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| **Science, 5th Period, 4th Quarter 2019-2020, Ms. Angell, April 20th – 24th**  Focus: MS-LS1-4 - animal and plant behaviors are specialized,  and those specializations increase the likelihood (probability)  that the plant or animal will have offspring that are successful (grow up). |
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| **Final Products**   1. Write 2 questions, 2 comments, 2 ahas **each** on the three TED Eds below (or for the two hardcopy documents if no online access) 2. create a factoid poster based on one of the three suggested TED Ed’s below 3. answer the quick write ahead of the tasks, and the essential question after. |
| ***Phenomenon:***  *Plants and animals can live in deserts, the arctic, the deep sea, tide pools, grasslands, forests and, well, just about everywhere.* |
| ***Essential Question:***  *What do cacti, polar bears, sharks, sea weed, hermit crabs, kangaroos, dandelions, redwood trees, and all plants and animals have in common that allows them to survive?* |
| **Tasks** |
| 1. Think about the phenomenon and the essential question. 2. Quick Write – what are some ways that plants and animals are able to survive in different places (biomes)? |
| 1. Watch these TED Eds (or read and annotate the two hard copy documents)  * [Can wildlife adapt to climate change? - Erin Eastwood](https://www.youtube.com/watch?v=ZCKRjP_DMII) * [Claws vs. nails - Matthew Borths](https://www.youtube.com/watch?v=7w2gCBL1MCg) * [Why are sloths so slow? - Kenny Coogan](https://www.youtube.com/watch?v=-64U7WoBrqM) |
| 1. For each TED Ed, list 2 questions, 2 comments, and 2 ahas (or do that for the 2 documents) 2. Create a factoid poster on one of the three TED Eds (or the hard copy documents). Include:   title, subtitle, 10 facts, one diagram/illustration, 5 key vocabulary words in a word bank, and a side bar. Color as needed for clarification or emphasis only. |
| 1. Answer the essential question. Hint… it’s all about adaptations and passing on genes ☺ |
| **Language Arts cross over (detailed in Language Arts assignments):**   1. Watch this TED Ed: z[Could we survive prolonged space travel? - Lisa Nip](https://www.youtube.com/watch?v=upp9-w6GPhU) 2. Give your opinion in in a CER paragraph based on the video information |
| **Grading:**   * **regular rubric** * **turning in product: turned into Williams, or photographed and sent to** [**cangell@tusd.net**](mailto:cangell@tusd.net) |
| **Questions:** [**cangell@tusd.net**](mailto:cangell@tusd.net) **Email anytime of course, but online hours I will be actively replying in real time will be 11am - 1:00pm (and checking email frequently)** |
| **Alternate Readings (two) (or extra background ☺) for Science Tasks 3 and 4 if unable to access TED Eds:**   1. **2020 WWF - World Wide Fund For Nature: Habitat and Nature**   **Every organism has a unique ecosystem within which it lives. This ecosystem is its natural habitat. This is where the basic needs of the organism to survive are met: food, water, shelter from the weather and place to breed its young. All organisms need to adapt to their habitat to be able to survive.**  This means adapting to be able to survive the climatic conditions of the ecosystem, predators, and other species that compete for the same food and space. An adaptation is a modification or change in the organism's body or behavior that helps it to survive.  An animal may adapt to its habitat in different ways. It may be a physical or structural adaptation, just as the limbs of birds have modified into wings or the way the cheetah is shaped for running at a fast speed.  It may be in the way the body works in circulating and respiration, for instance the gills that fish have enable them to breathe in water. Or it may be the way the animal behaves whether it is hunting for food, or running fast to avoid predators or migrating to other places for food or survival.   An animal's environment consists of many different things. The climate, the kinds of food plants that grow in it, other animals that may be predators or competitors- the animal must learn to adapt to each of these factors in order to survive. With increasing population growth and human activity that disturbs the natural habitat, animals must learn to adapt to these kind of threats as well.  Animals in the wild can only live in places they are adapted to. They must have the right kind of habitat where they can find the food and space they need.  Did you know that animals camouflage themselves so they can adapt to their environment? Adaptation can protect animals from predators or from harsh weather. Many birds can hide in the tall grass and weeds and insects can change their color to blend into the surroundings. This makes it difficult for predators to seek them out for food.  Some animals, like the apple snail, can survive in different ecosystems- from swamps, ditches and ponds to lakes and rivers. It has a lung/gills combination that reflects its adaptation to habitats with oxygen poor water. This is often the case in swamps and shallow waters.   In the harsh cold climate of Alaska, the animals have learnt to adapt to the weather by storing food in their body and protecting themselves from the cold with thick furs. Human inhabitants in Alaska have also learnt to cope with the environment by building shelters that insulate and hold the heat, and yet do not allow the structure to melt.   1. **Kidzsearch.com Adaptation**   **Adaptation** is the [evolutionary](https://wiki.kidzsearch.com/wiki/Evolution) [process](https://wiki.kidzsearch.com/wiki/Process) where an organism becomes better suited to its [habitat](https://wiki.kidzsearch.com/wiki/Habitat).[[1]](https://wiki.kidzsearch.com/wiki/Adaptation#cite_note-1)[[2]](https://wiki.kidzsearch.com/wiki/Adaptation#cite_note-2) This process takes place over many generations.[[3]](https://wiki.kidzsearch.com/wiki/Adaptation#cite_note-3) It is one of the basic phenomena of biology.[[4]](https://wiki.kidzsearch.com/wiki/Adaptation#cite_note-4)  When people speak about adaptation, they often mean a *feature* (a [trait](https://wiki.kidzsearch.com/wiki/Trait_(biology))) which helps an animal or plant survive. An example is the adaptation of [horses](https://wiki.kidzsearch.com/wiki/Horse)' [teeth](https://wiki.kidzsearch.com/wiki/Tooth) to grinding [grass](https://wiki.kidzsearch.com/wiki/Grass). Grass is their usual food; it wears the teeth down, but horses' teeth continue to grow during life. Horses also have adapted to run fast, which helps them to escape their [predators](https://wiki.kidzsearch.com/wiki/Predators), such as [lions](https://wiki.kidzsearch.com/wiki/Lions). These features are the [*product*](https://wiki.kidzsearch.com/wiki/Product) of the process of adaptation.  …bird beaks show an obvious sign of their different ways of life. However, eating a different food also means having a different [digestive system](https://wiki.kidzsearch.com/wiki/Digestive_system), [gut](https://wiki.kidzsearch.com/wiki/Gut), claws, wings and above all, different [inherited](https://wiki.kidzsearch.com/wiki/Heredity) [behavior](https://wiki.kidzsearch.com/wiki/Behaviour). For the major adaptations, what changes is not a single trait, but a whole group of features.  C:\Users\cangell\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\41B284E0.tmp  Adaptation occurs because the better adapted animals are the most likely to survive, and to reproduce successfully. This process is known as [natural selection](https://wiki.kidzsearch.com/wiki/Natural_selection); it is the basic cause of [evolutionary](https://wiki.kidzsearch.com/wiki/Evolution) change.[[5]](https://wiki.kidzsearch.com/wiki/Adaptation#cite_note-5)  **Ecological niches**  All adaptations help organisms survive in their [ecological niches](https://wiki.kidzsearch.com/wiki/Ecological_niche). This [implies](https://wiki.kidzsearch.com/wiki/Imply) an increase in biological [fitness](https://wiki.kidzsearch.com/wiki/Fitness).  These adaptive traits may be structural, [behavioral](https://wiki.kidzsearch.com/wiki/Behaviour) or [physiological](https://wiki.kidzsearch.com/wiki/Physiology).  Structural adaptations are physical features of an organism (shape, body covering, armament; and also the [internal organization](https://wiki.kidzsearch.com/wiki/Comparative_anatomy)).  Behavioral adaptations are composed of inherited behavior chains and/or the ability to learn: behaviors may be inherited in detail ([instincts](https://wiki.kidzsearch.com/wiki/Instinct)), or a tendency for [learning](https://wiki.kidzsearch.com/wiki/Learning) may be inherited (see [neuropsychology](https://wiki.kidzsearch.com/wiki/Neuropsychology)). Examples: searching for food, [mating], [vocalizations](https://wiki.kidzsearch.com/wiki/Vocal).  Physiological adaptations permit the organism to perform special functions (for instance, making [venom](https://wiki.kidzsearch.com/wiki/Toxin), secreting [slime](https://wiki.kidzsearch.com/wiki/Slime), [phototropism](https://wiki.kidzsearch.com/wiki/Phototropism)); but also more general functions such as growth and development, [and] [temperature regulation](https://wiki.kidzsearch.com/wiki/Temperature_regulation)...  Adaptation, then, affects all aspects of the life of an organism. |