

ADVANCED LEARNING LABS

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

TO ENGAGE, ACTIVATE, AND GROW OUR STUDENTS

GRADES

8–9

Adaptation



ENGLISH LANGUAGE ARTS

Shakespeare has often been considered the greatest writer in the English language and is known best for his plays and sonnets. While you may not think that you are familiar with Shakespeare's stories, many of them have been adapted over and over again. *The Lion King*, for example, is loosely an adaptation of *Hamlet*.

Select a Shakespeare play to read. Then find one or two film adaptations to watch. Use this link to help you get started: <https://bit.ly/3j9P40K>

- How faithfully do they stay to the script?
- What choices did the director or actor make that have impacted the story?

Create a video analysis where you share what you have learned.



SOCIAL STUDIES

Humans have always adapted to their environment. The Ancestral Puebloans who lived in the Four Corners Region of the United States from 600-1300 C.E. made the cliffs of Mesa Verde their home. Read about their civilization: https://www.nps.gov/meve/learn/education/upload/ancestral_puebloans.pdf

After reading about the Ancestral Puebloans, create a visual to show how they adapted to their environment.

- How did they adapt to the physical features?
- How did they use the materials that were available to sustain their society?
- How did their lifestyle change over time?
- What other examples can you think of where humans have adapted to their environment?

To learn more about Mesa Verde: <https://www.nps.gov/meve/index.htm>



SCIENCE

Imagine you are a green bug in the forest. Because of your color, you are able to blend in and hide from your predators. Over the generations, your offspring will also be able to survive. This is an adaptation based on genetic variation. The original gene variety allowed your species to adapt and survive to your surroundings. Read more about adaptation: <https://www.nationalgeographic.org/encyclopedia/adaptation/>

Think about species that are endangered. Create scenarios where things in their environment change so that they are now uniquely qualified to not only survive but to flourish in this new situation. Select two or more of these species and write a story where they adapt to the changes in their environment and begin to thrive. Make sure that key understandings about genetic variation and adaptation are evident to your reader.



MINDFULNESS

Setbacks, problems, and failures are a part of life. As you get older, the importance of these setbacks may seem even more significant. Brain research supports the idea that failure allows us time to learn, adapt, and grow. Scientists have studied the brain waves of people as they fail and note that there is more focus when critiquing their own mistakes.

Think about a time when you failed. How did you feel? What was your reaction? What did you learn? How did you adapt?

Social media posts tend to show the best in people. Posts include great vacations, awards and celebrations, or a great selfie (after taking 32 bad selfies). Create a social media post that focuses on a failure and how the failure created a change. Be sure to include a great hashtag.



LOGIC PUZZLE

Adapted from a classic Sudoku puzzle, Jigsaw Sudoku turns the three by three square into any shape. There will always be nine squares but they can take any shape.

Watch this video for the rules of Jigsaw Sudoku: <https://www.youtube.com/watch?v=aa6XtPxX7Ls>

Now try some puzzles on your own at this site: <https://icosahedral.net/sudoku/index.php?s=9&d=0&n=20943>



FIELD STUDIES

Code-switching means shifting between two or more languages in a conversation, but it does not necessarily mean that you speak two different languages like German and Spanish. As a teenager, you may speak one way around your friends, another way to your teacher, and an even different way to your grandmother. Whether it involves using different words, grammatical structures, or speech patterns, code-switching is an important skill.

Read Eric Deggans' article: <https://www.commonlit.org/en/texts/learning-how-to-code-switch-humbling-but-necessary>

Take notes as you read, then think about your own communication style to find ways that you may code-switch. Write in your journal as you reflect.



RESEARCH EXPLORATIONS

Exploring space has inspired dreams of living in an extraterrestrial environment, but how does the human body adapt to the new environment? Fortunately, we have data from the astronauts who have visited the International Space Center for extended periods of time.

Research the effects of space on the human body: <https://www.nasa.gov/hrp/bodyinspace>
<https://abcn.ws/3evleyX>

Pick one system of the human body and report on how the influences in space affect the system. How will the body need to adapt? How will that adaptation physically manifest itself? Draw a diagram to show what the human body system might look like after 1,000 years of adapting in space.



MATH

Biological adaptation is usually viewed as a good thing, but some are harmful to humans. Bacteria have been able to adapt, making them resistant to antibiotics. Learn more by watching the video: <https://www.youtube.com/watch?v=fyRyZ1zKtyA>

Review the data table: <https://bit.ly/3eTuP3O>

Finish the table by finding the % of resistant bacteria for each age group.

- Is there a correlation between age group and the number of antibiotic-resistant strains found?
- How would you determine a correlation?
- If you determined a correlation what type of correlation is it?

Write a function to model the correlation. If you determined that there is not a correlation, use probability to explain.



North Carolina Department of
PUBLIC INSTRUCTION



Adaptation Reference Guide

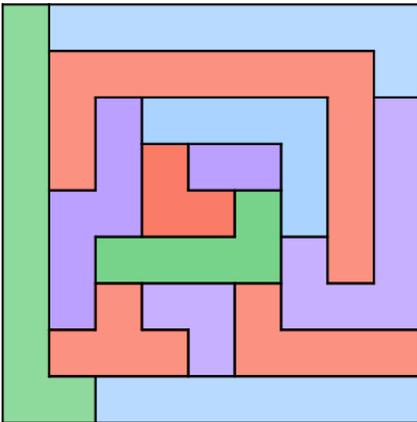
2-3 Logic Puzzle:

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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K-12

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