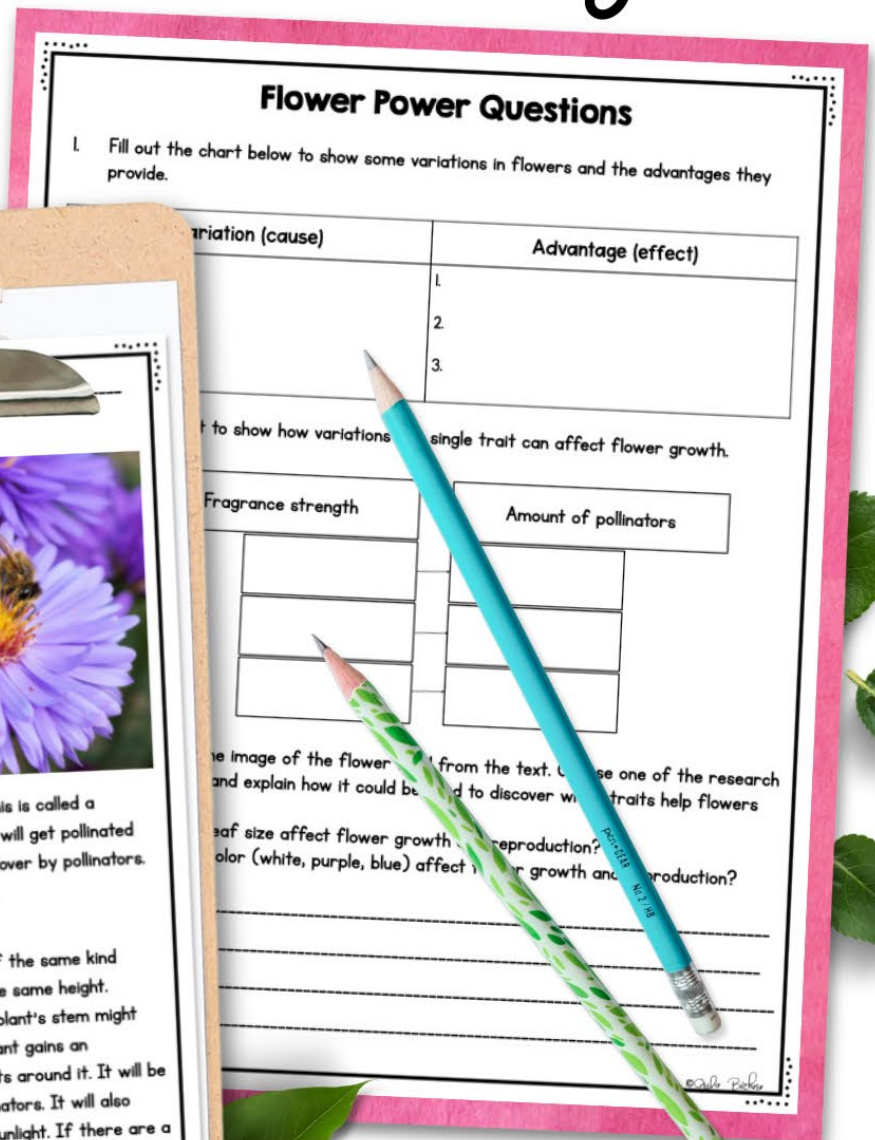
VARIATION, SURVIVAL, AND REPRODUCTION

differentiated passages

LEXILE



3rd Grade NGSS 3-LS4-2

ABOUT LEXILE LEVELS

MagiCore is a certified Lexile® Partner. These texts are officially measured and approved by Lexile and MetaMetrics® to ensure appropriate rigor and differentiation for students.

The Lexile Framework® for Reading measures are scientific, quantitative text levels. When the Lexile of a text is measured, specific, measurable attributes of the text are considered, including, but not limited to, word frequency, sentence length, and text cohesion. These are difficult attributes for humans to evaluate, so a computer measures them.

Common Core State Standards uses Lexile level bands as one measure of text complexity. Text complexity ranges ensure students are college and career ready by the end of 12th grade. Lexile measures help educators scaffold and differentiate instruction as well as monitor reading growth.

Grade Band	Lexile® Bands Aligned to Common Core Expectations
K-1	N/A
2-3	420L-820L
4-5	740L-1010L
6-8	1185L-1385L

Keep in mind when using any leveled text that many students will need scaffolding and support to reach text at the high end of their grade band. According to Appendix A of the Common Core Standards, "It is important to recognize that scaffolding often is entirely appropriate. The expectation that scaffolding will occur with particularly challenging texts is built into the Standards' grade-by-grade text complexity expectations, for example. The general movement, however, should be toward decreasing scaffolding and increasing independence both within and across the text complexity bands defined in the Standards."

Variation, Survival and Reproduction

3rd grade

Table of Contents

Each passage set includes two differentiated passages on a third-grade level (one at the beginning of the band, one towards the end) and a question set geared towards comprehension and science mastery. The first question is differentiated to include a fill-in-the-blank diagram (lower complexity) or an open-ended diagram (higher complexity).

How to Use This Resource

This resource was created with the NGSS Science Standards in mind. It includes six differentiated passages aligned to the following standard:

3-LS4-2: Variation, Survival, and Reproduction

Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. (Cause and Effect)

Clarification Statement: Examples of cause and effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten by predators, and animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.

Assessment Boundary: None

Here are some suggestions for using these passages:

- Use as independent work after you have taught an overview of this standard. Assign the different levels based on the passage students can read and comprehend independently.
- Use as a reading center to reinforce key comprehension and science concepts at the same time!
- Use as a homework or review packet.
- Use as an intervention for students who need to revisit science concepts.

520L

Name: _____ Date: _____

Flower Power

Flowers are beautiful. They depend on pollination to survive. Some flowers are better at attracting **pollinators**. Flowers that attract more pollinators have an advantage. **Traits** that attract pollinators are petal color, stem height, and scent.

Bright colors are signs to pollinators. Bold reds and sunny yellows grab attention. Pollinators like deep purples. Some petals are brighter than others. This is called a **variation**. Those flowers are more likely to be visited by a pollinator. They will get pollinated. Then they will be able to reproduce. The flowers with duller petals might be passed over. Pollinators won't notice them. If that happens, they won't get pollinated. They won't make more flowers.

Flower field with a variety of flowers.

Plants of the same kind are about the same height. Sometimes a single plant grows taller. This plant gains an advantage. It will stand out to pollinators. It gets more sunlight. A group of taller plants creates a problem for shorter plants. The tall plants have big shadows. The shorter plants will get less sunlight. The taller plants could get even taller. Then the shorter ones could wilt and die.

Night blooming jasmine in full bloom.

Scent is another important trait of flowers. This is especially true in darkness. Colors are not seen as well in the dark. Night-blooming flowers still need to attract pollinators. They have to use another strategy. They use their scent. It attracts nighttime pollinators. Some flowers have a stronger, sweeter smell than others. Pollinators like these flowers. They will not visit the less fragrant flowers. This causes better-smelling flowers to survive more often.

Flowers use traits such as showy colors, height, and scent to get what they need. More flowers are able to grow and bloom thanks to these traits. Variations in traits give some flowers advantages. They give other flowers disadvantages.

Flower Power Questions

1. Fill out the chart below to show some variations in flowers and the advantages they provide.

Variation (cause)	Advantage (effect)
1. Bright color	1.
2.	2. Better access to sunlight
3. Strong scent	3.

2. Use the chart to show how variations in a single trait can affect flower growth.

Fragrance strength	Amount of pollinators
No scent →	
Weak scent →	
Strong scent →	

3. Take a look at the image of the flower field from the text. Choose one of the research questions below and explain how it could be used to discover which traits help flowers survive.
   - How does leaf size affect flower growth and reproduction?
   - How does color (white, purple, blue) affect flower growth and reproduction?

480L

Name: _____ Date: _____

Penguin Picking

Penguins are large seabirds. Most live in Antarctica. Penguins do not fly. They have special **genetic traits**. The traits allow them to live in the sea. These traits help them find food, swim, mate, and keep warm in their **environment**.

Variations in traits help in mating. Females choose a male. They want the fittest mates. This helps offspring survive. Females look for larger penguins. They choose fatter penguins. They do not choose skinny ones. Weight is a sign of health. Males with extra weight are more likely to stay in the nest. They can take hunger longer. They won't be tempted to leave for food. Bigger males have a better chance of mating. They also keep eggs safer.

A female penguin will also choose based on males' voices. They want a lower voice. A deep voice usually means the male penguin is larger. Females want larger males. Males with higher voices may be seen as being less healthy. Females won't choose them for mating.

Female penguins notice feather color. They look for bright feathers. Bright colors mean a male is healthy. Dull feathers are not noticed. They make it harder to mate.

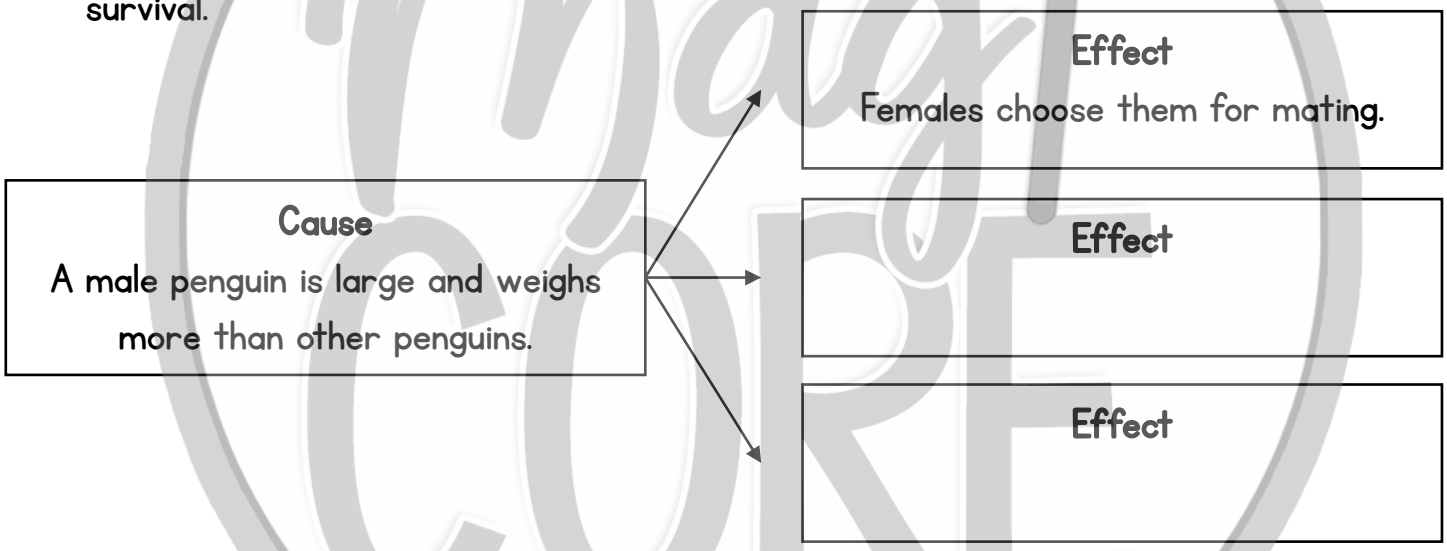
Weight, voices, and feather color are all important. They factor into penguin survival. A male penguin may not be able to mate if he doesn't have the best of these features.

Penguin Picking Questions

1. Fill out the chart below to show some variations in penguins and the advantages they provide.

Variation (cause)	Advantage (effect)
1. Heavier weight	1.
2.	2. Easier mating
3. Bright feathers	3.

2. Use the chart to show how one variation in penguin weight has many effects on their survival.



3. The article mentions the variations that help male penguins survive. Which of these traits do you think would make a difference in female penguins' survival? Explain.
   - Weight
   - Voice depth
   - Feather color

620L

Name: _____ Date: _____

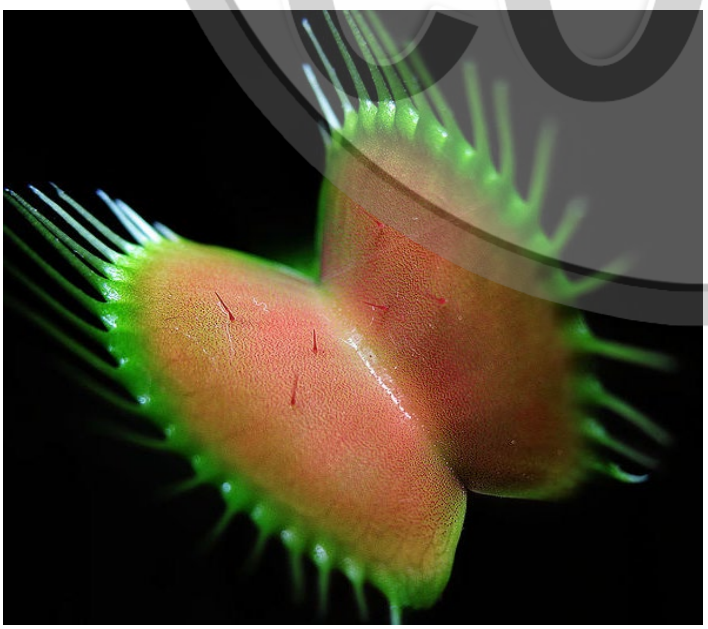
Venus Flytrap Variations

The Venus flytrap is an unusual plant. Most plants need sunlight, water, and soil to survive. The Venus flytrap, however, is a **carnivore** and eats meat.

Venus flytrap catching prey.

The plant grows in moist soil that doesn't have many nutrients. To get the nutrients for **survival**, Venus flytraps have **adapted** to eat insects and **arachnids**. Ants, beetles, grasshoppers, and spiders are a few of its favorite treats.

Venus flytraps have **inherited traits** to catch and **consume** their food. These plants have traps made of two hinged parts at the end of each leaf. Short, stiff, hair-like triggers line the two parts. When something touches these triggers, the trap snaps closed. The prey is captured inside. Traps with teeth that seal better are more likely to keep their prey. Wider or longer teeth mean better eating.



Venus flytrap with red inside.

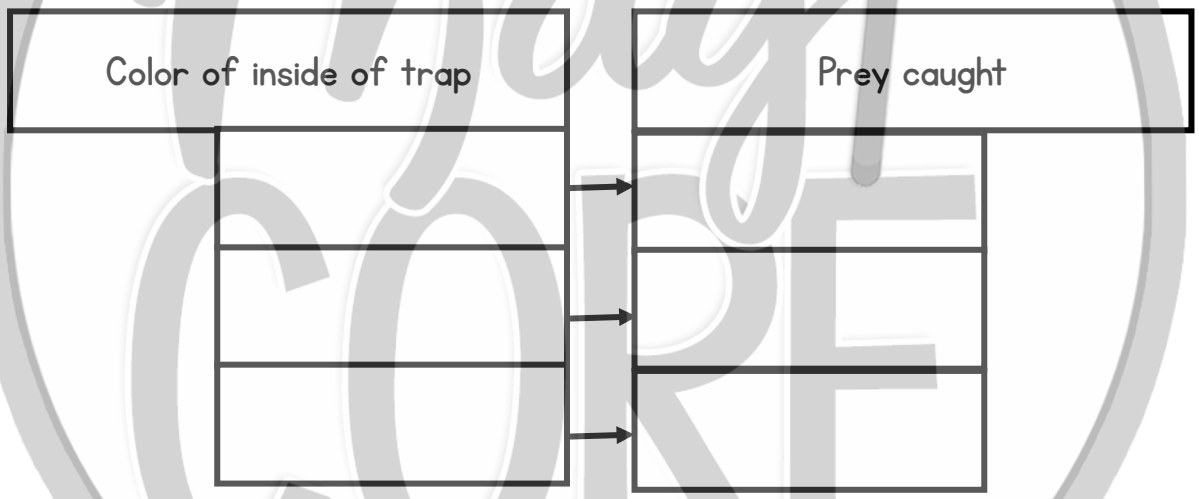
The color inside the trap is another **variation**. Venus flytraps with redder insides attract more prey. Insects are more likely to come closer to the trap when the color is brighter. A Venus flytrap wants to do all that it can to get that prey. The plant loses a meal if the insect doesn't touch the trap. Then the health of the Venus flytrap will suffer.

Venus Flytrap Variations Questions

1. Fill out the chart below to show some variations in Venus flytraps and the advantages they provide.

Variation (cause)	Advantage (effect)
1.	1.
2.	2.
3.	3.

2. Use the chart to show how variations in a single trait can affect Venus flytrap prey caught.



3. Take a look at the images of the Venus flytraps in the images. Based on what you learned about trait variations, which flytrap would be more likely to survive? Explain how you know.

520L

Name: _____ Date: _____

Camouflaging the Peppered Moth

Light-colored peppered moth

Peppered moths have dark specks on their white wings and bodies. This helped them blend in with light-colored trees. The **camouflage** protected them. They were hard for predators to see. Darker peppered moths were a less common color **variation**.

Until the Industrial Revolution in the 1800s.

Manufacturing grew in Europe. Factories were built. Coal powered these factories. The effect of burning coal was pollution. Dark smoke filled the air. Black soot covered trees. The Industrial Revolution changed the environment. It made it easy to spot white peppered moths. Their coloring was too bright. The buildings and trees were dark. This put them in danger.

The darker peppered moths did not stand out. They blended in with the smoke and soot. More of the dark peppered moths survived. They were better camouflaged. Their **offspring** were also dark. The number of white peppered moths decreased. They couldn't survive in the changed **environment**. By 1895, almost all peppered moths were dark. That color variation brought survival to peppered moths.

Dark-colored peppered moth

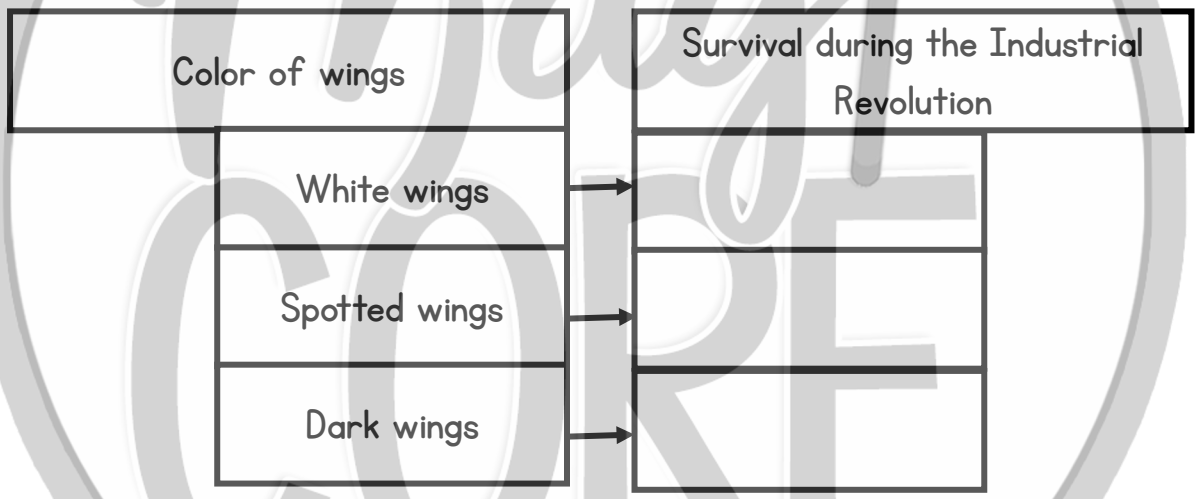
Scientists have continued to observe peppered moths. In 1956, the Clean Air Act was passed. This called for cleaner-burning fuels in manufacturing. This made the air and trees less sooty and dark. The white peppered moth color variation has returned because of this change.

Camouflaging the Peppered Moth Questions

1. Fill out the chart below to show some variations in peppered moths and the advantages they provide.

Variation (cause)	Advantage (effect)
1. Light colored wings	1.
2.	2. Blend in to dark, soot-covered trees

2. Use the chart to show how variations in a single trait can affect peppered moth survival.



3. Explain how the environment during the Industrial Revolution changed the appearance of the majority of peppered moths.

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