

Connecting Science and Math - Covid-19



You will have a choice on the work you will try. Let us start by learning about exponential growth! If you heard in the news about the virus spreading exponentially - let us learn a bit about it Everyone must do this part...

What is Exponential Growth?

- try this out to see how it works:

You come up with a plan to make some money. You say - "Since I am home I will do all the house chores - just pay me 1 cent today, double tomorrow (so 2 cents) and double the next day (so 4 cents). After 3 days of hard work you only made 7 cents. and so on - for the whole month of April, 2020. If you start today - April 6th until April 30th - how much money will you get on April 20th? What is the total amount you will get by (and including) April 30th?

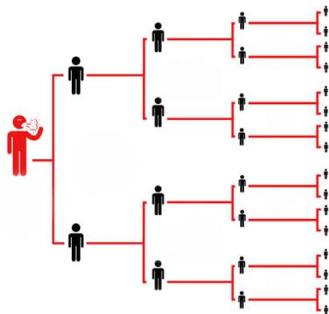
To help out make a table like the following:

April 6 th	1 cent
April 7 th	2 cents
April 8 th	4 cents
April 9 th	8 cents
And so on until April 30 th	

What did you notice about the amount of money you would get? (That is what is called money growing exponentially - exponential growth)

Why do you think this is related to the spread of a virus like COVID-19?

How would you explain exponential growth to someone?



This image is one showing how one person with a virus like the flu or Covid-19 infects 2 people and each infect 2 others and so on...

Explain why this is similar to your chore \$ above? Do you now know what is exponential growth?

You have 3 choices of lessons to do – Try the one you feel may work best for you

Choice 1 – if you have limited access to on-line resources you may want to try this one.

Find out about how viruses work? What is the difference between a bacteria and a virus?

Use any resource you can find – book or on-line (youtube has great videos).

Try to find out what the R_0 (R naught) means when we talk about viruses. Hint: the diagram on page 1 shows a virus with a R_0 of 2...

Choice 2

Go to the virus simulator that shows the idea of Flattening the Curve

https://www.washingtonpost.com/graphics/2020/world/corona-simulator/?itid=hp_no-name_hp-in-the-news%3Apage%2Fin-the-news

Write about what you learned from the simulator and what is the idea of flattening the curve in an pandemic situation.

Choice 3

This is for students that really want to know more about exponential growth and viruses – Try the lessons provided. For these lessons you are asked to develop an equation

<https://www.mathalicious.com/lessons/pandemic>