

ADVANCED LEARNING LABS

Collaboration between NC Department of Public Instruction and AIG Teachers across the state

TO ENGAGE, ACTIVATE, AND GROW OUR STUDENTS

GRADES
10-12

Adaptation



ENGLISH LANGUAGE ARTS

Students all over the world have had to adapt to remote learning due to COVID19. It is a new experience that many teachers and students were unprepared to handle.

Create a "How to Adapt to Remote Learning" newsletter for other students at your school. The sections may include:

- School information and contacts for parents
- Tips from teachers and students
- Resources for students and parents
- Coping skills/mindfulness moment

Survey classmates and friends to gather information on their experiences about learning at home. Make the newsletter available online or print.



SOCIAL STUDIES

According to the Americans with Disabilities Act, employers must provide reasonable accommodations *"enabling a qualified individual with a disability to perform the essential functions of a job."* Review the case of Manderson v. NYC Department of Education (DOE): <https://bit.ly/3jBh0uk>

1. How is the law limited in protecting Ms. Manderson's rights as well the DOE?
2. Should the ADA laws be amended to address future cases?
3. What do you think will be a reasonable outcome?
4. Would you support the teacher or the DOE?

Write a closing argument defending your stance using this example: <https://bit.ly/2OPoETR> Share your results. Follow the trial to see if your predicted outcome was accurate.



SCIENCE

Adaptation is achieved when an organism finds ways to survive in conditions that are gradually or suddenly different from pre-existing conditions.

Adaptation occurs in three forms:

- structural - developing wings for flight
- behavioral - changing from solo to pack hunting
- physiological - presence of toxin in plant leaves to repel herbivores

Create and illustrate a new ecosystem. Explain what characteristics are unique to your ecosystem. Select 5 animals from different habitats that will relocate to the new ecosystem.

- How will the ecosystem survive over time?
- What major adaptations will need to occur for each species to survive?
- How will your ecosystem affect future offspring?



MINDFULNESS

The world has changed and everyone has learned to adapt to a new way of living. Adaptation is not always easy and can often have detrimental effects on students. COVID19 has rerouted your course and many students will need someone to talk to, and preferably someone who can empathize with what they are feeling.

Create a virtual group for classmates to meet and discuss what they are going through. Take into consideration the following:

- How often will you need to meet?
- Who will moderate the group? A teacher? A counselor?
- How will you structure rules to share and discuss how group members are feeling?
- How will you provide support to group members? Through encouraging words? Through mindfulness strategies?



LOGIC PUZZLE

Survival of the Sheep

There is an island filled with grass and trees and plants. The only inhabitants are 100 lions and 1 sheep.

The lions are special:

1. They are infinitely logical, smart, and completely aware of their surroundings.
2. They can survive by just eating grass (and there is an infinite amount of grass on the island).
3. They prefer of course to eat sheep.
4. Their only food options are grass or sheep.
5. If a lion eats a sheep he TURNS into a sheep (and could then be eaten by other lions).
6. A lion would rather eat grass all his life than be eaten by another lion (after he turned into a sheep).

Will the original sheep get eaten? Why or why not?



FIELD STUDIES

As the world adapts to its new reality, people are finding ways to “leave the house” while staying at home. One solution is virtual reality. Virtual reality (VR) has become one of the greatest inventions for entertainment. The very first VR headset was created by Ivan Sutherland in 1968. <https://virtualspeech.com/blog/history-of-vr>.

With today's technology, you can create your own virtual reality tour from your computer. Using the website below, create your own virtual tour. Create a walking tour of your neighborhood, or a tour of another place of interest for family members who are isolated.

1. Visit the website: <https://arvr.google.com/tourcreator/>
2. Select the pictures you want to use and upload them to the site.
3. Add additional scenes, name your tour, and then click publish.



RESEARCH EXPLORATIONS

The Global Center on Adaptation is a solutions broker who works to address obstacles that prevent adaptation. Many countries, like Indonesia and Nova Scotia, are now seeking ideas to adapt and survive on Earth. They are incorporating innovative, forward-thinking solutions to persevere and adapt in a changing world.

Visit the Global Center on Adaptation to learn about additional ways countries are adapting: <https://bit.ly/3fVX2IL>

- Which one of the solutions would be beneficial for North Carolina in adapting to climate change?
- What changes can you make to live a sustainable lifestyle now and in the future?

Design a presentation of your choice to share your ideas with local government officials.



MATH

Math can be adapted to solve many problems, even in real life situations. Lana and Vance are playing against each other on their new gaming system. They decided to keep track of their wins and losses to see who is the better player. They are one month into their competition, and Lana has won 18 out of 30 games.

- How many games will Lana have to win back-to-back to achieve a 90% winning record?
- Could Lana reach a 100% winning record? Explain why or why not using your mathematical reasoning.
- Suppose after achieving a 90% winning record, Lana hits a losing streak. How many games in a row would she have to lose to drop down to a winning record below 55%?
- Compare your mathematical approaches in solving these questions.



North Carolina Department of
PUBLIC INSTRUCTION



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Adaptation Reference Guide

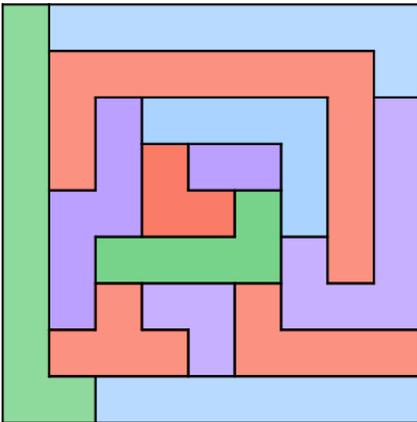
2-3 Logic Puzzle:

Six Toothpicks problem:

Source: <https://www.1001mathproblems.com/p/spatial-puzzles-3d.html>

4-5 Logic Puzzle:

Solution:



10-12 Logic Puzzle:

Solution: The sheep would remain untouched.

In fact, the sheep would remain untouched if there is an even number of lions on the island and would be eaten immediately if there is an odd number of lions on the island.

Further details can be found: <https://www.braingle.com/brainteasers/teaser.php?op=2&id=9026&comm=0>

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Adaptation NC Standards Alignment

Grade Span	English/ Language Arts	Social Studies	Science	Math
K-1	RL.1.9	K.G.2.1	1.L.1.3	NC.1.MD.5
2-3	3.L.3.5	3.G.1.3 3.G.1.2 3.G.1.3	3.L.2.2	NC.3.MD.3
4-5	5.L5.5	5.G.1.3 5.G.1.3	4.L.1.3	NC.5.NBT.7
6-7	RL.7.7	6.H.2.3	7.L.2.3	NC.6.SP.3b NC.7.SP.3b
8-9	RL.8.7	8.G.1.2	8.L.4.2	NC.M1.S-ID.8 NC.M1.S-ID.9 NC.M2.S-CP.4 NC.M2.S-CP.5
10-12	RI.11-12.2	FPC&G.3.1	Bio.2.1.2	CCSS.HSA.REI