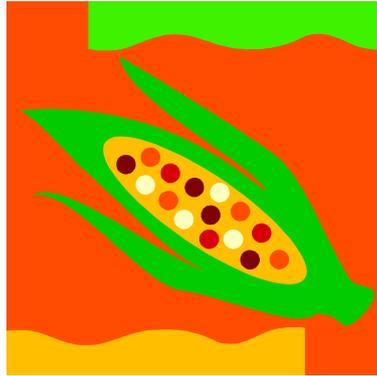
Name \_\_\_\_\_

## The A "Maze"ing Mesilla Valley Maze

Visit [www.mesillavalleymaze.com](http://www.mesillavalleymaze.com) and read about how the corn maze is created. Then, answer the questions below. Answer the questions in complete sentences.

1. When is the corn maze planted?
2. What do the initials GPS stand for?
3. What is used to cut out the pattern in the corn maze?
4. How many man hours does it take to cut out the maze?
5. How is do we use GPS systems in our everyday life?

Name \_\_\_\_\_ Date \_\_\_\_\_



Mesilla Valley Maze K-W-L

What I KNOW	What I WANT to learn	What I LEARNED

# A "Souped-up" Balloon

**Objective:** Students will listen to and follow oral instructions accurately. They will use measurement to construct a 2-D representation.

**Common Core State Standards:**

Math: K.MD.2; 1.MD.2; 2.MD.1; 2.MD.2; 2.MD.3; 2.MD.4; 3.MD.4; 4.MD.1    Reading: K-5.SL.2

**Texas Essential Knowledge and Skills**

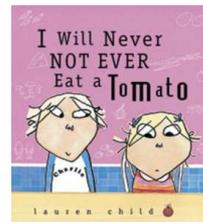
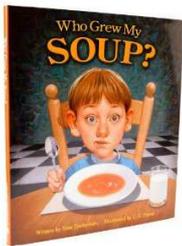
English LA and Reading: 110.11-110.16 A; 110.11-110.16C; 110.11-110.16D

Math: 111.2.7.A.B; 111.3.7.A.B.C.D; 111.4.8.D; 111.5.6.A; 111.6.8.A.C

**Suggested Reading Materials:**

*Who Grew My Soup?* By Tom Darbyshire

*I Will Never Not Ever Eat a Tomato* by Lauren Child



[aitc.oregonstate.edu](http://aitc.oregonstate.edu)

<http://www.amazon.com/dp/0763621803>

**What You Will Need?**

1 balloon and Pot Template per Student from

<http://www.agintheclassroom.org/TeacherResources/Lesson%20Booklets/Who%20Grew%20My%20Soup.pdf>

Yarn- (2) 5 ½ " Pieces

(2) 5" Pieces

Tape or Glue

**Activity Instructions:**

1. Have students color their tomato balloon and pot template from website above.
2. Measure yarn with a ruler. Each student will need two 5 ½ " pieces for the outsides and two 5" pieces for the inside. (Primary students might need pre-cut pieces). Have students compare their yarn pieces and notice the difference in length.
3. Have students cut out their balloon and pot.
4. Attach the yarn to the balloon and pot with tape or glue. The 5 ½ " pieces should go on the outside and the 5" pieces should go on the inside.

**Lesson Extenders:**

1. Have students write their favorite vegetable on their balloon and then share as a class. You can use this sharing as an opportunity to survey and tally the class's favorite vegetables.
2. Students can draw their favorite vegetable on their balloon.
3. Students can convince someone in writing to eat an unfamiliar vegetable.
4. Have students research an unfamiliar vegetable. Write about where it was first developed, what it is used for, describe the vegetable using their senses.

# Tops and Bottoms

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**Objective:** After completing this activity, students will have a better understanding of how garden vegetables grow and what part of the vegetable they can eat.

**Common Core State Standards:**

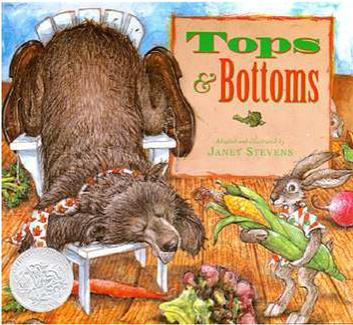
Reading: K-5 SL.1; K-5. RL.2; K-5.RL.3

**Texas Essential Knowledge and Skills**

English LA and Reading: 110.11-110.16A; 110.11-110.16C; 110.11-110.16D; 110.11-110.16E; 110.11-110.16F

**Suggested Reading Materials:**

*Tops and Bottoms* by Janet Stevens



[www.google.com](http://www.google.com)

**What You Will Need:**

Vegetable template from [www.agintheclassroom.org](http://www.agintheclassroom.org) or images of vegetables from internet.

2 Paper Fasteners (brads)

Hole Punch

Colored pencils or Crayons

Scissors

Two white paper plates per student

Glue

**About the Book:**

*Tops & Bottoms*, adapted and illustrated by Janet Stevens, is a story which has its origins in slave stories from the American South. In this trickster tale, a clever hare outwits the lazy bear while planting and harvesting the tops and bottoms of their vegetable garden.

**Key Words:**

- **hare-** The American form of hare is generally called rabbit
- **harvest-** The gathering of a crop season. A period in which agricultural work is done and a particular type of weather prevails.

**Getting Started:**

Before reading the book, ask students to think of vegetables they eat. List them on a chart. Emphasize that vegetables are plants grown for food. It may also be necessary to emphasize the difference between fruits and vegetables as the list is made.

As a group, look at the cover of the book. What vegetables are pictured? What animals are pictured? Note the Caldecott Honor Book Award Medal. This award is given to books that have outstanding illustrations. Encourage students to look carefully at the illustrations as the story is read.

Adapted from Illinois Agriculture in the Classroom

# Tops and Bottoms

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## Activity Instructions:

1. Have students color and cut out vegetables grown in the book from the vegetable template or from downloaded images.
2. Next have students fold one plate in half and draw a line down the center of the plate.
3. Color one half of the plate BLUE for the sky and the other half BROWN for the ground.
4. Now have students glue the vegetables on the colored plate. Anything that grows on "top" should be placed on the line "growing" into the blue; anything that grows from the "bottom" should be placed on the line "growing" into the brown side of the plate. When finished, all the vegetables should be lined up on the center line (fold) with the "tops" vegetables showing in the blue and the "bottom" vegetables showing in the brown.
5. Next, write on the second paper plate the words "TOPS" and "BOTTOMS" in their corresponding place on the plate.
6. Fold the plate in half and cut along the fold.
7. On the left side of the first plate (the one containing the vegetables) punch a hole with the hole punch about 3 cm on the line.
8. Lastly, place the two halves labeled "TOPS" and "BOTTOMS" on top of each other and place a hole 3 cm on the left side. This hole should line up with the decorated plate.
9. Line all the holes up and place a brad to secure the plates. Now the bottom plate should have a cover. When the "TOPS" is pulled up it should reveal the crops that grow on top and the same with the "BOTTOMS".

## Lesson Extenders:

1. **Chart:** Make a chart/list of vegetables before reading *Tops & Bottoms* to discuss what vegetables might be included in the story. Then, recall from the story the vegetables used and identify if it was from the top or bottom of the vegetable plant.
2. **Story Dictation:** Complete a shared writing activity in which students suggest ideas and the teacher writes down a story based on one of the illustrations in the book.
3. **Letters to Bear and Hare's Families:** Write a letter to the Bear and Hare families. Perhaps students could give them hints on growing vegetables or inquire about how their garden is growing.
4. **Writing About Your Garden:** Students who have grown a garden might be encouraged to write about their experiences. Students who do not have gardens could write about what their plans would be if they could start a vegetable garden.

# A "Souper" Detective



**Objective:** Students will learn how to identify, say, and write rhyming words by engaging in rhyming exercises after doing a read aloud of rhyming picture books.

## **Common Core State Standards:**

Reading: K-5 RL.3; K-5.RL.4; K-5.RF.3

## **Texas Essential Knowledge and Skills**

English LA and Reading: 110.11-110.16A; 110.11-110.16C;110.11-110.16D

## **Suggested Reading Materials:**

*Who Grew My Soup?* By Tom Darbyshire



[aitc.oregonstate.edu](http://aitc.oregonstate.edu)

## **Materials Needed:**

Index Cards

Pocket Chart

Quart size baggy

## **Activity Instructions:**

1. Do a read aloud with a rhyming picture book, such as *Who Grew My Soup?* Start with a picture walk and have students predict the story's main characters, setting and events. Have students read the title, author's name and illustrator's name.
2. Now read the story and encourage students to say the predictable/repetitive phrases with you. Pause at the end of a rhyming stanza to see if students can predict which rhyming word comes next.
3. Students will be the rhyme detectives as you read the book once more. Have students touch their nose when they hear two or more words that rhyme.
4. When students touch their nose, stop reading and ask students to identify the words that rhyme.
5. Have a volunteer write these words on an index card and place into a pocket chart.
6. Pull out all of the cards, mix them up and place them back into the chart. Call up students to find the rhyming words and then have them stand in the front holding their pair of cards.
7. When all of the pairs have been found, have each student in front read their pair of rhyming words with the rest of the class.
8. Allow students an opportunity to create their own rhyming game. Have index cards available and have them place into a baggie to store to use as a time filler.

# A "Souper" Detective

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## Possible Games to play with rhyming cards:

- Students can play the game like Memory, turning over and matching rhyming pairs.
- Students can play in pairs or independently to discover other words that rhyme with their words.
- Students can record their rhyming pairs on a chart to show evidence of learning.
- Students can discover a synonym or antonym for each of their rhyming words.

## Lesson Extenders:

1. Post rhyming words all over the classroom and give students magnifying glasses, clipboards, and a sheet on which to record their pairs. Students should be the best "detectives" they can be to find rhyming words on word walls, in books, on posters, etc.
2. Use graphic organizers in order to record rhymes.
3. Have students write poems or descriptors in the shape of the fruit or vegetable.
4. Students may write limericks about fruits and vegetables.
5. Create an acrostic poem about one of the vegetables in the book.

# Think Inside the Box



**Objective:** Students will follow directions and exercise critical-thinking skills to guess the Puzzle Box Word.

**Common Core State Standards:** K-5.SL.1; K-5.L.5

**Texas Essential Knowledge and Skills**

English LA and Reading: 110.11-110.16A; 110.11-110.16B; 110.11-110.16C; 110.11-110.16D

**Suggested Reading Material:**

*Buried Treasure: Roots and Tubers* by Meredith Sayles Hughes



[www.google.com](http://www.google.com)

**Materials Needed:**

Puzzles (teacher must plan puzzle clues in advance)

Small rewards, such as stickers or pencils

Markers

Black or white board or chart paper

scrap paper cut into 2" X 2" squares

**Activity Instructions:**

Prepare in advance six to ten clues that will help students guess a puzzle word. The puzzle word can relate to any topic or subject they are studying. See example below:

Puzzle Box: Can you guess what this is?

Answer: Banana

1. I am yellow and sweet.
2. I grow on a tall plant.
3. Monkeys like to eat me,
4. I'm good for your heart.
5. What am I?

1. Write the clues on the board or chart in the morning.
2. Go over the clues with the class first thing in the morning. Share in advance how the process will work.
3. Show the three prizes of the day.
4. Give the students all day to consider what the puzzle word might be.
5. At the end of the day, read the clues again.
6. Pass out the 2" squares of paper. Ask students to write the answer, or two or three guess, on one side of the paper and their name on the other side.
7. Collect the papers. Identify by name any student who has the correct answer. Put all the correct answers in a bag.
8. Pull out three of the papers to determine the winners of the three prizes.

# Think Inside the Box

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## Lesson Extenders:

1. Make a chart. Include the name of each child in the classroom. Put a check mark beside students' names for each right response given each week. After ten weeks, identify the student with the most correct responses. Award special prizes to those with the most correct responses.
2. After doing this activity as a whole class, have the students create the puzzles.
3. Have students write riddles in order to help classmates learn about fruits and vegetables. To help students in this process, have students choose a fruit or a vegetable about which she/he would like to write a riddle.
4. Have students list descriptive words or facts about their subject. Encourage students to think about color, shape, to eat the fruit or vegetable. Have students use the list to write a riddle about the subject.
5. Challenge students to create rhyming riddles.

# Mystery "Souper" Star



**Objective:** Students will use their senses in order to make predictions. Students will also use descriptive words to share information.

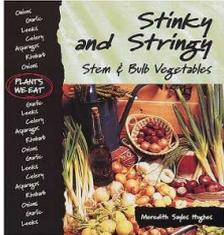
**Common Core State Standards:** K-5.RI.1; K-5.W.1

## **Texas Essential Knowledge and Skills**

English LA and Reading: 110.11-110.16A; 110.11-110.16B; 110.11-110.16C; 110.11-110.16D

## **Suggested Reading Materials:**

*Stinky and Stringy: Stem and Bulb Vegetables* by Meredith Sayles Hughes



[www.google.com](http://www.google.com)

## **Materials:**

5 different fruits and vegetables

Scrap pieces of paper for answers

5 brown paper bags numbered 1-5

5 boxes with lids and a hole that is large enough for a child's hand.

## **Activity Instructions:**

1. Secretly place a mystery object (fruit or vegetable) in each box.
2. Invite a child to reach through the hole, touch the mystery object inside, and then share descriptive words about how it feels. Record the descriptions on a sheet of paper.
3. Ask students to write what they believe is in the box, or two or three guesses, on one side of the paper and their name on the other.
4. Have students place their answers in the bag with the number that corresponds with their answer.
5. Read the descriptive words used by students aloud again before revealing the mystery object.
6. Recognize those students who correctly identified the mystery object.

## **Lesson Extenders:**

1. Have students draw pictures of what they think each vegetable or fruit looks like before you reveal the mystery object in the box.
2. Invite each child to taste the different mystery objects. Encourage students to describe each mystery object's taste, smell, and appearance. Record students' responses and then review the descriptive words with the group.
3. Place an assortment of fruits and vegetables in a shopping bag or basket, making sure there are several colors represented. Invite each child to pick a fruit or vegetable to identify its color. Continue with the remaining fruits, having students place the same-color fruits together.



# Beanie Baby

**Objective:** Upon completion of this activity, students will have a better understanding of the plant germination process.

## New Mexico State Standards:

Science Standard: Standard II. Life Science BM II

## Texas Essential Knowledge and Skills

Science: 112.11.9.A.B; 112.12.10.B; 112.13.9.A.B.; 112.13.10.B; 112.14.10.A; 112.14.10.C; 112.15.10.C; 112.16.9.D

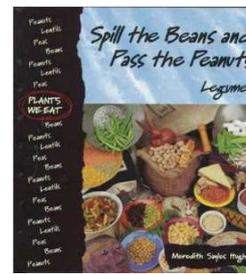
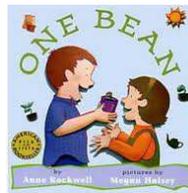
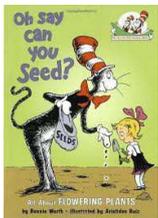
## Suggested Reading Material:

*Oh Say Can you Seed*

by Bonnie Worth

*One Bean* by Anne Rockwell

*Spill the Beans and Pass the Peanuts*



[www.google.com](http://www.google.com)

## What You Will Need:

Jewelry size re-sealable bag (found in craft stores)

Crystal Soil

Hole Punch

Water

Measuring spoons

Green Beans or Lima Beans Seeds

Yarn

## Activity Instructions:

1. Punch a hole in the top of your bag
2. Place a small  $\frac{1}{4}$  teaspoon of Crystal Soil into the bag.
3. Add 2 or 3 green bean or lima bean seeds.
4. Add 1 tablespoon of water.
5. Seal your bag firmly.
6. Insert the yarn into the hole to make a necklace.
7. Wear your Beanie Baby around your neck and under your shirt to keep it in a warm, dark place.
8. Check your Beanie Baby several times a day for germination and record the growth.

## Lesson Extenders:

1. Try this experiment with other seeds and record the similarities and differences.
2. Experiment with other controls like light, heat, soil medium, water and record the similarities and differences.

# Grow Your Own Soup



**Objective:** Students will make predictions about germination and harvest timelines. Students will also identify the impact of environmental factors on the growth cycle.

## New Mexico State Standards:

Science Standard: Strand I, Standard I. Scientific Thinking and Practice, BM I; Standard II. Life Science BM I and II

## Texas Essential Knowledge and Skills

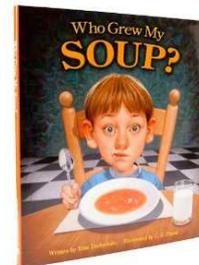
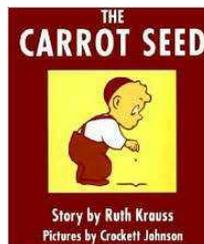
Science: 112.11.9.A.B; 112.12.10.B; 112.13.9.A.B.; 112.13.10.B; 112.14.10.A;112.14.10.C; 112.15.10.C; 112.16.9.D

## Suggested Reading Material:

*Stone Soup* by Marcia Brown

*The Giant Carrot* by Jan Peck

*Who Grew My Soup?* by Darbyshire



## Vocabulary Terms:

- **germinate:** when the plant's seed has opened and sends up its first stem
- **harvest:** to gather crops when they are mature and ready to eat or store
- **herbs:** a group of plants that are used for flavoring or seasoning food or drinks
- **hypothesis:** an explanation for something based on what has occurred, an "educated guess"
- **observations:** paying attention to how things occur or work and making a note of it.
- **prediction:** a good guess of what will happen based on your knowledge
- **root vegetables:** a group of vegetables with edible portions growing underground (includes carrots, potatoes, and radishes)
- **suppress:** to reduce or stop something from happening

## What You Will Need:

Calendar                      Small Planters  
Soil                              Seed Packets

## Activity Instructions:

1. Decide which vegetables you will be using for your soup. Be sure to supply students with the appropriate seed packets.
2. Have students create a growth chart to track important dates. Students will also need to keep a journal of their observations.
3. Using a calendar and the seed packets, answer the questions on the following worksheets.

# Grow Your Own Soup



Name \_\_\_\_\_

Use a calendar and the seed packets to answer the following questions:

1. Today's Date: \_\_\_\_\_

2. Name of Seeds: \_\_\_\_\_  
\_\_\_\_\_

3. According to the seed package, how many days will it be until your plants are ready for harvest?  
\_\_\_\_\_  
\_\_\_\_\_

4. Using a calendar, estimate your harvest dates:  
\_\_\_\_\_  
\_\_\_\_\_

5. Which plants will take the longest to be ready for harvest?  
\_\_\_\_\_  
\_\_\_\_\_

6. What factors can cause your plants to grow faster?  
\_\_\_\_\_  
\_\_\_\_\_

7. What factors can cause your plants to grow slower?  
\_\_\_\_\_  
\_\_\_\_\_

8. What factors can cause your plants to stop growing and die?  
\_\_\_\_\_  
\_\_\_\_\_

# Grow Your Own Soup



Name \_\_\_\_\_

During the time your soup garden is growing, keep a growth chart to track important dates. Be sure to also keep a journal where you can write down all of your observations. Consider the following questions when charting and journaling.

1. Do the plants seem to take a long time to **germinate**?
2. Do the plants **germinate** or start at the same time?
3. Do the leaves all seem the same or are they different?
4. Do the colors of the leaves vary?
5. Do the shapes of the leaves vary?
6. Do the plants have flowers?
7. Do any of the plants grow in clumps?
8. Do any of the plants grow like a vine?
9. Do the plants seem to be healthy?
10. How often do you have to water the plants?
11. Do the plants sometimes look like they need water? How can you tell?
12. Do the plants look yellow?

As you **harvest** your crop, consider these questions to record in your journal:

1. What is the first plant you **harvested**?
2. Did it look like you thought it would? If not, what is different?
3. Did you taste it?
4. What is the difference in the way you **harvest** the plants?
5. Was your indoor garden a success?
6. What would you do differently the next time you grow a garden?

# Grow Your Own Soup



Here is a wonderful Green Chile Stew Recipe you can grow.

## Green Chile Stew Recipe

Serves: 8 (leftovers freeze quite well)

Prep and cook time: 1.5 hours

### Ingredients

**1 1/2 Tbsp. coriander seeds, toasted and ground**  
**1 Tbsp. olive oil or canola oil**  
**1 1/2 pounds sirloin, trimmed with no fat (substitute pinto beans for a vegetarian stew)**  
**salt and pepper**  
**1 large onion, chopped**  
**3 large garlic cloves, minced**  
**3 cups crushed tomatoes**  
**6 cups chicken or vegetable stock**  
**1 tsp. oregano**  
**1 pound potatoes, cut into 1/2" cubes**  
**3 cups chopped New Mexico green chile**  
**Salt to taste**  
**Flour tortillas (as a side)**

### Instructions

1. To toast the coriander, heat a heavy skillet on the stovetop. Add the coriander seeds, shaking the skillet often until the seeds become aromatic and lightly brown. Transfer to a mortar and pestle and grind. Set aside.
2. Heat the oil in a large Dutch oven medium high heat. Lightly salt and pepper both sides of the sirloin. Add to the Dutch oven and sear on both sides. Transfer to plate.
3. Reduce the heat to medium. Add the onion and garlic. Saute' for about 2 minutes.
4. Add the tomatoes, ground coriander, oregano, stock, potatoes and green chile.
5. Cut the meat into bite size cubes and transfer back into the pot along with any juices that have accumulated on the plate.
6. Bring to a boil and reduce to a simmer. Simmer for 45 minutes or until the potatoes are tender.
7. Taste and add salt if necessary. (If you use canned tomatoes, you'll probably not need to add salt.)

Serve with warm flour tortillas.

<http://mjskitchen.com/2013/01/new-mexico-green-chile-stew/>

# Garden in a Glove



**Objective:** Students will conduct a scientific experiment and record data in order to explain the simple life cycle as well as the need of plants.

## New Mexico State Standards:

Science Standard: Strand I, Standard I. Scientific Thinking and Practice, BM I; Standard II. Life Science BM I and II

## Texas Essential Knowledge and Skills

Science: 112.11.9.A.B; 112.12.10.B; 112.13.9.A.B.; 112.13.10.B; 112.14.10.A;112.14.10.C; 112.15.10.C; 112.16.9.D

## Suggested Reading Material:

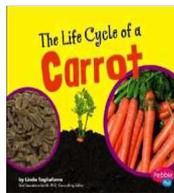
*Our Generous Garden* by Anne Nagro

Our Generous Garden



By Anne Nagro

*The Life Cycle of a Carrot* by Linda Tagliaferro



## What You Will Need:

Clear Plastic Food Service Glove

Pencil or Popsicle Stick

Twist Tie or piece of string

5 Cotton Balls

Water

Permanent Marker

5 Types of Seed

Plant Diary

Microscope (optional)

## Activity Instructions:

1. Write your name on a clear plastic food service glove.
2. Using the permanent marker, write the name of a seed you will be planting on each finger.
3. Wet five cotton balls and wring them out.
4. Dip each cotton ball into 1 seed type. The seeds should stick to the cotton ball.
5. Put the cotton ball with the seeds attached into the finger of the glove that is labeled with that type of seed. **Hint:** *For younger students, you may choose to use one type of seed for all 5 fingers. A pencil or a popsicle stick may also be handy in pushing the cotton ball to the bottom of each finger.*
6. Blow up the plastic glove and close it with a twist tie or tie a piece of string around the top.
7. Tape the glove to a window, chalkboard or wall. You may want to hang a clothes line under a chalk tray and use clothes pins to hold the gloves on. **Hint:** *Do not tape to the window in the winter because the window will be too cold to allow for germination.*
8. The seeds will germinate in 3 to 5 days. Keep a plant diary and look at the seeds under the microscope.
9. Transplant the seeds in about 1  $\frac{1}{2}$  to 2 weeks by cutting the tips of the fingers off the glove. Transplant the cotton ball and small plants into soil.
10. After growing to full size, vegetables can be harvested to use in your soup!



# Tomato Spinners

**Objective:** After completing this activity, students will have a better understanding of how vegetables grow and why they are an important part of their diet.

**Common Core State Standards:**

3.NF.1-3; 4.NF.3; 5. NF.3; K-5.W.7

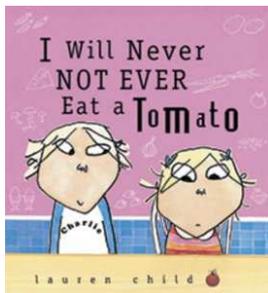
**Texas Essential Knowledge and Skills**

English LA and Reading: 110.11-110.16A; 110.11-110.16C; 110.11-110.16D; 110.11-110.16E; 110.11-110.16F

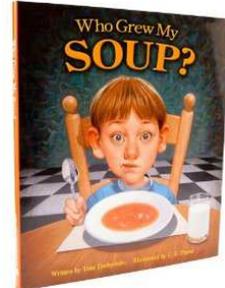
**Suggested Reading Material:**

*I Will Never Not Ever Eat a Tomato* by Lauren Child

*Who Grew My Soup?* by Tom Darbyshire



[www.google.com](http://www.google.com)



**What You Will Need:**

- |                            |   |                 |
|----------------------------|---|-----------------|
| 1 brad                     | pencil  | ruler(optional) |
| colored pencils or crayons | glue  | scissors        |
| 1 small dessert plate      | 1 red dinner plate or regular white plate that can be colored |                 |

Stem template from <http://www.agintheclassroom.org/TeacherResources/InterestApproaches/Tomato%20Spinners-Who%20Grew%20My%20Soup.pdf> or have students draw their own

**Activity Instructions:**

1. Divide the small dessert plate into eighths by drawing with a pencil and using the ruler as a straight line guide. Plain white paper can be substituted for the small white dessert plates. Just have students trace the large paper plate on a regular sheet of paper and cut it out.
2. Write one of the facts from *Who Grew My Soup?* on each one-eighth section,
3. Cut a triangle out of the large plate. It should be 1/8<sup>th</sup> of the plate in size. It should look like a pie slice and line up with the lines drawn on the small dessert plate.
4. Attach the red plate to the front of the divided fact plate with a brad.
5. Glue the tomato stem to the top of the tomato.
6. Now the students can turn their tomato spinner and review the facts about vegetables, especially tomatoes.

# "Souper" Surveys



**Objective:** Students will learn to organize and display data using charts and graphs. They will also make predictions based on given data.

**Common Core State Standards:**

K.MD.3; 1.MD.4; 2.MD.10; 3.MD.3; 4.MD.4; 5.MD.2; K-5.RI.9; K-5.W.2

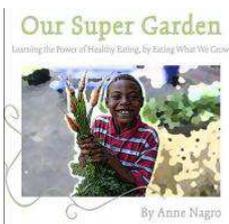
**Texas Essential Knowledge and Skills**

English LA and Reading: 110.11-110.16A; 110.11-110.16C; 110.11-110.16D; 110.11-110.16E; 110.11-110.16F

Math: 111.2.7.A.B; 111.3.7.A.B.C.D; 111.4.8.D; 111.5.6.A; 111.6.8.A.C

**Suggested Reading Material:**

*Our Super Garden* by Anne Nagro



[www.amazon.com](http://www.amazon.com)

**What You Will Need:**

Paper

Pencil

**Activity Instructions:**

1. Give each student a survey worksheet (located on the following page).
2. As a class, choose 10 vegetables used in soup that you want to survey other people on to see which is their *most* favorite and *least* favorite.
3. Have each student survey 10 people to see what their favorite vegetable in soup is.
4. Tally the votes as a class.
5. Have each student make a chart, graph, or line plot showing the survey results.

**Lesson Extenders:**

1. Survey all of the students in your class to see which vegetable is their favorite in soup.
2. Have the students make comparisons between what is their favorite vegetable in soup versus the favorite vegetable of the people they surveyed. Have them consider the following questions:
  - a. What is the *most* favorite vegetable in soup of the outside survey group?
  - b. What is the *least* favorite vegetable in soup of the outside survey group?
  - c. What is the *most* favorite vegetable in soup in you class
  - d. What is the *least* favorite vegetable in soup in your class?
  - e. Does your class like the same vegetables in soup as the outside survey group?
3. Create a Vehn Diagram and compare the likes and differences in each group.
4. Calculate the number of differences in each category. Create math word problems using this data.



# "Souper" Surveys

Name \_\_\_\_\_

Survey 10 people to find out their *most* favorite vegetable in soup. Keep your results in the table below. List the vegetables in Column A. In Column B, place a mark every time it gets a vote. When you are done, count the marks in Column B and write the number in Column C.

Column A: Vegetables	Column B: Votes	Column C: Total

# Measure It!!



**Objective:** Students will learn about serving size and use math skills to make predictions. Common Core

**State Standards:**

K-5.RI.9; K-5.RI.7; 3.MD.2; 4.MD.1; 4.MD.2; 5.MD.1

**Texas Essential Knowledge and Skills**

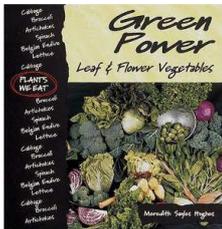
English LA and Reading: 110.11-110.16A; 110.11-110.16C; 110.11-110.16D; 110.11-110.16E; 110.11-110.16F

Math: 111.2.7.A.B; 111.3.7.A.B.C.D; 111.4.8.D; 111.5.6.A; 111.6.8.A.C

**Suggested Reading Material:**

*Green Powers Leaf and Flower Vegetables*

by Meredith Sayles Hughes



[www.amazon.com](http://www.amazon.com)

**Materials Needed:**

Copies of the Measure It! Recording sheet

plastic serving bowls

Large plastic tumbler or pitcher

plastic measuring cups (1/4 cup, 1/2 cup, and 1 cup)

Foods to measure (fruit juice, leafy greens, canned peas, canned fruit, raisins)

**Activity Instructions:**

1. Explain to students that different amounts of various kinds of fruits and vegetables are considered a serving. Show students the foods that they will be measuring in their group and tell them how much of each one equals a serving.
2. Name a fruit or vegetable and have each group measure one serving of the item, referring to the serving chart below.
3. Have the group read each question and use the necessary foods to answer the question.
4. After each group has finished, have students share their answers with the class.

**Lesson Extenders:**

- Make a recipe that involves a variety of measurements
- Have each child write a menu for one day that contains at least nine servings of fruits and vegetables. Be sure students write the amount of each food they will eat.

**One Serving Size for Fruits and Vegetables**

3/4 cup of 100% juice

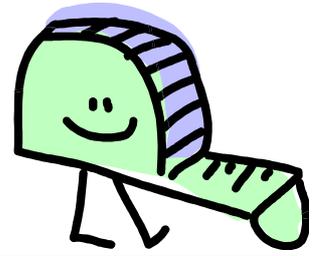
1/2 cup of canned soup

1 cup of leafy greens

1/4 cup of dried fruit

1/2 cup of canned or cooked vegetables

# Measure It!! Recording Sheet



Use the Serving Size Table to answer the following questions. Don't forget to show your work and explain your answer.

1. How many servings of canned soup are equal to 2 cups? \_\_\_\_\_

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2. How many servings of leafy greens are equal to 8 cups?

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3. How many cups of cooked vegetables would you need to serve six people a serving each?

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4. How much juice would you need for each person in your group to have a serving?

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5. How much dried fruit would you need for ten people to each have a serving?

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6. If you ate  $2\frac{1}{2}$  cups of canned vegetables, how many servings would you have eaten? \_\_\_\_\_

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## One Serving Size for Fruits and Vegetables

$\frac{3}{4}$  cup of 100% juice

1 cup of leafy greens

$\frac{1}{2}$  cup of canned or cooked vegetables

$\frac{1}{2}$  cup of canned soup

$\frac{1}{4}$  cup of dried fruit

# Corn Field Math



**Objective:** Students will use number sense, measurement, and data analysis to construct drawings and compute multi-step problems dealing with whole numbers, fractions, and percent.

**Common Core State Standards:**

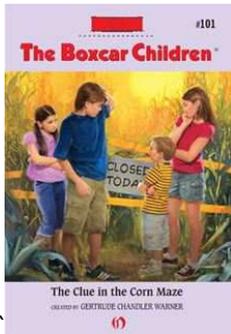
3.MD.4; 3.MD.5; 3.MD.6; 3.MD.7; 3.MD.8; 4.MD.3; 4.MD.5; 4.MD.6; 4.MD.7; 5.MD.1; 5.G.1; 5.G.2

**Texas Essential Knowledge and Skills**

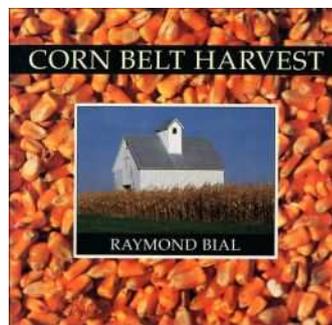
Math: 111.2.7.A.B; 111.3.7.A.B.C.D; 111.4.8.D; 111.5.6.A; 111.6.8.A.C

**Suggested Reading Material:**

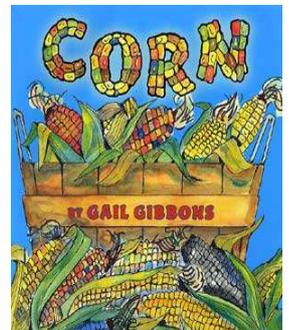
*The Clue in the Corn Maze*  
by Gertrude Chandler Warner



*Corn Belt Harvest*  
by Ramond Bial



*Corn* by Gail Gibbons



MES

**Materials:**

Computer/resource materials

calculator

graph paper

Ruler

compass

protractor

**Vocabulary**

- **Cultivate**- to prepare land for raising of crops
- **Domesticated**-adapted to living with human beings and serving their purpose
- **Ethanol**-a colorless, volatile, pungent liquid made from corn which can be burned as a fuel
- **Hybrid**-an offspring of parents with different genes especially when of different races, breeds, species, or genera
- **Maize**- Native American name for corn. Also called Indian Corn
- **Pollinated**- pollen placed on the stigma of a plant for the purpose of creating seeds, flowers and fruit.
- **Porridge**- a soft cereal or meal boiled in water or milk until thick
- **Silage**- the entire above ground portion of the corn plant (including ear) that is harvested by cutting and chopping the plant before it reaches maturity. It is stored in silos or packed into above-ground pits and used for feed.
- **Soil conservation**- a protection from loss, waste, etc. of soil through efficient farming methods.
- **Utilitarian**- the quality or property of being useful

### **Background Information:**

Corn is a grass, native to the Americas. The exact origin is unknown, but tiny ears of corn have been discovered at ancient village sites and in tombs of early Americans. Evidence of corn in Central Mexico suggests it was used there as long as 7000 years ago, where it was domesticated from wild grass. Cultivated corn is known to have existed in what is now the southwestern US for at least 3000 years. In the United States, many of the various Native American tribes have traditionally grown corn- also known as maize- and use it for both food and utilitarian purposes. Eastern tribes shared their knowledge of corn production with early European settlers, an act which saved many from starvation.

Early American colonist dried corn and ground it as meal for flour. They used the ground corn in porridge, cake and bread. Fresh, or sweet corn, the kind we like to eat as corn on the cob, was not developed until the 1700s. Before then, corn was only used in its dried form.

Along with wheat and rice, corn is one of the world's major grain crops. It is the largest grain crop grown in the US. About 9 percent of all the corn grown is used to produce food for humans. These foods include corn meal and other food products such as cooking oils, margarine, and corn syrups and sweeteners (fructose). Sixty-four percent of all corn grown is used as feed for livestock.

Corn cobs have been used in the manufacturing of nylon fibers and as a source for producing degradable plastics. Ethanol, a renewable fuel made from corn, has shown the possibility of becoming a major renewable fuel for the world's automotive industry.

Corn is pollinated by wind and is typically planted in 30-inch rows. A single seed (or kernel) of corn may produce a plant which yields more than 600 kernels of corn per ear. On one acre of land, anywhere from 22,000 to 35,000 individual plants may be grown.

Hybrid corn is developed to produce from one to two ears per plant. Ears per plant are often determined by moisture availability. Through better soil conservation practices, fertilizer use, better seed quality, and water availability, corn yields have increased 125 percent since 1950.

### **Activity Instructions:**

1. Read and discuss the background information and vocabulary.
2. Hand out the worksheet for students to complete.

Students will work in pairs or groups to solve math problems.

Students will check answers after completing the first two before continuing.

In class discussion, students will agree or disagree with the reasoning of other classmates and explain their positions.

### **Lesson Extender:**

- Have students create their own problems using the knowledge they have gained through this activity.
- Have students use graph paper to create scale-drawings illustrating each problem.
- Encourage students to check current and future corn prices and then complete the problems using the current or future corn prices.
- Challenge students to complete the problems using other crops in place of corn. Students will need to determine the number of plants in a row for the crop they have chosen, the number of plants per square acre etc.

Use your calculator and other mathematical tools to solve the following problems. Compare your methods with a partner.

1. A) An acre of land is 43,560 sq. ft. How long is one side of a square acre?  
  
B) If the rows are 2.5 ft. apart, how many rows are there?  
  
C) How many corn plants will be in each row if there are 22,000 plants in a square acre?
2. Each corn plant produces one ear of corn. There are 600 kernels per ear. How many kernels are produced on 1 acres of land?

WAIT: CHECK YOUR ANSWERS TO THE FIRST TWO PROBLEMS BEFORE CONTINUING.

3. There are 135 bushels of corn produced per acre. How many kernels of corn are in a bushel?
4. A farmer has 640 acres planted in corn. How many bushels of corn will this yield if each plant produces two ears?
5. Corn is selling for \$2.40 a bushel. Farmer A's plants produce two ears per plant, while Farmer B's plants produce one. Compare their earnings per acre.
6. The yield has increased by 125% or by a factor of 2.25 since 1950. It is 135 bushels today. What was it in 1950? Explain in writing how you completed your answer.
7. The farmer decided to plant his 320 acres in three different varieties of corn. Use graph paper to construct a model of the farmer's land. Label each section, and complete the calculations. Show your work. Discuss your work on this question with a partner or group.
  - a. Variety A produces one ear per plant. The farmer planted  $\frac{1}{3}$  of his 320 acres in Variety A. How many bushels of corn can he expect from Variety A?
  - b. Variety B produces two ears per plant. The farmer planted half of his 320 acres in Variety B. How many bushels of corn can he expect from Variety B?
  - c. Variety C produces 1.5 ears per plant. The farmer planted the rest of his acreage in Variety C. How many bushels of corn can he expect from Variety C?
  - d. What is the total yield the farmer can expect for the entire 320 acres?
  - e. How much would the farmer receive from the sale of his corn at \$2.40 a bushel?

## Corn Field Math (Answers)

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1. A) An acre of land is 43,560 sq. ft. How long is one side of a square acre?

$$\sqrt{43,560} = 208.71 \text{ ft per side}$$

- B) If the rows are 2.5 ft. apart, how many rows are there?

$$208.71 \div 2.5 = 83.48 \text{ rows}$$

- C) How many corn plants will be in each row if there are 22,000 plants in a square acre?

$$22,000 \div 83.48 = 263.54 \text{ plants}$$

2. Each corn plant produces one ear of corn. There are 600 kernels per ear. How many kernels are produced on 1 acres of land?

$$22,000 \times 600 = 13,200,000 \text{ kernels}$$

3. There are 135 bushels of corn produced per acre. How many kernels of corn are in a bushel?

$$13,200,000 \div 135 = 97,777.77 \text{ kernels}$$

4. A farmer has 640 acres planted in corn. How many bushels of corn will this yield if each plant produces two ears?

$$640 \times 135 = 86,400 \times 2 = 172,800 \text{ bushels (2 ears per plant)}$$

5. Corn is selling for \$2.40 a bushel. Farmer A's plants produce two ears per plant, while Farmer B's plants produce one. Compare their earnings per acre.

$$\text{Farmer A: } \$2.40 \times 270 = \$648; \text{ Farmer B: } \$2.40 \times 135 = \$324$$

6. The yield has increased by 125% or by a factor of 2.25 since 1950. It is 135 bushels today. What was it in 1950? Explain in writing how you completed your answer.

$$x + (125\%)x = 135; 2.25x = 135; 135 \div 2.25 = 60; x = 60$$

7. The farmer decided to plant his 320 acres in three different varieties of corn. Use graph paper to construct a model of the farmer's land. Label each section, and complete the calculations. Show your work. Discuss your work on this question with a partner or group.

- a. Variety A produces one ear per plant. The farmer planted  $\frac{1}{3}$  of his 320 acres in Variety A. How many bushels of corn can he expect from Variety A?

$$\frac{1}{3} \times 320 = 106.66 \text{ acres} \times 135 \text{ bushels} = 14,399.1 \text{ bushels}$$

- b. Variety B produces two ears per plant. The farmer planted half of his 320 acres in Variety B. How many bushels of corn can he expect from Variety B?

$$\frac{1}{2} \times 320 = 160 \text{ acres} \times 270 \text{ bushels} = 43,200 \text{ bushels}$$

- c. Variety C produces 1.5 ears per plant. The farmer planted the rest of his acreage in Variety C. How many bushels of corn can he expect from Variety C?

$$\frac{1}{6} \times 320 = 53.33 \text{ acres} \times (135 \times 1.5) = 10,799.325 \text{ bushels}$$

- d. What is the total yield the farmer can expect for the entire 320 acres?

$$14,399.1 + 43,200 + 10,799.325 = 68,398.425 \text{ bushels}$$

- e. How much would the farmer receive from the sale of his corn at \$2.40 a bushel?

$$68,398.425 \times \$2.40 = \$164,156.22$$

# How to Make a Tin-Can Wind Chime

## Step 1

Remove any paper wrapping on the outside of the tin cans. Wash the inside of the cans well and dry them. Use the metal file to buff away any sharp edges on the cans.

## Step 2

Paint the outside of the tin cans with acrylic paint. Make them one color or splash an assortment of bright colors onto them. Allow the paint to dry completely.

## Step 3

Use a nail to make a hole in the bottom of the cans, directly in the center. Pound the nail through the cans with a hammer, then pull the nail out.

## Step 4

Cut a 3-foot length of nylon cord and burn both ends with a lighter to seal them. Thread one end of the cord through the bottom hole of the larger can. Place the can so that approximately 1 foot of cord extends out the bottom. This will be the top of the wind chime (the can should be upside down). Place one locking toggle onto the short end of the cord and position it just above the can to hold it in place.

## Step 5

Slide another locking toggle onto the long end of the cord and push it up so that it stops when it rests against the inside bottom of the large can. This will hold the can in place along the cord. Slide another locking toggle onto the long end of the cord and push it up so that it is just under the large can.

## Step 6

Insert the long end of the cord through the hole in the smaller can (which is upside down) and position the can so that it stops at the locking toggle you just added. Add the fourth locking toggle onto the cord and push it up so that it stops when it rests against the inside bottom of the smaller can. Now both cans are securely in place on the cord with the locking toggles.

## Step 7

Add the large wooden bead and push it up so that it is even with the bottom of the smaller can. Place the last locking toggle onto the cord and push it up just under the bead so that it will hold the bead in place.

## Step 8

Tie a loop in the other end of the cord for hanging the wind chime. Find a spot where it can catch the wind

Taken from: [How to Make a Tin-Can Wind Chime | Garden Guides](http://www.gardenguides.com/68323-make-tin-can-wind-chime.html#ixzz2WnWjhzMx)  
<http://www.gardenguides.com/68323-make-tin-can-wind-chime.html#ixzz2WnWjhzMx>