

ECOSYSTEM CHANGE bundle

differentiated passages



ENVIRONMENTAL CHANGE SOLUTIONS

differentiated passages

FOSSIL EVIDENCE

differentiated passages

ANIMAL GROUPS

differentiated passages

HABITATS & ORGANISM SURVIVAL

differentiated passages

A Shrewdness of Great Apes

Great apes are mammals and primates. Traits such as a large brain, opposable thumbs, and forward-facing eyes set them apart from other mammals. Great apes include orangutans, chimpanzees, gorillas, and humans. Many animals in the great apes take on social roles. A group of great apes is called a troop. Great apes are very social. Their activity behavior is in many ways.



Living in a group lowers the risk of becoming a victim. In social groups, more individuals are looking out for predators. These predators will be spotted quickly. The larger the group, the lower the chance for each individual to become prey. Group members also have the advantage of being able to work as a team to drive away predators. A single individual would have more trouble accomplishing that alone.



Great apes in a shrewdness are better able to get food. Many members are searching for food at the same time. Food is more likely to be found. Communication is looking for it. Communication

The Sahara Desert



Sahara Desert

Sand covers about a fourth of the Sahara Desert. Some places have high hills of sand called dunes. Rocky surfaces, mountains, flat plains, and plateaus are also found in this desert. At the edges of the Sahara Desert are the Nile and Niger Rivers. A few places have underground supplies of water called oases. This water comes to the surface in springs or in

The Sahara Desert is in North Africa. It is the largest desert on Earth. During the summer days, the Sahara Desert is the hottest place in the world. Temperatures can reach 120°F. At night, the temperatures are colder. Sometimes it goes below freezing after the sun sets. It is dry and windy with little rain.

Sahara Desert Questions



3rd Grade NGSS

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."



Animal Groups

3rd grade

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5. Wolf Packs (490L, 760L)
6. Ant Colonies (530L, 790L)
7. Penguin Colonies (520L, 770L)

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-LS2-1: Animal Groups

Construct an argument that some animals form groups that help members survive. (Cause and Effect)

Clarification Statement: None.

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.



Elephant Herds

The largest living land animal is the elephant. They live in forests and grasslands. Elephants travel in small family groups. These groups have 2-8 elephants in them. They are led by a female. This female is called the **matriarch**. The groups have females and young elephants. A **herd** is formed when these smaller groups join together.



A herd of elephants traveling.

Herds have many purposes.

Members of the herd help raise babies. Females only give birth to one calf at a time. Each

one is important. This is because elephants are **endangered**. Humans have destroyed many elephant habitats. They have killed elephants. Humans kill them to take their ivory tusks. Every elephant that is born keeps this **species** alive. The herd works together to care for baby elephants. This gives them a better chance of becoming adults.



A baby elephant and its mother.

Elephant herds are true families. The elephants talk to each other. They use calls and rumbles. They also support each other. Members of the herd will help injured elephants. The herd will also slow down for older members. They will slow down if one is injured. The herd is sad when a member dies.



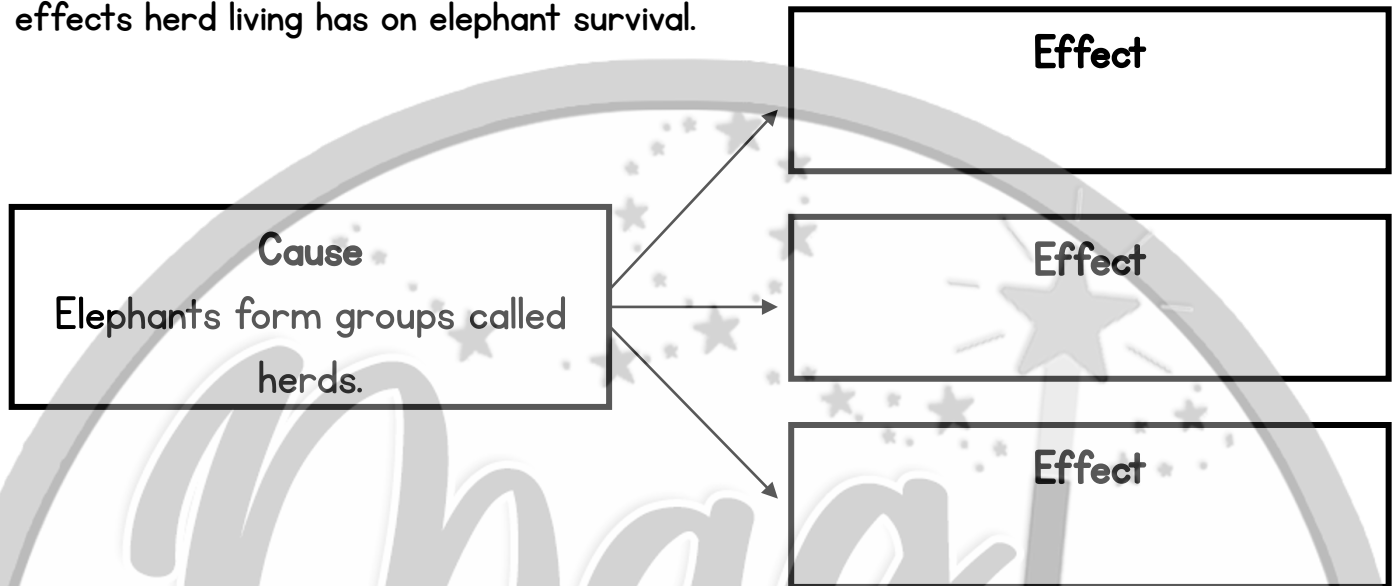
A herd protects elephants. Herds keep other animals from attacking. A main goal of the herd is sensing predators. Elephants would be less likely to survive without the safety of the herd.

Male elephants don't form herds. Young male elephants are normally alone. Researchers have seen males forming all-male herds, though. This behavior is thought to be an **adaptation**. The young males travel deeper into

human lands. They go here in search of food. They use the herd to protect themselves. This shows how adaptable elephants are to **environmental change**.

Elephant Herds Questions

1. Living in a herd has many effects on elephant survival. Fill in the chart below to show the effects herd living has on elephant survival.



2. The reasons male elephants have begun living together are different than a typical herd. Explain the differences between an elephant herd and male elephants living together.

Give 2 reasons scientists could use to argue that elephants survive better in groups. Explain how these reasons help them survive.

Reason 1: _____

Reason 2: _____

Explain: _____

Wolf Packs

Wolves are part of the **canine** family. Dogs, foxes, and coyotes are also canines. Wolves live in groups. The groups are called **packs**. These groups usually have 7-8 wolves. They include parents and offspring. Packs help wolves raise pups, hunt for food, and protect themselves.



All the wolves in a pack help care for pups. Members get food when the pups are very small. The mother does not get food. She stays in the **den** with the pups. Older wolves in the pack take turns bringing pups food. They play with them. They also watch over them. The pups learn how to survive from the adult wolves. They also play with other pups. All this play is practice for hunting. It also teaches pups how to **interact** with other wolves.



Wolves surrounding a bison.

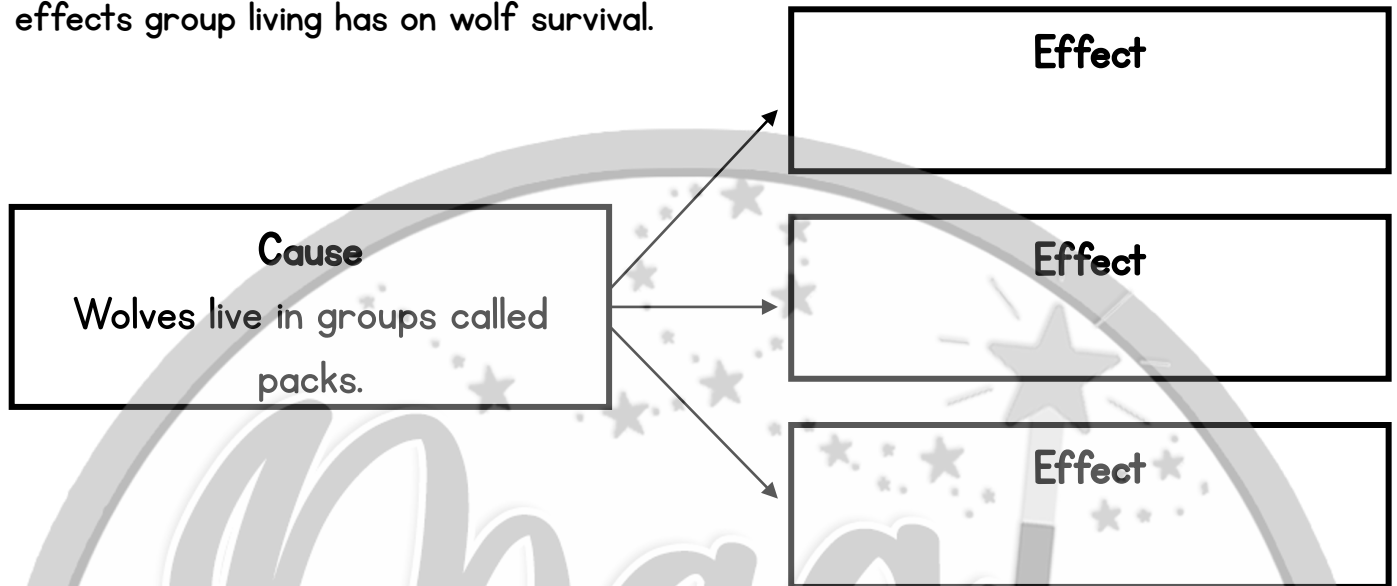
Hunting is much easier in a wolf pack. A pack helps when going after large prey. First, the pack will spread out. Then, members surround the target. Some pack members attack from the rear. Others approach from the front. They work together. The wolves are more likely to be successful in getting food for the pack.

Male wolves **specialize** in protecting their packs. They fight off **rivals**. Teamwork helps wolves keep the members of their packs safe.

Wolf packs have many benefits for their members. Wolves do not want to live alone. They succeed by cooperating and struggle when alone.

Wolf Packs Questions

1. Living in a group has many effects on wolf survival. Fill in the chart below to show the effects group living has on wolf survival.



2. Who helps take care of wolf pups in the pack? Describe their roles and what they do.

3. Give 2 reasons scientists could use to argue that wolves survive better in groups. Explain how these reasons help them survive.

Reason 1: _____

Reason 2: _____

Explain: _____

Fossil Evidence of Past Environments

3rd grade

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3. What Do Fossils Tell Us? (490L, 790L)
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6. Living Fossils (490L, 770L)
7. Himalayan History (470L, 750L)

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-LS4-1: Fossil Evidence of Past Environments:

Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.

Clarification Statement: Examples of data could include type, size, and distributions of fossil organisms. Examples of fossils and environments could include marine fossils found on dry land, tropical plant fossils found in Arctic areas, and fossils of extinct organisms.

Assessment Boundary: Assessment does not include identification of specific fossils or present plants and animals. Assessment is limited to major fossil types and relative ages.

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.



What is a Fossil?

Fossils are the remains of animals and plants that lived long ago. Scientists study these fossils. The scientists are called **paleontologists**. The fossils give clues about what plants and animals lived in the past. They show how life has changed over time. Some fossils are tiny. Others are huge. Fossils have been found all over the world. They are usually buried between layers of rock. Sometimes they are in mud. Sometimes they are in gravel.



Dinosaur fossil in rock.

Fossils form in steps. First, a plant or animal dies. Next, the **organism** settles somewhere. This is often underwater. Parts of the plant or animal rot. The dead plant or animal is covered with sand, dirt, and mud. The remains harden into rock. This process takes a very long time. Fossils are seen when weather, erosion, or digging brings them to the surface.

Most fossils are in rock. Some fossils are found in ice. Cast or mold fossils are made when an organism leaves a hollow space behind. Minerals fill the mold. This creates a solid fossil. Many insect fossils are in **amber**, as well. In dry areas, fossils can form through **mummification**. The organism dries out. This makes a fossil.



Insect fossilized in amber.

There are two main types of fossils. **Body fossils** and **trace fossils**. Body fossils have part of the organism's body. Leaves and bones are body fossils. Trace fossils do not have body parts. They are things left behind by animals. Footprints are trace fossils.

Fossils are important. They tell the history of organisms on Earth. They also show changes over long periods of time.

What is a Fossil? Questions

1. What is a fossil?

2. Fossils are created in steps. Fill out the chart to show how fossils are made.



3. What are the two main types of fossils. How are they different?

4. Why is it important to study fossils? Why do scientists say they are important?

What is a Fossil?

The preserved remains of animals and plants that lived long ago are called **fossils**. Scientists called **paleontologists** study fossils to better understand the past. Examining fossils gives these scientists clues about what plants and animals existed a long time ago. They can also show how life has changed over time.

Some fossils are tiny, such as bacteria, and can only be seen with a microscope. Others are huge, such as an entire dinosaur skeleton with many pieces. Fossils have been found all over the world. They are usually buried between layers of **sedimentary rock**. They have also been found in mud and gravel.



Dinosaur fossil in rock.



Insect fossilized in amber.

There are several steps involved in forming a fossil. First, a plant or animal dies. Next, the **organism** settles somewhere, often underwater. Certain parts of the plant or animal **decay**, or rot. Over time, the dead plant or animal is covered with sand, dirt, and mud. These materials form layers over the dead plant or animal. After being covered with the layers, the remains harden into rock. This process takes a very long time. Fossils are revealed when the rock is disturbed by weather, erosion, or paleontologists digging at a site.



200,000,000 YEAR OLD DINOSAUR TRACKS
EUROPEAN DINOSAUR (TRIASSIC PERIOD)
THIS 8" HIGH BUILT CARBONACEOUS REPTILE'S
TRACKS WERE DISCOVERED BY STUDENTS
PAUL GLEN AND TONY LESA OF LINDSEYTON,
NEW JERSEY IN THE ROSELAND N. J.
QUARRY IN 1970.

Trace fossil of a dinosaur footprint

Fossils are preserved in different ways. Most are enclosed in rock. Some fossils, however, are kept in ice. Freezing protects the remains for thousands of years. Cast or mold fossils are made when an organism leaves a hollow impression behind. Minerals fill the mold as time passes. A statue-like fossil then forms. Many insect fossils have been found in **amber**. In very dry areas, fossils can be formed through **mummification**. The organism's remains dry out, creating a fossil.

Two main types of fossils exist. **Body fossils** have some part of the organism's body in them. They include items such as leaves, teeth, shells, and bones. **Trace fossils**, on the other hand, do not contain actual body parts. Instead, they are things left behind by animals. Footprints and animal **scat** are examples of trace fossils.

Fossils are important because they tell the history of organisms on Earth. They also reveal changes in those plants and animals and the environment over long periods of time.

What is a Fossil? Questions

1. What is a fossil?

2. Fossils are created in steps. Fill out the chart to show how fossils are made.



3. What are the two main types of fossils. How are they different?

4. Why is it important to study fossils? Why do scientists say they are important?

What Do Fossils Tell Us?



Leaf fossil in rock.

Fossils help scientists understand our world. They have shown that **organisms** on Earth have changed. The **environment** is different, too.

Fossils can tell us about time and place. Many fossils are found in rock. Scientists can figure out how old a fossil is. They examine the rock around it. The place where a fossil is found is important also. It tells us which animals lived in an area.

Fossils can tell us what animals and plants looked like. They show size and shape. Bones hint at how an animal moved. Footprints help, too. Animal teeth give clues to diet. Changes can be seen by comparing fossils to the plants and animals of today.

Fossils tell about the environment, too. Sometimes seashell fossils are found far from water. This tells scientists that water was there in the past. Coral has been found in the arctic. Coral only lives in warm waters. This suggests that the arctic wasn't always cold. Something happened to change these areas.



Coral fossil found in the Grand Canyon.

Some scientists think fossils tell about the future. They study fossils of **extinct** plants and animals. That can help

find which ones are in danger now. They can use what they learn to protect future plants and animals.

What Do Fossils Tell Us Questions

1. What are the 3 main things fossils tell us? Fill out the chart to answer the question.

What do fossils tell?	What do they say?
Time and Place	
	They show size and shape of an animal, what it may have eaten and how it moved.
What the environment was like.	

2. How can scientists use fossils to show that changes have occurred in either animals or the environment? Give an example from the article.

3. The article says that fossils can help scientists learn about the future. How do fossils do this? What can we learn from them that could help future plants or animals?

Antarctic Fossils

Think of Antarctica. You are probably picturing ice, freezing temperatures, and penguins. But was Antarctica always so cold? Fossils tell us it wasn't.



Leaf fossil found in Antarctica.

Antarctica once had a warmer climate. Forests covered it. Fossil trees from 100 million years ago are still on Alexander Island. This island is on the west coast. The roots of these fossil trees suggest they lived beside large rivers. There is sand around the trunks of the fossil trees. This is **evidence** that powerful floods happened. There are leaf fossils, too. They prove many kinds of plants lived there. They did well in temperatures ranging from 55°F to 69°F. These fossil trees would have needed moisture in the air to grow. This environment is very different from today.



Cryolophosaurus fossil

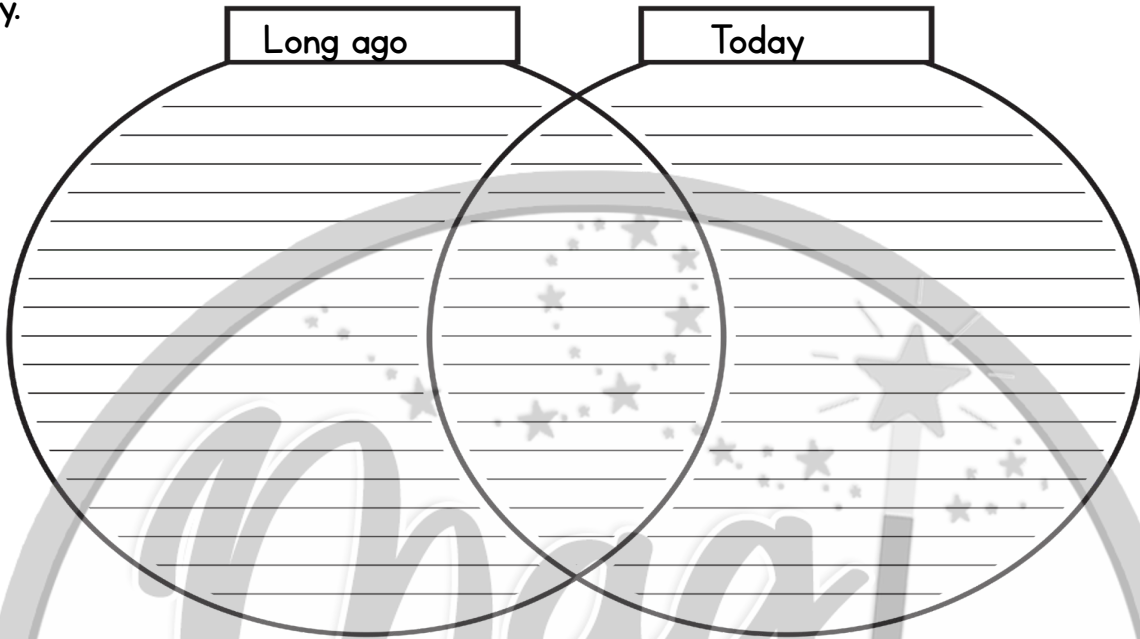
Fossilized pollen is in Antarctica's rock. It gave scientists details about how long it took for changes to occur. The forests disappeared about 35 million years ago. Ice took over about 13 million years ago. Glaciers formed slowly. Scientists studied tree ring fossils. They learned Antarctic trees could switch from summer to winter living in about a month's time. This is different from trees of today. They take several months to do that.

Fossils also show animals that lived in Antarctica. In the past, there were birds, **amphibians**, and dinosaurs. The Cryolophosaurus was discovered in Antarctica. It was a 26-foot-long dinosaur. Some of the best-known fossils found in Antarctica were of dolphins. These dolphins were different from today's dolphins. They had no teeth. They were much larger than modern ones. Scientists think they ate squid. They sucked them into their slim jaws.

The fossils in Antarctica show how our planet has changed. They've unlocked secrets of the past.

Antarctic Fossils Questions

1. Fill out the chart below to compare and contrast Antarctica from long ago to Antarctica today.



1. Describe how scientists used fossils to discover a forest that once covered Antarctica.

(CORE)

3. The article says scientists discovered fossils of Cryolophosaurus and ancient dolphins in Antarctica. Based on the information in the article, what other animal fossils do you think they might find? Use evidence to support your ideas.



Himalayan History



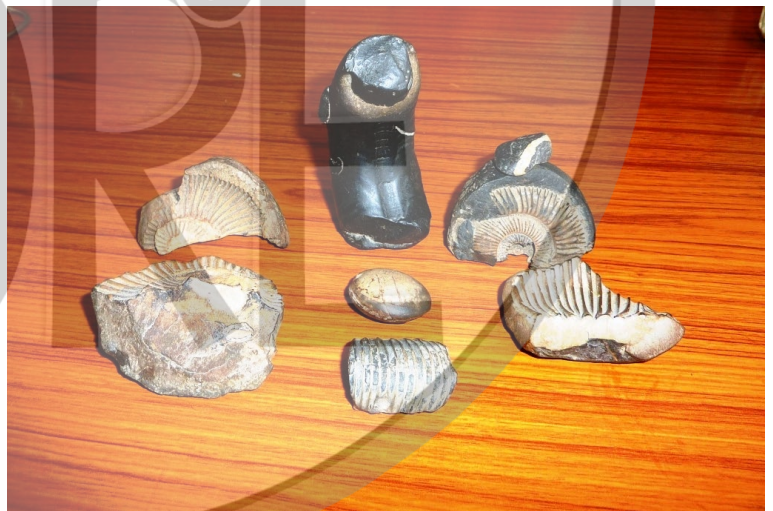
Himalayan mountains

The Himalayan mountains reach the sky. Their heights don't make people think of sea life. These mountains, however, have fossils of ocean life. How did that ocean life get there?

The Himalayas are in South Asia. They have the highest mountains on Earth. Mount Everest is one of them. The peaks are always covered in snow. These mountains are far away from the sea. The

area was different millions of years ago, though. The world didn't look as it does today. There were huge landmasses instead of separate **continents**. **Continental drift** is the movement of the continents across Earth's surface. This motion caused shifts. The landmasses broke apart.

The Tethys Sea was between India and Eurasia. This sea had many creatures. India drifted north. About a hundred million years passed. India banged into Eurasia. Mountains rose up from these two pieces of land hitting. The huge Himalayan mountains formed where the sea had been. The seabed became the mountain peaks.



Marine fossils found in the Himalayan mountains.

Sea creatures were trapped in the layers of rock that made the mountains. Their remains turned into fossils. Fossils of fish, coral reefs, **marine** plants, and shells were found. They are **evidence** that water was once there. We learn about the history of the Himalayas by studying these fossils.

Himalayan History Questions

1. How can scientists tell that the Himalayan mountains weren't always tall, snow-covered peaks?

2. A series of interactions occurred to form the Himalayan mountains. Fill out the chart to show how this happened.

Cause	Effect
1. India drifted north and banged into Eurasia.	1.
1.	2. Sea creatures were trapped in the layers of rock that formed the mountains and turned into fossils.

3. Do you think any ancient creatures that once lived in the area where the Himalayan mountains are could have survived? Give an example and tell how you know.

Environmental Influence on Traits

3rd grade

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3. City Coyotes (490L, 790L)
4. Rescuing Rice (480L, 810L)
5. Thirsty Corn (500L, 800L)
6. Adapting to Wildfire (490L, 810L)
7. Do You Smell That? (490L, 770L)

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-LS3-2: Environmental Influence on Traits

Use evidence to support the explanation that traits can be influenced by the environment.
(Cause and Effect)

Clarification Statement: Examples of the environment affecting a trait could include normally tall plants grown with insufficient water are stunted; and a pet dog that is given too much food and little exercise may become overweight.

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.



Polar Bears in Trouble

Climate change is a problem. Humans are causing climate change. Changes in the environment make it hard for wildlife to **adapt**. Scientists have even seen changes in some animals' genes. This **causes** problems for those animals.

The polar bear is an example. Polar bears live in the Arctic. They live in a cold climate. They need sea ice to travel. They need seals to eat. Global warming melts the ice. Polar bears spend more time on land. They are away from their food. They can starve. A lack of food makes mother polar bears unhealthy. These mothers may not be able to feed their cubs. They will have fewer cubs. The populations shrink.



There are other problems for polar bears. Polar bears in Norway showed a loss in **genetic diversity**. Melting sea ice is shrinking the polar bears' **habitat**. There were fewer polar bears to breed. The next **generations** might not be as healthy.

We can help polar bears. We can use solar and wind energy. They don't cause global warming. "Adopting" polar bears can help. This gives money for studying the effects of climate change.

Polar Bears in Trouble Questions

1. The article lists two environmental factors that impact the traits of polar bears. Fill cause and effect relationships below.

Environmental Factors (Cause)	Variation in Traits (Effect)
1. Arctic ice is melting due to global warming.	1.
2.	2. Polar bears produce less offspring.

2. Oftentimes, there is more than one effect that an environmental factor impacts. Reread the passage and fill in the cause-and-effect chain to show the impact of melting ice on polar bears.



3. Chose one of the following environmental factors that might impact polar bears. How might this factor cause a change in polar bear traits?
- Polar bears are exposed to toxic chemicals in their food.
 - Humans develop oil in the Arctic.

Rescuing Rice

Many people around the world enjoy eating rice. It's quick to cook and a healthy food choice. Growing rice, however, is not as easy. Most rice is grown in fields known as paddies. These paddies are typically filled with about 10 centimeters of water. It's important to keep the water level consistent. If it gets too high or too low, disaster can strike the rice crop.

Unfortunately, global warming is harming rice. Changes in weather patterns cause **droughts** and floods. A drought is when there is little rainfall. This causes crops to not get the water they need. Floods, on the other hand, mean too much **precipitation**. The **effects** are poor development and less production of rice overall.



Water isn't the only problem. Hot days and cooler nights are the best conditions for growing rice. Temperatures, however, are warming up around the globe due to climate change. Rice plants are **vulnerable** to heat stress during their growth cycles. Extreme heat can mean the destruction of rice crops. With higher temperatures, the risk of disease in the rice plants also increases.



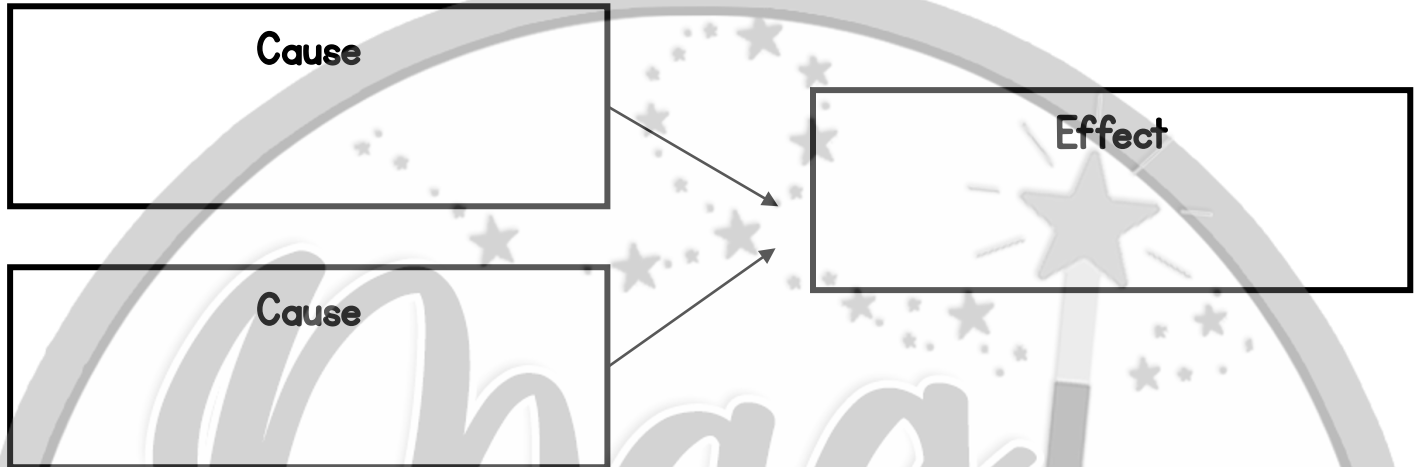
Humans are trying to help rice crops survive. New **irrigation** methods for rice paddies have been tested with some hope. An even more interesting solution involves scientists working with rice **genes**. Rather than controlling the growing **environment** for the rice, scientists are **experimenting** with changing the rice itself. They are breeding new forms of rice plants. They use various rice seeds from around the globe to do this. Combining the **genetic** material from different rice seeds can create sturdier rice plants.

These new **breeds** can withstand droughts and floods. Scientists try new mixes then **analyze** the results. One gene, in particular, helps rice live during long periods with too much water. Rice plants made with this gene, called “scuba rice,” can live for two weeks underwater. This is great news for farmers growing rice in areas that often flood.

More genetic study needs to be done. New combinations of genes could be discovered. Producing rice plants that **inherit** traits to make them survivors will benefit everyone.

Rescuing Rice Questions

1. The article lists some ways global warming affects the traits of rice. Fill in the chart to show these effects.



2. How can scientists change the genetics of rice to make tougher plants? What traits would be desirable?

3. Describe what effect the following environmental factor might have on rice:

a. There is half the amount of annual rainfall this year.

Environmental Change Solution

3rd grade

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3. In Search of Water (520L, 810L)
4. A Salmon Road Trip (510L, 760L)
5. Shady Chocolate (490L, 790L)
6. Welcome Back, Wolves (520L, 790L)
7. Oil Spill Clean-Ups (530L, 790L)

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How to Use This Resource

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

3-LS4-4 Environmental Change Solution

Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change. (Systems and System Models)

Clarification Statement: Examples of environmental changes could include changes in land characteristics, water distribution, temperature, food, and other organisms.

Assessment Boundary: Assessment is limited to a single environmental change. Assessment does not include the greenhouse effect or climate change.

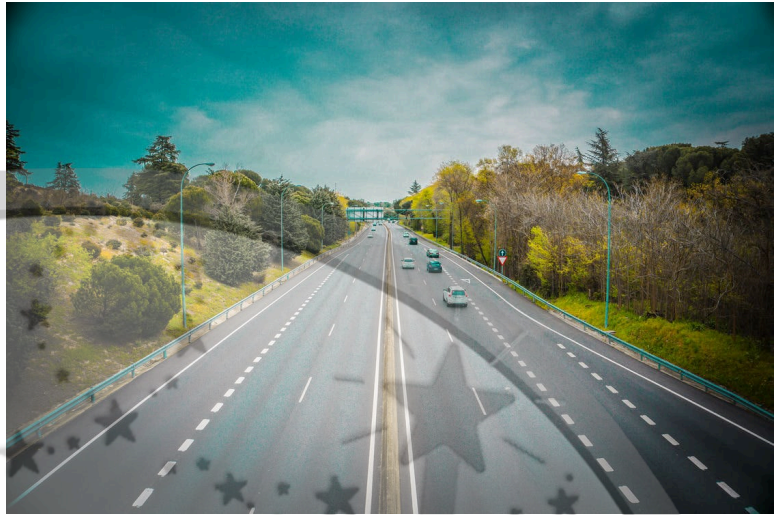
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- Use as independent work after you have taught an overview of this standard. Assign the different levels based on the passage students can read and comprehend independently.
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Safe Passage

The Cascades are mountains. They run from California through Oregon and Washington. They end in British Columbia, Canada. This mountain range has forests, slopes, and lakes. Many different **organisms** live in these mountains. Gray wolves and deer are a few **mammals** in the Cascades. Fish and reptiles are part of this **ecosystem**. Birds and insects also live there.



Highway animals cannot cross.

People live in the Cascades, too. They travel through the area. One major highway is Interstate 90, or I-90. This highway cuts across the Cascades. It carries over 28,000 cars a day. I-90 causes a problem. Its location affects wildlife movement in the Cascades. It stops safe **migration**. Accidents happen when animals cross the highway. Animals and people die in these crashes.



Example of a wildlife bridge in Canada.

I-90 has other effects, too. It blocks animal movement. This makes finding food hard. I-90 also makes finding new mates tricky. The animals won't be reproducing as much. Their numbers could decrease. I-90 is a danger to animal **survival**.

Builders have made wildlife bridges to solve the problem. Some of

these bridges are built over highways. This keeps animals out of traffic. One wildlife overcrossing is near Snoqualmie Pass in Washington. This bridge looks natural to animals. It has dirt and plants. High walls protect animals. Fences along the highway guide animals to the overpass.



Aerial view of a wildlife bridge.

Below the bridge are two arches for cars to drive under. The bridge costs over \$6 million. It's doing its job. Many species have been seen crossing I-90 without harm. It didn't take them long to figure out how the bridge worked either. Coyotes and elk are some of the animals using the bridge. Many animals in the Cascades are able to live in this **environment** without danger from the highway.

Wildlife bridges are one **solution**. The only problem has been humans entering these bridges that are for wildlife. Humans on the bridges may stop animals from using them. Signs have been posted. They ask people to stay out. The bridges are also being watched.

Safe Passage Questions

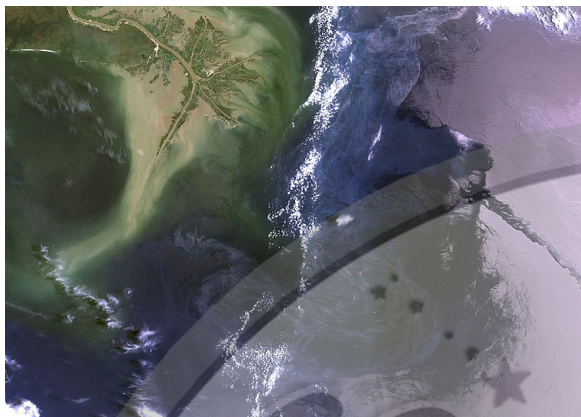
1. Use the chart below to describe the problem and solution described in the article.

Problem	Solution
Interstate 90 carries 28,000 cars daily through the Cascade Mountains. This puts animals and humans at risk from accidents.	

2. Describe the problem the interstate has caused in the Cascades mountains in more detail.

3. Is the solution in the article effective at solving the problem? Give reasons from the text to support your answer.

Oil Spill Clean-Ups



Aerial view of an oil spill.

habitats are the most common environments affected by oil spills.

When oil spills into an environment, plants and animals are affected. Oil coats bird wings and then birds can't fly. Nesting grounds are destroyed by oil spills. Sea otter fur loses its **insulating** qualities when covered with oil. The otters can't stay warm in colder water. Fish eggs can't survive when they come into contact with oil. Blowholes of whales and dolphins become clogged with oil. This makes breathing impossible. Oil has **toxic** substances that kill plants and animals.

One of the biggest oil spills in U.S. history was the *Deepwater Horizon* spill. This occurred on April 20, 2010. An explosion happened aboard a drilling platform in the Gulf of Mexico. The oil **rig** sank two days later. About 134 million gallons of oil leaked into the ocean. Thousands of birds, mammals, and sea turtles were slicked with oil. Many of these creatures didn't survive.



Milkweed plant.

There are a few solutions that have been tried to clean oil spills. None of them remove 100% of the oil, though. One of the more natural solutions involves **milkweed**. This plant is the only source of food for monarch caterpillars. The seed pods of milkweed plants have long **fibers**. These fibers **repel** water. They also help milkweed spread its seeds. It's been discovered, however, that these fibers are remarkable at absorbing oil. They suck up more than four times the oil that other materials can. Some companies have created oil cleanup kits that include milkweed fibers. Each low-cost kit can absorb 53 gallons of oil. A great side benefit is that more milkweed is being planted. This helps monarch butterfly populations whose numbers have been decreasing.

The best solution would be to prevent oil spills. Until that happens, solutions like milkweed kits are a tool against the damage oil spills create.

Oil Spill Clean-Ups Questions

1. Use the chart below to describe the problem and solution described in the article.

Problem	Solution

2. Describe the problem oil spills cause for the environment. Give at least 2 examples of what has happened or could happen because of this problem.

3. Is the solution in the article effective at solving the problem? Give reasons from the text to support your answer.

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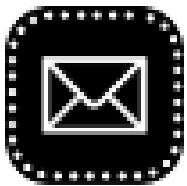
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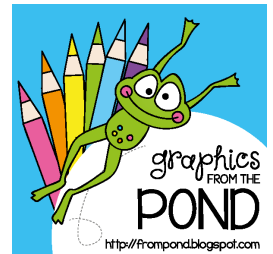
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