

GED 2002 Teachers' Handbook of Lesson Plans

Content Area Science	Lesson Title <i>Recycling – A Job Everyone Can Do</i>	Lesson Topic/Theme Life Science – Environment	Lesson Number SCI 2004 - 10
<p>Objectives/Learner Outcomes</p> <p>At the end of this lesson, the learner will be able to:</p> <ul style="list-style-type: none"> • Use appropriate tools and techniques to gather data • Identify and provide a solution to a problem related to ecology and recycling • Evaluate and make decisions about personal issues related to the environment 		<p>Materials/Resources/Internet Sites/Handouts/Worksheets</p> <ul style="list-style-type: none"> • Handout 1 – Recycling – Just the Facts • Handout 2 – Reduce, Reuse, Recycle, Respond • Handout 3 – Household Trash Survey • Internet Resources <ul style="list-style-type: none"> ○ 12 Tips for Reducing Solid Waste http://www.epa.gov/cgi-bin/epaprintonly.cgi ○ Earth 911 http://www.earth911.org ○ Dumptown Game http://www.epa.gov/recyclecity/gameintro.htm ○ Washington State Department of Ecology, Recycling Facts and Trivia http://www.ecy.wa.gov/programs/swfa/kidspage/trivia.html ○ Thomas Recycling http://www.thomasrecycling.com/kids.html#anchor530036 ○ American Forest and Paper Association http://www.afandpa.org/Template.cfm?section=About_AFandPA 	
<p>Pre-Requisite Knowledge</p> <p>The learner should be able to:</p> <ul style="list-style-type: none"> • Use the Internet to search for information and resources • Read charts and graphs • Construct charts and graphs • Make predictions 		<p>Key Words</p> <ul style="list-style-type: none"> • Reduce • Reuse • Recycle • Respond • Source Reduction • Toxicity • Pulp (paper) • Municipal Solid Waste 	

Anticipatory Set/Introduction

Ask: Do you ever worry about the environment? What concerns do you have? List the concerns on the board. Today, there are many efforts within local communities to improve air and water quality. There are also efforts to reduce the amount of waste that people dispose of everyday. In this lesson, we are going to look at one job that all of us can do to help protect the environment – recycling.

Preview Questions for Lesson

- Is there a recycling program in your community, development, apartment complex?
- What do you recycle? If there is a program but you don't participate, why not?
- Do you know how much waste is generated each year in your community, in the country, in the world?

Instructional Outline

This lesson requires that students access the Internet in order to obtain information about recycling in the United States. Before students begin their searches, discuss the concept of recycling and what they already know about it. Students should be able to answer each of the questions on Handout 1 – **Recycling – Just the Facts** when they complete their searches. Review and discuss any areas of concern.

Have student work in teams to play the *Dumptown Game* on the Internet. This game enables students to see what changes occur when certain types of programs are implemented in communities. To make the game more challenging, limit the amount of funds that students can use to clean up Dumptown and then discuss the reasons why they chose specific programs.

Provide students with Handout 2 – **Reduce, Reuse, Recycle, Respond**. Divide the students into teams of 2-4. Have each team identify specific steps or strategies they could use to meet each of the four principles of solid waste reduction. Have the students share their results at the end of the class.

Provide students with a copy of Handout 3 – **Household Trash Survey** that they can take home and use. Have the students sort through their own solid waste to see what they are throwing away each day. Have students track their trash over a period of 3-5 days. This is an activity that they can do with their children. Have students report the results to the class. See who has the least amount of waste and who has the most. As a group, brainstorm ways that each of them can reduce the amount of trash that they consume.

Have students write a paragraph or essay that explains the most important thing that they can do to reduce solid waste in their own homes. Have students share their writing samples with the class.

<p>Process/Activities</p> <p>During this lesson, students will:</p> <ul style="list-style-type: none"> • Use the Internet to find out basic facts about recycling • Read text and identify specific details associated with recycling • Complete an online recycling game • Conduct research at home to determine the types and quantity of waste that they and their families are generating each day • Write a paragraph or essay on how the most important thing they can do to reduce solid waste in their own homes 			
<p>Product/Evaluation/Summary</p> <p>When students have completed this lesson, they will provide the teacher with:</p> <ul style="list-style-type: none"> • a copy completed Handout 1 – Recycling – Just the Facts, • a copy of each team’s master list of ways to address of the four principle of solid waste reduction; • a copy of their home waste survey and plan for reducing; and • their paragraph or essay. 			
<p>Teaching to Different Types of Learners</p>			
	<p>Visual</p>	<p>Auditory</p>	<p>Kinesthetic/Tactile</p>
<p>Learning Activity</p>	<p>Provide written instructions for the activity.</p>	<p>Provide oral instructions to ensure students understand what is expected of them.</p>	<p>Provide students with strips of paper on which they can write their ideas for addressing each of the four principles for reducing solid waste. Have students sort their ideas into each category.</p>
<p>Special Differentiation Strategies</p>	<p>Have students add vocabulary words to their personal dictionaries and include definitions in their own words.</p>	<p>Have students watch the video from the American Forest and Paper Association. Click on Environment and Recycling, Open Menu and go to Recycling, and then Recycling Video.</p>	<p>Bring in an assortment of products and have the students separate them into those that can be recycled and those that cannot. This will provide students with practice before they go home and sort their own solid waste products.</p>

<p>Evaluation</p>	<p>Have students compose their paragraphs or essays using basic word processing software.</p>	<p>Have students read their paragraphs or essays to the class. Discuss the different selections that students made as the most important thing they could do to reduce solid waste.</p>	<p>Have students construct poster boards of their recycling plans. Have someone from the Solid Waste Authority visit the class and judge each of the plans.</p>
<p>The Family and Adult Literacy Connection</p> <p>Have parents complete the trash survey handout with their children. Print copies of the Planet Protector's Online Coloring Book and provide to each student for their younger children. Encourage parents to go online with their children to the Nine Lives of a Peanut Butter Jar website. Have them identify a product in their own homes that they could provide with "nine lives" and share that information with the class.</p> <ul style="list-style-type: none"> • Plant Protector's Online Coloring Book http://www.epa.gov/epaoswer/osw/kids/color/index.htm • The Happy Earth Day Coloring and Activities Book http://www.epa.gov/region5/publications/happy.pdf • Nine Lives of a Peanut Butter Jar http://www.epa.gov/epaoswer/non-hw/reduce/catbook/jar.htm 		<p>ESE/ESOL Accommodations</p> <p>ESOL students come from very diverse cultures and may not be familiar with the concept of recycling or recycling may have been handled differently in their native countries. Have students share their customs with the rest of the class. Take students on a field trip to a recycling plant in the area and let them see what happens to the solid waste from their community.</p>	

GED 2002 Teachers' Handbook of Lesson Plans Recycling – Just the Facts!

Use the following Internet resources to find the answers to each of the following questions:

- **12 Tips for Reducing Solid Waste** <http://www.epa.gov/cgi-bin/epaprintonly.cgi>
- **Washington State Department of Ecology, Recycling Facts and Trivia**
<http://www.ecy.wa.gov/programs/swfa/kidspage/trivia.html>
- **Thomas Recycling** <http://www.thomasrecycling.com/kids.html#anchor530036>

1. Another term for municipal solid waste is _____.
2. Paper cups consume trees, water, and chemicals. Most of them are not recyclable because they are often _____.
3. Paper products make up ____% of solid waste.
 - a. 25
 - b. 30
 - c. 40
 - d. 50
4. Food waste, such as leftovers, is a great source for composting.
 - a. True
 - b. False
5. According to the America Recycles Day report, 1996, Americans recycled ____% of the 99 billion aluminum cans produced.
 - a. 25
 - b. 33.3
 - c. 55.6
 - d. 63.5
6. Which of the following countries used the least amount of wood pulp in 1998?
 - a. Brazil
 - b. France
 - c. China
 - d. Canada
7. The U.S. has the highest consumption of paper products. Which of the following countries has the second highest consumption?
 - a. Belgium
 - b. Denmark
 - c. Finland
 - d. Canada
8. The four basic principles for reducing solid waste are: _____, _____, _____, and _____.
9. Buying products with less packaging is called _____.
 - a. Resource allocation
 - b. Resource reduction
 - c. Source reduction
 - d. Reduced quantity
10. By recycling 1 ton of paper, you can save _____ trees.
 - a. 3
 - b. 7
 - c. 12
 - d. 17

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Reduce, Reuse, Recycle, Respond

REDUCE	REUSE
RECYCLE	RESPOND

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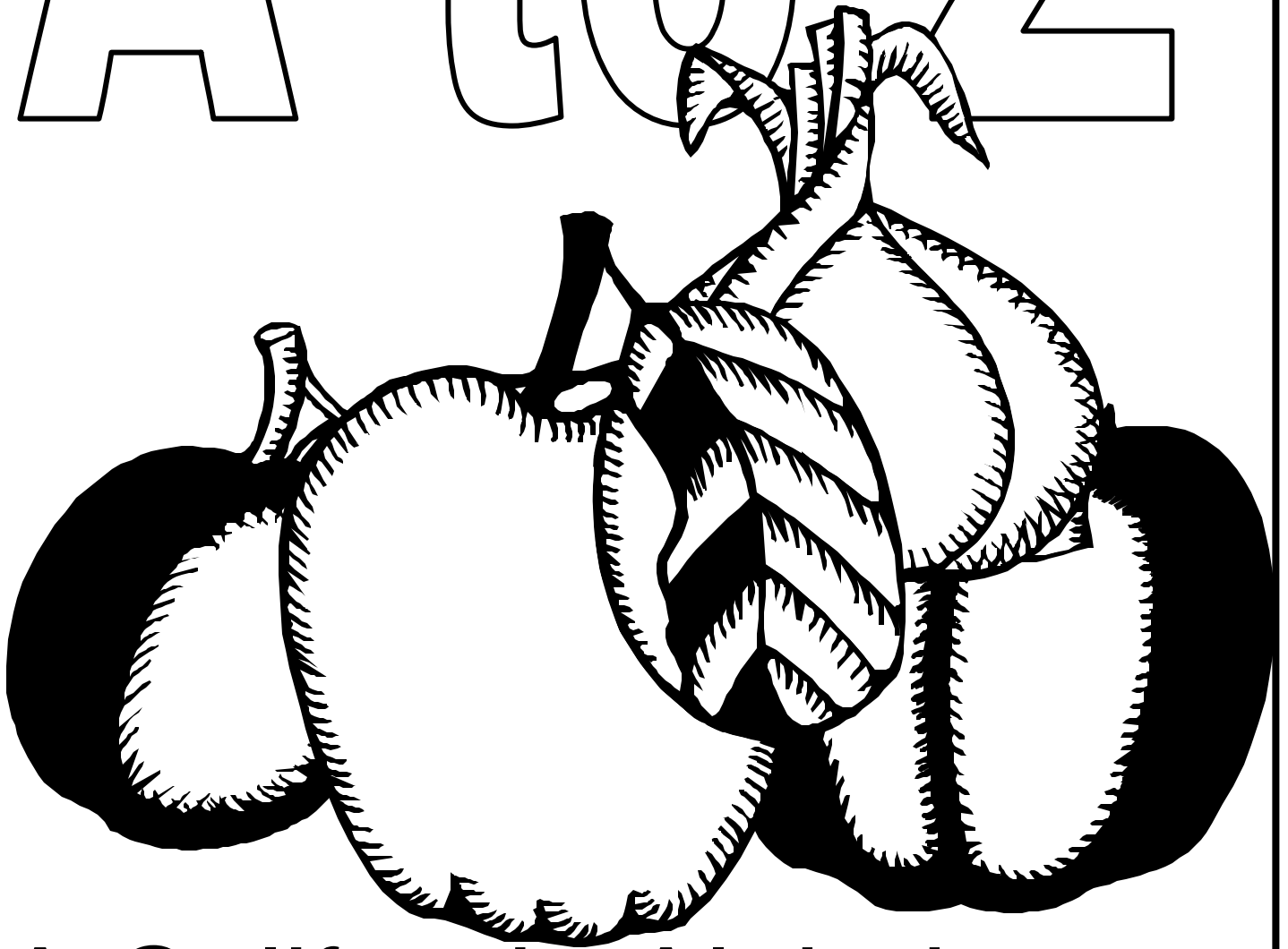
Household Trash Survey

Use the following chart and survey the trash that is generated in your home for a period of 3-5 days. Keep a tally of each type of item and then total them at the end of the survey period. Construct a graph that shows how each category compares to the others.

	Day 1	Day 2	Day 3	Day 4	Day 5
Glass					
Aluminum Cans					
Paper					
Plastic					
Food					
Hazardous Waste					
Other					

Farm Service Agency

A to Z

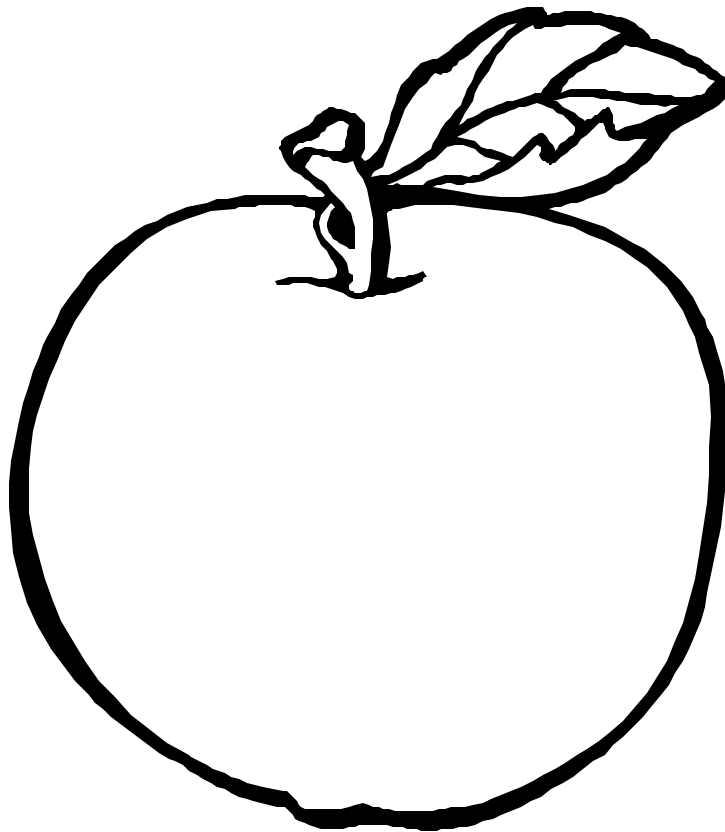


A California Alphabet & Coloring Book

These crops all grow in California!

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www.fsa.usda.gov/ca/agforkids.htm

A a

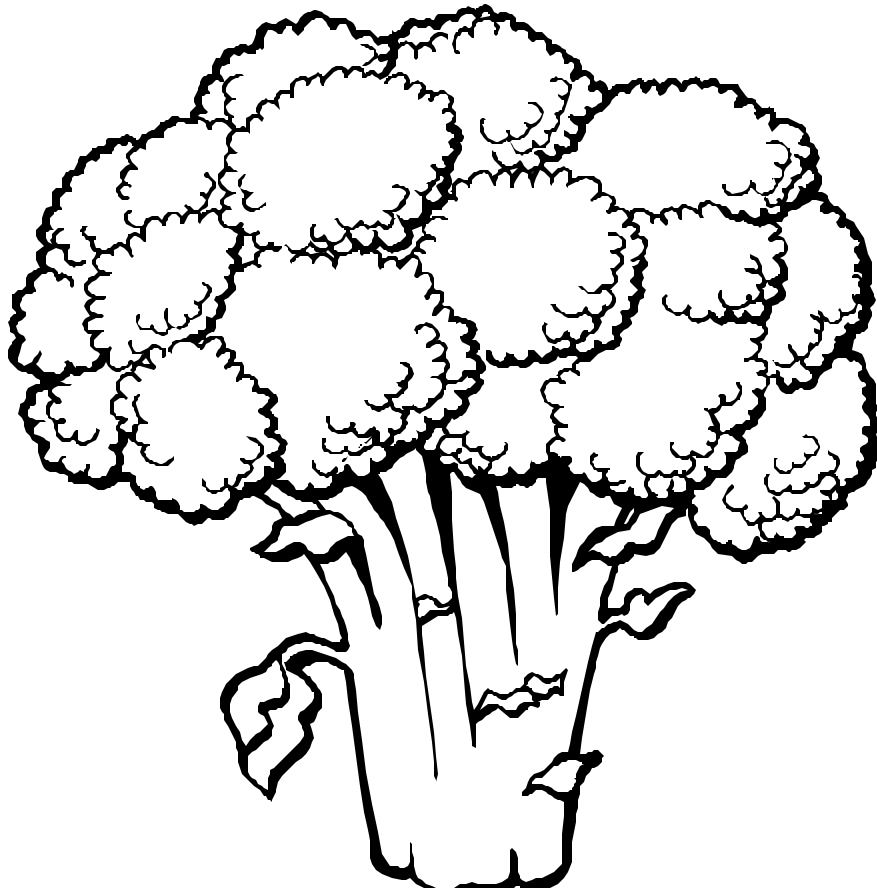


apple

Fun fact: It takes two pounds of apples to make a pie.

USDA Farm Service Agency
www.fsa.usda.gov/ca/agforkids.htm

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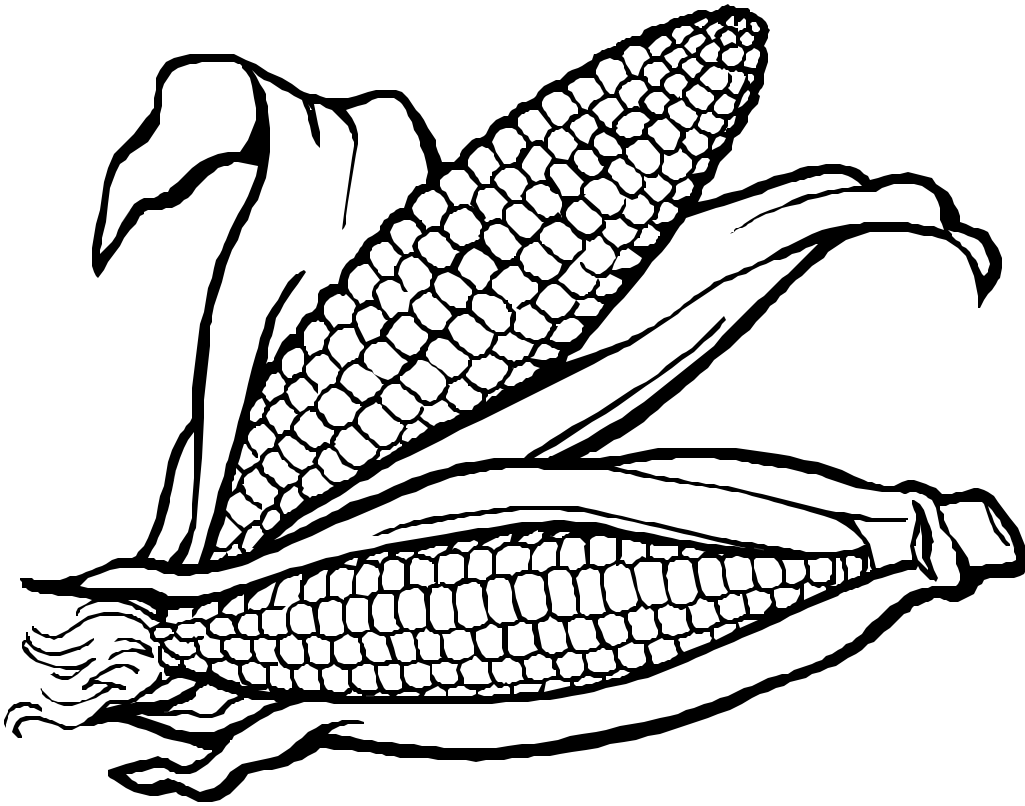


broccoli

Fun fact: Moms have been telling kids to eat broccoli for 2,000 years.

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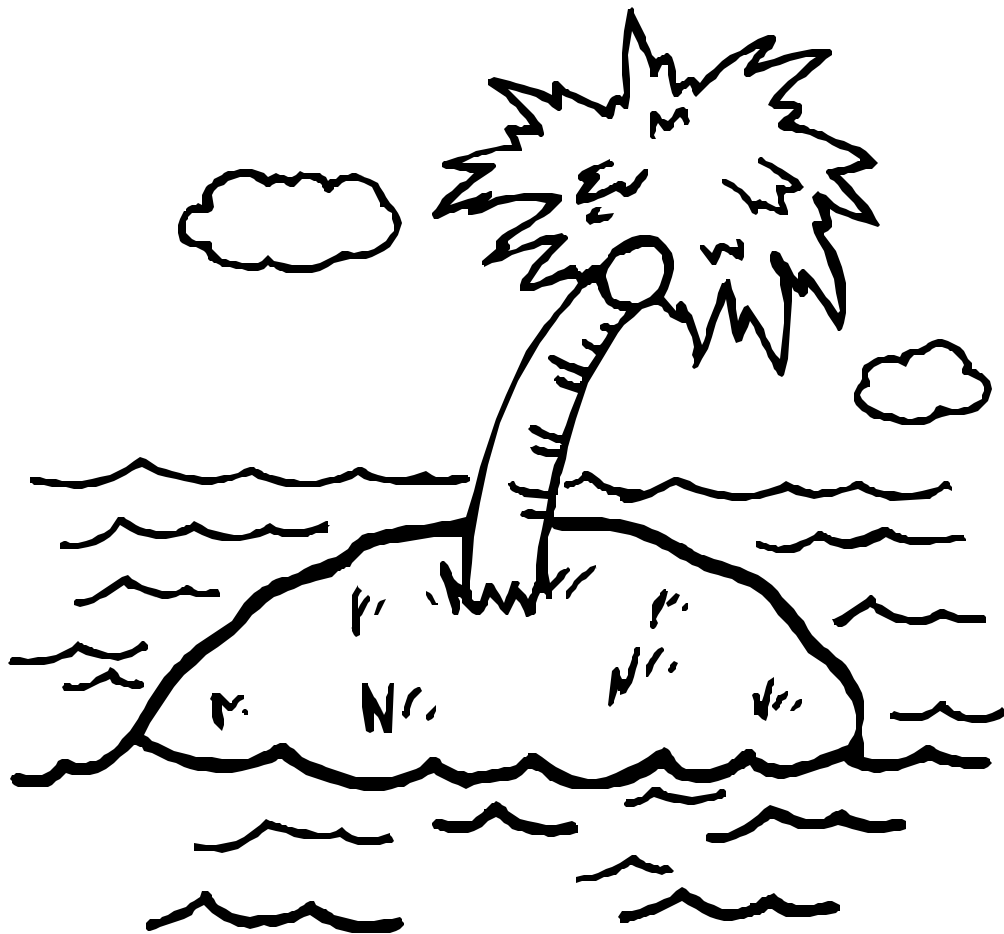


corn

Fun fact: Corn is really a tall grass.

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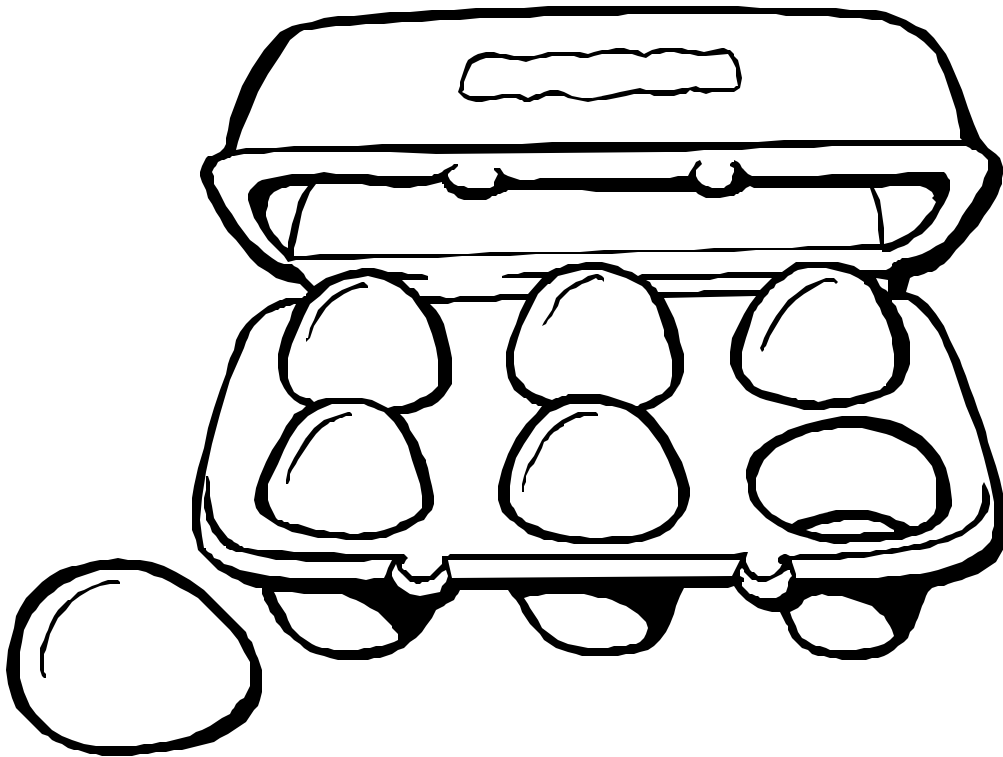


date palm

Fun fact: The date palm was brought to the US (on a large scale) in the 1890's.

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E e



egg

Fun fact: It takes a hen 24 to 26 hours to produce an egg. Just 30 minutes later, she starts all over again.

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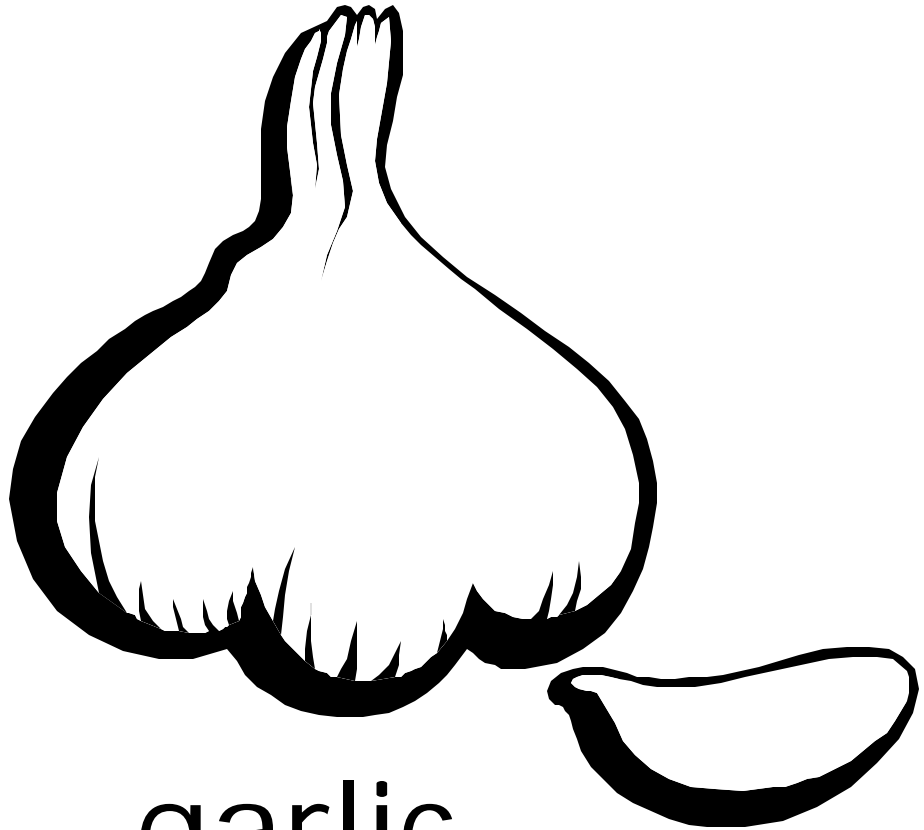
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fig

Fun fact: Figs were probably one of the first fruits to be dried and stored by people.

G g

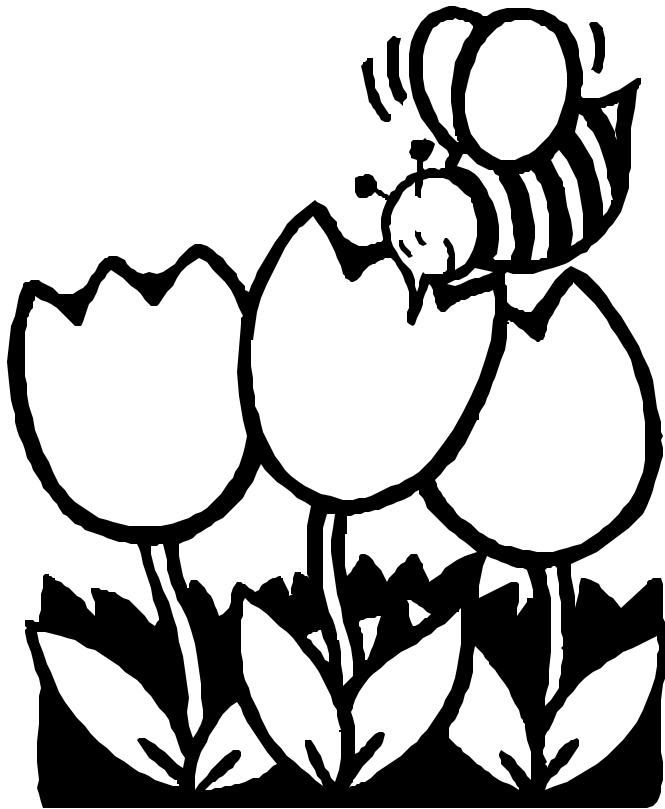


garlic

Fun fact: Cloves of garlic were found in King Tutankhamen's tomb.

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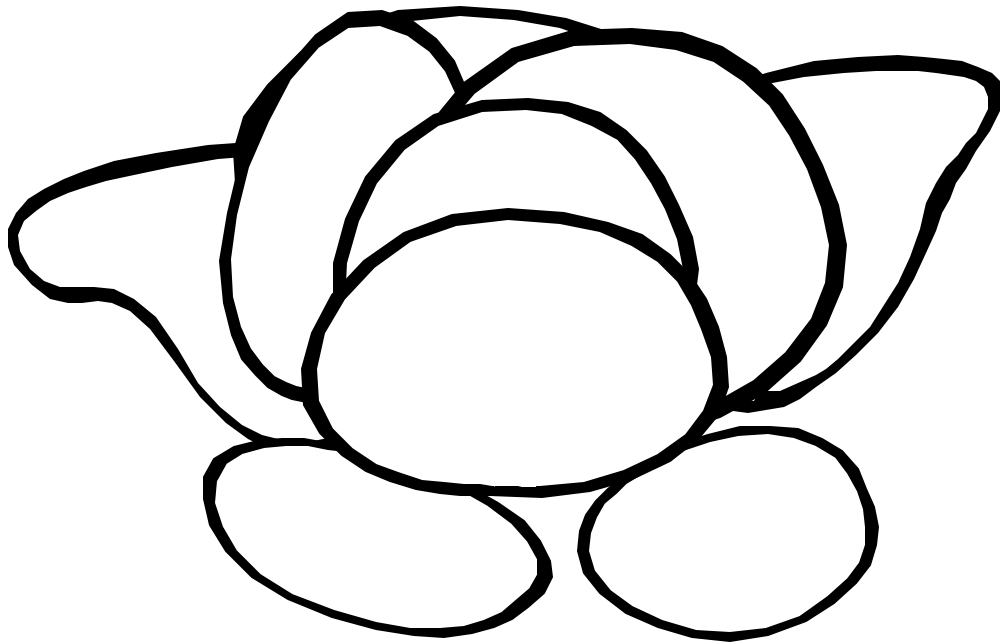
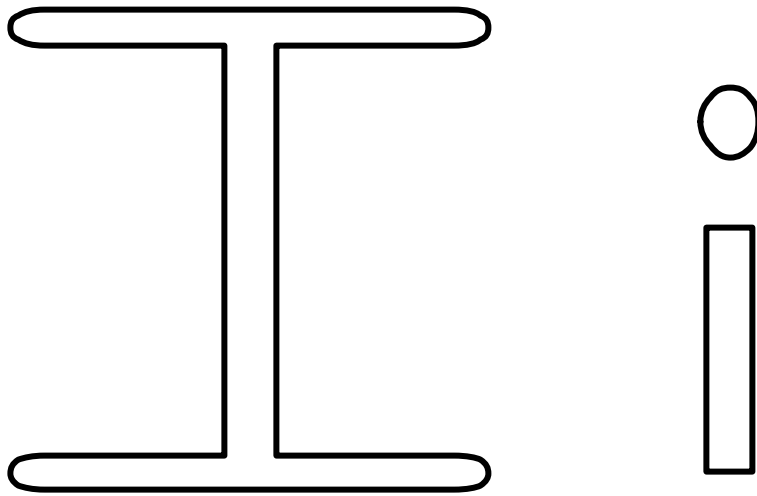
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honey

Fun fact: A honey bee flies about 15 miles per hour.

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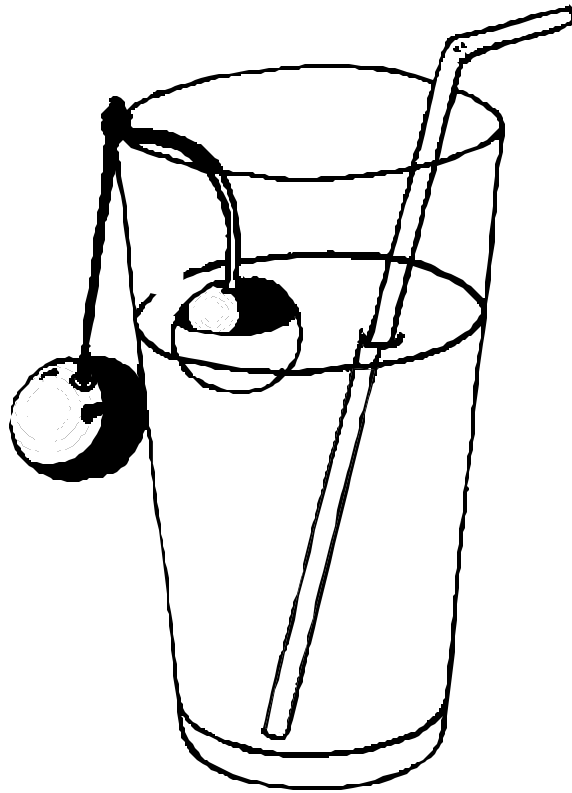


iceberg lettuce

Fun fact: The ancient Greeks believed that lettuce made you sleepy so they served it at the end of the meal.

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J j

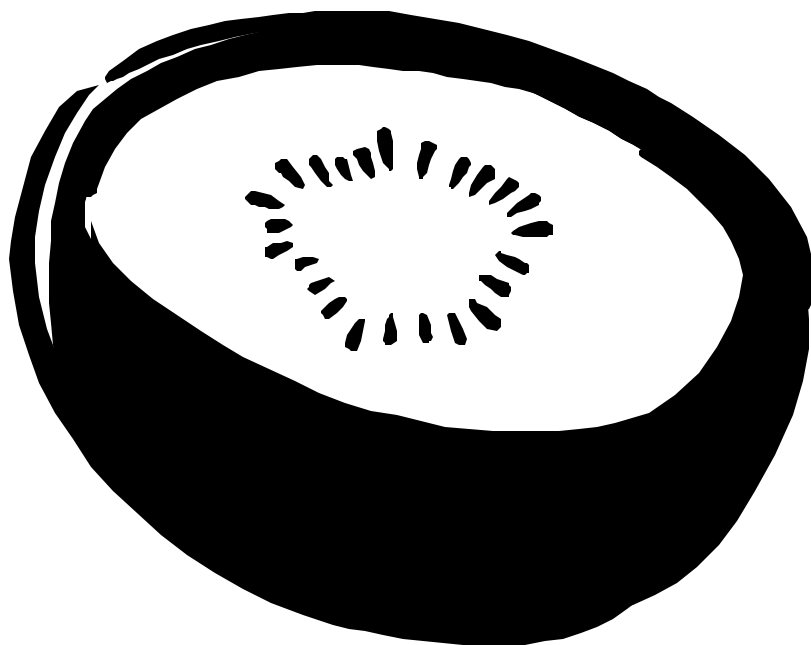


juice

Fun fact: Did you know that a serving of 100% fruit juice is $\frac{3}{4}$ of a cup?

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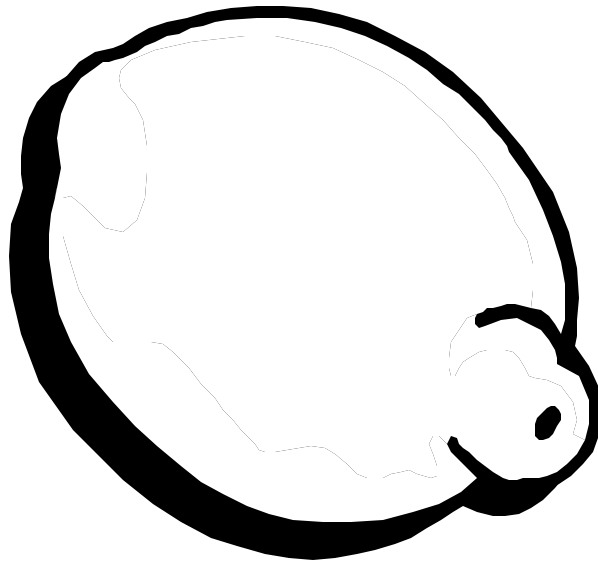
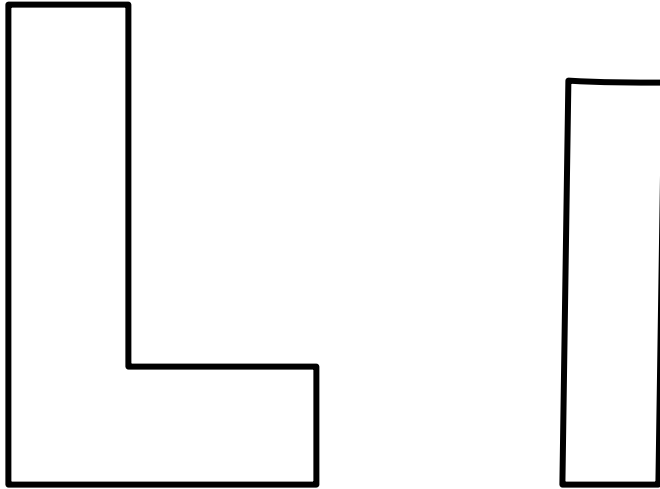
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kiwifruit

Fun fact: Kiwifruit first came from China.

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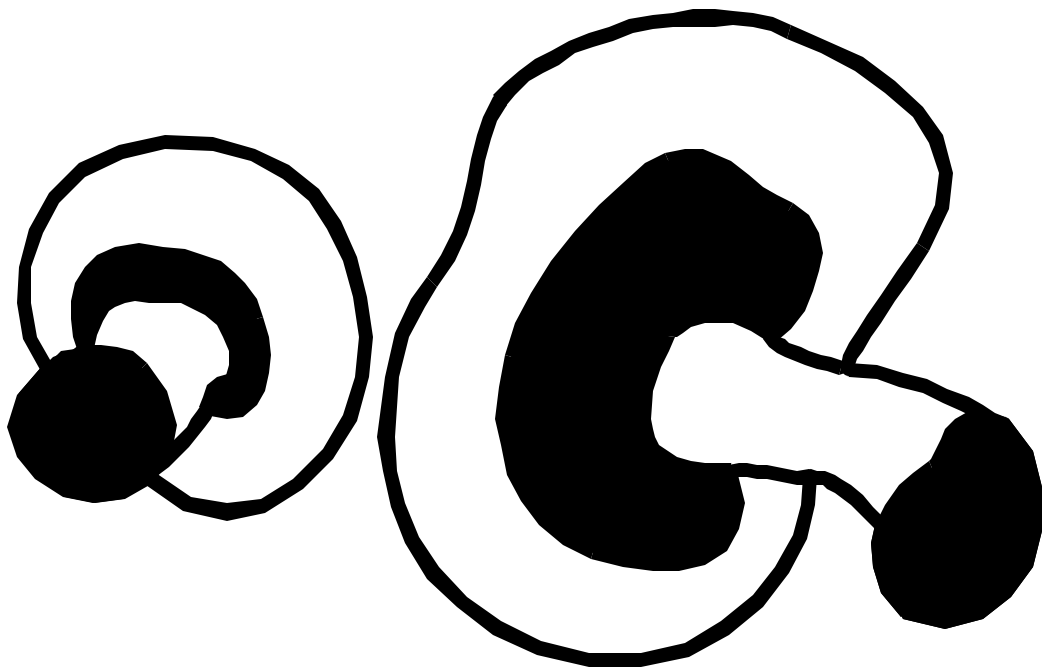


lemon

Fun fact: Almost all lemons grown in the US come from California and Arizona.

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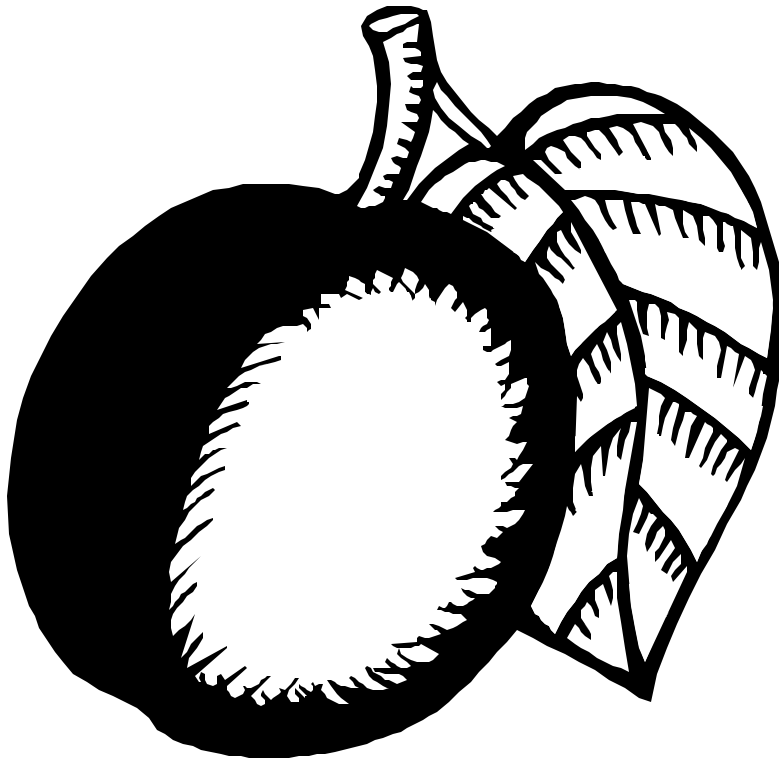


mushroom

Fun fact: In old Ireland, people thought mushrooms were umbrellas for leprechauns.

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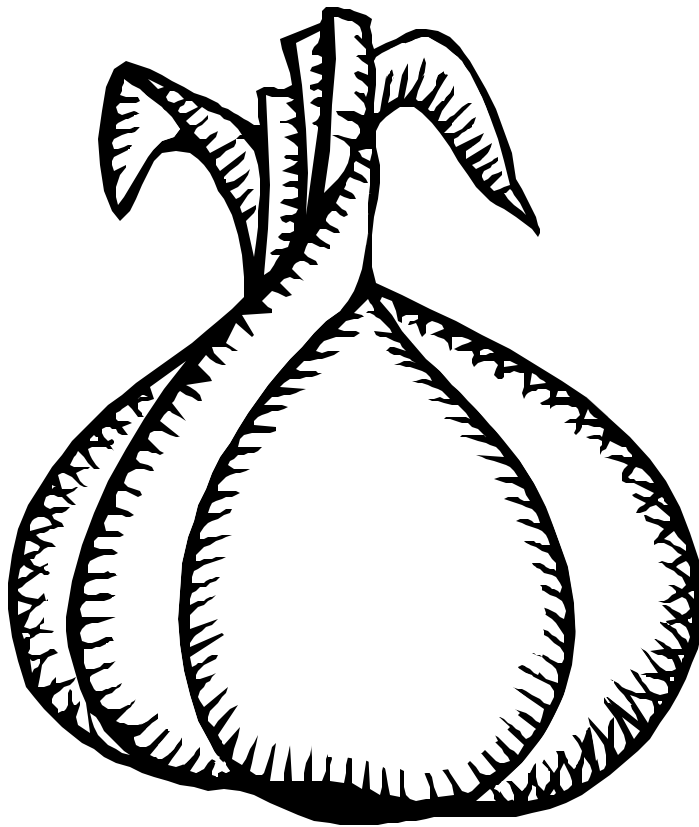
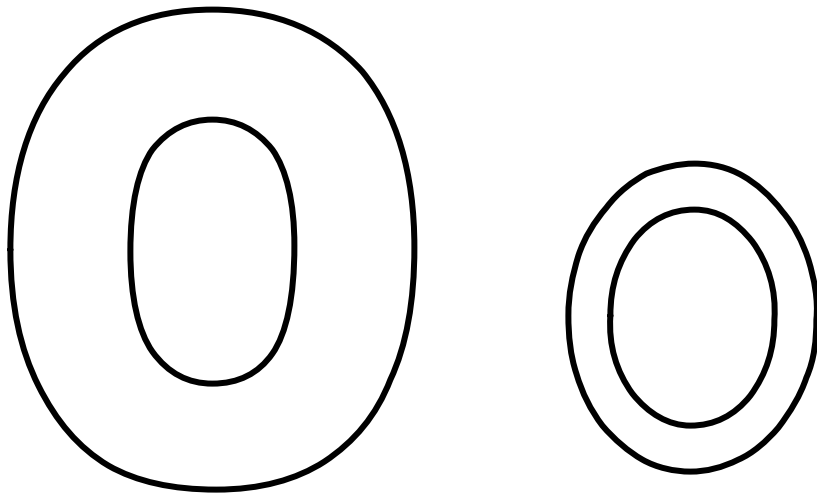
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nectarine

Fun fact: A nectarine is a fuzzless variety of peach.

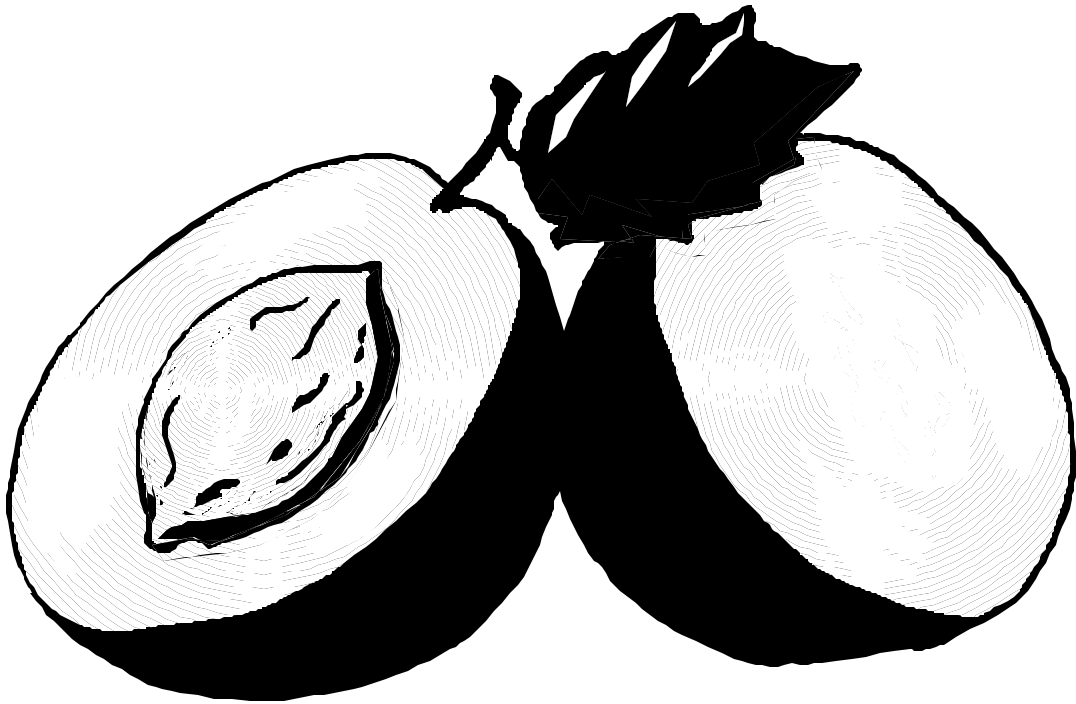
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onion

Fun fact: It is not the strong odor of the onion that makes us cry, but the gas that the onion releases.

P p

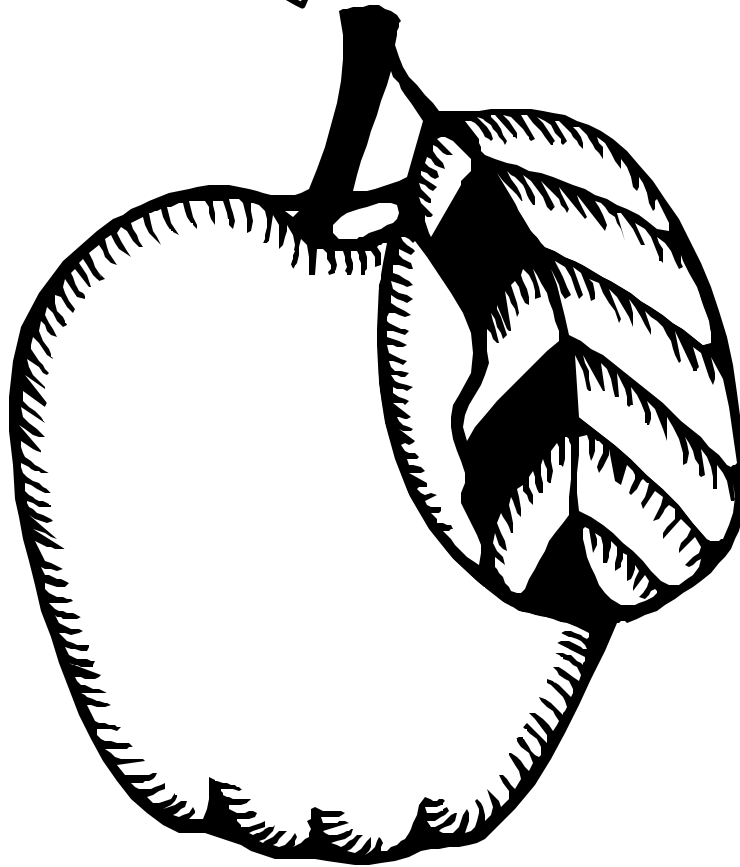


plum

Fun fact: Dried plums used to be called prunes – but now they’re dried plums.

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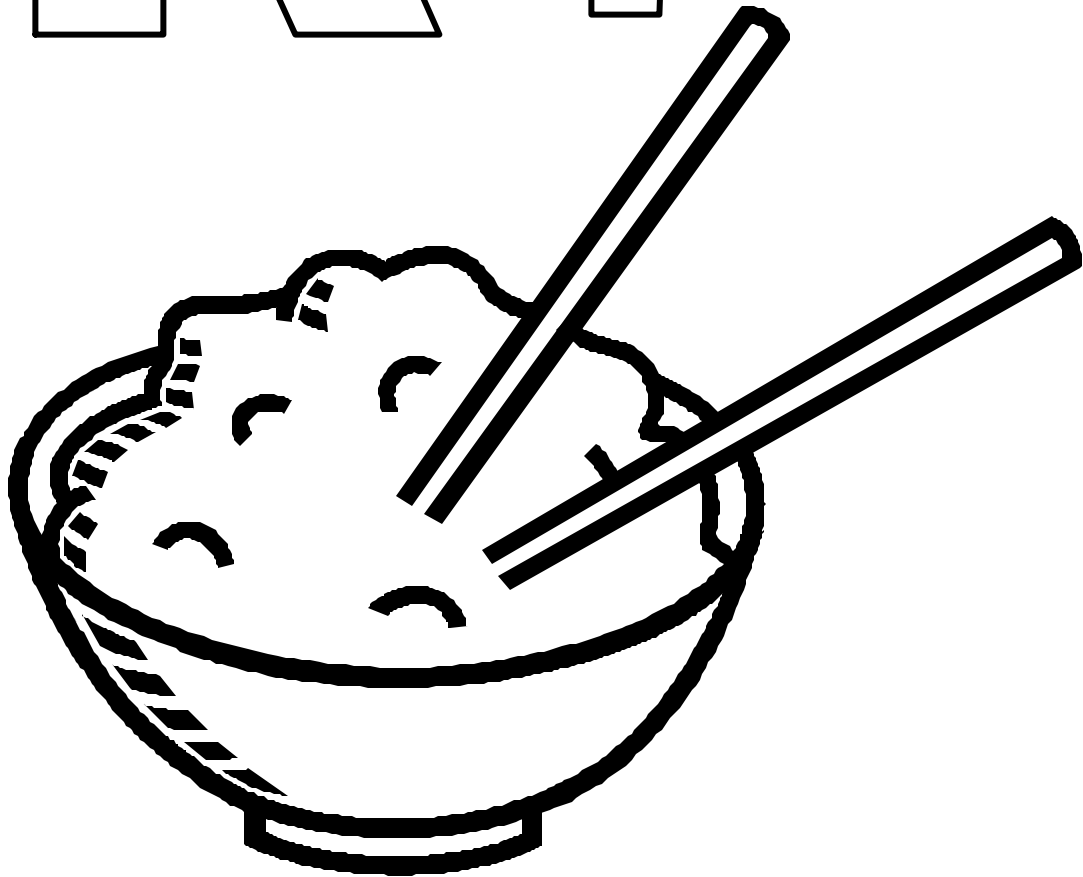


quince

Fun fact: A quince is not edible when raw.

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Rr



rice

Fun fact: More than 1 billion people throughout the world grow rice.

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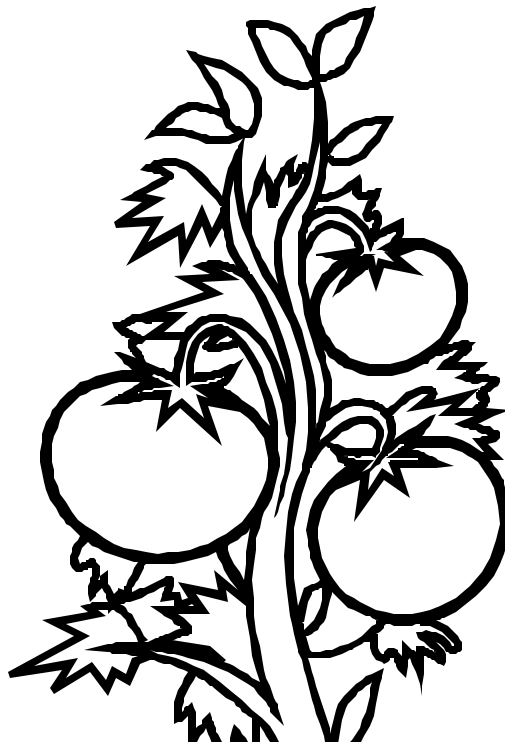
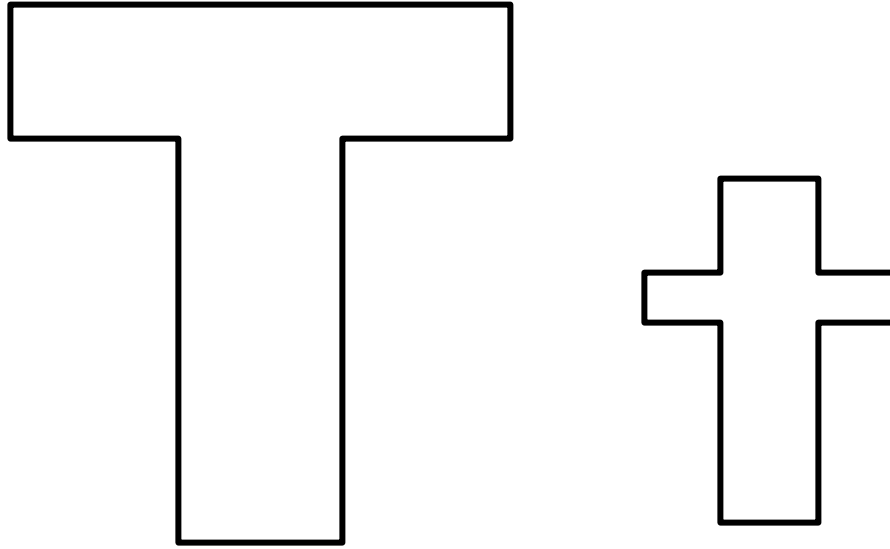
S s



strawberry

Fun fact: If all the strawberries produced in California this year were laid berry to berry, they'd wrap around the world 15 times.

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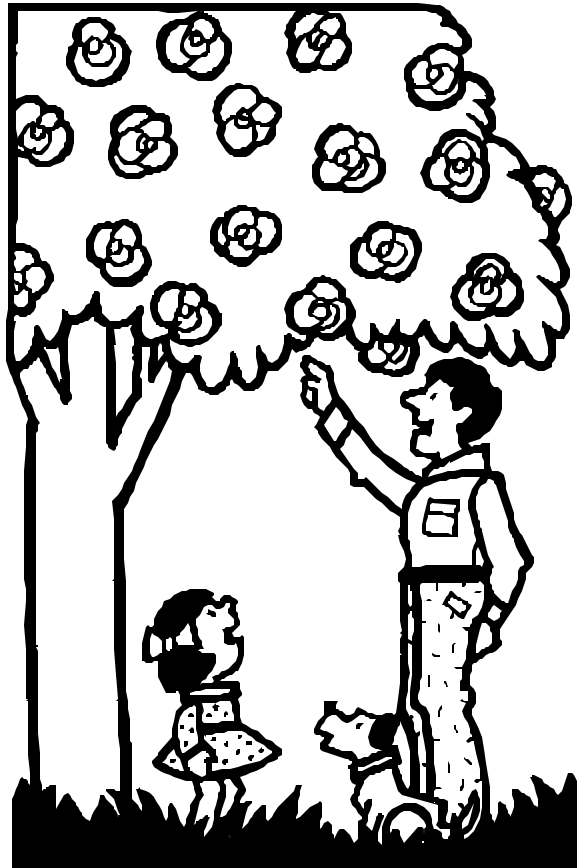


tomatoes

Fun fact: Tomatoes are a fruit, since it is the ripened ovary of a plant, but in 1893 the US Supreme Court ruled in the case of "NIX v. HEDDEN" tomatoes were to be considered vegetables.

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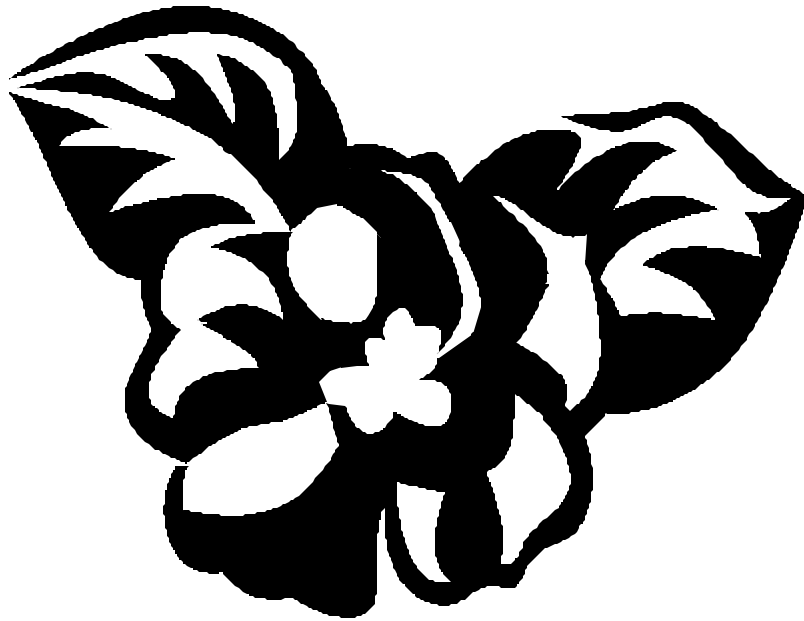
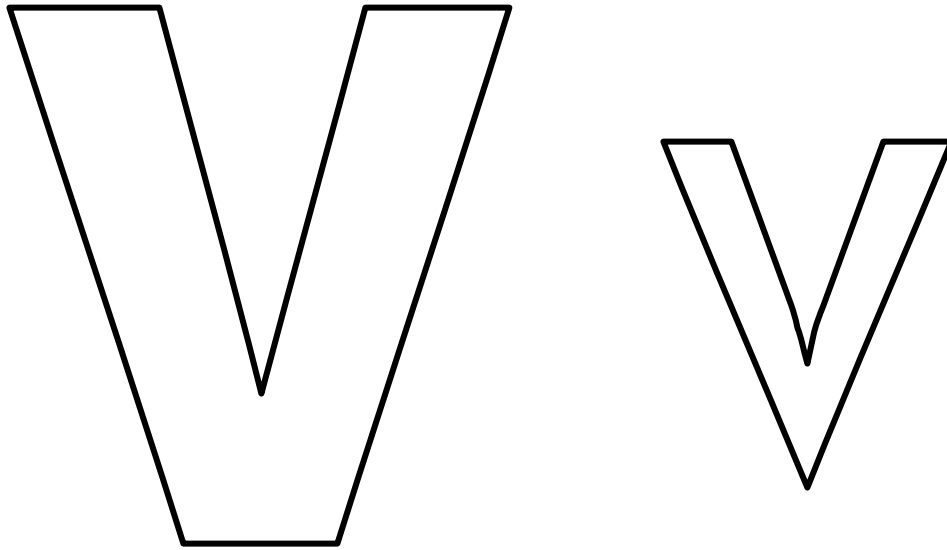
U u



U-pick farms

Fun fact: Some farmers run U-Pick farms where you can go and gather your own apples, peaches or other fruit.

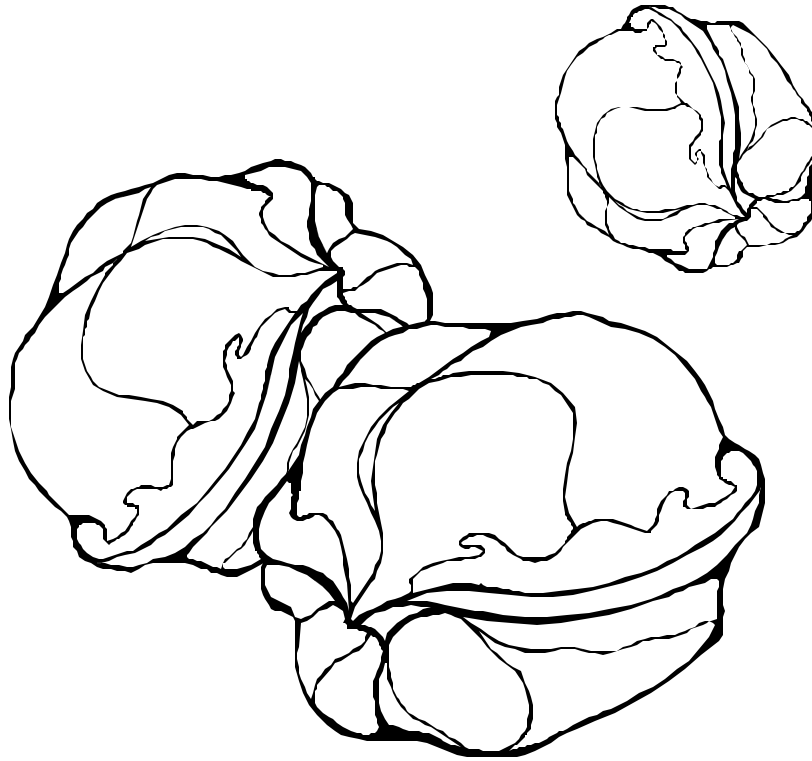
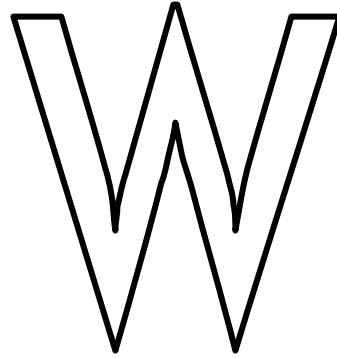
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African violets

Fun fact: A few California farmers grow and sell African Violets.

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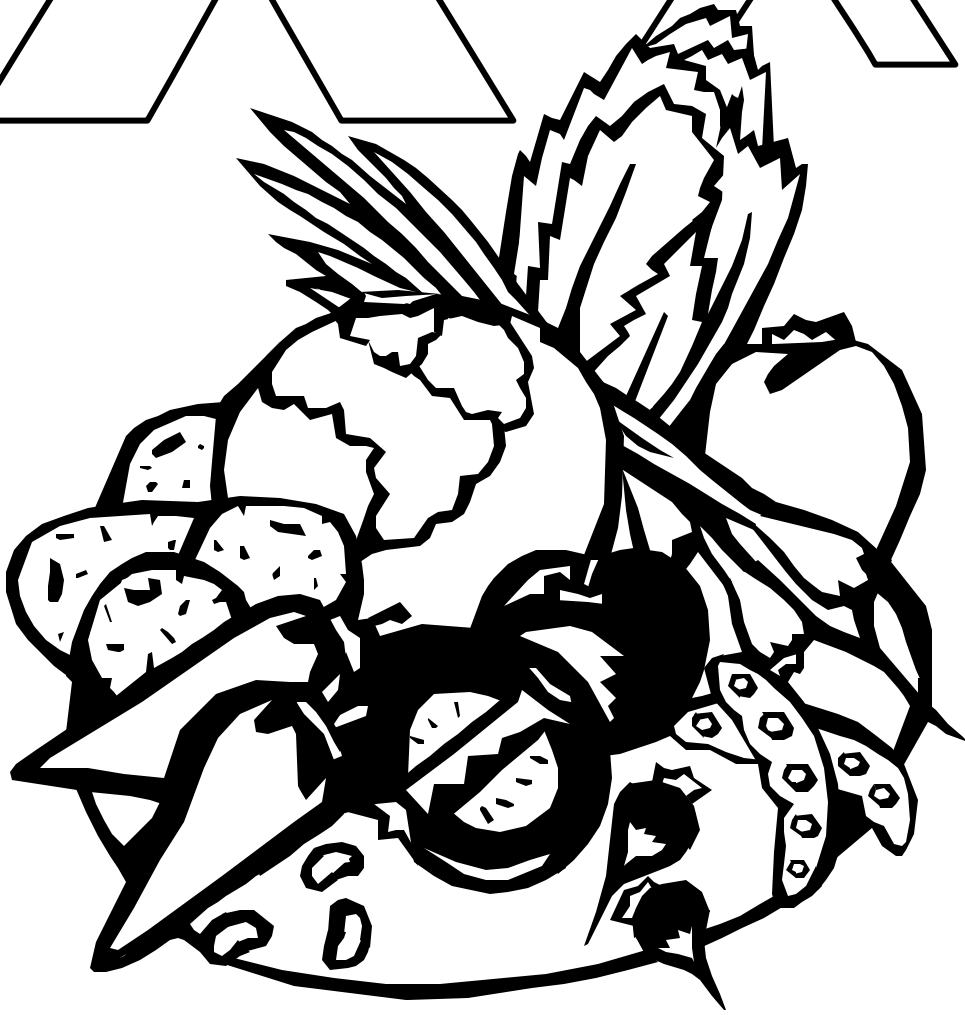


walnut

Fun fact: Most US-grown walnuts grow in California.

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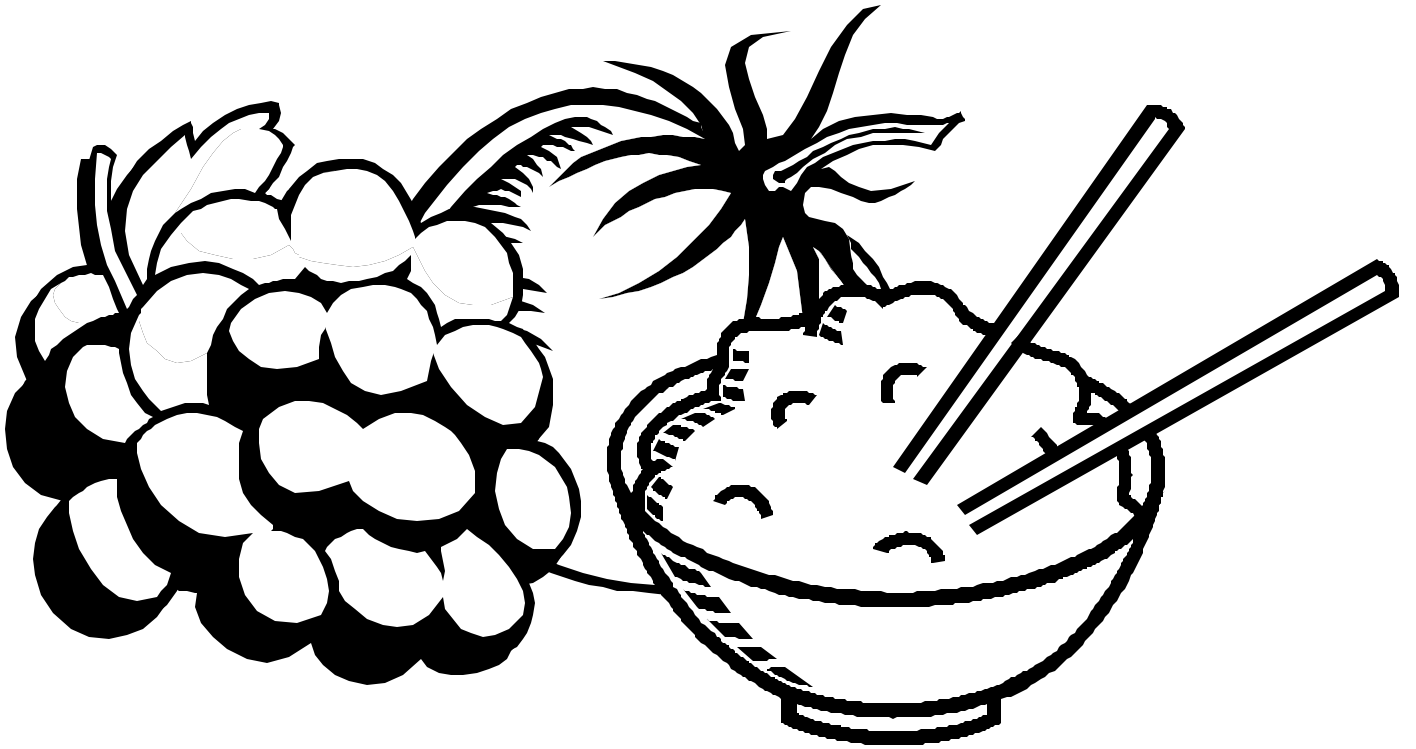
antioxidants

Fun fact: Antioxidants in fruits and vegetables protect our cells.

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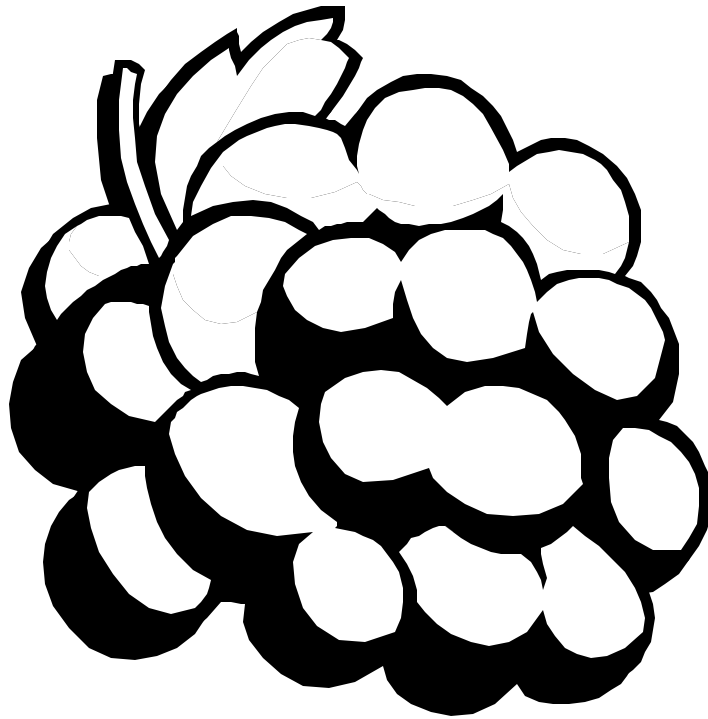
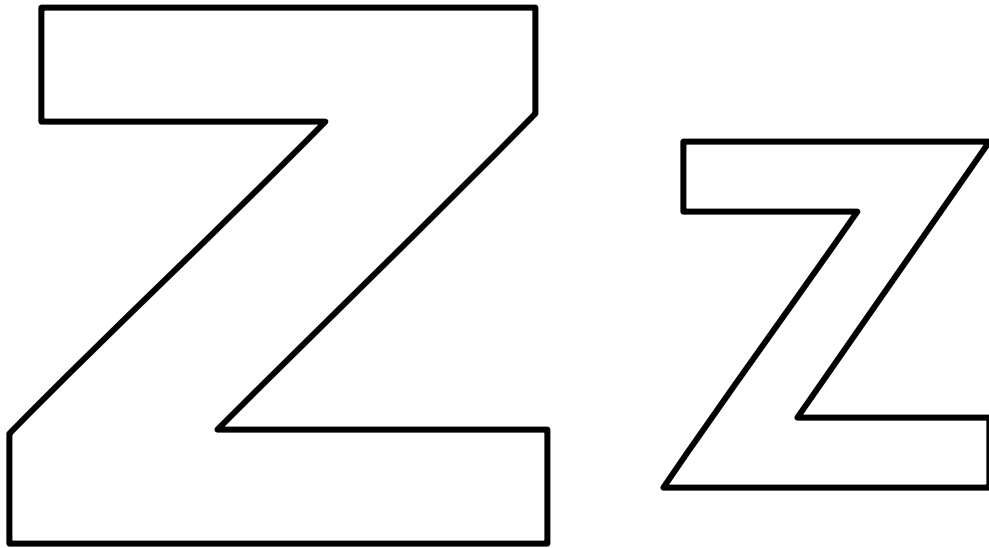
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Yolo County

Fun fact: Yolo County, California grows processing tomatoes, grapes, rice, alfalfa hay and seed crops.

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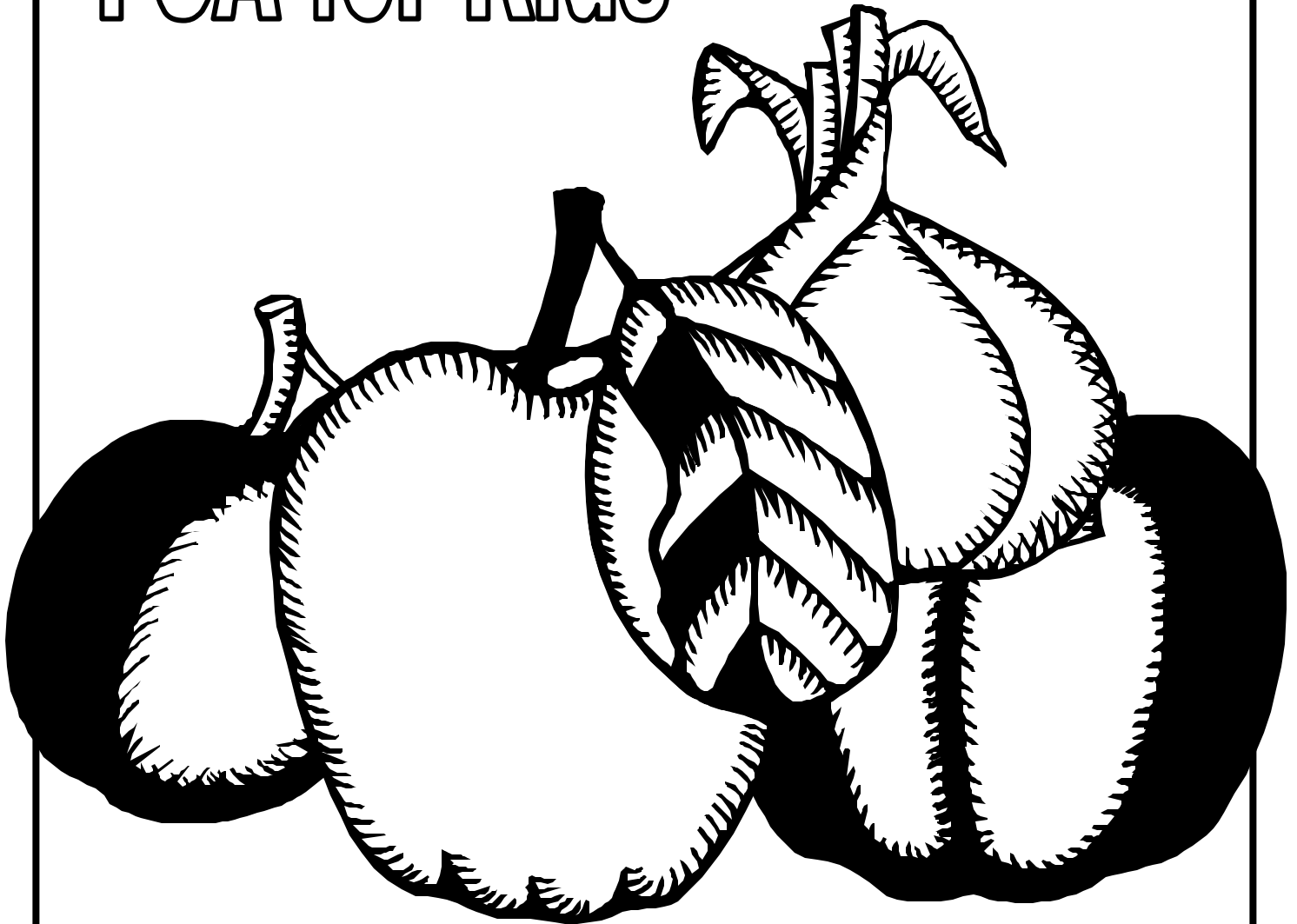


Zinfandel grapes

Fun fact: Zinfandel grapes are red grapes used to make wine.

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FSA for Kids



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