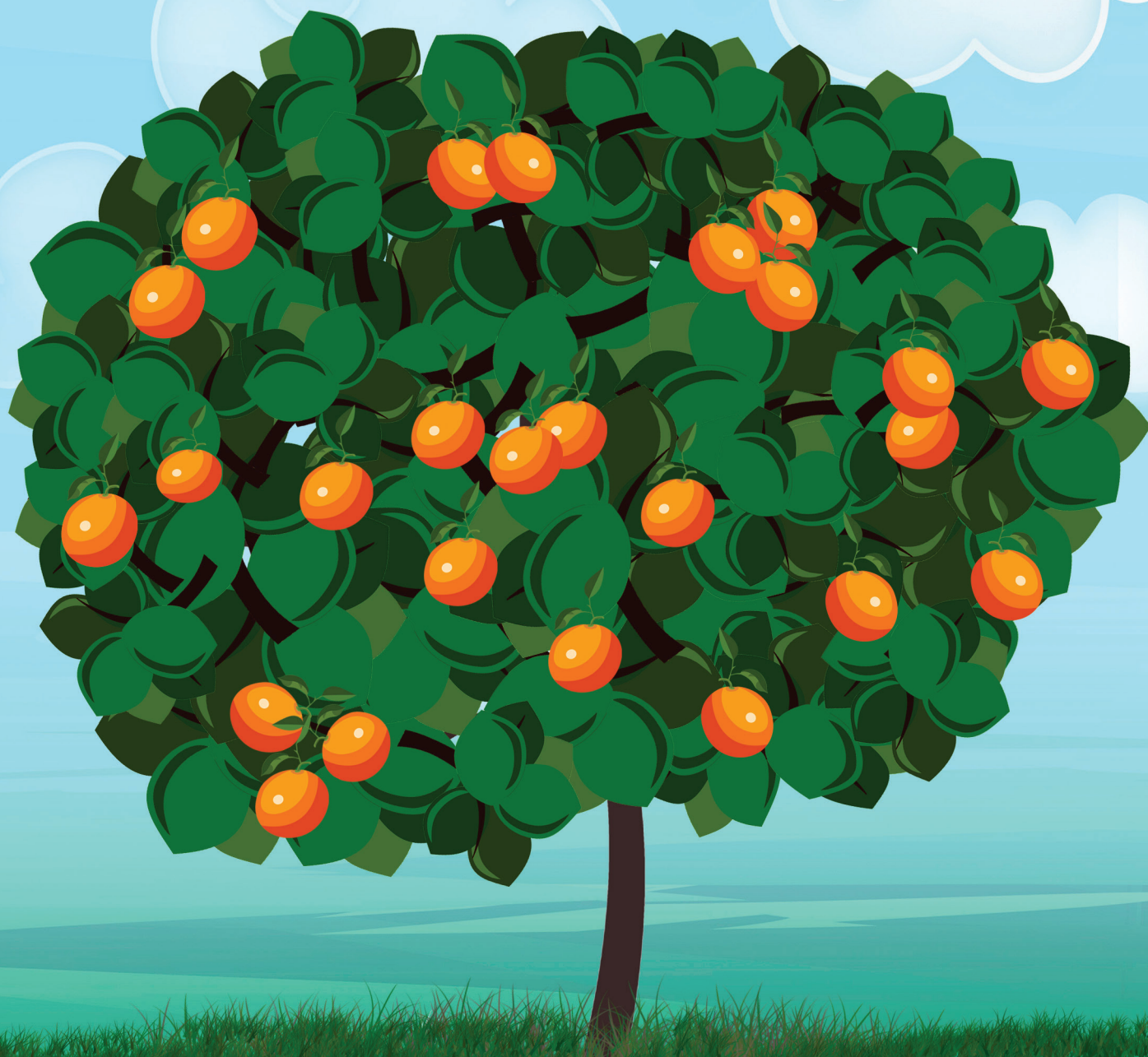


Florida Citrus Activity Book



Provided by the University of Florida, IFAS, Citrus Research and Education Center

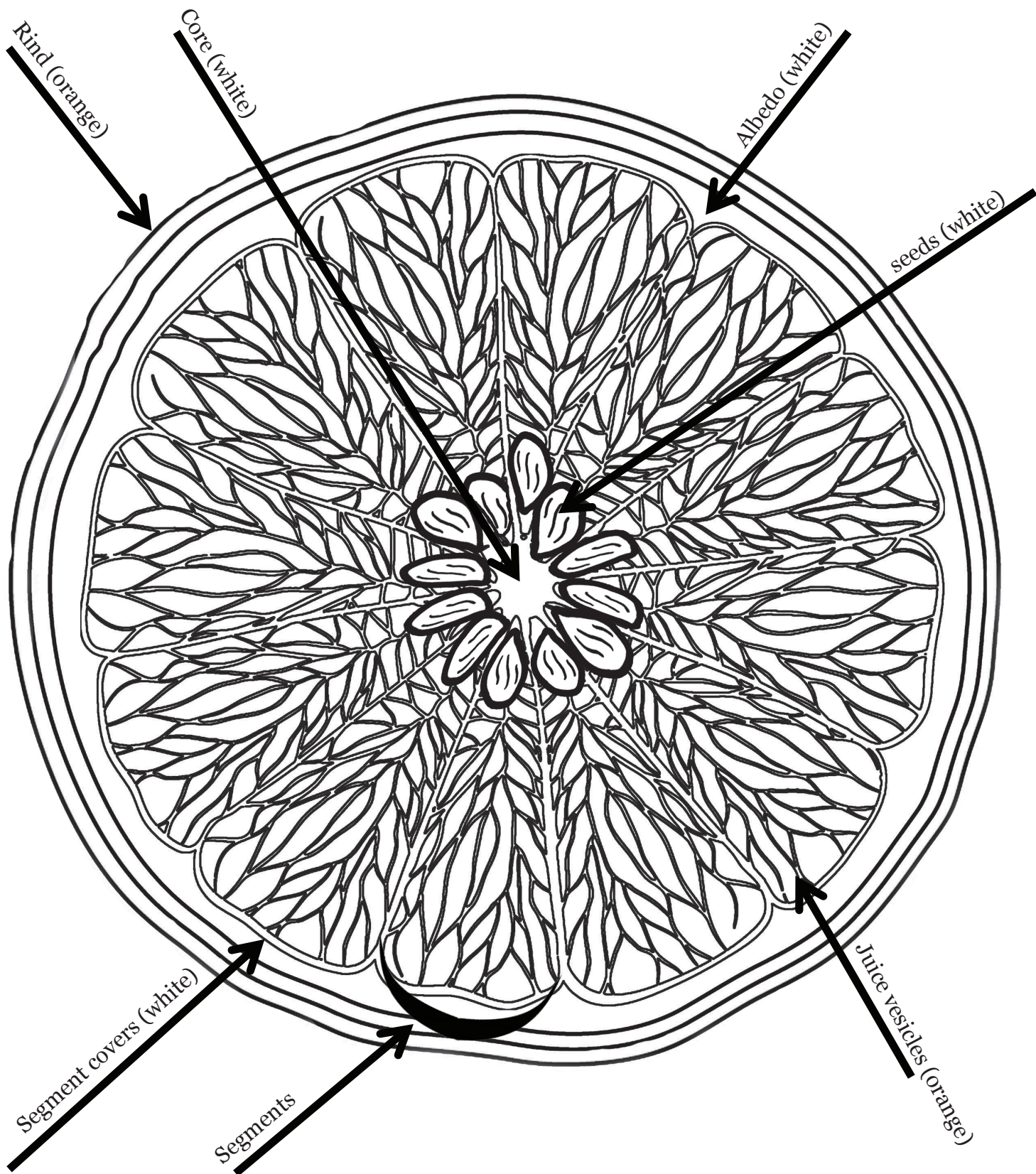


Created by J.D. Burrow, M.M. Dewdney, M.E. Rogers, and T.M. Spann
Cover Design by Kathy Snyder

University of Florida, IFAS, Citrus Research and Education Center
700 Experiment Station Road, Lake Alfred, Florida 33850
www.crec.ifas.ufl.edu

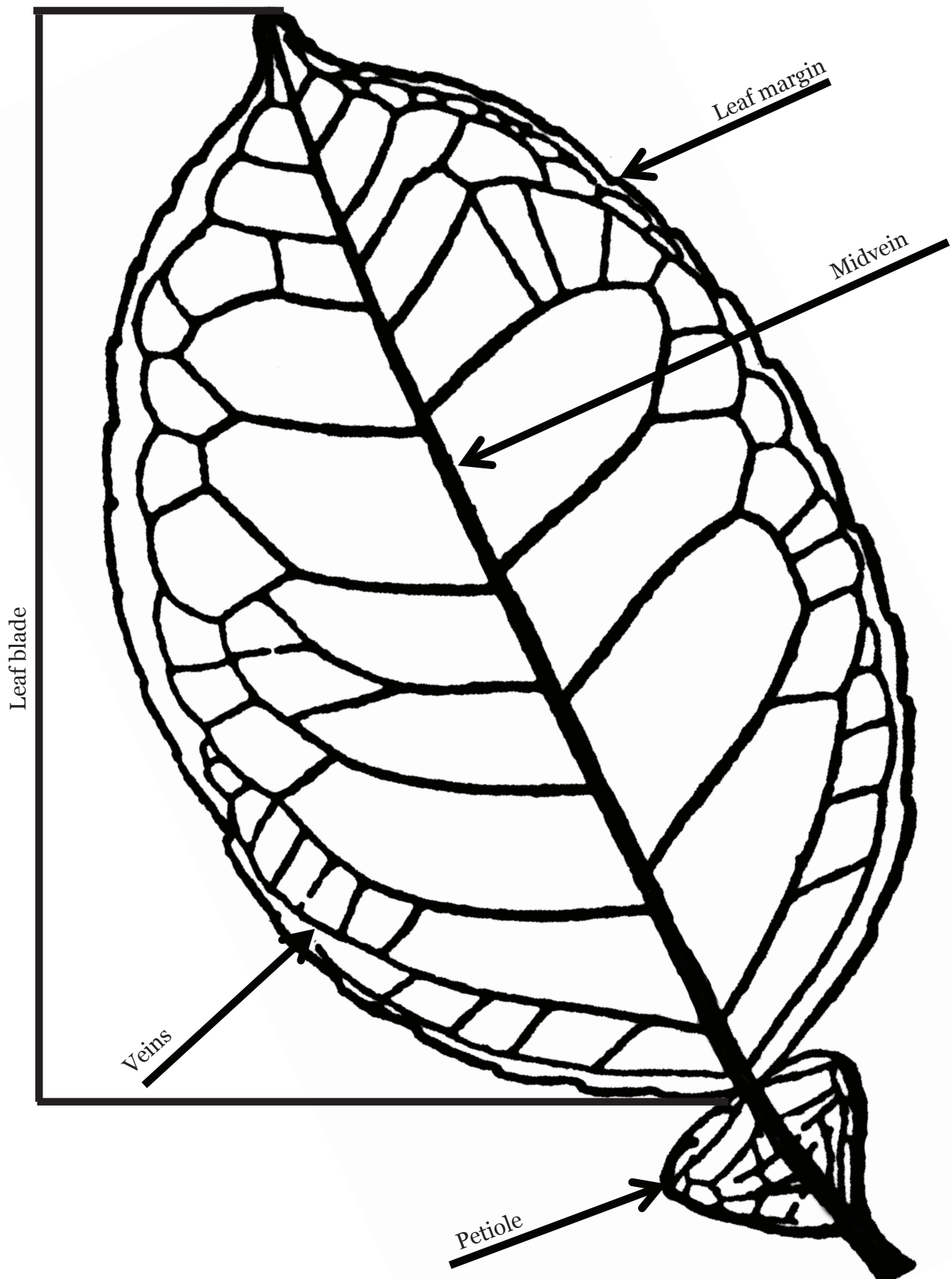
Parts of an Orange

Directions: Color the parts of the orange.



FUN FACT: Citrus fruit are modified berries.

Parts of a Leaf



FUN FACT: Leaves are the primary site for food manufacturing in plants through the process called photosynthesis. Color the leaf green.

Clipart ETC. (2011). Retrieved from http://etc.usf.edu/clipart/58500/58557/58557_grpfrt_leaf.htm

Parts of a Citrus Tree

Directions: Label the parts of the tree and color.

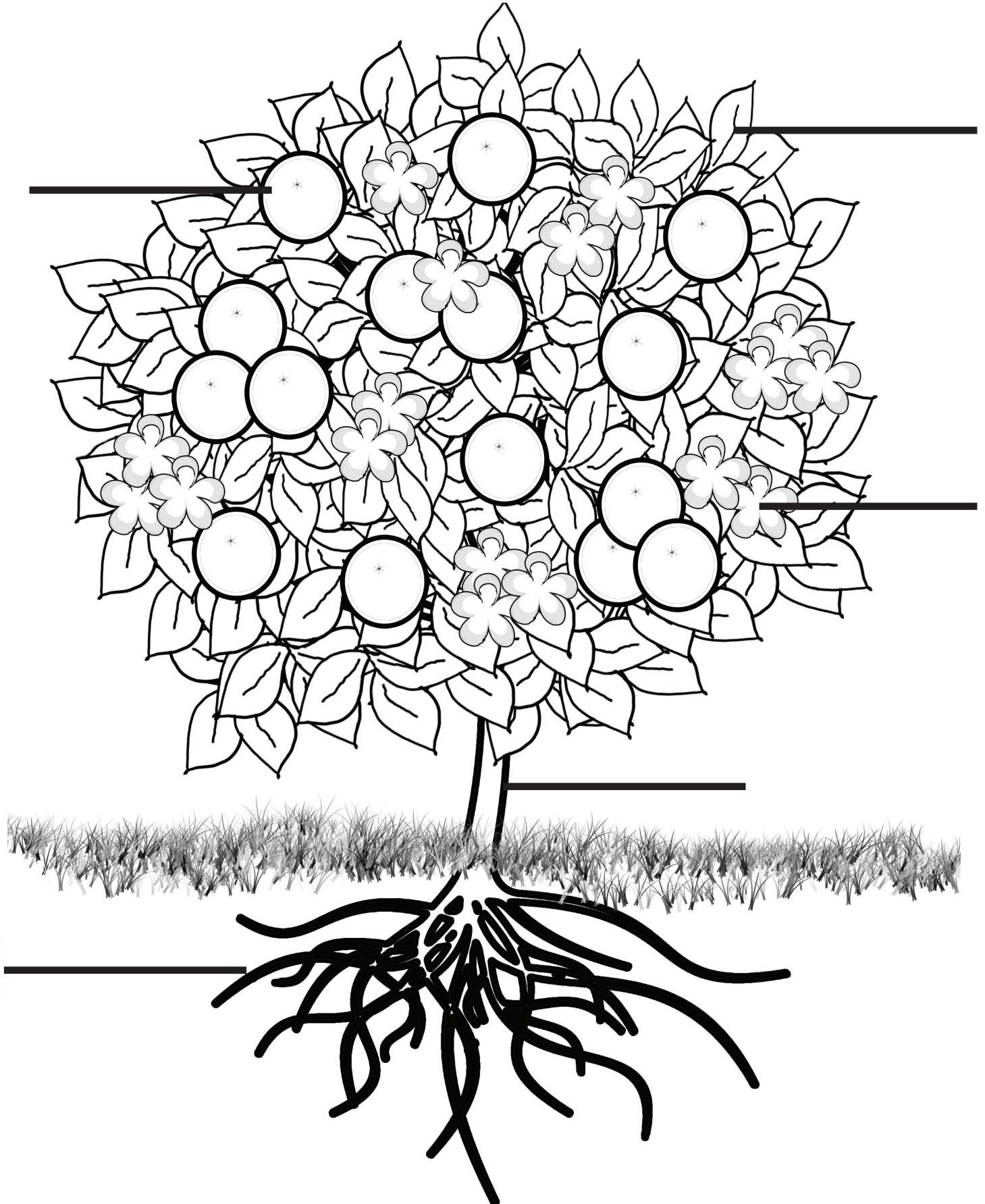
Roots

Leaves

Fruit

Trunk

Flower (Blossom)



FUN FACT: Valencia orange is the only variety that can carry two crops of fruit at one time.

Citrus Varieties

Below is a list of Florida citrus varieties and their harvest period.

Oranges

Navel (October - January)
Hamlin (October - January)
Parson Brown (October - January)
Valencia (March - June)

Grapefruit

Duncan (December - May)
Thompson (December - May)
Flame (November - May)
Ruby Red (November - May)

Lemons and Limes

Meyer Lemon (November - March)
Bearss Lemon (July - December)
Tahiti Lime (June - September)
Key Lime (All year)

Tangerines and Tangelos

Murcott Tangerine (January - March)
Sunburst Tangerine (November - December)
Minneola Tangelo (December - February)
Satsuma (September - November)

Miscellaneous

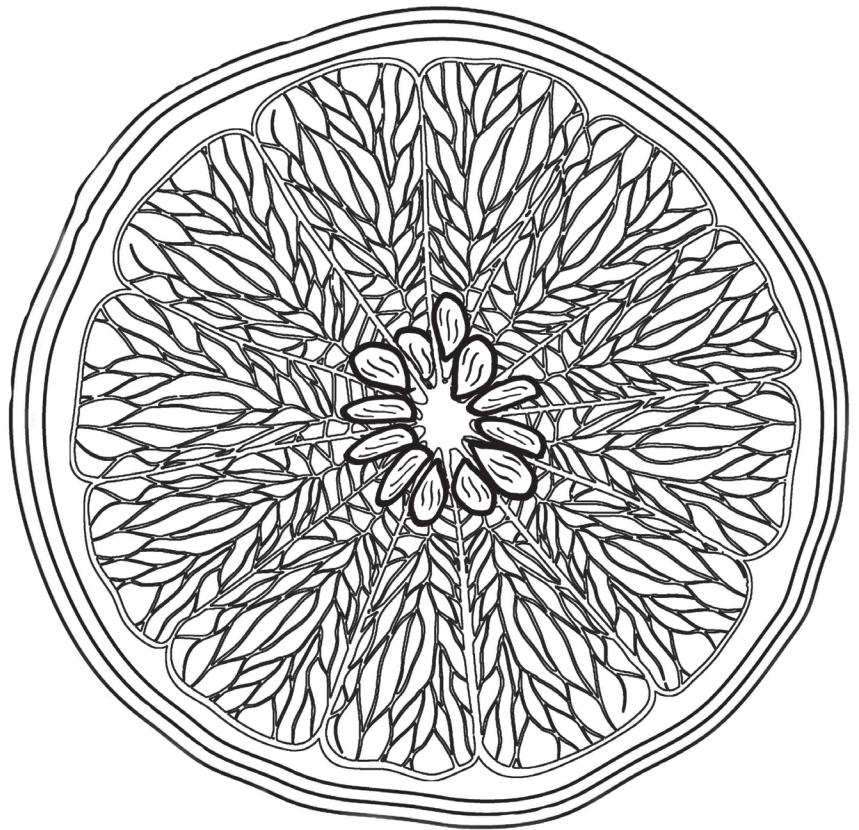
Calamondin (November - April)
Nagami Kumquat (November - April)
Tavares Limequat (November - March)
Nakon Pummelo (December - February)

DID YOU KNOW?

- In Florida citrus, the term **seedless** means zero to six seeds. Although the Navel orange is considered seedless, you may find a few seeds.
- The Minneola Tangelo's nickname is the Honeybell because it is very sweet and in the shape of a bell.
- The majority of Florida's oranges are squeezed into juice.
- Grapefruit from Florida is shipped to Japan by boat.
- You can eat an entire Kumquat, even the peel.
- Satsuma is one of the earliest tangerine varieties and grows best in North Florida.

Directions: Count the number of seeds in the orange.

Number of seeds: _____



What is your favorite citrus fruit? _____

Citrus Diseases

Citrus trees can get sick just like people. There are three causes of diseases: fungi, bacteria, and viruses.

Bacterial Diseases

Citrus Canker
Citrus Greening

Fungal Diseases

Greasy Spot
Citrus Scab
Alternaria Brown Spot
Melanose
Citrus Black Spot
Phytophthora Root Rot
Brown Rot

Viral Diseases

Tristeza
Exocortis



Directions: Below is a list of common citrus diseases. Using the lists above, identify their cause of disease. Write B for bacterial, F for fungal and V for viral.

_____ Alternaria

_____ Exocortis

_____ Brown Rot

_____ Greasy Spot

_____ Citrus Black Spot

_____ Melanose

_____ Citrus Canker

_____ Phytophthora Root Rot

_____ Citrus Greening

_____ Tristeza

_____ Citrus Scab

Citrus Canker

Citrus canker is a very contagious disease for citrus trees. It does not harm people. It makes oranges, grapefruit, lemons and tangerines look very bad. Although it is not pretty on the outside, you can still eat the fruit.



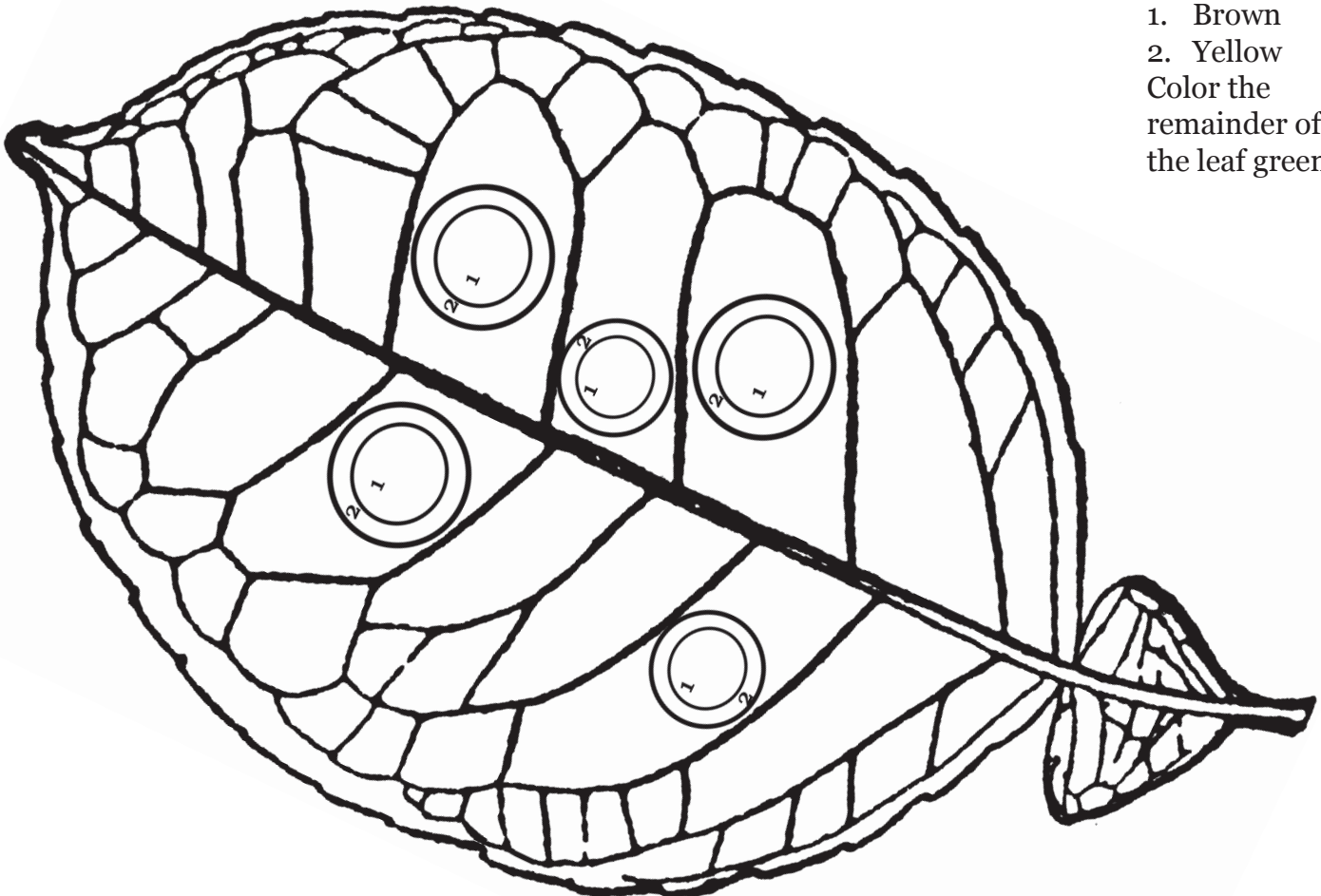
Citrus canker lesions (spots) are usually tan when first formed. As the lesions get older, they form a yellow circle around the tan lesion. This is called a yellow halo or yellow ring. You can see the same symptoms on both leaves and fruit. The yellow halo is commonly seen when identifying canker.



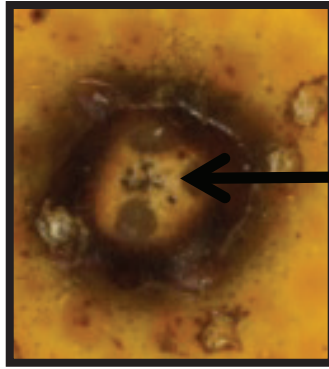
The lesions feel rough and are raised. They are not smooth like the leaf. As the lesions get older, they turn dark brown to black. You can sometimes see a sticky substance oozing out of the lesion. This is where the bacteria lives and when the wind blows, it spreads the bacteria.

Color By Number

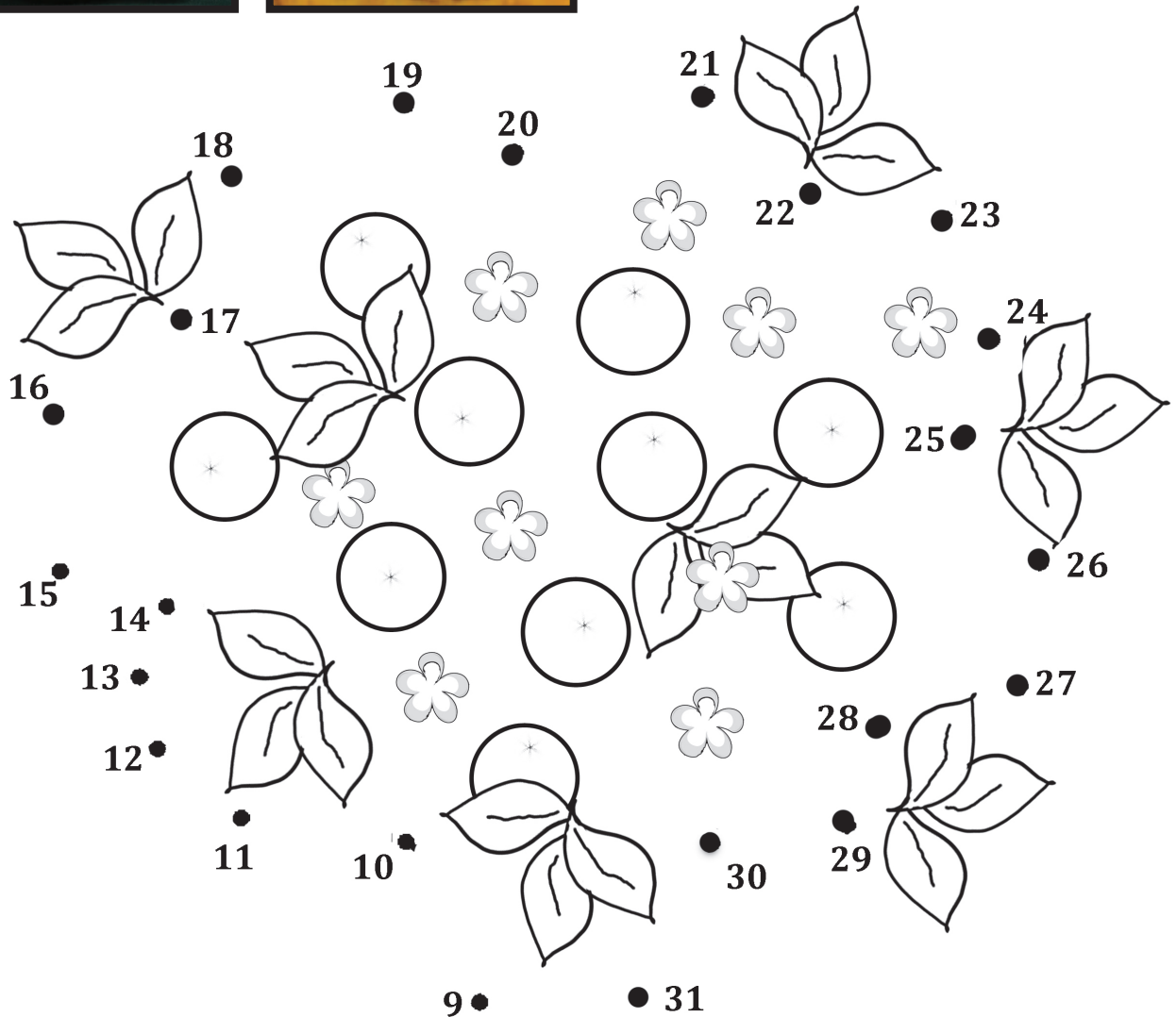
1. Brown
 2. Yellow
- Color the remainder of the leaf green.



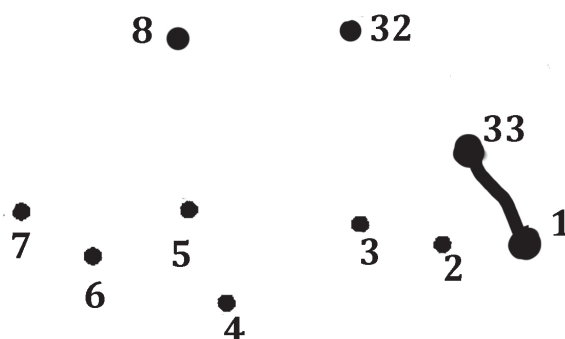
Citrus Black Spot



Citrus black spot is a fungal disease causing various types of spots on the fruit. The most common type is hard spot. It is round and sunken. If you look inside the circle, you can see little dots. The little dots are the fungal structures.



Directions: Connect the dots and color the picture.



Fungal Diseases

Fungal diseases reproduce well in moist and humid conditions. Florida has perfect conditions for fungal diseases. The most common fungal diseases are greasy spot, scab, melanose and alternaria. Citrus fruit infected by fungal diseases may look bad, but it doesn't harm the inside of the fruit. You can still eat the fruit!



Greasy Spot

Looks like dust on fruit



Melanose

Feels like sandpaper



Citrus Scab

Looks like warts



Alternaria

Looks like craters

Directions: Fill in the crossword puzzle with the common citrus fungal diseases found in Florida.

Greasy Spot

Scab

Melanose

Alternaria

D

I

S

E

A

S

E

Citrus Greening

Citrus greening is a bacterial disease. It's official name is Huanglongbing (HLB). The leaf symptoms have a blotchy mottle pattern. It causes fruit to be lopsided, small and the rind does not color properly. The fruit may taste bitter and sour. It affects oranges, grapefruit, tangerines, tangelos, lemons, and limes--all citrus varieties!!!



Blotchy mottle pattern



The curved central core on the inside of a grapefruit.

Directions: Circle the words in the puzzle below.

BACTERIA

CITRUS

FRUIT

GRAPEFRUIT

GREENING

HLB

HUANGLONGBING

LOPSIDED

MISSHAPEN

ORANGES

PHLOEM

PSYLLID

SMALL

TANGERINES

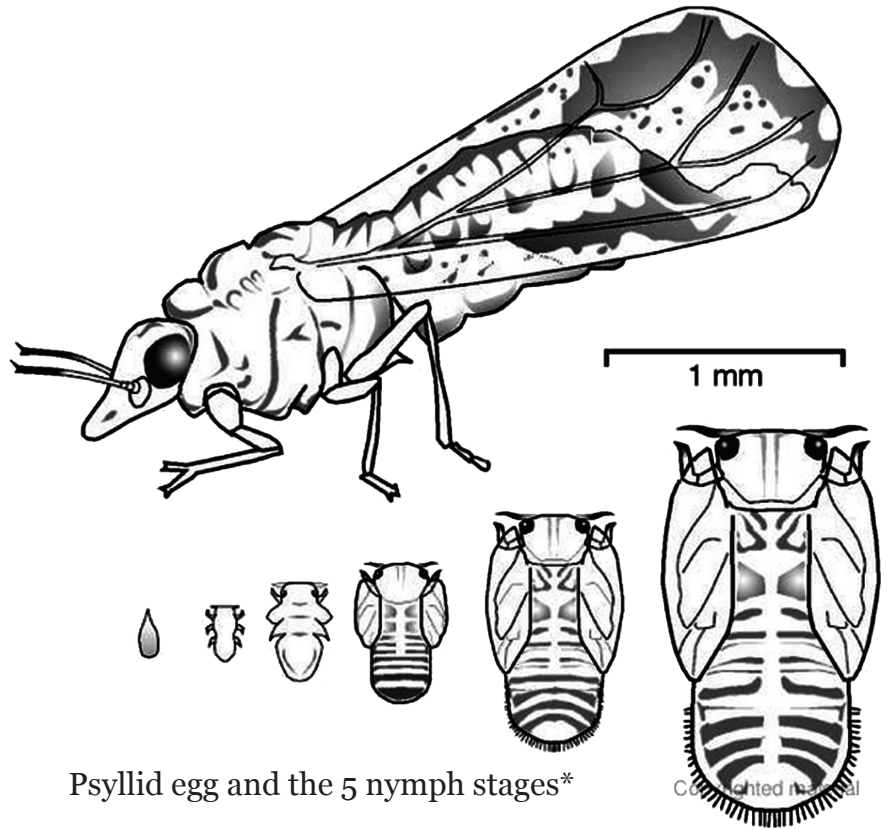
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H	U	A	N	G	L	O	N	G	B	I	N	G	A	E
B	C	I	I	S	R	S	P	X	J	M	F	S	N	D
D	D	I	X	R	E	A	W	A	I	T	F	R	G	I
X	L	J	T	G	E	R	P	S	M	E	I	U	E	S
P	L	T	N	R	I	T	S	E	V	M	H	X	R	P
H	R	A	I	R	U	H	C	G	F	K	E	K	I	O
L	R	Q	R	F	A	S	G	A	S	R	H	M	N	L
O	X	U	R	P	G	E	M	N	B	U	U	M	E	Y
E	F	U	E	G	N	I	N	E	E	R	G	I	S	W
M	I	N	P	S	Y	L	L	I	D	B	E	I	T	Q
T	L	L	A	M	S	V	R	V	M	P	L	Y	T	U
R	U	A	X	Z	H	T	M	I	K	E	V	H	O	D
W	M	W	N	X	B	G	E	T	I	G	A	A	M	A
D	Q	V	O	D	G	N	F	K	W	P	N	A	R	M

Asian Citrus Psyllid

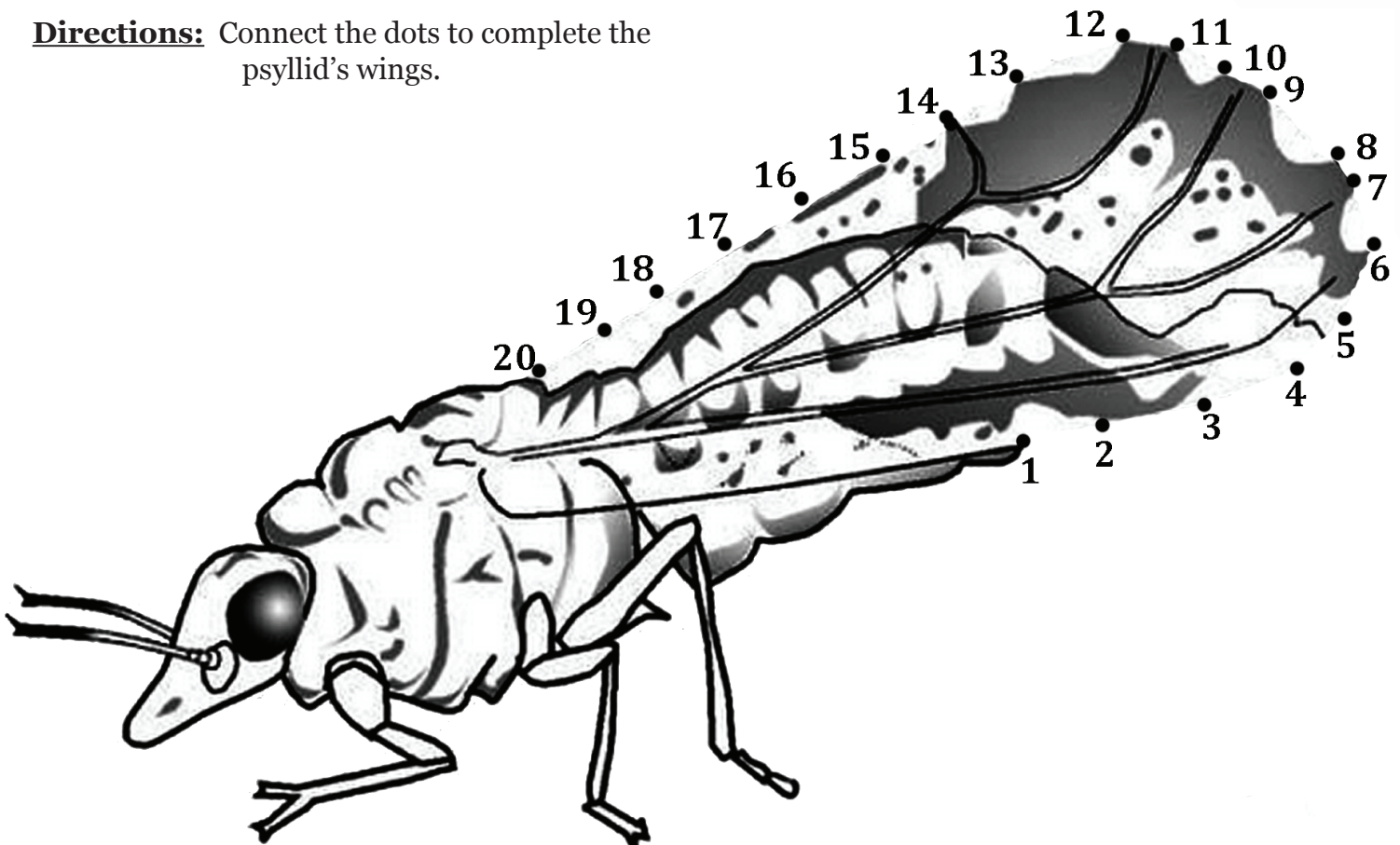
The Asian citrus psyllid is the insect responsible for spreading the bacteria causing citrus greening. It is a small insect, about 3-4 millimeters in length (about the size of a flea).



The female psyllid lays the eggs on the new flush (new leaves) of citrus trees. It takes about 14 days for the eggs to hatch. The psyllid nymphs then go through 5 stages before becoming an adult.



Directions: Connect the dots to complete the psyllid's wings.



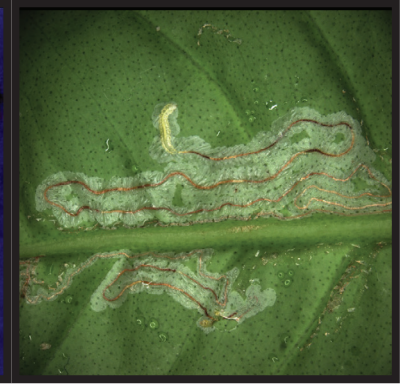
*Artwork credit: D.L. Caldwell, University of Florida

Leafminer

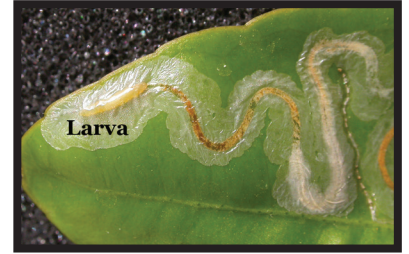
Leafminer is a very small moth, but the larvae stage can cause severe damage on citrus leaves. The larvae tunnels underneath the leaf's skin eating the nutrients and growing while leaving a trail, finally emerging as an adult.



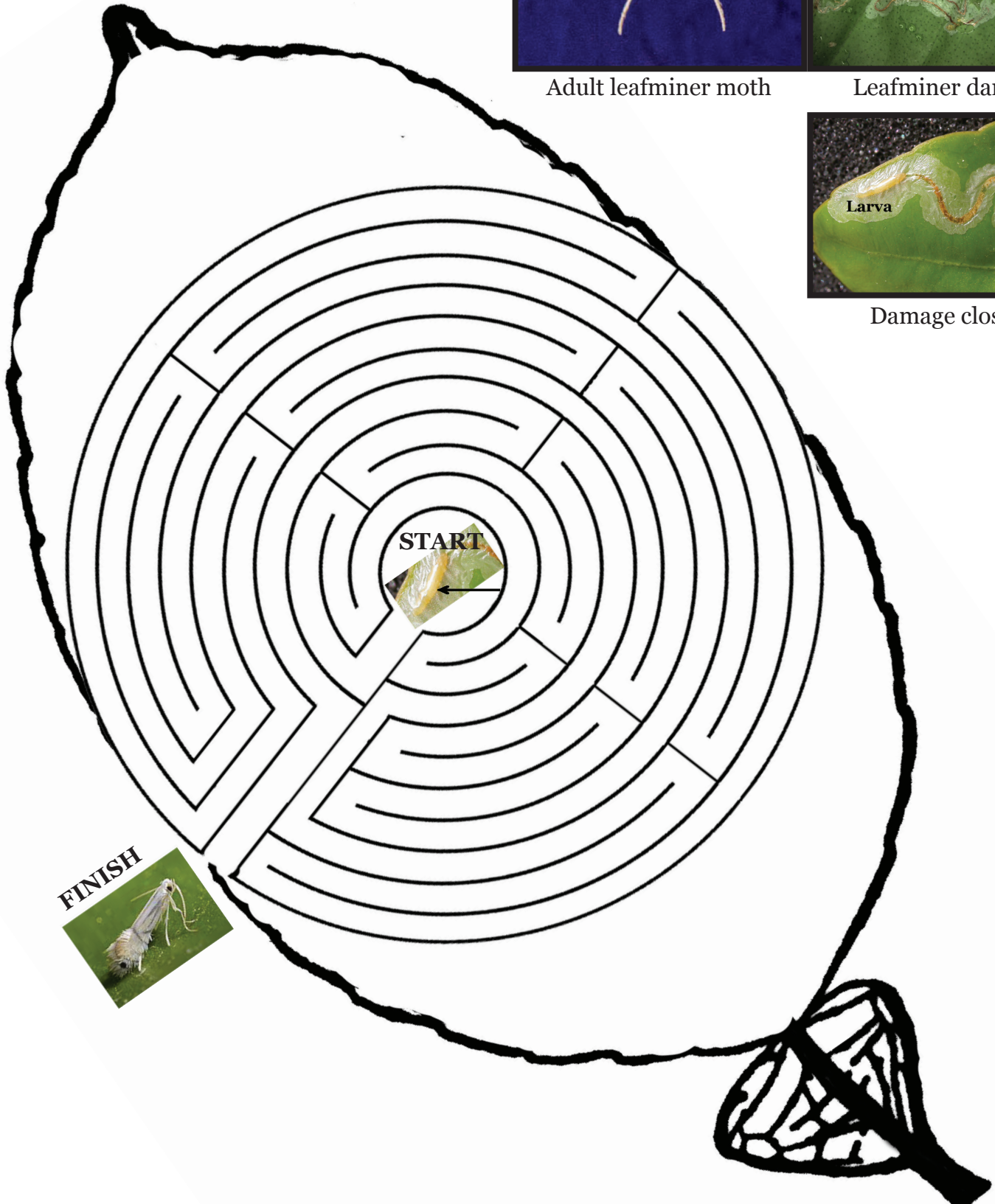
Adult leafminer moth



Leafminer damage



Damage close up.



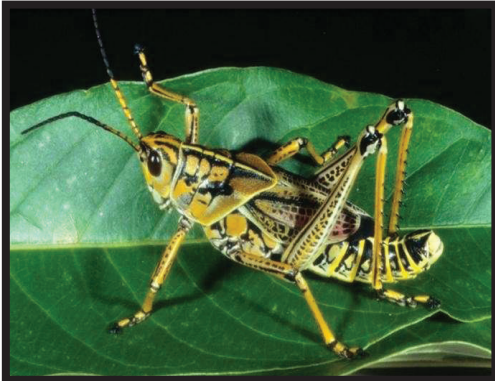
Directions: From start (larvae) to finish (adult moth), help the larvae grow into an adult.

Grasshoppers

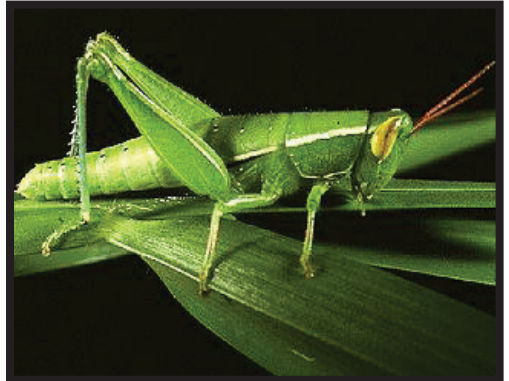
Directions: Draw a line to match the grasshoppers.



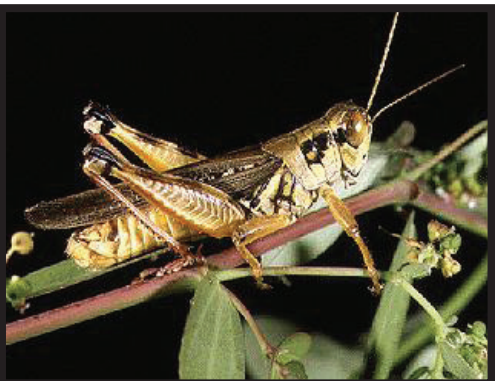
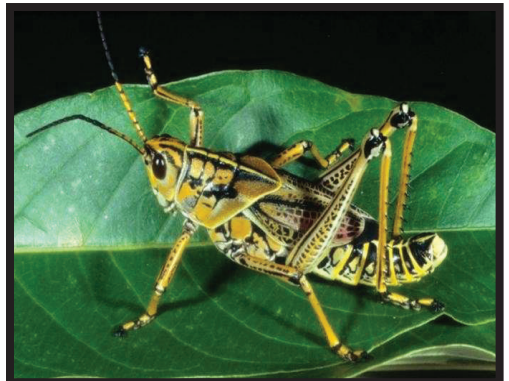
American bird grasshopper



Southern lubber grasshopper



Linearwinged grasshopper



Southern redlegged grasshopper



FUN FACT: There are about 70 species of grasshoppers in Florida.

Weeds

Weeds compete with citrus trees and rob them of water, nutrients, sunlight, and space for growth, therefore, weeds are thieves. Weeds act as substitute hosts of insect pests and diseases. Weeds are super abundant seed producers; some weeds such as Spanishneedles can produce as many as 5000 seeds per plant per year! Weeds reproduce through seeds or through sprouting from rhizomes, stolons and bulbs found under the soil. Weeds can be a grass, a broadleaf or a sedge.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
18	16	26	8	6	25	22	23	14	4	2	9	3	5	15	20	1	24	10	11	17	13	21	12	19	7

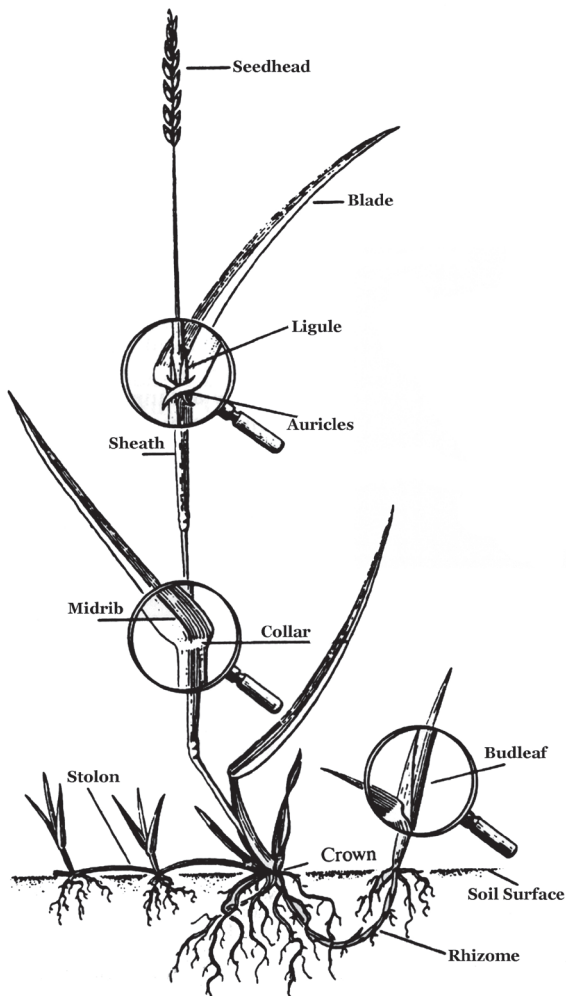
21 6 6 8 10 18 24 6 11 23 14 6 13 6 10

Directions:

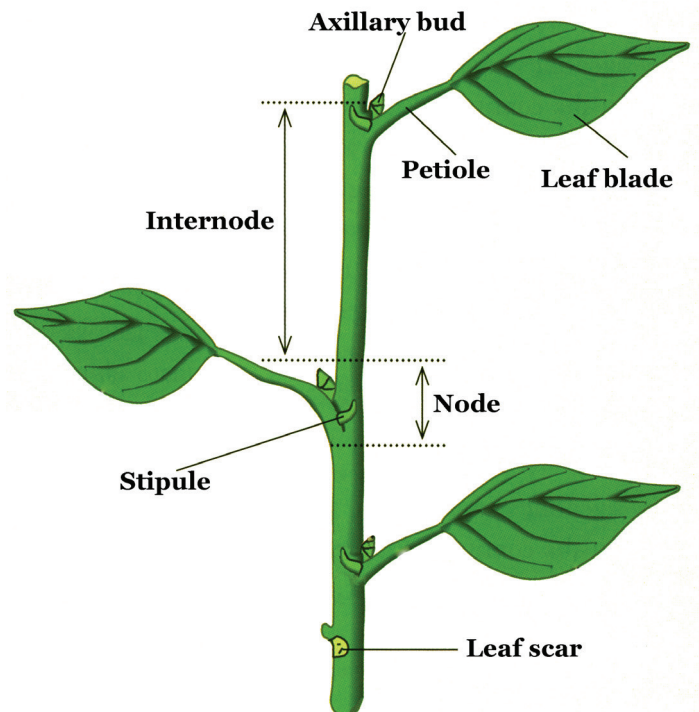
At the top there is a KEY that lists all the letters from A through Z with a box below. Each of the letters has a corresponding number.

The bottom part contains a phrase. Each of the blanks has a number underneath it. Fill in the letters that correspond to the numbers below the blanks to solve the phrase.

Parts of Weeds



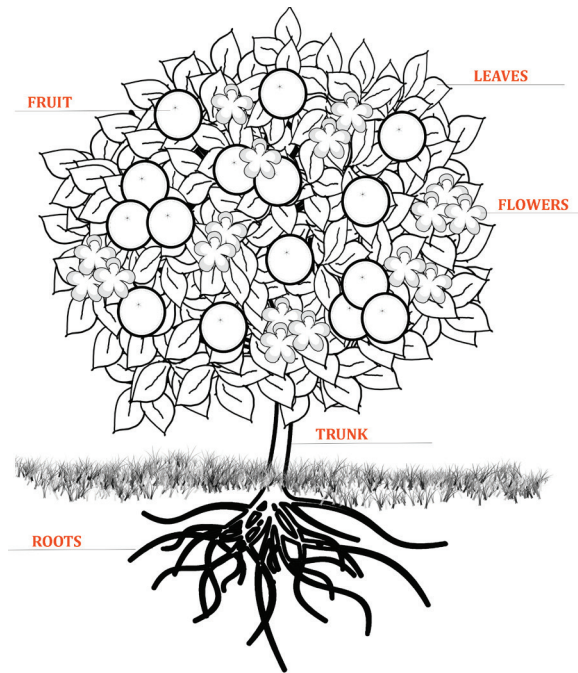
Grass weed



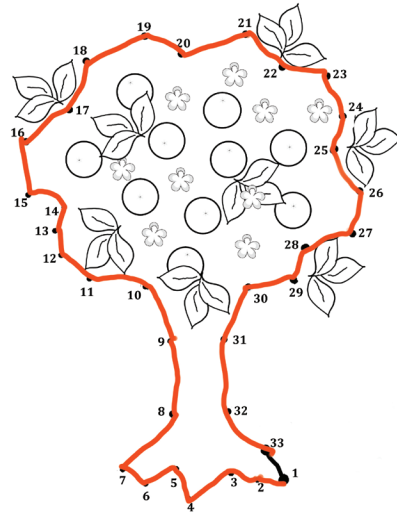
Broadleaf weed

Answer Key

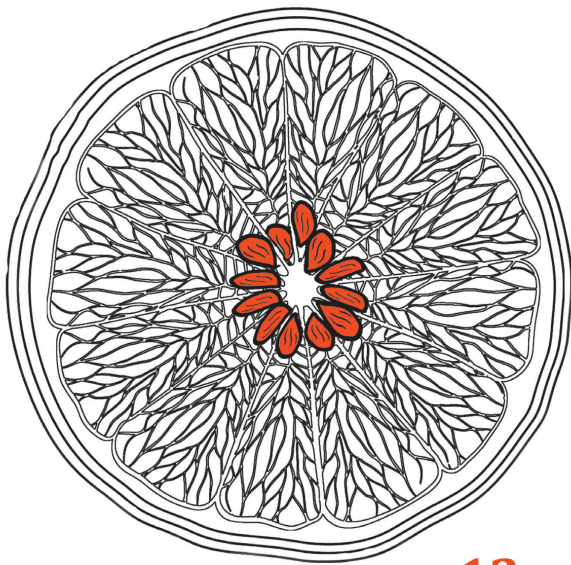
Page 5



Page 9



Page 6



Number of seeds: **12**

Page 10

D
I
S **C** **A** **B**
G **R** **E** **A** **S** **Y** **S** **P** **O** **T**
A **L** **T** **E** **R** **N** **A** **R** **I** **A**
S
M **E** **L** **A** **N** **O** **S** **E**

Page 11

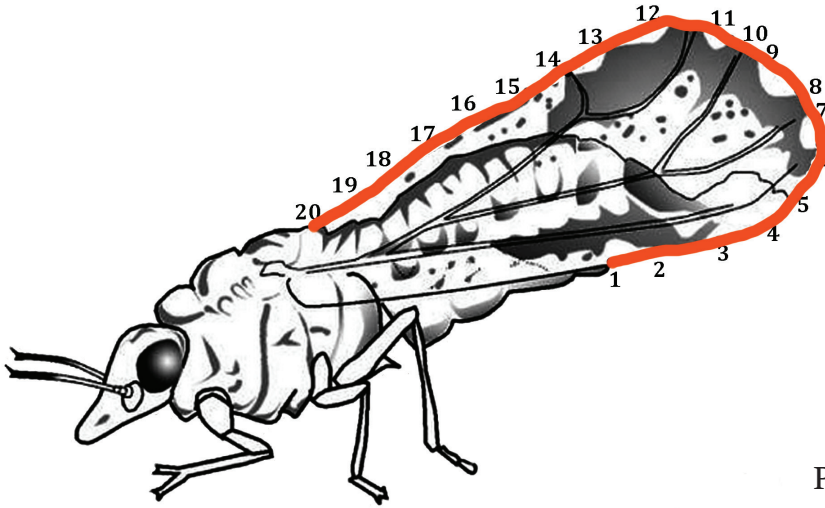
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B	C	I	I	S	R	S	P	X	J	M	F	S	N	D
D	D	I	X	R	E	A	W	A	I	T	F	R	G	I
X	L	J	T	G	E	R	P	S	M	E	I	U	R	S
P	L	T	N	R	I	T	S	E	V	M	H	X	R	P
H	R	A	I	R	U	H	C	G	F	K	E	K	I	L
L	R	Q	R	F	A	S	G	A	S	R	H	M	N	L
O	X	U	R	P	G	E	M	N	B	U	U	M	E	Y
E	F	U	E	G	N	I	N	E	E	R	G	I	S	W
M	I	N	P	S	Y	L	L	I	D	B	E	I	T	Q
T	L	L	A	M	S	V	R	V	M	P	L	Y	T	U
R	U	A	X	Z	H	T	M	I	K	E	V	H	O	D
W	M	W	N	X	B	G	E	T	I	G	A	A	M	A
D	Q	V	O	D	G	N	F	K	W	P	N	A	R	M

Page 7

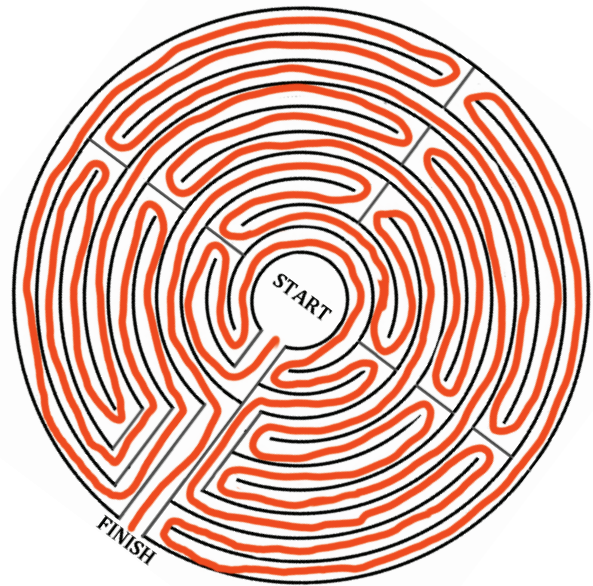
- | | |
|----------------------------|--------------------------------|
| F Alternaria | V Exocortis |
| F Brown Rot | F Greasy Spot |
| F Citrus Black Spot | F Melanose |
| B Citrus Canker | F Phytophthora Root Rot |
| B Citrus Greening | V Tristeza |
| F Citrus Scab | |

Answer Key

Page 12



Page 13



Page 14



American bird grasshopper



Southern lubber grasshopper



Linearwinged grasshopper



Southern redlegged grasshopper



Page 15

W E E D S A R E T H I E V E S
21 6 6 8 10 18 24 6 11 23 14 6 13 6 10

Recipes

Always remember to check with Mom or Dad before starting!

Tangerine Punch

Ingredients

- 1 (32-ounce) container tangerine juice
- 1 (10-ounce) can Welch's® Frozen Strawberry Breeze Juice Concentrate
- 2 cups water
- 1 tablespoon lime juice

Steps

1. Combine tangerine juice and strawberry juice in pitcher.
2. Stir in water and lime juice; chill until ready to serve.

Sunrise Coolers

Ingredients

- 1 (6-ounce) can frozen orange juice concentrate
- 1 (6-ounce) container orange creme yogurt
- 4 cups ice
- 1 ¼ cups water
- 2 tablespoons honey
- 3 tablespoons maraschino cherry juice
- Maraschino cherries for garnish

Steps

1. Place in blender: orange juice, yogurt, ice, water and honey.
2. Blend 30-40 seconds, or until thick and smooth.
3. Fill four glasses ¾ full, leaving ¼ of mixture in blender.
4. Add cherry juice to remaining mixture in blender and blend additional 30 seconds.
5. Dividing equally, pour over each original mixture, top with cherries, and serve.

Strawberry Lime Smoothies

Ingredients

- 2 cups frozen whole strawberries
- 1 (6-ounce) container frozen limeade concentrate
- 2 cups reduced fat milk
- 1 (8-ounce) container lowfat strawberry yogurt

Steps

1. Combine all ingredients in blender.
2. Blend for 20 seconds. Turn blender off and scrape down sides. Blend for additional 20-30 seconds or until well blended. Serve.

Lemon Ice Cream

Ingredients

- 1 large lemon
- 1 cup sugar
- 1 cup milk
- 1 cup well-chilled heavy cream

Steps

1. With a vegetable peeler remove zest from lemon, being careful not to include any white pith.
2. In a food processor, blend zest with sugar until very finely ground.
3. Squeeze enough juice from lemon to measure ¼ cup.
4. In a large bowl stir together sugar mixture and milk until sugar is dissolved and stir in lemon juice.
5. In a medium bowl beat cream until it just holds stiff peaks and fold into milk mixture gently but thoroughly.

Pour mixture into a 9 x 5 x 3-inch metal loaf pan. Freeze ice cream until frozen, about 3 hours. (Can be made with any citrus fruit).



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Eat Florida Citrus!

