

Green Up/Green Down at Anthony Carnevale!

Our GLOBE Science Inquiry

Anthony Carnevale Elementary School

Providence, Rhode Island

Grade 2, Inclusion, Room 201

Mr. Tramonti/Mrs. Tavares, Classroom Teachers



Adopting Our Trees...

Three Teams of students explored the school grounds. Each team adopted a different tree species that are located in our school yard that they could study throughout the school year. An Adoption sign with the team names and student pictures were placed on each tree.





The Swans



The Bunnies



The Snow Leopards

Fall Observations...



Stick vs. Twig or in Other Words, Dead vs. Dormancy

Investigation #1

“Are trees dead in the winter, Mr. Tramonti?”

- One inquiry question from a student prompted an investigation that spanned a few months.
- So, to learn about misconceptions that our students may have, I took an informal survey of their thoughts about this question...

Common Misconceptions About Trees in the Winter

Student Responses were as follows:

- **Most students believed trees died in the winter and came alive again in spring.**
- **Some thought they were just asleep.**
- **Some thought they were frozen.**
- **Some had no idea.**

Investigation #2

How Does Air Temperature Effect Bud Bursts?



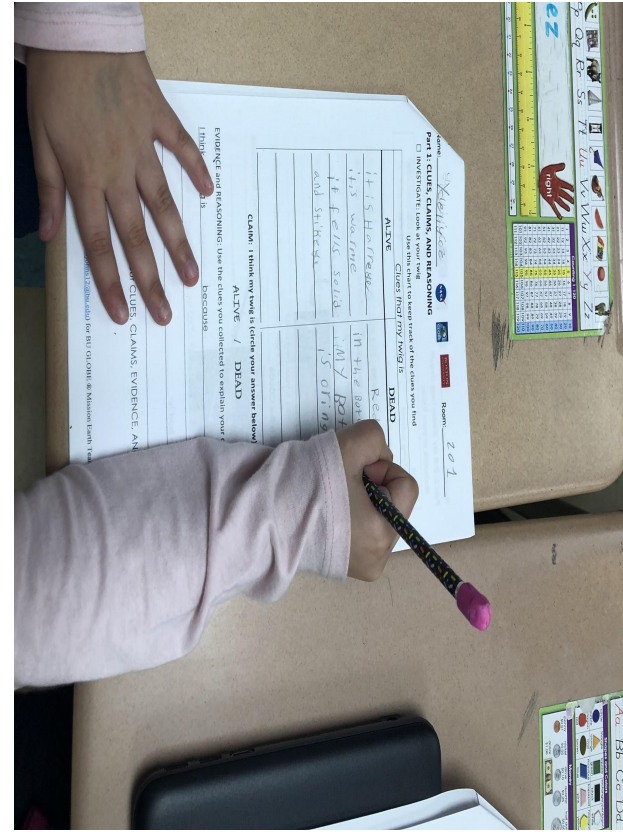
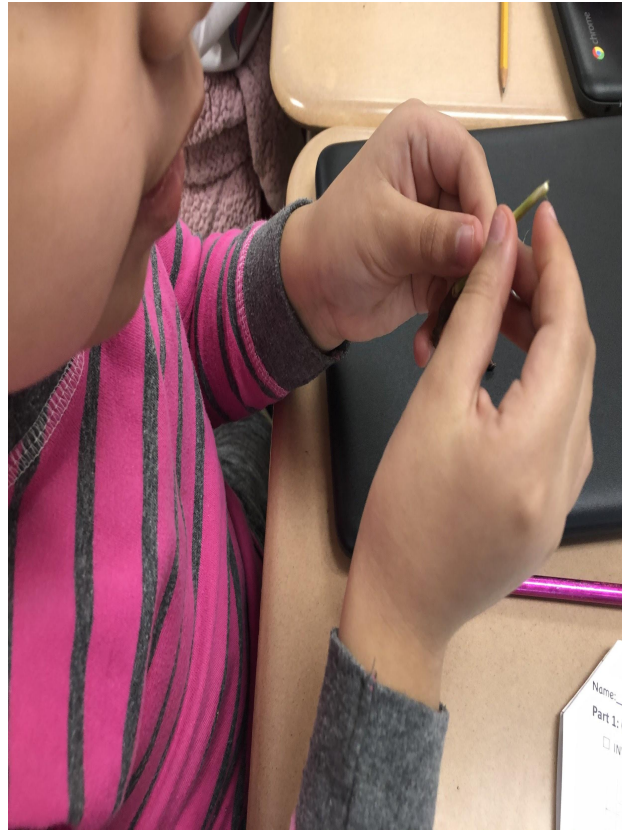
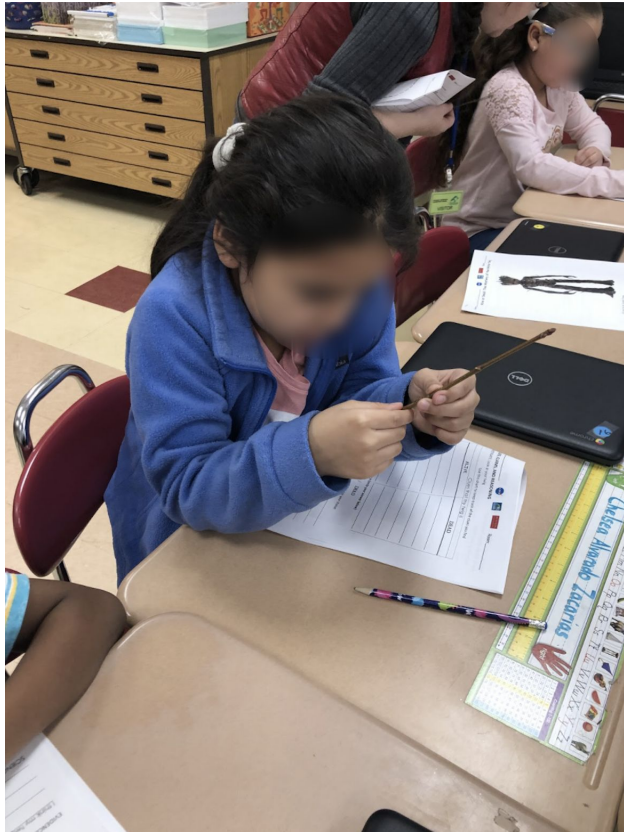
How can we change these student misconceptions?

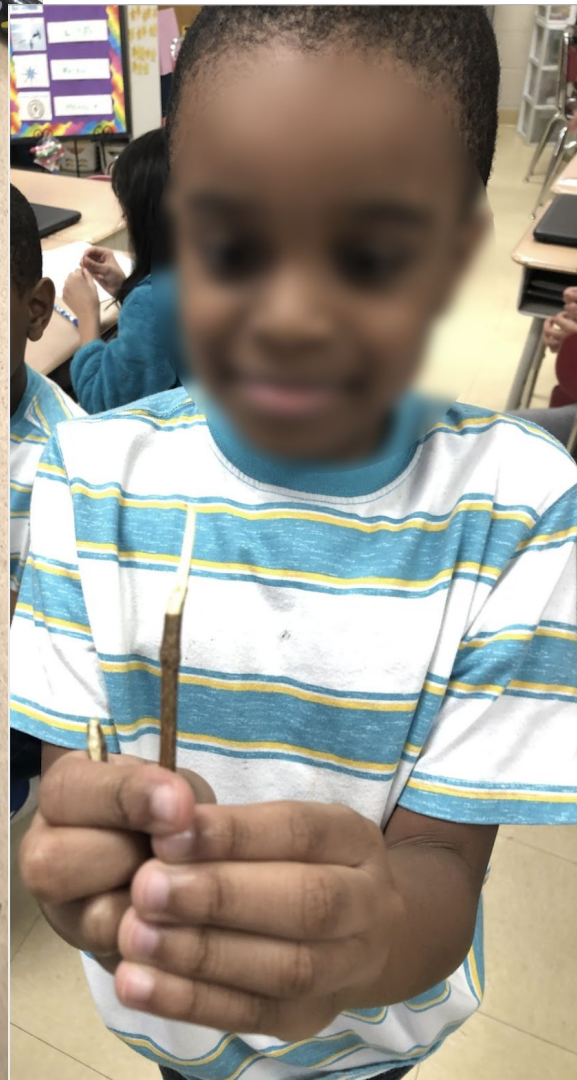
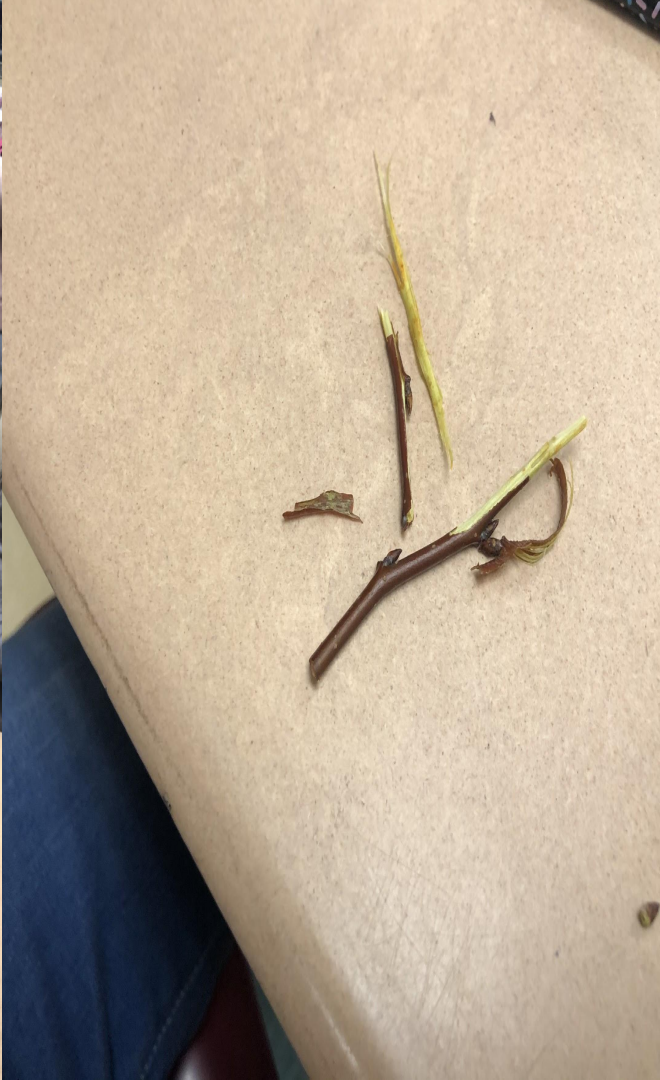
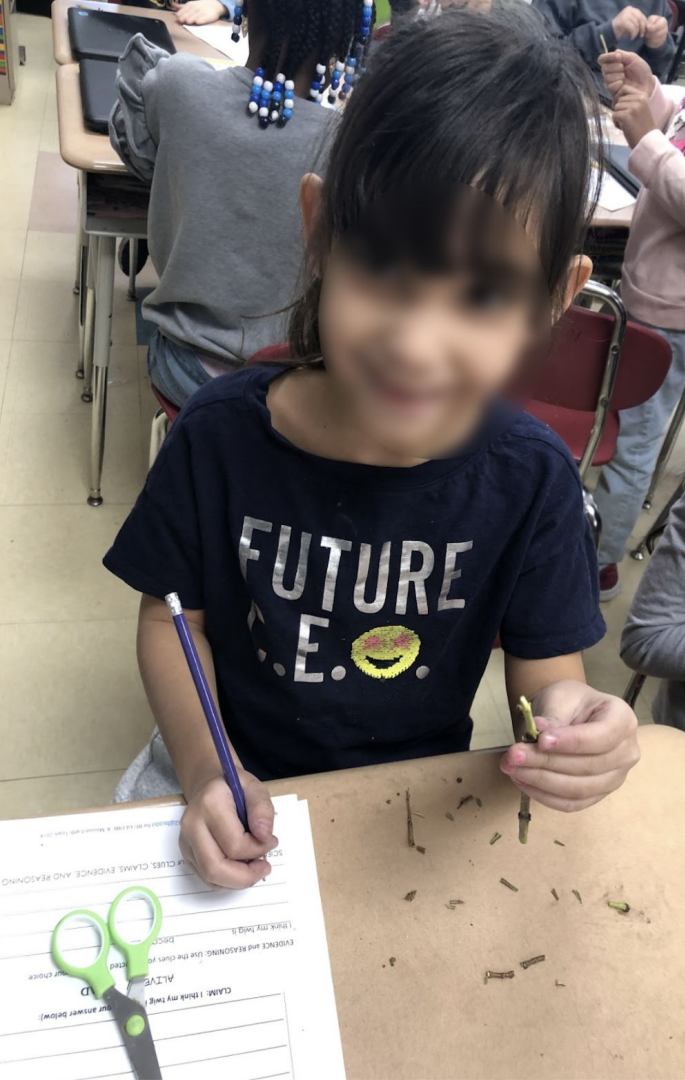
The Mystery of the Winter Twig

- As a class decided that an expert was needed!
- We decided we wanted GLOBE help and I reached out to our BU Superhero, Ms. Kathleen! She swooped in to save the day, and had us knee deep in twigs to investigate in a top secret twig mission called Operation: Winter Twig!



Room-201 Inquiry Investigation!



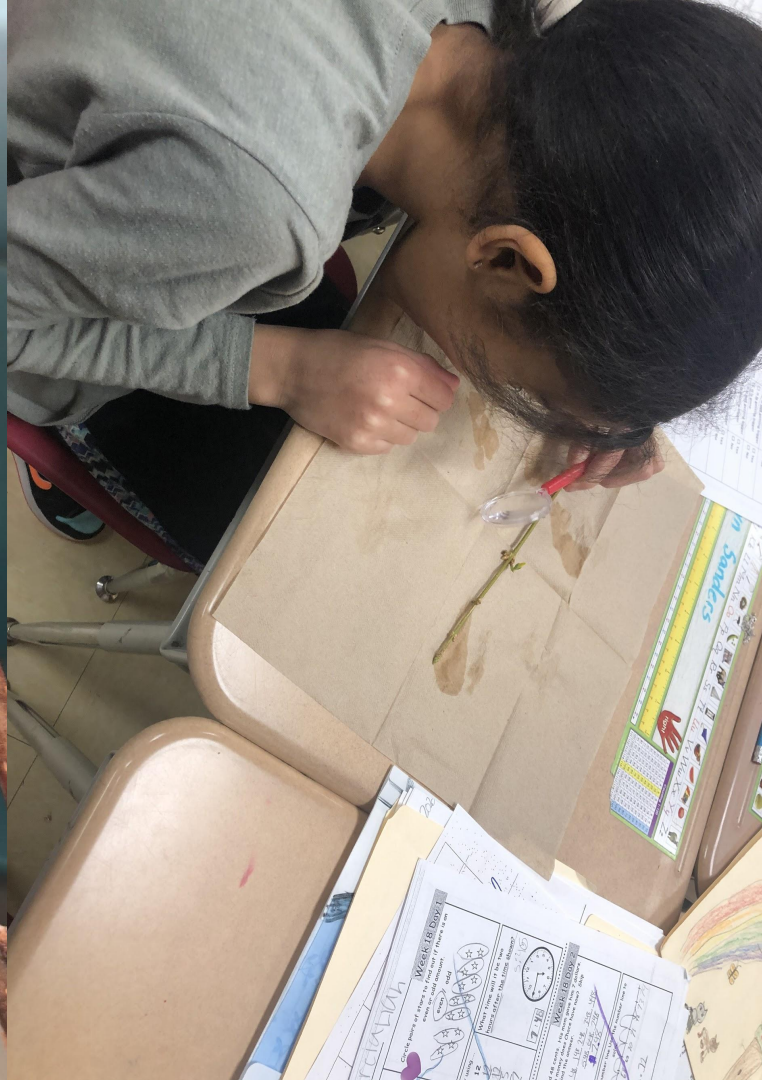


Continuing Our Investigation...Bud Bursts!

The students continued the investigation by doing the following:

- Each team kept twigs in a cup with water and they were placed in front of a window with plenty of sunlight. Each team marked their cups.
- In addition to the twigs brought in by Kathleen, each team went outside to their adopted tree, clipped their twigs and they were placed in their respective cups.
- “Twig Monitors” were assigned to monitor water levels, record air temperature and mark any changes they noticed in the twigs.
- All students monitored twigs weekly and recorded their noticings and presented their noticings to the entire class.





Will My Winter Twig Grow?- DATA SHEET

Room: _____

Use this table to record data for your leaf bud each day.

Date	Room Air Temperature (°F)	What color is your twig bud today?	How long is your twig bud?	What is happening to your twig bud?	Are there flower leaves on your twig?
2/15/20	68°F	White	inches	<input type="checkbox"/> It is not getting bigger <input checked="" type="checkbox"/> It is getting bigger <input type="checkbox"/> It is gone	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		My twig bud is the color	inches	<input type="checkbox"/> It is not getting bigger <input type="checkbox"/> It is getting bigger <input type="checkbox"/> It is gone	<input type="checkbox"/> Yes <input type="checkbox"/> No
		My twig bud is the color	inches	<input type="checkbox"/> It is not getting bigger <input type="checkbox"/> It is getting bigger <input type="checkbox"/> It is gone	<input type="checkbox"/> Yes <input type="checkbox"/> No
		My twig bud is the color	inches	<input type="checkbox"/> It is not getting bigger <input type="checkbox"/> It is getting bigger <input type="checkbox"/> It is gone	<input type="checkbox"/> Yes <input type="checkbox"/> No
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Will My Winter Twig Grow?- DATA SHEET

Use this table to record data for your leaf bud each day.

Date	Room Air Temperature (°F)	What color is your twig bud today?	How long is your twig bud?	What is happening to your twig bud?
2/15/20	68°	My twig bud is the color Green + brown + white	inches	<input type="checkbox"/> It is not getting bigger <input type="checkbox"/> It is getting bigger <input type="checkbox"/> It is gone
		My twig bud is the color	inches	<input type="checkbox"/> It is not getting bigger <input type="checkbox"/> It is getting bigger <input type="checkbox"/> It is gone
		My twig bud is the color	inches	<input type="checkbox"/> It is not getting bigger <input type="checkbox"/> It is getting bigger <input type="checkbox"/> It is gone
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Room 201 Meteorologist Protocols

A meteorologist is a scientist who studies weather. Some meteorologists report the weather to many people!

1. Scroll down on the assignment page to the section marked GLOBE.
2. Open up the link to the Carnevale Weather Station.
3. Look at the information.
4. Click on to the Weather board and fill in the information.
5. DO NOT submit!
6. Click on the April Weather Data Chart
7. Complete the chart by adding the temperature and sky conditions
8. Report out information to the class! Remember to be an awesome superstar speaker!

Weather Collection Tools

Virtual Weather Board

Weather Board (Google Doc)

Fill in the information on the Virtual Weather Board below. Be prepared to share your data with the class.

* Required

The **temperature** is... *

The sky conditions are... *sunny, partly cloudy, cloudy

The **precipitation** is...

rain, snow, freezing rain, drizzle, none

What kind of clouds are in the sky? *

Cumulus, Cirrus, Stratus, No clouds...the sky is clear.

The **wind speed** is... *

The **wind direction** is... *

The **barometer** is... *

steady (the weather is staying the same with no changes)

falling (there is going to be a change in our weather...like rain, snow or a storm)

rising (our weather is going to improve).

Student Air Temperature/Sky Condition Data Collection Sheet

Student meteorologists logged on to the Davis Weather Center daily during the solar noon time.

Students recorded their data on the sheet.

The data collected focused only on school days.







The information on the collection sheet was turned into a bar graph and the data was then analyzed.


Name: January

Let's Graph Our Weather Data!

Month: _____ Year: 2020

Student Air Temperature and Sky Condition Data Collection... January, 2020

20						
19						
18						
17						
16						
15						
14						
1/31/20 13	44°					
1/30/20 12	33°					
1/28/20 11	38°					
1/25/20 10	48°					
1/21/20 9						
1/21/20 8			47°			
1/14/20 7	36°					
1/13/20 6	24°					
1/10/20 5	47° 48°					
1/9/20 4	28° 39°			4#		
1/8/20 3	39°			42°		
1/7/20 2	43°			47°		
1/6/20 1				37° ✓		
How many days this month were:			Partly Cloudy 			Snowy 




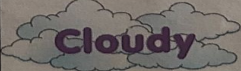


Name: February 

Let's Graph Our Weather Data!

Month: _____ Yr: _____

Student Air Temperature and Sky Condition Data Collection... February, 2020

55°F

	20						
	19						
	18						
	17						
	16						
<u>2/15/20</u>	15	37°					
<u>2/14/20</u>	14	62°					
<u>2/13/20</u>	13	27° ^{OF}					
<u>2/12/20</u>	12	33°					
<u>2/11/20</u>	11	44°					
<u>2/10/20</u>	10	28°					
<u>2/9/20</u>	9	43°				40°	
<u>2/8/20</u>	8	43°				43°	
<u>2/7/20</u>	7					46°	
<u>2/6/20</u>	6					40°	
<u>2/5/20</u>	5					41°	
<u>2/4/20</u>	4		45° ^{OF}				
<u>2/3/20</u>	3		48°	51°			
<u>2/2/20</u>	2			45°			
<u>2/1/20</u>	1			44° ^{OF}			
How many days this month were:				Partly Cloudy 			

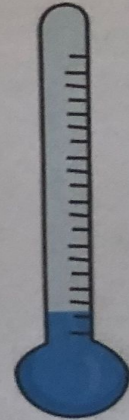
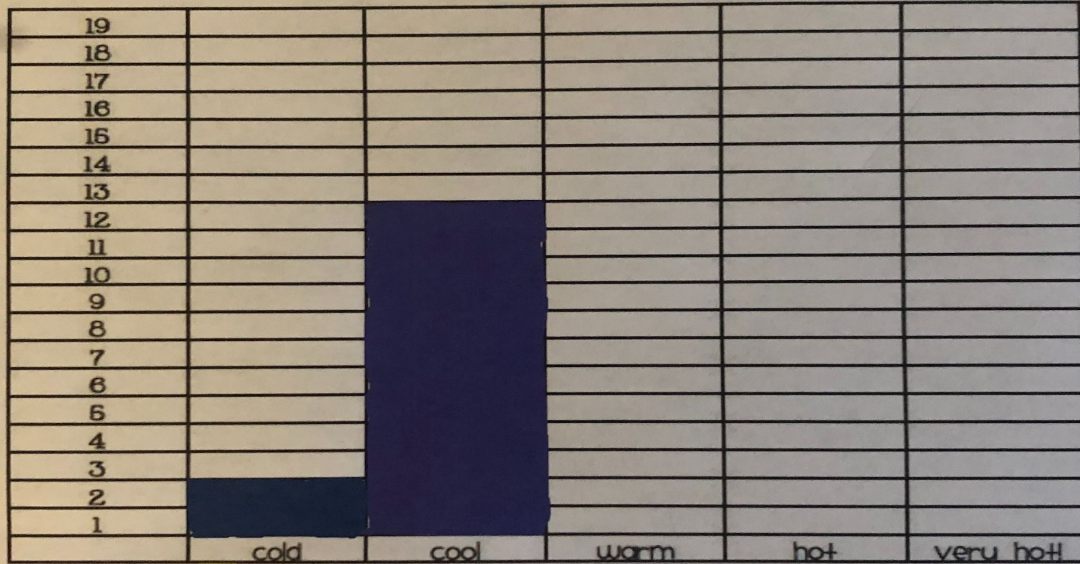


our monthly temperatures!

This month is January

Data Analysis
January, 2020

Number
of Days



Air Temperatures

- There were 2 cold days.
- There were 12 cool days.
- There were _____ warm days.
- There were _____ hot days.
- There were _____ VERY hot days.

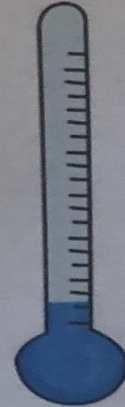
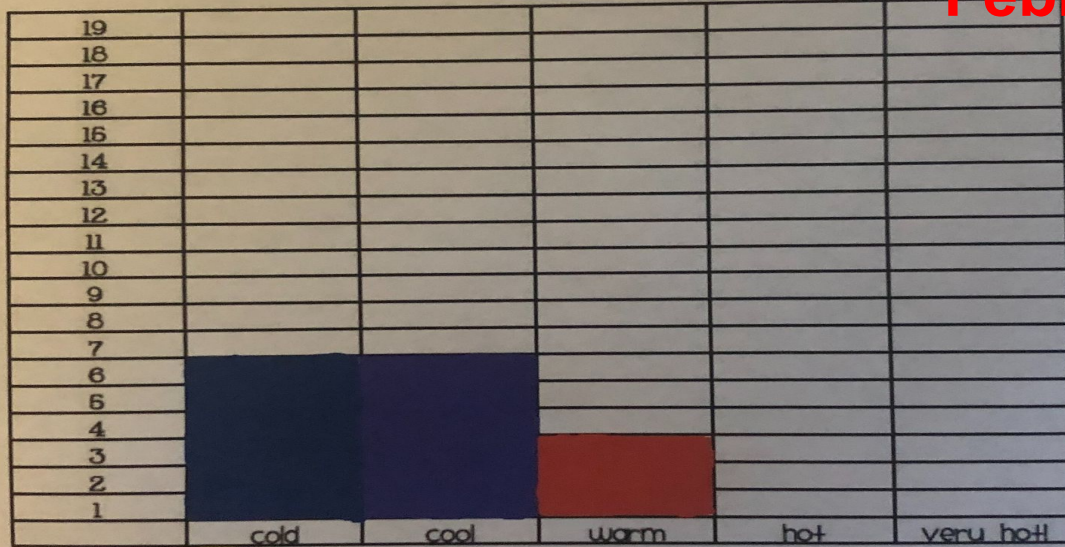
This month was mostly cool.

our monthly temperatures!

This month is February.

Data Analysis
February, 2020

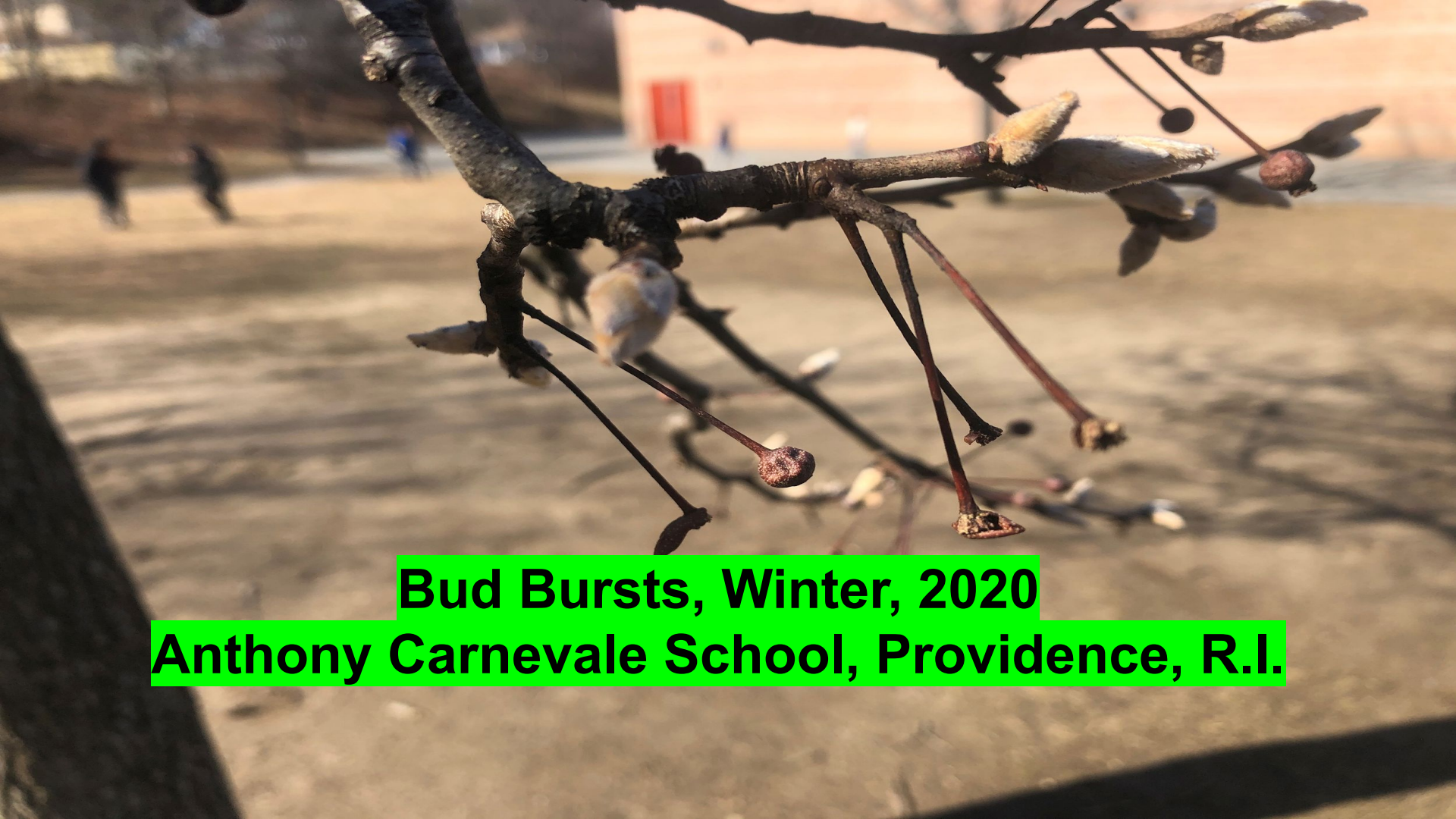
Number
of Days



Air Temperature

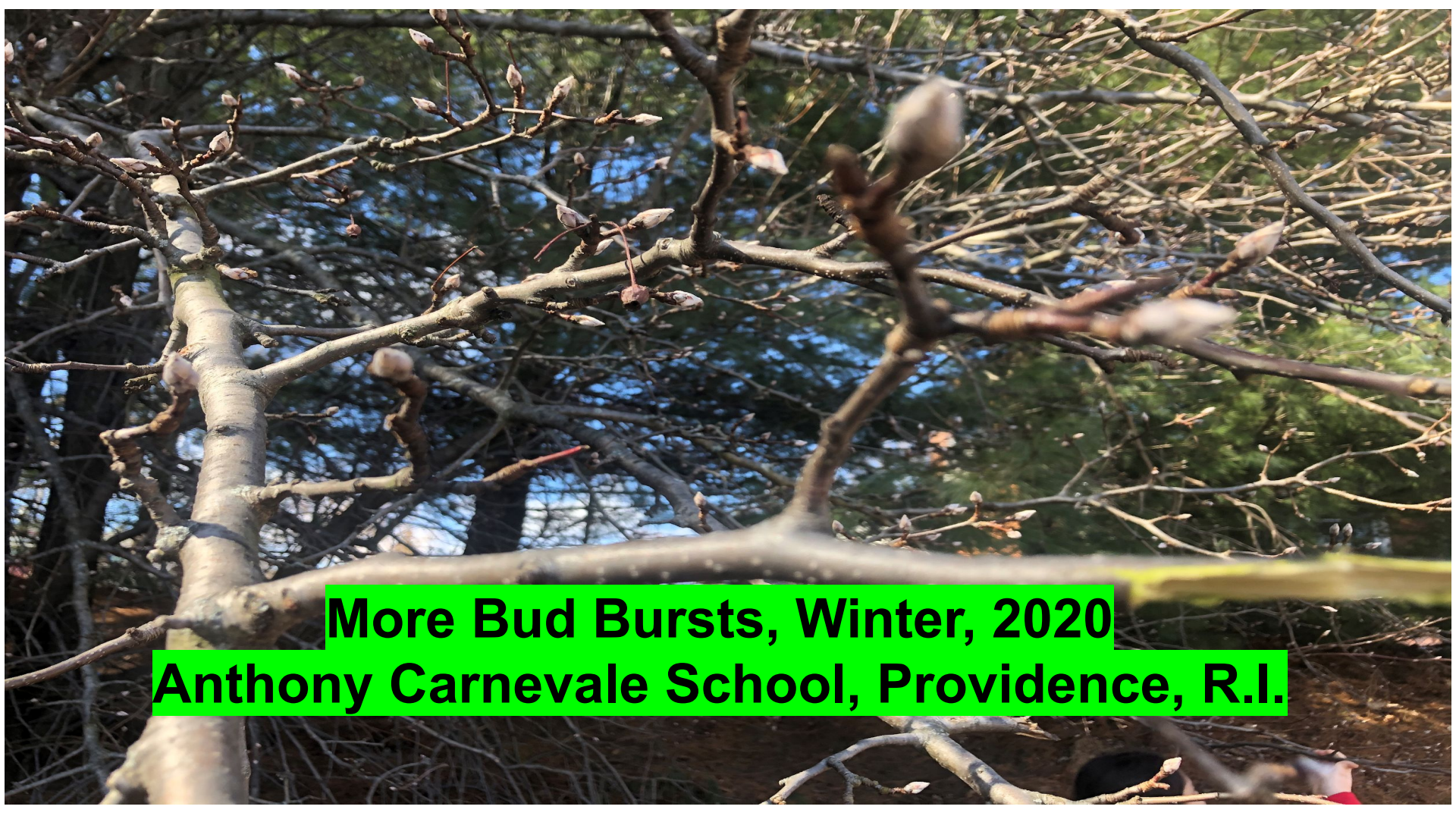
There were 6 cold days.
 There were 6 cool days.
 There were 3 warm days.
 There were hot days.
 There were VERY hot days.

This month was mostly cool.



Bud Bursts, Winter, 2020

Anthony Carnevale School, Providence, R.I.



**More Bud Bursts, Winter, 2020
Anthony Carnevale School, Providence, R.I.**

Our Conclusions...

All students had to make a claim and support it with evidence they recorded on their data collection sheets.

The evidence from the 8 weeks of data collected as well as student observations helped us understand that trees and bushes are dormant during the winter. The air temperature in the classroom was consistently between 68°F-72°F, the twigs were kept in water and had plenty of sunlight.

Students also based their observations based on the evidence collected on warmer than normal winter air temperatures that were recorded in the months of January and February as well as the start of very early bud bursts observed by students during this time of year, which they noticed was unusual.

After analyzing air temperature data along with the data collected on bud bursts both inside and outside the classroom, students had enough evidence to make a claim...that air temperature does have an effect on bud bursts and can cause buds to burst.

This evidence also proved that trees and bushes are NOT dead during the winter but remain dormant during these months. Both The Mystery of the Winter Twig activity and the students' own research, observations and data collection answered both questions about temperature and dormancy.

A final survey showed that 100% of the students agreed trees/bushes were not dead or frozen during the winter but were alive but dormant based on the evidence collected during the collection period.

Differentiation...those students who have an IEP had their data collection modified and worked with our Teacher Assistant...they could draw what they saw,our TA would scribe for them, they were assigned a peer model and they could simply pull a twig from their team cup and share what they learned.

What was your favorite GLOBE activity? (You can choose more than one!) Graphing data is based on 10 student responses.

Using the Davis Weather Center	Orange	Orange	Orange						
Collecting /Presenting Weather Data/Sky Conditions.Clouds	Blue	Blue							
Adopting a Tree/Observing Changes	Green	Green							
Studying Dormancy/Bud Bursts	Yellow	Yellow	Yellow						
Dissecting Bud Bursts	Purple	Purple							
Outdoor nature Scavenger Hunt	Brown	Brown	Brown	Brown	Brown	Brown			
Pollinators/Pollination	Olive	Olive	Olive						

Student Response Question...

Choose one of your choices. Why was that your favorite activity? Make Sure you tell us WHY you liked that activity and what you LEARNED! Use the sentence starter below to write your answer. I liked the activity

**_____ because I
learned_____...**

Student Responses...

I liked the activity that we did pollination because we did the experiment that we could look inside the flower.

I liked the activity of the outdoor nature scavenger hunt because I got to go outside and I learned about leaves

I liked the activity adopting a tree because I learned that in winter there not dead there alive and I learned the word dormant it means it's asleep.

Student Comments Continued...

I like the outdoor nature scavenger hunt because i learned about what small seeds look like and branches look more closer and more nature stuff and it was so much fun.

I liked the weather center because I could learn how to look at the weather.

I liked Adopting a tree and watching its changes because I learned all about how they go dormant and how the levels fall off in the fall.

I liked the activity outdoor nature scavenger hunt because I learned about different flowers and pinecones.

I liked the Pollination and pollinators activity because the flowers are pretty and animals eat pollen.

A Big Thank you to...

The Providence Public Schools
The GLOBE Educators from Boston University
NASA

For all of the materials for us to use, your fun
learning activities, and your kindness to all of us!

We appreciate all that you do!

Love,

The Second Grade Students, Room 201 Inclusion
Anthony Carnevale Elementary School
Providence, Rhode Island