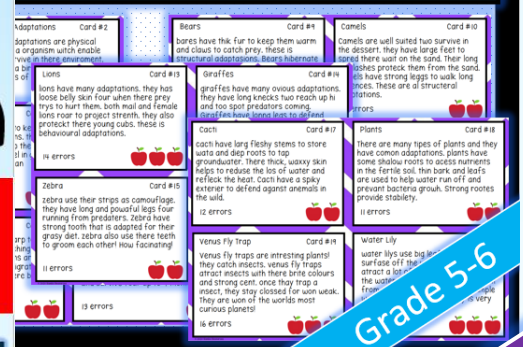
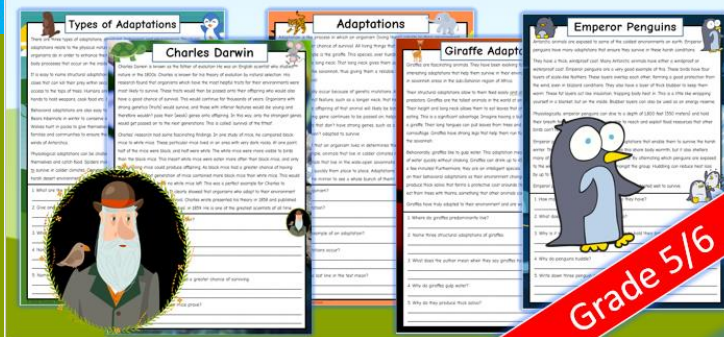
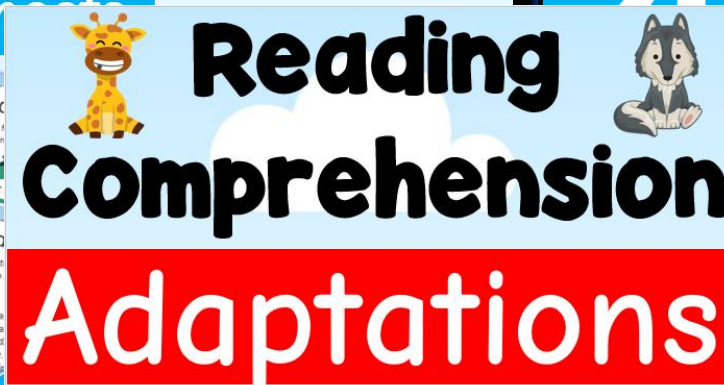
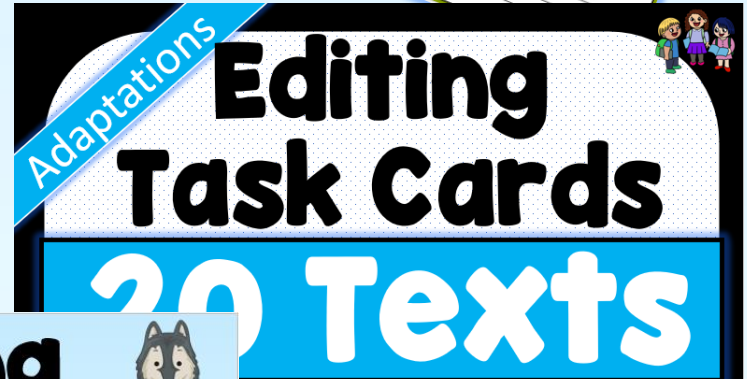
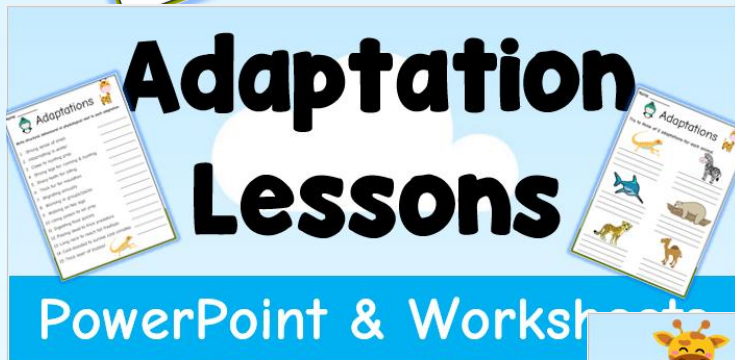


Adaptations

Bundle



Grade 5 & 6

Adaptation Lessons



PowerPoint & Worksheets

What is Adaptation?

Adaptation is the process in which an organism adapts to their environment to ensure a better chance of survival in their habitat.

Example:
Giraffes have successfully adapted to their environment – the savannah woodlands of Africa. This area is home to many tall trees. The giraffe's long neck, which

Biomes



Grassland



Desert



Forest



Tundra

How do Adaptations

usually occur because of genetic

If an animal was born with a long neck and its longer neck helped it reach food that other animals would have a better chance at surviving. If this animal would likely be born with that long neck, it would have a better chance of survival also, and so it would

Animals that are better suited to their environment survive and breed more often, furthering the

features that hinder their survival eventually disappear. Features that pass on are not strong enough to survive in the environment.

Structural Adaptations

Structural adaptations are physical features on an animal that have evolved over time. Examples include:

- ☐ Giraffe's long neck
- ☐ Fish's gills
- ☐ Bear's thick fur
- ☐ Penguin's blubber
- ☐ Shark's teeth
- ☐ Bird's sharp beak
- ☐ Succulent leaves

How many structural adaptations



Adaptation Task

On A3 paper, Create a poster with a 'made up' animal. You could combine two animals or create an entire new animal. You must:

1. Choose a biome as your background.
2. Design your animal.
3. Give it at least 6 adaptations for your chosen biome.
4. Write a short description of your animal. What type of animal is it? What type of environment does it survive? How is it adapted to survive in that environment? What is its purpose? How does it help them survive in that biome?

2 Lessons



Reading Comprehension

Adaptations

Types of Adaptations

There are three types of adaptations: structural, behavioral and physiological. Structural adaptations relate to the physical nature of organisms.

It is easy to name structural adaptations. Claws that can kill their prey within seconds are an example. Humans have hands to hold weapons, cook food etc.

Behavioral adaptations are also easy to name. Bears hibernate in winter to conserve energy. Wolves hunt in packs to give themselves a better chance of survival.

Physiological adaptations can be challenging to name. Spiders make webs to catch food. Camels can survive in hot climates.

1. What are the three types of adaptations?
2. Give one example of a structural adaptation.
3. Give one example of a behavioral adaptation.
4. Give one example of a physiological adaptation.
5. Name one animal that has each type of adaptation.

Charles Darwin

Charles Darwin is known as the father of evolution. He was an English scientist who studied nature in the 1800s. Charles is known for his theory of evolution by natural selection. His research found that organisms which have the most helpful traits for their environments were most likely to survive. These traits would then be passed onto their offspring who would also have a good chance of survival. This would continue for thousands of years. Organisms with strong genetics (traits) would survive, and those with inferior features would die young and therefore wouldn't pass their (weak) genes onto offspring. In this way, only the strongest genes would get passed on to the next generations. This is called 'survival of the fittest'.

Charles' research had some fascinating findings. In one study of mice, he compared black mice to white mice. These particular mice lived in an area with very dark rocks. At one point, half of the mice were black, and half were white. The white mice were more visible to birds than the black mice. This meant white mice were eaten more often than black mice, and only the surviving mice could produce offspring. As black mice had a greater chance of having offspring, the next generation of mice contained more black mice than white mice. This would continue for thousands of years.

It clearly showed that organisms who adapt to their environment have a greater chance of surviving. Charles wrote and presented his theory in 1859 and published 'On the Origin of Species' in 1859. He is one of the greatest scientists of all time.

1. What was Charles Darwin's theory?
2. Give one example of a structural adaptation.
3. Give one example of a behavioral adaptation.
4. Give one example of a physiological adaptation.
5. Name one animal that has each type of adaptation.

Adaptations

Adaptation is the process in which an organism (living thing) adapts to its environment. It is a change in an organism's traits that helps it survive. All living things that live in the same environment have adaptations. For example, the giraffe. This species, over hundreds of years, has a long neck. That long neck gives them a better chance of survival in the savannah, thus giving them a reliable way to reach food.

Adaptations occur because of genetic mutations. A mutation is a change in an organism's DNA. A mutation can be a good thing, a bad thing, or a neutral thing. For example, a longer neck, that helps a giraffe reach food, is a good adaptation. The offspring of that animal will likely be born with the same long neck. This is called a beneficial mutation. A mutation that doesn't help an organism survive, such as a mutation that makes an organism more visible to predators, is called a harmful mutation. A mutation that doesn't affect an organism's survival is called a neutral mutation.

That an organism lives in determines the adaptations it needs. Animals that live in colder climates have adaptations like thick fur. Animals that live in the wide-open savannahs have adaptations like long legs to run quickly from place to place. Adaptations are the key to an organism's survival. They are the mirror to see a whole bunch of them!

1. What is an adaptation?
2. Give one example of a structural adaptation.
3. Give one example of a behavioral adaptation.
4. Give one example of a physiological adaptation.
5. Name one animal that has each type of adaptation.

Giraffe Adaptations

Giraffes are fascinating animals. They have been evolving for millions of years. They have many interesting adaptations that help them survive in their environment. They live in the savannah in the sub-Saharan region of Africa.

Their structural adaptations allow them to feed easily and avoid predators. Giraffes are the tallest animals in the world at one time. Their height and long neck allows them to eat leaves that other animals can't reach. This is a significant advantage. Imagine having a built-in ladder! Their long tongues can pull leaves from trees and shrubs. Giraffes have strong legs that help them run fast in the savannah.

Behaviorally, giraffes like to gulp water. This adaptation means they can drink a lot of water quickly without choking. Giraffes can drink up to 45 liters of water in a few minutes! Furthermore, they are on intelligent species. They can learn from each other. They produce thick saliva that forms a protective coat around their mouth. Giraffes have truly adapted to their environment and are well-suited to survive.

1. Where do giraffes predominantly live?
2. Name three structural adaptations of giraffes.
3. What does the author mean when they say giraffes have a significant advantage?
4. Why do giraffes gulp water?
5. Why do they produce thick saliva?

Emperor Penguins

Antarctic animals are exposed to some of the coldest environments on earth. Emperor penguins have many adaptations that ensure they survive in these harsh conditions.

They have a thick, windproof coat. Many Antarctic animals have either a windproof or waterproof coat. Emperor penguins are a very good example of this. These birds have four layers of scale-like feathers. These layers overlap each other, forming a good protection from the wind, even in blizzard conditions. They also have a layer of thick blubber to keep them warm. These fat layers act like insulation, trapping body heat in. This is a little like wrapping yourself in a blanket, but on the inside. Blubber layers can also be used as an energy reserve.

Physiologically, emperor penguins can dive to a depth of 1,800 feet (550 meters) and hold their breath for up to 2 hours. They are able to reach and exploit food resources that other birds can't reach.

Emperor penguins have many adaptations that enable them to survive the harsh winter. They have a thick, windproof coat. They also have a layer of thick blubber to keep them warm. By alternating which penguins are exposed to the wind and which are huddled together, they can reduce heat loss. Huddling can reduce heat loss by up to 50%.

1. How many layers of feathers do emperor penguins have?
2. What does the author mean when they say emperor penguins have a significant advantage?
3. Why is it important for emperor penguins to hold their breath?
4. Why do penguins huddle?
5. Write down three penguin adaptations.

Grade 5/6

Adaptations



Editing Task Cards

20 Texts

Adaptations Card #1

what is Adaptation! the proces witch enables organisms to adjust to they're environment in order to insure survival. Their are 3 types off adaptations; structural, behavioural and physiological. adaptations usualy occur because of genetik mutations.

14 errors

Structural Adaptations Card #2

structural adaptations are physical features of a organism witch enable them too survive in there enviroment. the beek on a bir are examples of adaptations.

Bears Card #9

bears have thik fur to keep them warm and claws to catch prey. these is structural adaptasions. Bears hibernate

Camels Card #10

Camels are well suited two survive in the dessert. they have large feet to spred there wait on the sand. Their long lashes protect them from the sand. elms have strong leggs to walk long ences. These are al structural otations.

errors

Behavioural Adaptations

behavioural adaptations ar off an organism that enab survive. birds fling south food or animals moving in examples of behavioural ad. They are important for sur

11 errors

Penguins

penguins have thik blubber to ke them warm in cold condishions. th also have webed foot to help the more faster. Penguins huddel in to keep warm aswell. this is an behavioural adaptation.

12 errors

Sharks

Sharks have incredibly sharp t and a strong bodie for catching. These structural adaptations ar to there survival. Sharks migrat diferent sesons to keep there b temptures comfortble.

11 errors

Lions

Card #13

lions have many adaptations. they has loose belly skin four when there prey trys to hurt them. both mail and female lions roar to project strenth. they also protectk there young cubs. these is behavioural adaptations.

14 errors



Zebra

Card #15

zebra use their strips as camouflage. they have long and powaful legs four running from predators. Zebra have strong tooth that is adapted for their grasy diet. zebra also use there teeth to groom each other! How facinating!

11 errors



Giraffes

Card #14

giraffes have many ovious adaptations. they have long necks two reach up hi and too spot predators coming. Giraffes have lonnd leas to defend

Cacti

Card #17

cacti have larg fleshy stems to store wata and diep roots to tap groundwater. There thick, waxxy skin helps to reduce the los of water and reflek the heat. Cacti have a spiky exterior to defend aganst anemals in the wild.

12 errors



Venus Fly Trap

Card #19

Venus fly traps are intresting plants! they catch insects. venus fly traps attract insects with there brite colours and strong cent. once thay trap a insect, they stay closed for won weak. They are won of the worlds most curious planets!

16 errors



Plants

Card #18

There are many tipes of plants and they have comon adaptations. plants have some shallow roots to acess nutrients in the fertile soil. thin bark and leafs are used to help water run off and prevant bacteria growh. Strong rootes provide stability.

11 errors



Water Lily

water lilies use big leas to float on the surface off the water. they attract a lot of insects from the water. example is very



Slambo
Resources

Grade 5-6