



## Fuzzy Worms

### Description

Learn about the mechanisms behind evolution with an emphasis on natural selection. This activity uses creative play, counting, sorting, and critical thinking to demonstrate a real-world phenomenon.

This activity is easily adaptable depending on the age level of the children participating in this experimental model. See "Questions and Discussion" section for tiered learning objectives.

### Background

Natural selection is the way by which different observable traits of a species can affect the survival of that species and thus, that observable trait. An observable trait is something anyone can see like coloring, size and shape or the organism, wingspan, leaf shape, height, and many more. This activity focuses on the coloring of an organism, our "fuzzy worms", and why the coloring might change how that organism is affected by its environment.

When our fuzzy worms are placed in a grassy area some of the colors will be more camouflaged than others, meaning they will blend into the area and thus avoid being seen by predators. Camouflage is an adaptation mechanism that increases the survival rate of that organism.

### Materials

- 180 strips of multiple colors of yarn cut to be about 2-3 inches long
  - Suggested colors: 30 Red, 30 Yellow, 30 Green, 30 Blue, 30 Purple, 30 Brown
- Designated outdoor grassy area

### Procedure

1. Sprinkle all pieces of yarn in the grassy area, being sure to spread them out.
2. Students will be the "birds" that collect and "eat" the worms.
3. Give students 1 minute (or less depending on age, ability, and number of students) to see how many worms they can find in the area.
  - The goal is to not be able to find all the worms, just the ones immediately noticeable.
4. Take all the found worms back inside.
5. Separate the worms by color and tally how many of each color worm was "eaten".
6. Discuss the results with the children posing open ended questions.

## Questions and Projects

### Grades PreK-1<sup>st</sup> Grade

- Projects:
  - Have students make a drawing of a worm in its natural habitat and discuss what they think the worm needs to thrive.
- Pre-Questions:
  - What color worms do you think you will find the most of?
  - How many worms do you think you will find?
- Post- Questions:
  - Which color worm was “eaten” the most (did we find the most of)?
  - Which color worm was “eaten” the least (did we find the least of)?
  - What color are real worms we find outside?
  - Why do you think they are that color?

### Grades 2<sup>nd</sup>-3<sup>rd</sup>

- Projects:
  - Have students record their data and create a colorful graph that represents the differing amounts of each colored worm that was found and write a few sentences describing their observations.
- Pre-Questions:
  - What color worms do you think you will find the most of? Why?
  - How many worms do you think you will find? Why?
- Post- Questions:
  - Which color worm was “eaten” the most (did we find the most of)?
  - Which color worm was “eaten” the least (did we find the least of)?
  - What color are real worms we find outside? Why do you think they are that color?
  - What are some advantages to not being noticed by other animals?
  - What other qualities help worms survive in their environment?

### Grades 4<sup>th</sup>-5<sup>th</sup>

- Projects:
  - Have students create their own experiment that tests a different quality, they can change the length of the worms, the environment they live in etc..
    - Have them form a hypothesis, or educated guess, as to what the results of their experiment might be.
    - Have students record their findings and even repeat their experiment to ensure accuracy.
    - Once completed have the students write a summary paragraph about their experiment and what they learned.
- Pre-Questions:
  - What color worms do you think you will find the most of? Why?
  - How many worms do you think you will find? Why?
- Post- Questions:
  - Which color worm was “eaten” the most (did we find the most of)?
  - Which color worm was “eaten” the least (did we find the least of)?

- What color are real worms we find outside? Why do you think they are that color?
- What other qualities help worms survive in their environment?
- What are some qualities of other animals that help them survive in their environment.?
- What food chain can you create using the animals we have talked about today?
- What other animals would you include in your food chain to make a food web?

## References

- National Geographic:
  - <https://www.nationalgeographic.org/encyclopedia/camouflage/>
- NSTA: Camouflage Collection:
  - [https://learningcenter.nsta.org/mylibrary/collection.aspx?id=dp3ck!plus!!plus!ZgBE\\_E](https://learningcenter.nsta.org/mylibrary/collection.aspx?id=dp3ck!plus!!plus!ZgBE_E)
- Crash Course Biology: Natural Selection
  - [https://www.youtube.com/watch?v=aTftyFboC\\_M](https://www.youtube.com/watch?v=aTftyFboC_M)
- Nature Journal: The Power of Natural Selection
  - <https://www.nature.com/articles/433694a>
- NSTA: natural Selection
  - <https://ngss.nsta.org/Resource.aspx?ResourceID=576>

## TEKS

### Kindergarten:

- (2): (A) (B) (C) (D) (E)
- (4): (A) (B)
- (10): (A)

### 1<sup>st</sup> Grade:

- (2): (A) (B) (C) (D) (E)
- (3): (A) (B)
- (4): (A) (B)
- (9): (A) (B) (C)

### 2<sup>nd</sup> Grade:

- (2): (A) (B) (C) (D) (E) (F)
- (3): (A) (B)
- (4): (A) (B)
- (10): (A)

### 3<sup>rd</sup> Grade:

- (2): (A) (B) (C) (D) (E) (F)
- (3): (A) (B)
- (10): (A)

### 4<sup>th</sup> grade:

- (2): (A) (B) (C) (D) (E) (F)
- (3): (A) (B)
- (4)
- (10): (A)

### 5<sup>th</sup> Grade:

- (2): (A) (B) (C) (D) (E) (F)
- (3): (A) (B)
- (4)
- (9): (A)
- (10): (A) (B)