

ED 345 Calvin College Lesson Planning Form

Teacher: Kelsey Stark

Date: Thurs Sept 24

Subject/ Topic/ Theme: Bird Adaptations

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| I. Objectives | |
| What is the main focus of this lesson? The main focus of this lesson is bird adaptations, including beak, feather, and camouflage adaptations. | |
| How does this lesson tie in to a unit plan? (If applicable.) This is the second lesson plan in our New Mexico Birds unit. This lesson will move students from thinking about bird anatomy on a basic level, to thinking about how the specific parts of a bird are built for its survival. | |
| What are your objectives for this lesson? (As many as needed.) Indicate connections to applicable national or state standards. If an objective applies to only certain students write the name(s) of the student(s) to whom it applies. Students will be able to -describe how bird's beaks are adapted based on the type of food they eat. -identify different features of bird feathers that help birds fly. -discuss what camouflage is and how it helps mother birds. <u>3-LS4-3.</u> Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. | |

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| II. Before you start | |
| Prerequisite knowledge and skills. | Basic concept of what a bird is Basic understanding of feathers Ability to individually lead self, and get along with peers, during a self-guided small group |
| Assessment (formative and summative) | Formative: Questioning and observation will be used by Mrs. Van Dorp and Ms. Stark to assess student understanding in the bird beaks and feather small group stations. Observation will be used by both teachers to assess the progress and understanding of the camouflage station. Summative: At the end of the lesson, the students will be asked to write a their conclusions to the questions, "Why are bird beaks different shapes and sizes?", "What helps a bird fly?", and "What is camouflage and why do birds have it?" This will help the teacher see student growth and understanding. |

Universal Design for Learning Networks/Domains (see UDL Guidelines)

| RECOGNITION | STRATEGIC | AFFECTIVE |
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| Multiple Means of Representation | Multiple Means of Expression (Action) | Multiple Means of Engagement |
| <i>Options for Perception</i> A microphone will be used during the lesson as an aid for students' with hearing difficulties. | <i>Options for action/interaction</i> | <i>Options for recruiting interest</i> |

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| <i>Options for Language/Symbols</i> | <i>Options for Expression</i> | <i>Options for Sustaining Effort & Persistence</i> Students will be told the three main questions they will be investigating during the lesson. These questions will be posted at each station, to show students the activities objective. |
| <i>Options for Comprehension</i> | <i>Options for Executive Function</i> Each station will have a graphic organizer that will help the students organize their inquiry, and what they have learned from it. | <i>Options for Self Regulation</i> |
| Materials-what materials (books, handouts, etc) do you need for this lesson and do you have them? | Different Types of feathers Magnifying Glasses Feather adaptation investigation sheet Colored paper (colors matching the feathers) Colored feathers Camouflage investigation sheet Stapler removers (birds of prey) - 6 Cardboard with staples in it (ripping flesh) Strainer spoons (fish eaters) - 6 Paper clips in bucket of water (fish) Tweezers (worm eaters) - 6 Yarn (worms) Eye Droppers- 6 Red water (nectar) Bird beaks investigation sheet Stations switching PowerPoint Cardstock investigation questions Timer Four bird pictures: heron, hummingbird, red tailed hawk, roadrunner Scrap paper | |
| Do you need to set up your classroom in any special way for this lesson? If so, describe it. | The classroom will be set up in its normal fashion. The students will move around the classroom during the stations. One station will be set up at Mrs. Van Dorp's desk, one at the table group near the door, and one on the rug. | |

| III. The Plan | | |
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| Time | Parts | The description of (script for) the lesson, wherein you describe teacher activities and student activities |
| Whole Group: | Motivation (Opening/ Introduction/ Engagement) | <ul style="list-style-type: none"> -The teacher will welcome the students to day two of their New Mexico bird unit, and will tell the students to get out their scientist journals so they can find out what questions they will be investigating today. -The teacher will have the students turn to day two in their scientist journals and will ask a student volunteer to read the first question they will be investigating. The teacher will explain this question in another way for students. -The teacher will continue having students read the questions, and then explain them out loud, until they are all read. -The teacher will tell the students that they will be doing three different stations today that will help them find out whether their hypothesis was correct. |

**Small
Group:
20
minutes
each
rotation**

Development

- The teacher will then place on the overhead projector the station switching PowerPoint and will explain to the students the expectations for stations. (Staying in the station they are assigned, following the directions exactly, listening and working together.) The teacher will also assign who the group "facilitator" or "leader" is for each group during station three.
- The teacher will also explain that each of these stations will help them answer one of the day's "investigation questions." (These investigation questions will be posted at the appropriate station.)
- The teacher will tell the students to move to their first assigned station.

-Each station will be 20min long.

Station One: Why are bird beaks different shapes and sizes?" - with Mrs. Van Dorp

- The teacher will explain to the students that during this activity they will be testing how much food different types of birds can collect in twenty seconds.
- The teacher will explain that the students will be working on a team as the same type of bird each round. The teacher will explain that the students will all be trying to collect the same type of food each round as well, testing which they can collect the most of with each beak.
- The teacher will pass out a bird beak to each child and the first type of food (paper clips, or fish.)
- The teacher will model how to pick up the food and put it in the food container, and how to stop collecting food when the timer goes off.
- The teacher will ask if there are any questions.
- The teacher will time the students collecting the first type of food for thirty seconds for each of the four different bird beaks (popsicle stick beak, toothpick beak, sieve beak, claw beak).
- The teacher will guide the students on how to add and record the number collected in each blank on their inquiry guiding worksheet.
- When done the teacher will have the students write down which beak was best suited for nectar, tearing flesh, worms, and fish. (The teacher will guide the students to write this on the bird beaks investigation page.)
- The teacher will then lie out four bird pictures, asking the students to match the bird pictures with the beak they think was being represented through the activity.
- The teacher will then ask the students why they think these birds' beaks are different shapes and sizes?
- The students will answer.
- The teacher will explain that birds' beaks are different shapes and sizes based on what type of food they eat.
- The students will be guided to finish their "bird beaks investigation" page.

Station Two: "Birds can fly...but how?" - with Ms. Stark

- The teacher will ask the students what birds have that help them fly?
- The students will answer: feathers!
- The teacher will explain that during this station they will be investigating some of the reasons feathers are so helpful for helping birds fly. The teacher will have the students turn in their scientist journals to the feathers investigation page.
- The teacher will explain that the first thing a feather needs to be to help a bird fly is light.
- The teacher will show the students a feather whose shaft has been cut.
- The teacher will ask the students what they notice about the shaft (or center piece.)
- The students will answer: it is open or hallow.
- The teacher will explain that the thickest part of the feather is open and has air in it. This keeps the feather light.
- The teacher will have the students draw the hallow shaft on their investigation sheet and make notes.
- The teacher will then explain that feathers also have to be strong to help lift heavy birds into the air.
- The teacher will explain to the students that the central shaft of the feather is what keeps it strong.
- The teacher will give each student a piece of paper and will ask them to try to bend a break it.
- The teacher will then give each student a piece of paper and have them roll it into a tube, taping it closed.
- The teacher will then ask the students to bend/break the tube.
- The teacher will explain that the feathers shaft is so strong even when it is hallow because it is stronger when it is bent or round.

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| | | <ul style="list-style-type: none"> -The teacher will have the students draw the rounded shaft on their investigation sheet and make notes. -The teacher will also explain that feathers have to be able to push air in order to help birds fly. -Show the students that a feather has a continuous surface that sticks together called a barb. When you push these barbs apart it allows air to go through, but you can then smooth it back to form a flat surface again. Birds do this with their beak when a feather is damaged. Explain that these barbs stick together to help birds push air in order to fly. -The teacher will ask the students: How do these barbs stick together? -The students will answer -The teacher will explain to the students that each barb has many tiny hooks that are called barbules. These hooks interlock with the next barb similar to Velcro. This helps the barbs stay together so that they are strong enough to push air. -The teacher will give the students each a few feathers and a magnifying glass to investigate, or see, these barbules. -The teacher will have the students draw the barbules on their investigation sheet and make notes. <p><u>Station Three: "What is camouflage and why do birds have it?"</u> - individual investigation (with facilitator designated.) The teacher will set up this station ahead of time.</p> <ul style="list-style-type: none"> -The students will read that this is the "camouflage" station where they will be investigating what camouflage is and why certain birds have it. -The students will read the guided group directions on their camouflage investigation page. The student facilitator will read the investigation sheet and guide the students in collecting as many feathers as possible off of the gray paper in forty-five seconds. The student will use the timer to time the forty-five seconds accurately. -The student facilitator will then tell the students to record how many feathers of each color they found on their investigation guiding worksheet. -The student facilitator will then guide the group through the rest of the questions and reading on the camouflage investigation page. |
| <p>Total: 1hr 30min</p> | <p>Closure</p> | <ul style="list-style-type: none"> -The teacher will ask the students to return to their seats and to pull out their scientist journals. The teacher will tell the students to turn to the "Day Two Conclusions" page. -The teacher will explain that after scientists investigate and learn more about a topic, they come up with conclusions, or what they found out to be true. -The teacher will read the day's conclusion questions out loud for the students, explaining that they must work on these questions individually and that they must answer in complete sentences. When they are done they will be told to draw a picture to go along with their answers. -The teacher will also have the students add their investigations pages to their scientist journals. |
| <p>Your reflection on the lesson including ideas for improvement for next time:</p> | | |