The Teacher Institute for Evolutionary Science

Middle Childhood Presentation Grades 3 - 5
You are going to learn about why some living things survive and others do not. You will also learn how living things can change over time.

You will need to answer questions along the way on paper or on a Word/Google Document.

Your teacher will let you know how they would like you to turn this in.

All questions to be answered will be in red font.
Look at these photos:

1. What characteristics does the polar bear have to survive in its habitat?

2. What about the tiger?

3. What would happen if we switched the animals?
Let’s talk vocabulary...what do these words mean?

4. Come up with your own definitions for these 4 words.

Species
Population
Variation
Adaptation
5. Now let’s write down the definitions that scientists use for these words. Use the next slides to find the definition of species, population, variation, and adaptation. Write them on your response sheet.
Species
A group of similar living things that is made up of individuals able to produce offspring (babies) with one another.
Population

Members of the *same* species that live in the *same* place at the *same* time.
Variation
A property of a population that occurs when individuals within a population differ in the characteristics.
Adaptation

The process by which animal and plant species develop characteristics over time which help them survive in their habitats.
Let’s practice what we have learned.
6. Species: Group the photos below by 6 different species.

For example, f, i, and m are house cats.
Remember not all living things that look alike are members of the same species.

There are 440 different species of sharks, for example!!

7. Can you think of another group of animals that include many different species?
8. Complete this sentence using one of your new vocabulary words. While these dogs are all members of the same species, they show that ___________ exists within the dog species.
9. Describe what you see in this photo.

10. Which trait do you think will help a gazelle survive if the cheetah begins to chase them?

11. Which gazelles might be caught by the cheetah?

12. Over time, what do you think happened to the gazelle population?
If you answered #12 by saying that the gazelles got faster over time, you were right!!

This is called adaptation.

- Remember, a population is a group of living things of the same SPECIES that live together.
- Not every individual in a population survives.
- They do not all look alike either. There is variation in the population.
Introducing *Lithipodius nulla*!!

Watch this video and answer the questions in red below.

13. What similar traits do the members of the species have?
14. What different traits do the members of the species have?
15. Which members of the species are more vulnerable to the predator?
16. Which members of the species are more likely to survive?
17. Can you predict what the population will look like over time?
18. Can you describe natural selection?
19. What is adaptation?
20. a. What will happen to the green individuals in this sandy environment? b. What if the environment changes and gets greener?
21. How does variation the survival of the species?
Let's try to survive a million years!

Click here: The TIES Time Machine

• Read about Charles Darwin who developed the Theory of Evolution by Natural Selection.
• Play the game until your species survives a million years. It may take a few tries.
• Take the quiz.

22. Take a picture of the screen to prove you survived a million years AND a screenshot of your score on the quiz. Add the 2 pictures to your student response sheet as #22.
A Great Example of Example of Adaptation

Click here to watch video: The Wild World of Carnivorous Plants

23. Describe one of the ways these plants have adapted to eat insects.
One of the best ways to understand that living things have really changed over time is to study living things that are not here anymore.

These living things are extinct, but they leave behind traces of themselves. These traces are called **fossils**.
Click here to watch this video: **What is a fossil?**

24. What is the definition of a fossil?

25. What is permineralization?

26. What is more likely to become a fossil, a worm or a snail? Why?

Now watch this video. **What's a fossil?**

27. List the steps described in the formation of a dinosaur fossil.
Dinosaurs make the coolest fossils!!!!
Let’s learn more about dinosaurs. Click the links underlined here:

Triceratops and T-Rex
And
Velociraptor, Quetzalcoatlus, Fossils and More!