

1) In the chat...

Please introduce yourself.



2) Note to self...

When you think about using data collected by others (not your students), what challenges come to mind?

What Do Plants Do in the Dark?

*Using a NSTA Daily Do to Engage
Students in Minds-On Learning*

Jeremy Peacock, Jackson County (GA) School System
Kate Soriano, NSTA

nsta Daily Do 

Daily Do

Sensemaking tasks teacher and families can use to
engage students

What are Daily Dos?

Daily Dos are sensemaking tasks teachers and parents can use to engage their students in authentic, relevant science learning. **Students actively try to figure out** how the world works (science) or how to design solutions to problems (engineering) using the **science and engineering practices**. Engaging in these practices requires that students be part of a **learning community**, of classmates or family, to be able to share and evaluate ideas, give and receive critique, and reach consensus.

The Daily Do Sensemaking Checklist

✓ Phenomena

✓ Student Ideas



✓ Practices

✓ Science Ideas

What are Daily Do Playlists?

Daily Do Playlists are suggested instructional sequences of two or more Daily Do lessons in which students coherently build science ideas over time. While each Daily Do lesson in the Playlist can be taught as a stand-alone task, guidance is provided for teachers to navigate students from one lesson to the next in the context of a *We* culture:

- *We figure out the science ideas.*
- *We figure out where we are going at each step.*
- *We figure out how to put the ideas together over time*

To better support both teachers and students, the individual Daily Do lessons in the Playlist have been updated to include tailored Google Docs, Slides and/or Jamboard templates to facilitate students' science learning in the classroom or virtual learning environment (synchronous and asynchronous).



Lesson Plan

Why Is a Covered Planet a Healthy Planet?



Lesson Plan

Why Isn't Pluto a Planet Anymore?



Lesson Plan

How Can We Make Informed Decisions to Keep Ourselves and Our Communities Safe During the COVID-19 Pandemic?



Lesson Plan

Why is the Monarch Butterfly Population Changing?



Lesson Plan

What Do Plants Do in the Dark?



Lesson Plan

How Can We Run Out of Water?



Lesson Plan

NSTA Daily Do: Why Are the Stars Disappearing?



Lesson Plan

Why doesn't the snow melt?



Lesson Plan

How Are Cancer Cells Different From Normal Cells?



Lesson Plan

How Do Population Shifts Affect the Ecosystem?



Lesson Plan

Why does ice melt without getting hotter?



Lesson Plan

Why Should We Prepare for Earthquakes?

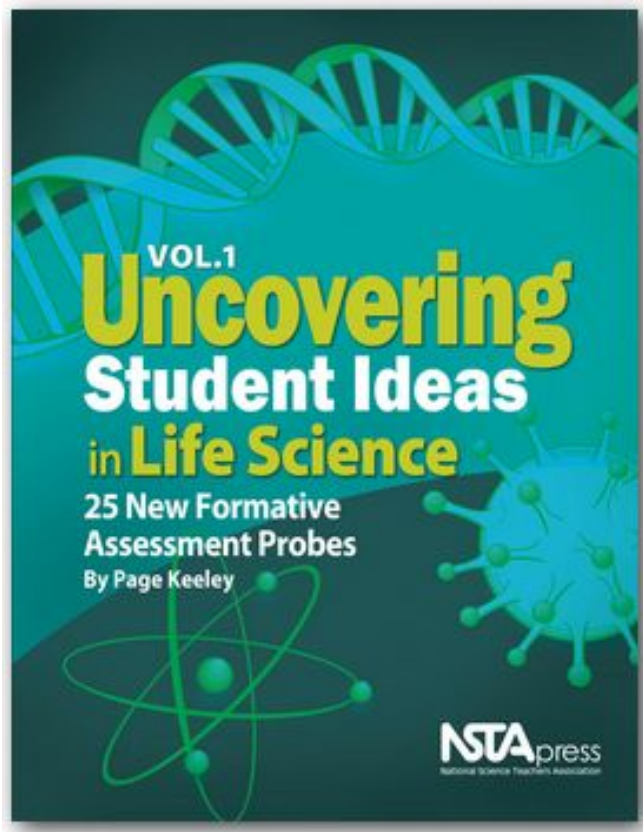
High School Daily Do Lesson



Lesson Plan

What Do Plants Do in the Dark?

Light and Dark



Light and Dark

Five friends were talking about when plants carry out the processes of photosynthesis and respiration. This is what they said:

Janet: "Photosynthesis and respiration occur both when it is light and when it is dark."

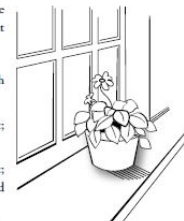
Calvin: "Photosynthesis occurs when it is light; respiration occurs when it is dark."

Mika: "Photosynthesis occurs when it is light; respiration occurs both when it is light and when it is dark."

Turner: "Photosynthesis occurs both when it is light and when it is dark; respiration happens at night."

Sophie: "Photosynthesis occurs in the light; plants don't carry out the process of respiration."

Whom do you agree with the most? _____ Explain why you agree with that person and not the others.



Whom do you agree with the most? Why?



Five friends were talking about when plants carry out the processes of photosynthesis and respiration. This is what they said:

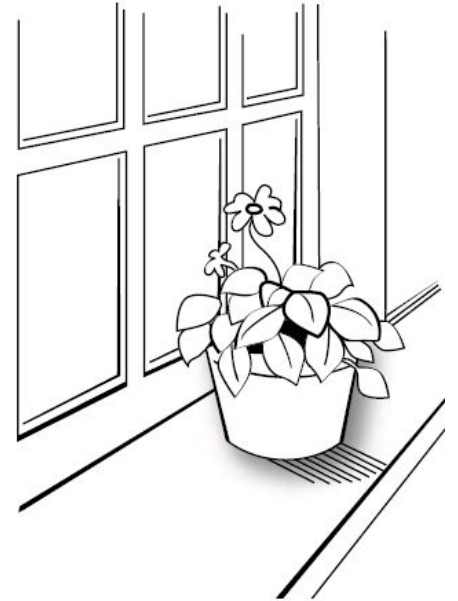
Janet: “Photosynthesis and respiration occur both when it is light and when it is dark.”

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Turner: “Photosynthesis occurs both when it is light and when it is dark; respiration happens at night.”

Sophie: “Photosynthesis occurs in the light; plants don’t carry out the process of respiration.”



Whom do you agree with the most?



Student Login

Room Name

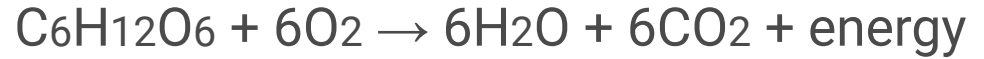
JOIN

<https://b.socrative.com/login/student/>

Photosynthesis



Cellular Respiration

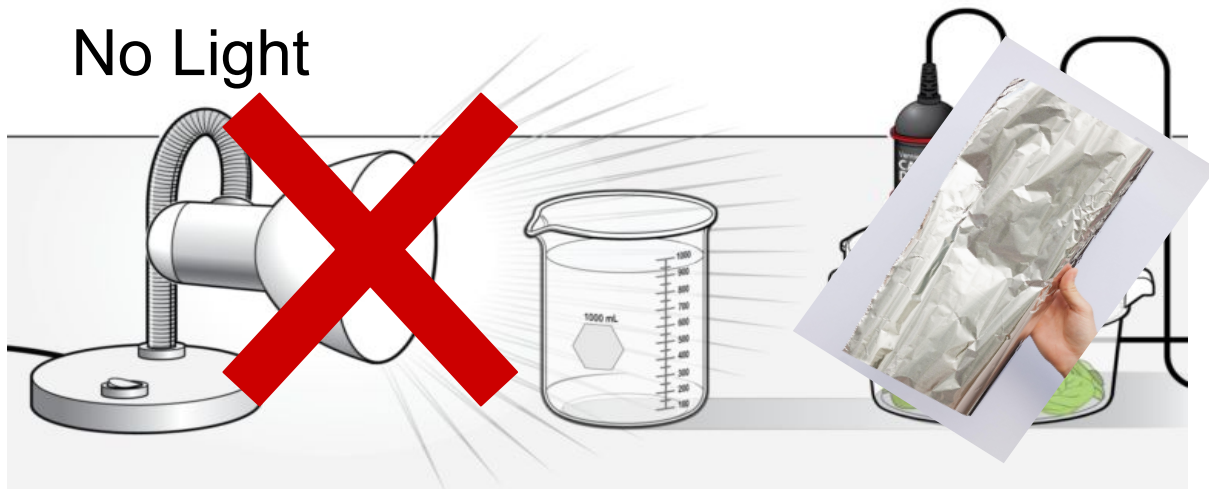


**How can we
figure this out?**

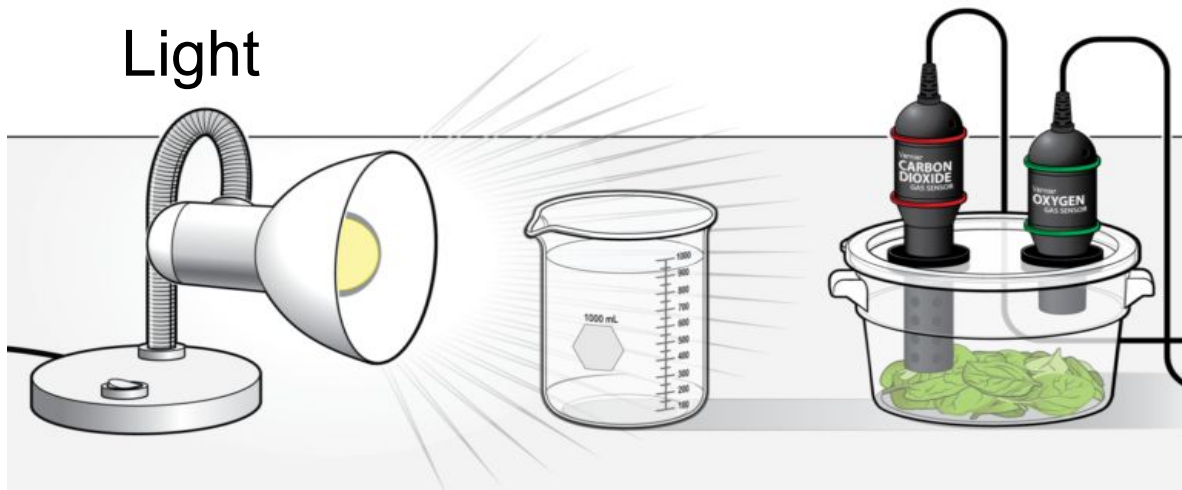


If we had
probeware...

No Light



Light



Generating Hypotheses

Guiding Question: What do plants do in the dark?

Claim: [Highlight the claim you agree with most.]

Janet: "Photosynthesis and respiration occur both when it is light and when it is dark."

Calvin: "Photosynthesis occurs when it is light; respiration occurs when it is dark."

Mika: "Photosynthesis occurs when it is light; respiration occurs both when it is light and when it is dark."

Turner: "Photosynthesis occurs both when it is light and when it is dark; respiration happens at night."

Sophie: "Photosynthesis occurs in the light; plants don't carry out the process of respiration."

Predicted Results: [Complete the predicted results for each data set based on your selected claim.]

Data Set 1 (Dark):

Oxygen will...

because...

Carbon dioxide will...

because...

Data Set 2 (Light):

Oxygen will...

because...

Carbon dioxide will...

because...

Student Name(s):

So, where will we get our data?



www.vernier.com/remote-learning/sample-data-library/

Analyze Experiment Data at Home

General Science, Physical Science, Biology, Chemistry, Physics

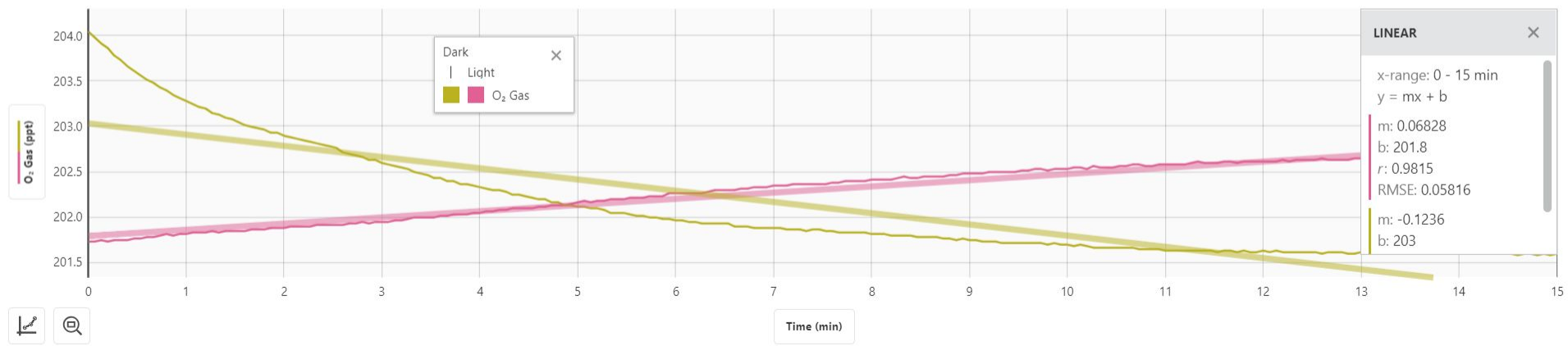
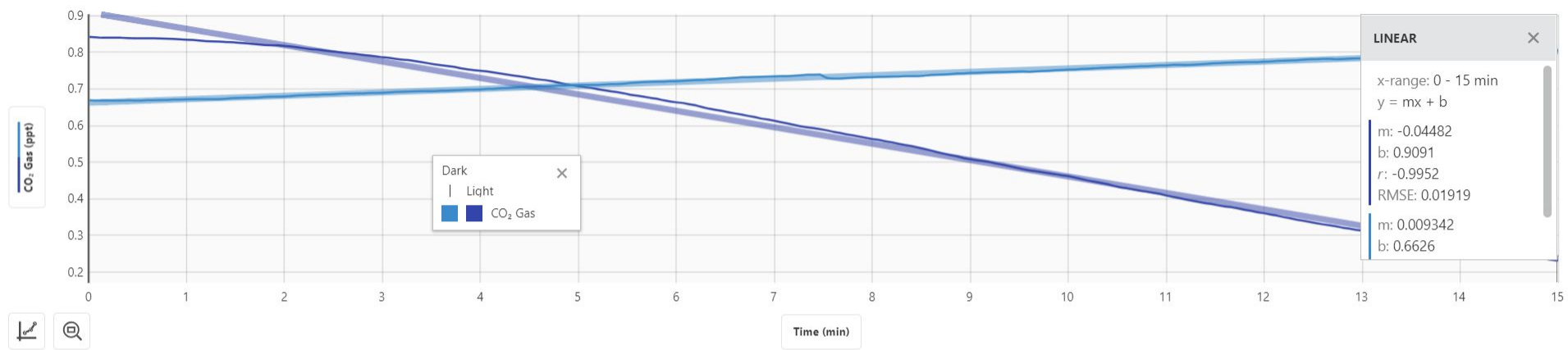
Free

To help ensure students continue to sharpen their critical-thinking skills and learn key scientific concepts during this precarious time, Vernier has put together over 300 free experiments with sample data files covering many subjects that you can distribute to your students at home. Though students won't be performing the experiments themselves, they can perform their own analysis of the sample data and answer questions based on their results.

[VIEW FREE LIBRARY](#)



BWV 31 Photosynthesis and Respiration (CO₂ and O₂).amb1

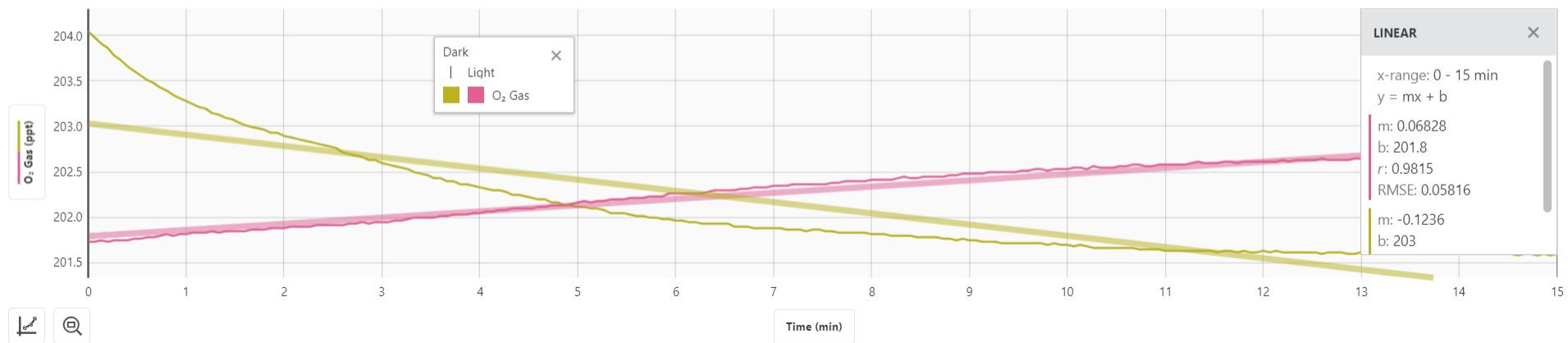
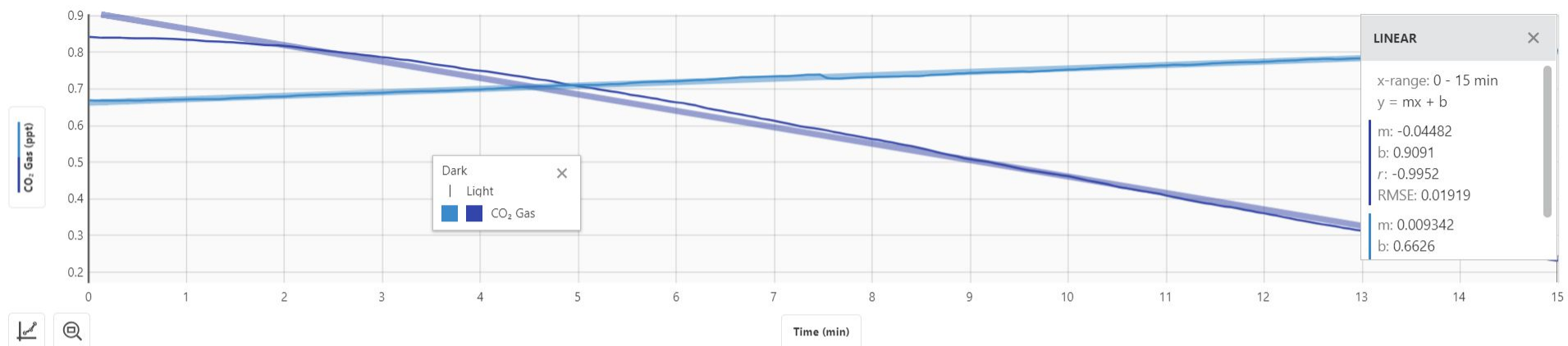


Analyzing and Interpreting the Data

Alone Zone

- How does the amount of O_2 change with time in the light?
In the dark?
- How does the amount of CO_2 change with time in the light?
In the dark?
- What patterns do you observe in the data presented in the graphs?
- How are the rates of change changing over time? How might you represent these rates of change mathematically?

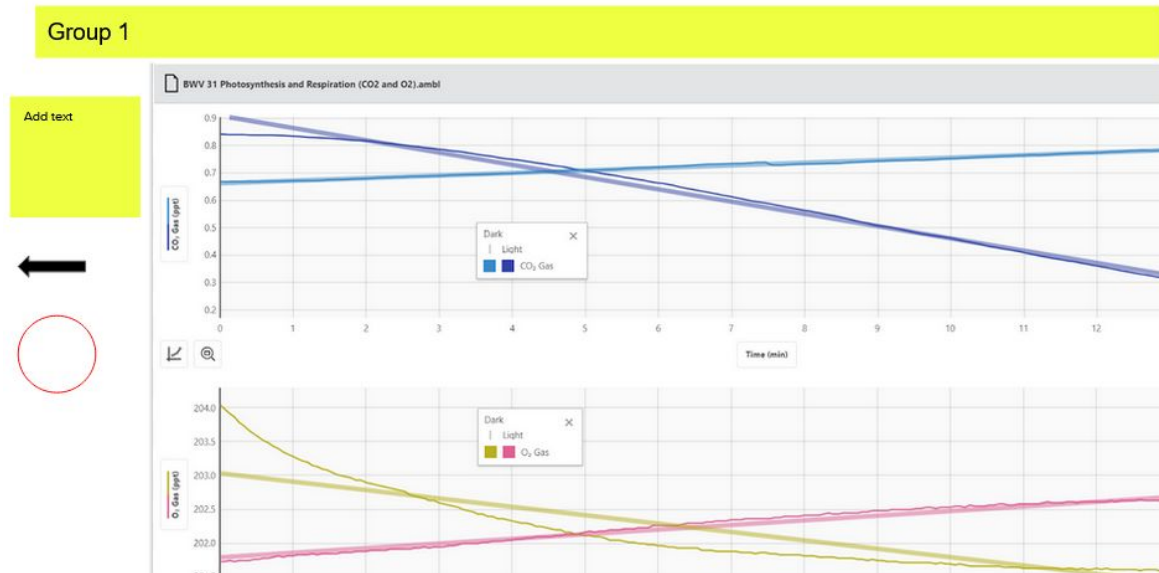
BWV 31 Photosynthesis and Respiration (CO₂ and O₂).amb1



Analyzing and Interpreting the Data

Small Group

Share one pattern you noticed and/or point out something on the graph you are curious about.



https://docs.google.com/presentation/d/1yRiT07IOqrkqLQqCQaNa7_s3gTsJ0ONjw-qZilrsWo/edit?usp=sharing

Evaluating Hypotheses and Revising Initial Claims

Guiding Question: What do plants do in the dark?	
Claim: [Highlight the claim you agree with most.]	
Janet: "Photosynthesis and respiration occur both when it is light and when it is dark." Calvin: "Photosynthesis occurs when it is light; respiration occurs when it is dark." Mika: "Photosynthesis occurs when it is light; respiration occurs both when it is light and when it is dark." Turner: "Photosynthesis occurs both when it is light and when it is dark; respiration happens at night." Sophie: "Photosynthesis occurs in the light; plants don't carry out the process of respiration."	
Predicted Results: [Complete the predicted results for each data set based on your selected claim.]	
Data Set 1 (Dark): Oxygen will... because... Carbon dioxide will... because...	Data Set 2 (Light): Oxygen will... because... Carbon dioxide will... because...
Student Name(s):	

Alone Zone

Compare the results of the investigation with your predicted results and then complete the statement:

I used to think [initial claim] but now I think [revised claim] because...

Small Group

Provide feedback to at least one other group member using this sentence stem:

I agree/disagree because ...

Whom do you agree with the most? Why?



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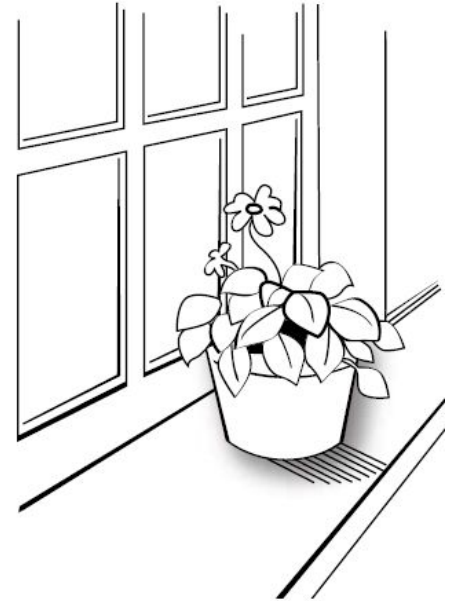
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Whom do you agree with the most?



Student Login

Room Name

JOIN

<https://b.socrative.com/login/student/>



How does using
published data
engage students in
science and
engineering
practices?





Revisit your note to self...

Have we addressed any of the challenges you noted? How so?



Other Data Sources

- [Data Nuggets](#)
- [PASCO Distance Learning Resources](#)
- [Concord Consortium CODAP Project](#)

Do you have others to share?





Questions

Email us:

- peacock.jeremy@gmail.com
- ksoriano@nsta.org