**Survival and Reproduction**

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**Overarching Question:** What characteristics help with individuals’ survival and reproduction?

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How do species differ from each other?

What does a species need to survive and reproduce?

What types of characteristics differ in species?

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What does a species need to survive and reproduce?

What types of characteristics differ in species?

Are interactive notebooks effective?

How are interactive notebooks organized?

How are interactive notebooks assessed?

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| **Line of Evidence – Bird Beak Prediction** |
| *Students predict which type of beak will be the best option for each type of food.* |

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| **Line of Evidence – Bird Beak Activity** |
| *The beaks are used to collect each type of food and the results of how much is recorded.* |

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| **Line of Evidence – Informational References** |
| *Birds have different types of beaks to help them survive in their environment and capture their food. Their adaptations are necessary for survival and reproduction.* |

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| **Line of Evidence – Survival**  |
| *The results of the activity show that each beak has a certain type of food that they are best designed for and are adapted for that environment.* |

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| **Big Aha Thesis Statement** |
| *The characteristics in a bird vary, especially in their beaks. The designs of the beaks help them to survive and reproduce in their environment.* |

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**Engage - Bird Beak Prediction**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type of Beak | # of goldfish | # of raisins | # of sunflower seeds | # of gummy worms |
| Spoon |  |  |  |  |
| Hair Clip |  |  |  |  |
| Tooth Pick |  |  |  |  |
| Chopsticks |  |  |  |  |

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**Explore – Bird Beak Activity**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type of Beak | # of goldfish | # of raisins | # of sunflower seeds | # of gummy worms |
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| Chopsticks |  |  |  |  |

**Bird Beak Activity CER**

**Claim** (Write a sentence stating how birds characteristics help them survive.)

**Evidence** (Explain what beak will thrive the most in survival and reproduction. Why?)

**Reasoning** (Explain how your evidence supports your claim. Describe how birds vary in characteristics and talk about their differences in beaks.)

**Oreo Moon Phases CER**

**Claim** (Write a sentence stating how birds characteristics help them survive.)

**Evidence** (Explain what beak will thrive the most in survival and reproduction. Why?)

**Reasoning** (Explain how your evidence supports your claim. Describe how birds vary in characteristics and talk about their differences in beaks.)

**ANSWER KEY Bird Beak Activity**

**Claim** (Write a sentence stating the pattern of the moon phases.)

 *Birds have different beaks to help them survive and reproduce in certain environments.*

**Evidence** (Provide names and descriptions of the phases of the moon to support your claim. Describe how to tell the difference between waxing and waning phases.)

*The plastic spoon type beak worked the best with the sunflower seeds. This means that a bird with a spoon type beak will survive the best with a food source like the seeds and then can continue to reproduce through life. The charts show which types of beaks have a better chance of survival based off the food options in the environment.*

**Reasoning** (Explain how your evidence supports your claim. Describe how the phases of the moon repeat.)

*Birds that are a part of the same species have different characteristics to help them survive. The different shaped beaks picked up certain types of food better than others. This is the result in physical characteristics in the same species working to give the birds an advantage in their environment. Not all birds would survive in the same environment because they would not be able to collect enough food to survive based off the shape of their beak.*

**ANSWER** **KEY Bird Beak Activity**

**Claim** (Write a sentence stating the pattern of the moon phases.)

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**Explain - Informational References**



Bird Beak Chart [Online image]. (n.d.). Retrieved April 25, 2017, from http://eteamscc.com/2015/battling-beaks/

Other Resources

<https://www.youtube.com/watch?v=cUP-vTuvHq8>

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**Informational Reference Reading Questions**

1. In order to survive and reproduce organisms need to have what type of traits?
2. True or False… The environment affects a species ability to survive.
3. What is the definition of a species?
4. Why is it important for a bird to live in an environment appropriate for their physique?

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**ANSWER KEY Informational References Questions**

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*Traits that are favorable for survival and traits to help them thrive.*

1. True or False… The environment affects a species ability to survive

*True*

1. What is the definition of a species?

*A class of individuals having some common characteristics or qualities; distinct sort or kind.*

1. Why is it important for a bird to live in an environment appropriate for their physique?

*Because a bird’s beak must be able to collect food in that environment to survive.*

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**Elaborate – Survival**

Students will compare the results they got for each beak and explain why each beak may help that bird in surviving different types of environment. Students will write their explanation as to why the varied characteristics affect the survival rates and reproduction rates.

Teacher will use this paper to assess the students’ knowledge of the activity and the results the received. Applying this to what they know about animal survival and reproduction to provide an appropriate explanation.

Students will turn in the prediction chart, results chart, and their short paper

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**Survival CER**

**Claim** (Write a sentence stating what you saw happen in the bird beak activity.)

**Evidence** (Provide evidence from the lab to support your claim. Describe what type of environment you can find a bird with each type of beak and why.)

**Reasoning** (Explain how your evidence supports your claim. Describe how having these beaks help the birds survive.)

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**ANSWER KEY Phases of the Moon Lab CER**

**Claim** (Write a sentence stating what you saw happen in the bird beak activity.)

*The bird beaks were only able to pick up certain types of food depending on the size and shape of the food and beak.*

**Evidence** (Provide evidence from the lab to support your claim. Describe what type of environment you can find a bird with each type of beak and why.)

*A spoon type beak worked the best with picking up sunflower seeds. The Hair Clip type of beak worked the best with gummy worms. The Chopstick type beak worked the best with goldfish and the toothpick type beak worked the best with raisins.*

**Reasoning** (Explain how your evidence supports your claim. Describe how having these beaks help the birds survive.)

*These beaks help the birds survive in an environment that fits their need when finding food. A bird that has a spoon type beak will be able to fly down and scoop, so probably lives near water. Having this type of beak will help it survive in its environment.***ANSWER KEY Phases of the Moon Lab CER**

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**Big Ah-Ha Thesis**

 The purpose of this unit was to understand that different characteristics can occur in the same species and help benefit that species in survival and reproduction in their environment.

 We learned about a species and the different types of beaks that birds have and the purpose of them. We also watched a brain pop video discussing birds and their adaptations.

 The bird’s beaks are designed for eating certain types of food. The activity we did allowed us to see which design of beak is the best fit for each type of food. We recorded our information and used it to explain our findings.

 We found that having these different beaks doesn’t make them different from other birds; it is an adaptation to help them survive in the area they live. We compared the beaks and explained why each beak was best fit for each environment.

 Each of our learning activities was a line of evidence. They helped us explain the characteristics of bird beaks and how each of their differences help them to survive and reproduce in their environment.

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