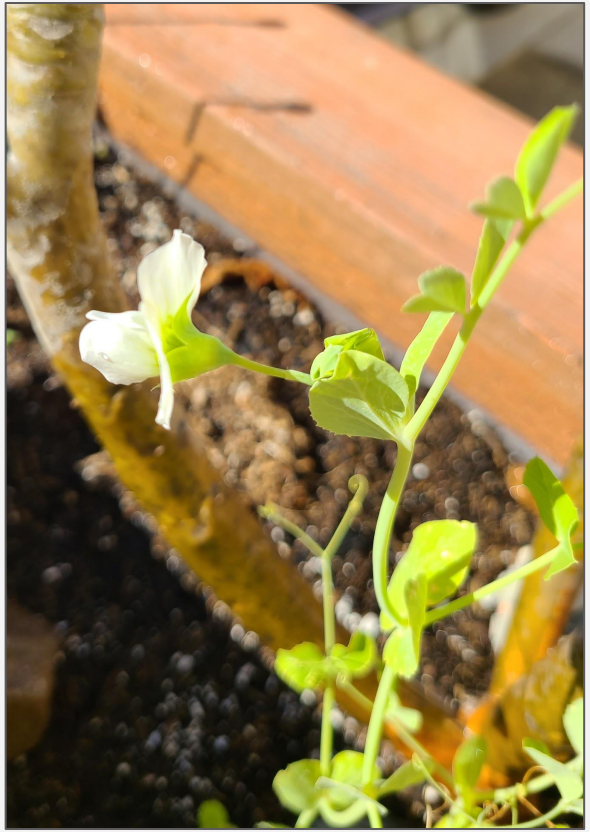
NGSS in the Garden

Gardening with Class - October 11, 2025

Good Morning!



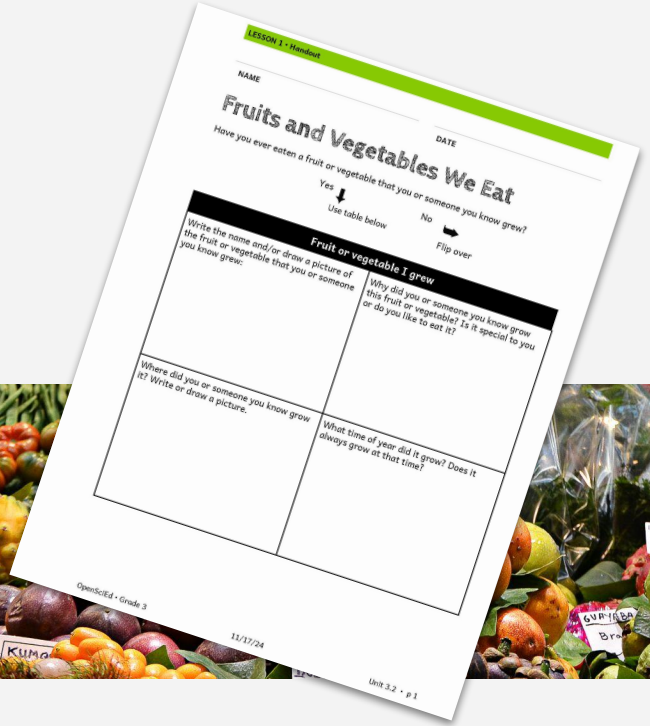
Excerpt from OpenSciEd Unit 3.2 · Lesson 1-6

Fruit and vegetables we eat

Have you ever eaten a fruit or vegetable that you or someone you know grew?

YES

NO


LESSON 1 - Handout

NAME

DATE

Fruits and Vegetables We Eat

Have you ever eaten a fruit or vegetable that you or someone you know grew?

Yes ↓ Use table below

No → Flip over

Fruit or vegetable I grew	
Write the name and/or draw a picture of the fruit or vegetable that you or someone you know grew.	Why did you or someone you know grow this fruit or vegetable? Is it special to you or do you like to eat it?
Where did you or someone you know grow it? Write or draw a picture.	What time of year did it grow? Does it always grow at that time?

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Jacopo Maia

Explore fruits on the lunch menu

This menu shows only the fruits on a lunch menu for the month of September.

What do you notice?

September

				01 Friday Apple Juice Fresh Orange Wedges
04 Monday	**05** Tuesday	**06** Wednesday Apple Juice Bananas	**07** Thursday Apple Slices, IW Orange Juice	**08** Friday Apple Juice Fresh Orange Wedges
11 Monday Birthday Cake Applesauce Cups Blue Raspberry Applesauce Cups Mango Peach Applesauce Cups Orange Juice Strawberry Applesauce Cups Watermelon Applesauce Cups	**12** Tuesday Diced Peaches Grape Juice	**13** Wednesday Apple Juice Bananas	**14** Thursday Grapes Orange Juice	**15** Friday Apple Juice Mixed Fruit
18 Monday Diced Peaches Orange Juice	**19** Tuesday Grape Juice Strawberry Cups	**20** Wednesday Apple Juice Bananas	**21** Thursday Apple Slices, IW Orange Juice	**22** Friday Apple Juice Fresh Orange Wedges
25 Monday	**26** Tuesday Blushing Applesauce Grape Juice	**27** Wednesday Apple Juice Bananas	**28** Thursday Apple Slices, IW Orange Juice	**29** Friday Apple Juice Fresh Orange Wedges

What do you notice?

02 Monday	03 Tuesday	04 Wednesday	05 Thursday	06 Friday
Birthday Cake Applesauce Cups Blue Raspberry Applesauce Cups Mango Peach Applesauce Cups Orange Juice Strawberry Applesauce Cups Watermelon Applesauce Cups	Diced Peaches Grape Juice	Apple Juice Bananas	Grapes Orange Juice	Apple Juice Mixed Fruit
09 **Monday**	**10** **Tuesday**	**11** **Wednesday**	**12** **Thursday**	**13** **Friday**
	Grape Juice Strawberry Cups	Apple Juice Bananas	Apple Slices, IW Orange Juice	Apple Juice Fresh Orange Wedges
16 **Monday**	**17** **Tuesday**	**18** **Wednesday**	**19** **Thursday**	**20** **Friday**
Diced Pears Orange Juice	Blushing Applesauce Grape Juice	Apple Juice Bananas	Apple Slices, IW Orange Juice	Apple Juice Fresh Orange Wedges
23 **Monday**	**24** **Tuesday**	**25** **Wednesday**	**26** **Thursday**	**27** **Friday**
Birthday Cake Applesauce Cups Blue Raspberry Applesauce Cups Mango Peach Applesauce Cups Orange Juice Strawberry Applesauce Cups Watermelon Applesauce Cups	Diced Peaches Grape Juice	Apple Juice Bananas	Grapes Orange Juice	Apple Juice Mixed Fruit
30 **Monday**	**31** **Tuesday**	**October**		
Diced Peaches Orange Juice	Grape Juice Strawberry Cups			

What do you notice?

November

		01 Wednesday	02 Thursday	03 Friday
		Apple Juice Bananas	Apple Slices, IW Orange Juice	
06 Monday	**07 Tuesday**	**08 Wednesday**	**09 Thursday**	**10 Friday**
Diced Pears Orange Juice	Blushing Applesauce Grape Juice	Apple Juice Bananas	Apple Slices, IW Orange Juice	Apple Juice Fresh Orange Wedges
13 Monday	**14 Tuesday**	**15 Wednesday**	**16 Thursday**	**17 Friday**
Applesauce Cups Applesauce Cups, Original (CMDTY) Birthday Cake Applesauce Cups Blue Raspberry Applesauce Cups Mango Peach Applesauce Cups Orange Juice Strawberry Applesauce Cups Watermelon Applesauce Cups	Diced Peaches Grape Juice	Apple Juice Bananas	Grapes Orange Juice	Apple Juice Mixed Fruit
20 Monday	**21 Tuesday**	**22 Wednesday**	**23 Thursday**	**24 Friday**
	Thanksgiving holiday			
27 Monday	**28 Tuesday**	**29 Wednesday**	**30 Thursday**	
	Grape Juice Strawberry Cups	Apple Juice Bananas	Apple Slices, IW Orange Juice	

What do you notice?

December

				01 **Friday** Apple Juice Fresh Orange Wedges
04 **Monday** Diced Pears Orange Juice	**05** **Tuesday** Blushing Applesauce Grape Juice	**06** **Wednesday** Apple Juice Bananas	**07** **Thursday** Apple Slices, IW Orange Juice	**08** **Friday** Apple Juice Fresh Orange Wedges
11 **Monday** Applesauce Cups Applesauce Cups, Original (CMDTY) Birthday Cake Applesauce Cups Blue Raspberry Applesauce Cups Mango Peach Applesauce Cups Orange Juice Strawberry Applesauce Cups Watermelon Applesauce Cups	**12** **Tuesday** Diced Peaches Grape Juice	**13** **Wednesday** Apple Juice Bananas	**14** **Thursday** Grapes Orange Juice	**15** **Friday** Apple Juice Mixed Fruit
18 **Monday** Diced Peaches Orange Juice	**19** **Tuesday** Grape Juice Strawberry Cups	**20** **Wednesday** Apple Juice Bananas	**21** **Thursday** Apple Slices, IW Orange Juice	**22** **Friday**
25 **Monday**	**26** **Tuesday** Winter break	**27** **Wednesday**	**28** **Thursday**	**29** **Friday**

How long do these fruits last once picked?

Apples are good for 5-7 days on a counter

Bananas are good for 5 days on a counter.

Oranges are good for 5-7 days on a counter.

Apples and oranges can be good for 4-8 weeks if stored in a refrigerator. Bananas are only good in the refrigerator for 7-10 days.

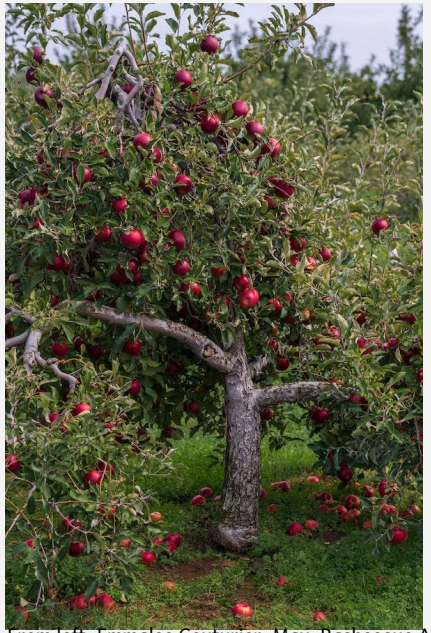
Group Ideas

How is that possible to have bananas, apples, and oranges for our school breakfasts and lunches all year?

Be ready to share your ideas with the class.

Where do they grow?

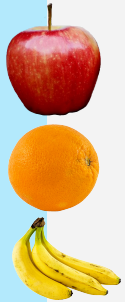
Where do apples, bananas, and oranges grow?



From left: Emmalee Couturier; Max; Rasheeque Ahnaf

Explore stickers off of fruits

1. Look at the images of places where fruits grow.
2. Find the places on your map.
3. Make red dots for apples
4. Make orange dots for oranges
5. Make yellow dots for bananas




LESSON 1 • Handout

Where Do These Fruits Grow?

1. Sort through the cards that have places where fruit is grown. Find those matching countries on the map below.
2. Place a tiny fruit sticker (an apple, banana, or orange) on the map where that kind of fruit grows.

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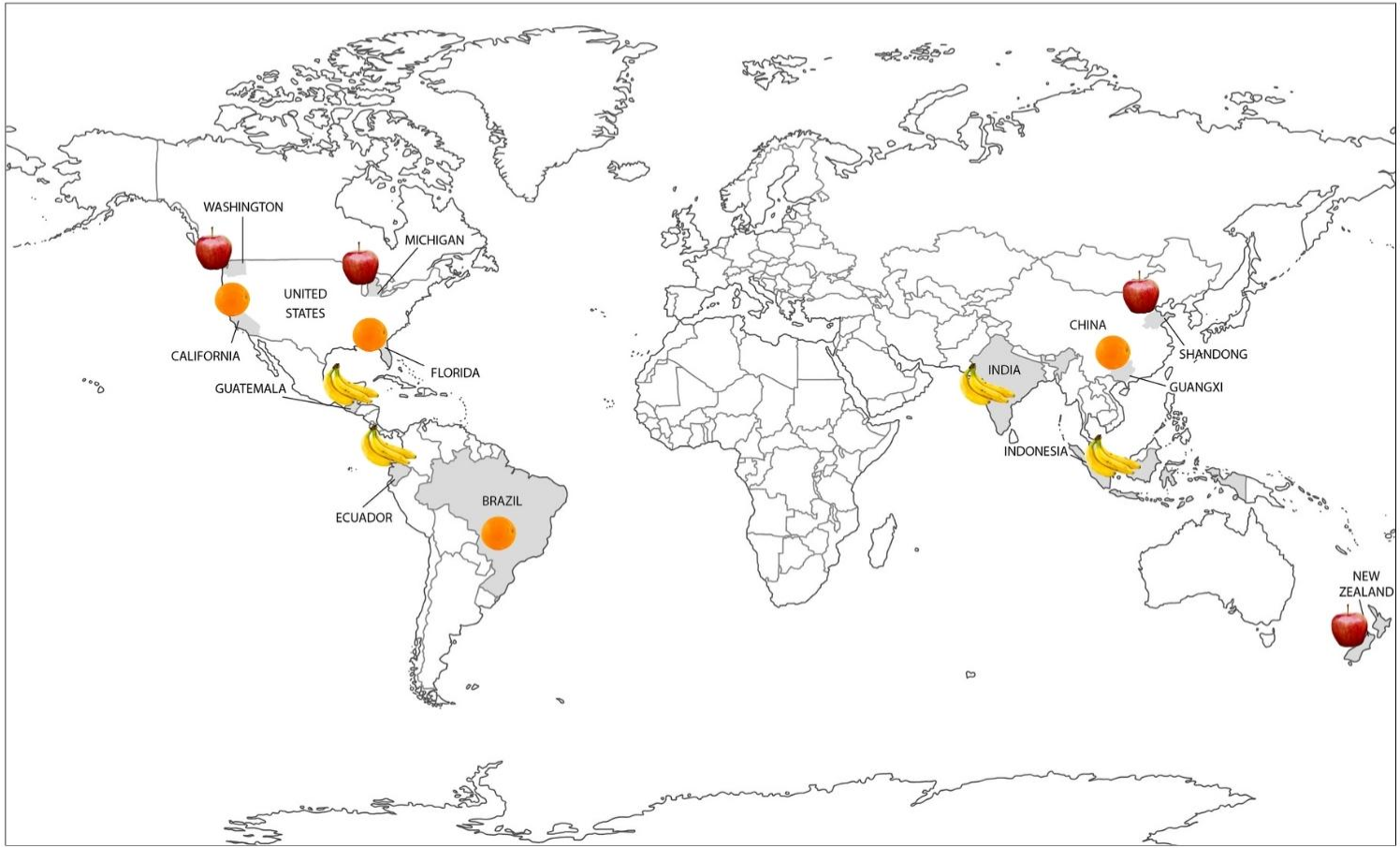
Where Fruit Grows



Patterns we notice

Bananas are in the middle.
Oranges are in between bananas and apples.
Apples are either on the top (north) or bottom (south).

What we know

Before they get to the store, fruit and vegetables are growing.

- What do we know about how they grow?

Max

Gemma Jade

Make sense of what we will observe

Sometimes when scientists want to observe a plant growing, they watch **time lapse** videos to see changes quickly.

Time lapse videos are really a bunch of pictures, taken every day, played together as a movie.

We will see 120 days of growth in just 2 minutes!!

Day 1

Day 2

Day 3

Observing Tomato Plant Growth

Watch the time lapse video of the growing tomato plant.

Look for:

- How the plant starts growing.
- How the plant changes over time.
- When changes are happening.

Record our observations

Add our observations to our class chart.

- What changes did we observe?
- When did those changes happen?
- How could we label these stages?

Tomato Growth Observation Chart

Sequence	What happens	When/Day Number
First		
Second		
Third		
Next		
Then		
Last		

Tomato Growth Observation Chart

	Sequence	What happens	When/Day Number
Life Begins	First	Seeds are planted in soil and water is added.	Day 0
Grows bigger	Second	Green plants grow up out of the soil. The plants gets more leaves and gets bigger. Then some on the stems are cut off the plant.	Day 5 - 16
	Third	Keeps growing taller and gets wider as more branches grow. It is getting water every day *(we can tell because the soil changes color)*	Day 16 - Day 74
Makes flowers	Next	Small yellow flowers start growing. They open up and seem to get bigger. But then they shrivel and close back up.	Day 74 - Day 80
Makes fruit	Then	Baby green tomatoes start growing where the flowers were. The baby green tomatoes get bigger. Some leaves are still growing.	Day 89 - Day 113
	Last	Green tomato turns red and is ready to be picked. There are many tomatoes on the plant.	Day 113 - Day 120

Look closer

With a partner

Look closely at the inside of tomatoes.

How could this tomato slice grow into a whole plant?

Make Predictions

Have you ever seen another plant grow and produce fruit? Was it like the tomato or was it different?

Do we think all plants have similar stages of growth?

- What could we do to find out?

Plan to gather information

 Red Delicious **Apple**	 Navel **Orange**	 Cavendish **Banana**	 Garden **Strawberry**
Name	*Name*	*Name*	*Name*
 Common **Pumpkin**	 Garden **Cucumber**	 Sugar Snap **Peas**	 Northern Highbush **Blueberry**
Name	*Name*	*Name*	*Name*

Obtain information from texts

Work with your group to research how your fruit or vegetable changes as it grows.

Use the handout to record information that will be helpful to share with your classmates.

LESSON 2 • Handout

A Fruit or Vegetable's Life Research Notes

Use the information from your assigned fruit or vegetable infographic card to find the answers to these questions. Circle the best answer for each row. Record your group's ideas when everyone agrees. You will share these ideas with your classmates.

Our fruit or vegetable is: _____			
1. Life Begins as...	Seed	Seed + Runner	Sucker/Offshoot
2. Grows into...	Small Plant (shorter than you)		Big Plant/Tree (taller than you)
3. Our plant can make its first flowers and fruits after...	Months	1 - 2 Years	3 or more Years
4. Our plant can continue to make flowers and fruits...	One season		Year after year
5. Our plant can live for...	Less than 1 year	1 - 10 years	More than 10 years
6. Over its entire life, our plant grows best if the temperature is...	Both cold and warm		Warm or hot
7. To continue growing, our plant needs...	Water		No water

At certain times in life

Life begins as...	Seed: Tomato, Pumpkin, Pea, Orange, Blueberry, Apple, Cucumber	Seed + Runner: Strawberry	Root bulb: Banana
Grows into...	Small Plant: Tomato, Pumpkin, Pea, Strawberry, Blueberry, Cucumber	Big Plant/Tree: Banana, Orange, Apple	
Flowers and fruits after...	Months: Tomato, Pumpkin, Pea, Banana, Strawberry, Cucumber	1 - 2 Years: Blueberry	3+ Years: Orange, Apple
Make flowers and fruits...	One season: Tomato, Pumpkin, Pea, Banana, Cucumber	Year after year: Strawberry, Orange, Blueberry, Apple	
Life ends	Less than 1 year: Tomato, Pumpkin, Pea, Cucumber	1 - 10 years: Banana, Strawberry	More than 10 years: Orange, Blueberry, Apple

Over their entire life

Grows best if the temperature is...	Both cold and warm: Pea, Strawberry, Blueberry, Apple	Warm or Hot: Tomato, Pumpkin, Banana, Orange, Cucumber
Continues growing if it gets...	Water: Tomato, Pumpkin, Pea, Banana, Strawberry, Orange, Blueberry, Cucumber, Apple	No Water

Fruit plant needs

Apples, oranges, and bananas come from plants that make fruit during part of their life cycle.

These plants have needs in order to grow best.

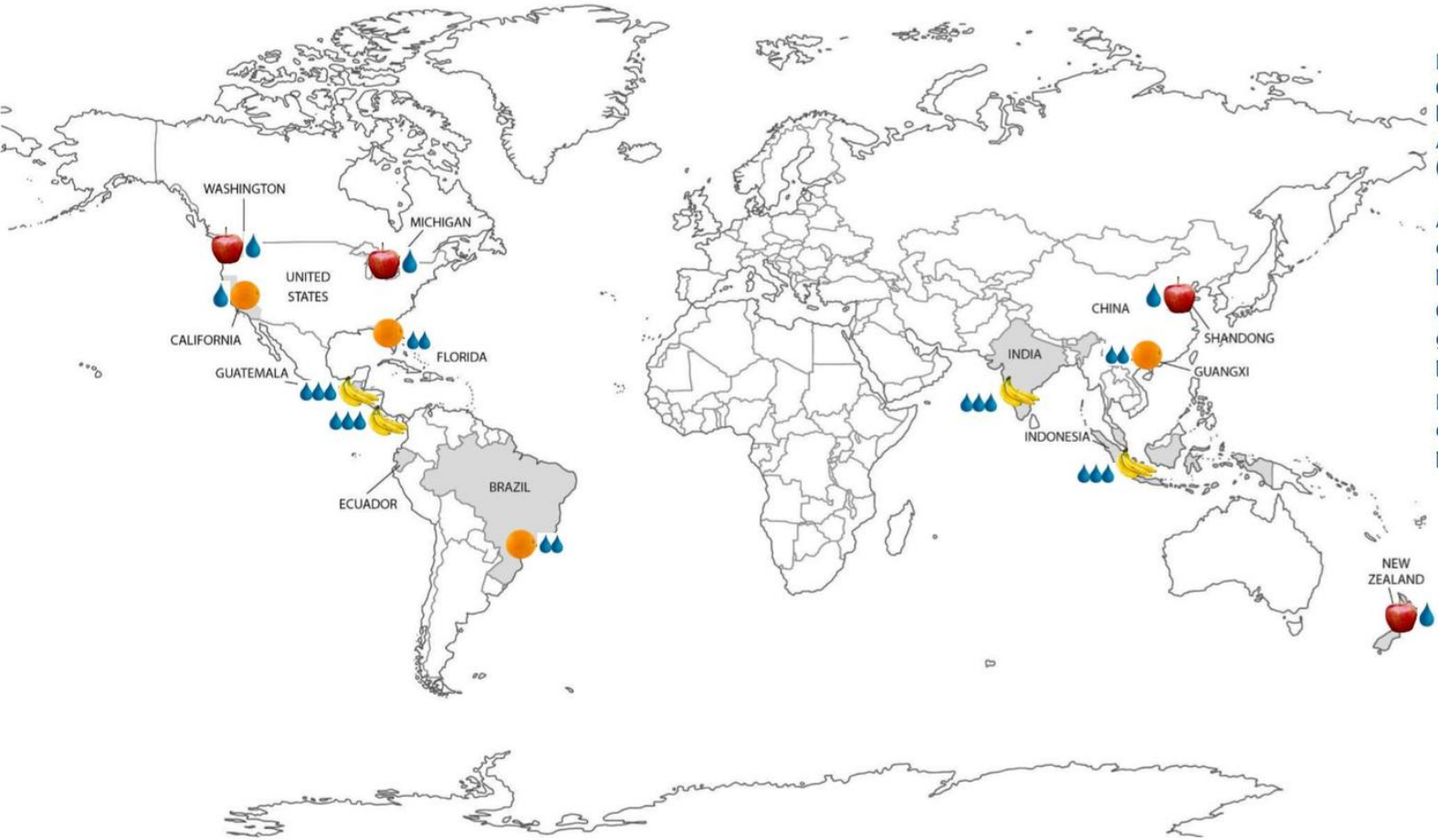
Turn and talk with a partner:

- If we want to grow these plants ourselves, what would you want to know to make sure your plant grows well and produces fruit?

Fruit plant needs

What do you notice about the precipitation and temperature needs of fruit plants and what we figured out about where they grow?

Lesson 3 Example: Where Fruit Grows map (*Add Precipitation*)



Patterns we notice:

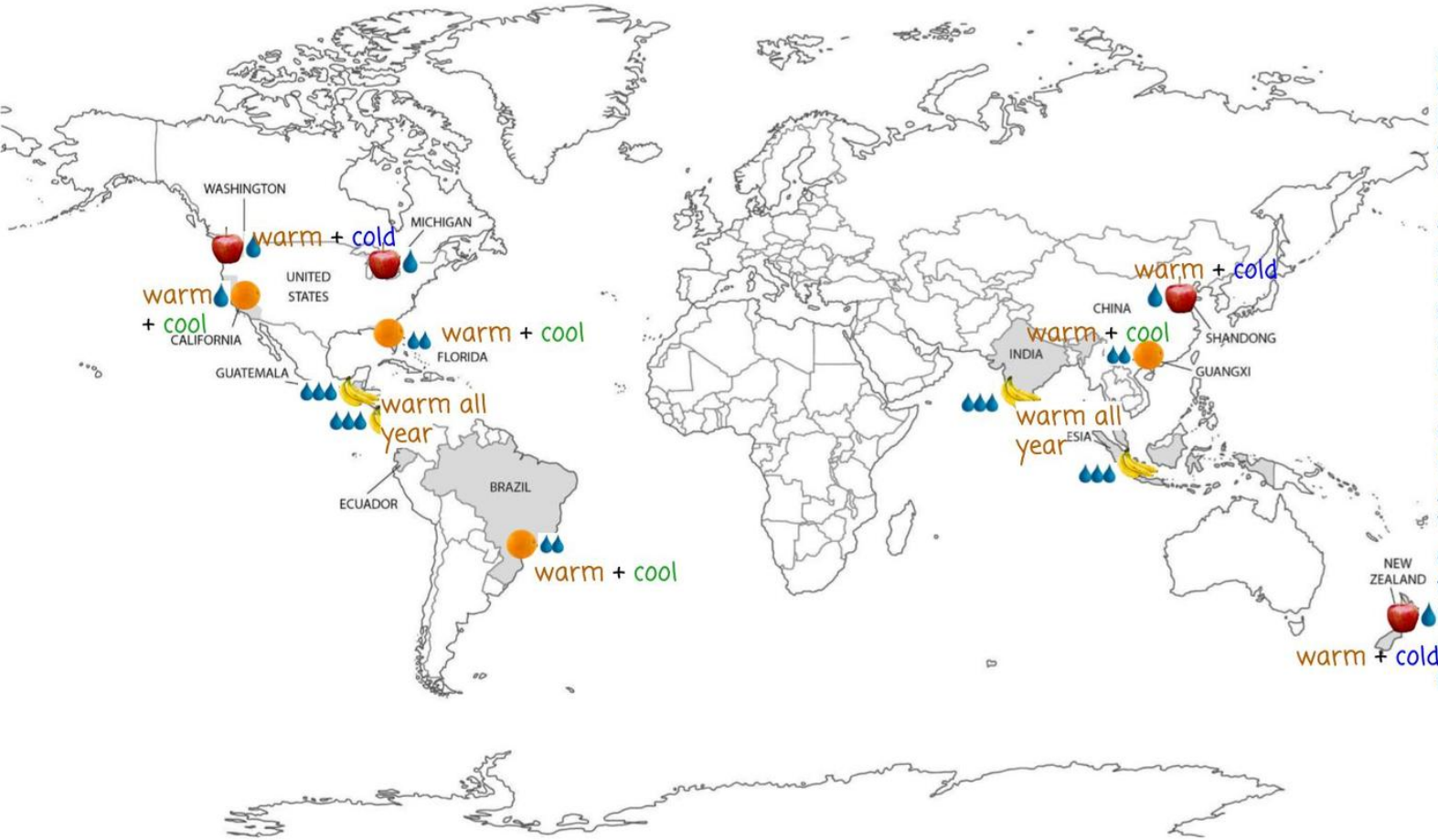
Bananas are in the middle
Oranges are in between bananas and apples
Apples are either on the top (north) or bottom (south)

Apples need the least water and grow in places with less precipitation.

Oranges fall in the middle and grow in places with some precipitation.

Bananas need the most water and grow in places with more precipitation.

Lesson 4 Example: Where Fruit Grows map (*Add Temperature*)



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Bananas need the most water and grow in places with more precipitation.

Apples are grown in places with warm and cold temperatures.

Oranges grow in mostly warm temperatures with cool winters.

Bananas grow in places warm all year.

Revisit our Where Fruit Grows map

Summarize our ideas so far:

What can we say about the temperature and precipitation data in places that grow:

- Apples?
- Oranges?
- Bananas?

How do they know where to grow fruit?

Look at the data.

Since it is a long time to grow and produce fruit, how do farmers know places are good places to grow certain fruits?

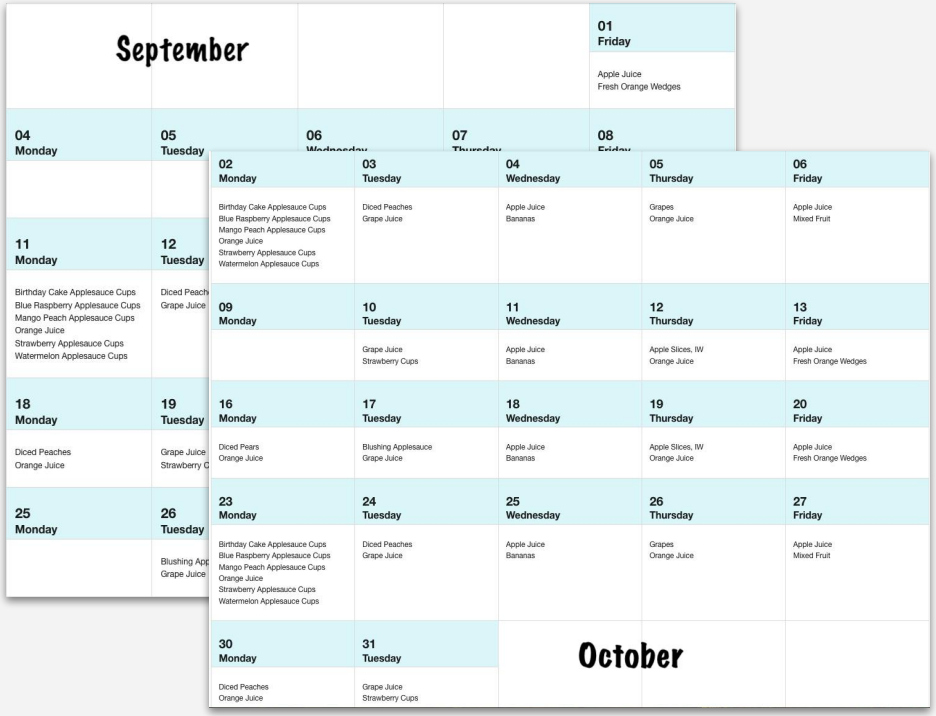
Type of fruit:	How many years it takes to produce first fruits:	How many years the plant can continue making fruit:
Apples	5-10 years	30+ years
Oranges	3-6 years	25 years
Bananas	1 ½ - 2 years	Up to 6 years, but each stem only produces fruit for 1 year.

How do we get fruit all year long?

As a class

Think back to our school menu. We've learned a lot about the places that grow these fruits for us.

What are our ideas for how we can eat them all year long?



Lesson Debrief

1. How does this lesson support the Next Generation Science Standards?

2. How does this lesson support the CA Environmental Principles and Concepts?

3. Where can taking students outdoors and into the garden connect to this lesson?

Thank you!

http://bit.ly/46ZEeUw

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