ADVANCED LEARNING LABS

A partnership between the North Carolina Department of Public Instruction and Duke TIP

TO ENGAGE, ACTIVATE, AND GROW OUR STUDENTS

GRADES 8–9

Lab 6 • Growth

ENGLISH LANGUAGE ARTS

Extinction of species is both natural and man-made. As the human population grows, resource consumption and habitat loss are inevitable. Research multiple causes of extinction across biomes, including human-to-environment interactions. What alternatives would you propose to mitigate habitat loss and prevent or minimize extinction?

Create a visual presentation that showcases two critical cases from your research of extinction and presents your solutions.

Make sure to check your sources for accuracy and cite them in your presentation. Share your presentation with a friend and family member and ask them what they notice and wonder about what is being represented.

SOCIAL STUDIES

Throughout time, technology has evolved and populations have grown as cities became larger.

You'll play the Urban Game this week to help simulate how cities have grown since the 18th century. There are a few versions of this game online, but the link below explains all the steps with great detail. After you have developed your city, answer the following questions:

What struggles do you think people in your city would have with the layout? Do you think your city has benefits from its design? How are cities that are founded after 1950 different?

Link: https://geographyeducationdotorg.files.wordpress.com/2017/06/industrialization-game-analysis.pdf

SCIENCE

Infectious diseases grow exponentially based on the number of people 1 sick person will likely infect, the R0 value. Compare that to the percentage of people who die from the disease once infected, the case fatality rate (CFR).

Link: https://bit.ly/2XeTwAQ

What do you notice? Are there trends? What questions would you need to research to investigate whether these trends apply more widely?

While it cannot yet be known accurately, the current coronavirus has an estimated R0 range 2-3 and CFR 1.3-5%, how do these fit in with your trends?

MINDFULNESS

One key to success is having a Growth Mindset--believing that you are in control of your own ability and can learn and improve! This graphic compares growth vs. fixed mindset.
https://bit.ly/2yU32S3
Apply a growth mindset this week by being mindful of the things you say to yourself when you are frustrated or upset. Instead of thinking…

- This is too hard—Try this— I can do hard things!
- I'm not smart enough—Try this— I'm getting smarter every day!
- That was a dumb mistake—Try this— Mistakes help me grow!

Study more about a Growth Mindset and begin to work toward making it a life skill.

LOGIC PUZZLE

Quote Square:

"I've never thought of that!"

Use investigation and process of elimination to reveal what that statement is talking about.

Follow this link: **https://bit.ly/2Ztnd4d**

FIELD STUDIES

The stock market experiences periods of rapid economic growth and decline. Throughout the history of the United States there have been numerous depressions and periods of growth. However, for many, the Stock Exchange is a mysterious place.

Follow this video tour with the President of the New York Stock Exchange. Link: **https://www.youtube.com/watch?v=lqhib_8h0tc**

What role does the Stock Exchange play in globalization? Why do companies work to want an evaluation and a place on the Stock Exchange?

RESEARCH EXPLORATIONS

What conditions are best for growing food at home?

Pick two foods that you can grow from leftover scraps and seeds that you have at home or can get.

First research what conditions are best for those plants to grow. Try to grow those foods changing one condition three ways: the "traditional" way (using sun, water, and soil) and altering that one condition (more/less sunlight or water, type of soil or water, temperature, etc.).

Choose three ways to measure how well they grow, and measure daily. What conclusions can you make about growth after three weeks, based on the data, and how does it differ by plant?
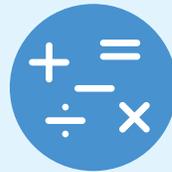
MATH

You have explored linear equations and probably even quadratic & exponential equations. Now, explore these and other types of equations to create a virtual art piece!

Use the blank graph on desmos.com to create your design. Create equations and use {brackets} to add domain and range to enhance the details of your design. For inspiration check out the art gallery.

Graphing Link: https://www.desmos.com/calculator

Art Gallery Link: https://www.desmos.com/art

North Carolina Department of
PUBLIC INSTRUCTION

AIG
ALL DAY, EVERY DAY

Duke TiP
DUKE UNIVERSITY
TALENT IDENTIFICATION PROGRAM

Lab 6 • Growth
Works Cited and Answers

Research Explorations:

Link for All: **https://www.buzzfeed.com/jesseszewczyk/16-food-scraps-that-you-can-regrow**

Additional 4-5 Link: **https://empressofdirt.net/regrow-vegetable-scraps/**

Additional links for All: **https://www.ruralsprout.com/regrow-vegetables/**

Math:

2-3 Recipe Link: **https://www.yummytoddlerfood.com/activities/the-best-salt-dough-ornaments/**

4-5 Recipe Link: **https://sugarspunrun.com/the-best-pizza-dough-recipe/**

Answers:

2-3 Answers: With a 1/2 c of salt, you need 1 c of flour and 1/2 cup of water. If you need 36 keepsakes, you need 1 1/2 times the ingredients - 3 c flour, 1 1/2 c salt, 1 1/2 c water.

4-5 Answers: To make 4 pizzas, you need 4 times each ingredient - 8 c flour, 4 packages of yeast, 6 tsp/2 tbsp sugar, 3 tsp/1tbsp salt, 1/2 tsp garlic, 8 tbsp oil, 3 c water. With 1 c flour, you need to cut all ingredients in half - 1/2 package yeast, 3/4 tsp of sugar, 3/8 tsp salt, 1/16 tsp of garlic, 1 tbsp oil, 3/8 c water.

Advanced Learning Lab 6
NC Standards Alignment

Math	
K-1	N/A for Lab 6
2-3	NC.3.NF.1, NC.3.NF.2, NC.3.NF.3
4-5	NC.4.NF.2, NC.4.NF.3, NC.4.NF.4; NC.5.NF.1, NC.5.NF.3, NC.5.NF.4; NC.5.NF.7
6-7	NC.6.RP.3 NC.7.RP.1
8-9	NC.M1.A-CED.1 NC.M2.A-CED.1 NC.M3.G-GPE.1
10-12	N/A for Lab 6
English Language Arts	
K-1	N/A for Lab 6
2-3	W 3.3.c
4-5	RL 5.3
6-7	W.1
8-9	W.9-10.6
10-12	N/A for Lab 6
Science	
K-1	N/A for Lab 6
2-3	3.L.1
4-5	5.L.1
6-7	7.L.2
8-9	8.L.1
10-12	N/A for Lab 6
Social Studies	
K-1	N/A for Lab 6
2-3	3.H.1
4-5	5.G.1.4
6-7	6.G.2.2
8-9	AH1.H.3
10-12	N/A for Lab 6