

# 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 3 • Innovation



### ENGLISH LANGUAGE ARTS

Very often, popular books become blockbuster movies. Choose a novel you have read that has also been made into a film. Compare and contrast the two to discern where the production remains true to the story and where it departs. Create a chart to track and evaluate your results.

How did the variations affect the characters, plotline, and outcome of the film? Draw some conclusions as to why the director made those specific choices.

Determine if the filmmaker was or was not innovative in his or her adaptation of the film based on your analysis. Provide suggestions for further innovations that could be made to enhance key aspects for the story.



### SOCIAL STUDIES

The short and long-term effects on personal and global finances during and after a pandemic are immense. Read about how inequality within populations deepens economic disparities and watch how North Carolina is being impacted by COVID-19.

- Article Link: <https://nyti.ms/3duPY4c>
- Video Link: <https://bit.ly/3bbw5xj>

What has been the economic impact of the pandemic on your local community? On your state?

Write a letter to your Governor Cooper suggesting two economic policies that could be implemented in 2020 to support economic growth in North Carolina.



### SCIENCE

NASA data has shown the short-term changes in NO<sub>2</sub> emissions over NC due to changes in human behavior. What behavior changes led to the improvement in air quality?

Review the EPA's national and regional rules to reduce emissions long term. Considering both the recent changes to human behavior and the EPA's rules, identify some obstacles to low NO<sub>2</sub> emissions data.

Create an innovative plan to overcome those obstacles. Write your response as if you were addressing Governor Roy Cooper.

Link: <https://www.epa.gov/no2-pollution/basic-information-about-no2#Reduce>



### MINDFULNESS

Think about your favorite song and how it connects to Mindfulness- the practice of being in the present moment.

- How does the music make you feel when you hear it?
- How do the melodies come together?
- What instruments do you hear that you have not noticed before?

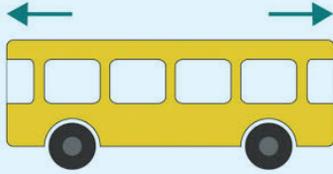
Listen with lyrics.

- How does the music match with lyrics?
- How does the song change your mood when you hear it?

Take this time to clear your mind and enjoy the sounds and connect with the emotions the music gives you. Lead your friends and family through this exercise.



## LOGIC PUZZLE



In which direction is the bus moving?

What is the next number in the sequence:

1, 11, 21, 1211, 111221, 312211, 13112221, \_\_\_\_\_?

Answers: <https://bit.ly/2yemUPn>



## FIELD STUDIES

Learn more about the innovative ways researchers at the Idaho National Laboratory are using nuclear energy.

Link: <https://vimeo.com/390572856>

What are some practical applications of nuclear energy?

Imagine you have received a two-year grant that will cover expenses for research of innovative nuclear energy practices.

- What would be the focus of your research?
- Why would this be an important focus?
- Who would this research benefit?
- What is missing from current knowledge on this topic?

Write an introduction to a research proposal answering these questions.



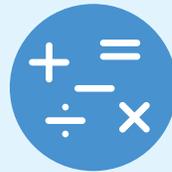
## RESEARCH EXPLORATIONS

What makes American architect Frank Lloyd Wright's designs innovative and unique? What might a treehouse designed by him look like?

Research Wright's architectural designs and do "market research" on what is desired in a treehouse (e.g., look online, interview people).

Then, design a treehouse that would meet the market need and also be created in Wright's style.

Create a presentation for a potential business partner explaining what makes Wright's architecture unique, what the market wants in a treehouse, and how you integrated the two.



## MATH

An article summarizing the 2017 World Economic Forum's Global Shapers Survey identifies climate change as the most serious issue facing the world today.

Link: <https://www.businessinsider.com/world-economic-forum-world-biggest-problems-concerning-millennials-2016-8>

Search the internet to find at least two sets of data that can represent this global issue (or another of your choosing) in a scatterplot. What sort of relationship would you describe? Does the data represent a correlation or a causation? What types of solutions might mitigate this problem? Create a public service announcement that uses the data you've collected to advocate for a change.



North Carolina Department of  
PUBLIC INSTRUCTION

