Hi there!

I'm glad you're using this resource. Continue to check our website (realsciencechallenge.com) to find more resources. And, sign up for our newsletter to receive updates on materials that will be available soon.

I spend countless hours writing, researching, editing and generating graphics/charts for each question. I want to continue creating useful content for you to use - however, I also want to ensure my work is fairly compensated.

Therefore, below are the terms and conditions for use of our materials.

What is allowed:

- photocopying our content for your students to use.
- posting a copy of our content (ie. questions, rubrics) on a password protected site for your students to access and/or complete.
- copying our questions into your tests or assignments. Please give credit in this case.

What is not allowed:

- Selling our content.
- Repackaging our content in your own materials and then selling it. NOTE: giving credit to us still does not make this okay.
- Distributing and/or posting our content online (for example, on social media or a blog.

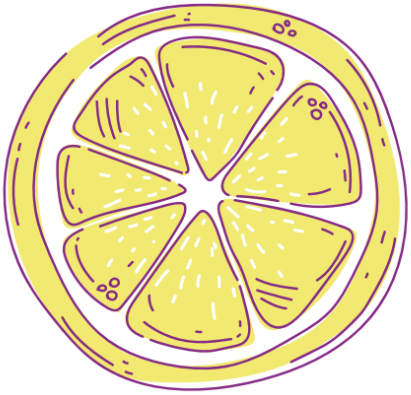
Thank you for supporting us. And, we look forward to helping you with your teaching practice. Please feel free to reach out to us if you have any questions or suggestions.

Sincerely,

Kent
REAL Science Challenge Founder
Science Department Head (Burnaby South Secondary)

Contact Kent at realsciencechallenge@gmail.com

Evaluating 1: Agree or Disagree with an Opinion



Lemons can be juiced by cutting a lemon in half and then pressing it against the dome of a citrus juicer. One day, Leo collected 15 mL of lemon juice using a citrus juicer. Leo's friend, Brian, suggested Leo heat up the lemons before juicing them. Brian said that heating up the lemon before juicing will result in more juice being collected.

Do you agree with Brian's hypothesis?.

For your response:

1. Choose a side ("Yes, I agree" or "No, I disagree"), and
2. Provide an explanation using words or sketches. Tie in your explanation to concepts you've learned in science class.
3. Provide a situation or scenario where your belief could be wrong. For example, if you agree with Brian's hypothesis - that heating lemons will result in more juice being collected - then how might this belief be incorrect? Under what circumstance? And vice versa.

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Evaluating 2: Reflecting on Lab Potential Errors

Name: _____

Class: _____

Pendulum **L**ab

Question

How does mass affect how quickly something swings? In other words, what is the effect of bob mass on the period of a pendulum?

Predict

If the mass of the bob ***increases | decreases*** *, then the period of the pendulum will*

increase | decrease | stay the same .

Data and Observations

Number of Washers	Period of 10 swings (s)		Period of 1 swing (s)
1		÷ 10 =	
2		÷ 10 =	
3		÷ 10 =	
4		÷ 10 =	
5		÷ 10 =	

NOTE: Do NOT determine the period of 1 swing by using a stopwatch. Instead, determine the period of 1 swing by taking the period of 10 swings and dividing by 10.

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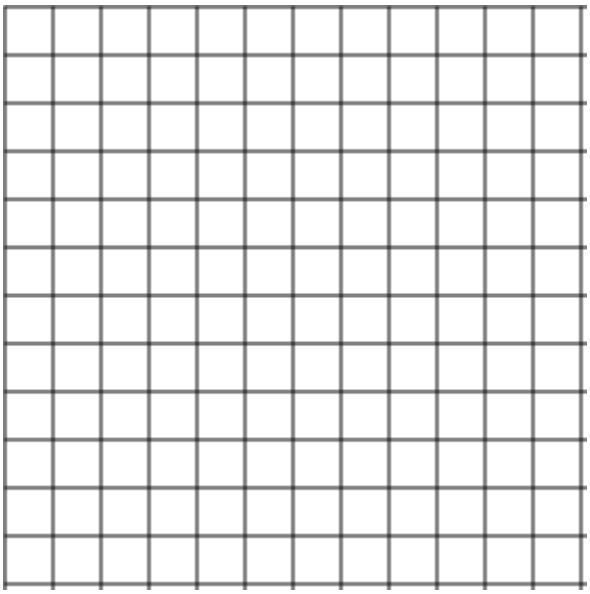
Graphing

Create a line graph on the graph paper provided. Plot the period of 1 swing on the vertical axis and the number of washers on the horizontal axis.

NOTE: You do **not** need to plot the period of 10 swings on the graph.



Conclusion

Claim	*When the mass of the bob* ***increases | decreases*** *, the period of the pendulum* ***increases | decreases | remains the same*** *. In other words, there is a* ***positive | negative | no*** *correlation between bob mass and the period of a pendulum swing.*
Evidence:	*According to our data, the period of one swing when 1 washer was added was _____. When 2, 3, 4, and 5 washers were added to the pendulum, the period of one swing was _____, _____, _____, _____, respectively.*
Reasoning:	*One explanation for this phenomenon is...*
	_____
	_____
	_____
	_____

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