The Bio/Diversity Project

Lesson Title: **Specific Pollinator- Birds**

Teacher: *Ms. Gricelda Meraz*

Grade Level: *6th*

Time: *30 minutes +10 minute introduction*

*Adapted from:* [*https://www.nps.gov/sagu/learn/kidsyouth/upload/pollinator-activity-booklet.pdf*](https://www.nps.gov/sagu/learn/kidsyouth/upload/pollinator-activity-booklet.pdf)

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| **AZ State Science Standard:** | *6.L2U1.13:*   * *Develop and use models to demonstrate the interdependence of organisms and their environment including biotic and abiotic factors.* |
| **Learning Objective:** | In student friendly language, write your objective. Your objective is likely to target just one or two aspects of the Science Standard, as mastery of a Standard usually takes multiple lessons. A Science Standard should be broken down into smaller, more manageable objectives per lesson.  For example:   * *Students will describe specific adaptations of bird pollinators.* * *Students will explain the symbiotic relationship between birds and plants/* |
| **Language Objective:** (Optional) | N/A |
| **Scientist of the Week:** | This is a slide of basic information about your diverse scientist of the week. This scientist should connect to the topic of your lesson that week. A powerpoint slide should be put together in kid-friendly language. This slide should contain:    **Edwin Juarez - Wildlife Biologist**   * grew up in a rural community in El Salvador, but is also from Phoenix, Arizona * 13 years of experience with bird conservation * helps in the conservation of birds with Arizona Bird Conservation Initiative * “I have a strong interest in identifying and implementing approaches that better connect Latino communities to nature.” |
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| **Vocabulary** | | | **Materials** | | |
| Provide a bulleted, alphabetized list of words that students will hear, speak, write, and/or read about in the lesson. Please do not list more than 4-5 words. These words must be integral to developing content understanding. You may copy and paste these directly from the Scope and Sequence Guide document.   * Interdependence: the reliance one organism on the rest of the organisms in the ecosystem * Migration: a pattern of behavior in which animals travel from one habitat to another in search of food, better conditions, or reproductive needs * Species diversity: the number and relative abundance of species found in populations/ecosystems or even the earth | | | Provide a bulleted and hyperlinked list of relevant materials for the lesson.   * [*Adaptation Activity*](https://www.fws.gov/uploadedFiles/Region_1/NWRS/Zone_2/Inland_Northwest_Complex/Turnbull/Documents/EE/Field_Trip/Adaptation%20Artistry.pdf) * [*Flower Pollination Activity*](https://www.nps.gov/sagu/learn/kidsyouth/upload/pollinator-activity-booklet.pdf) * [*Draw an Adaptation Activity*](https://jamboard.google.com/d/1edNlJavTXi05DWbEXkN5vynTia1dz9HPV-JmKWX2-fw/edit?usp=sharing) * [*Dibuje un Adaptación Actividad*](https://jamboard.google.com/d/1iSHh-owLuatWNpi-PyQWhfIqI-h9WjiFcKOinib2xBw/edit?usp=sharing) * [*Spanish Hummingbird Vid*](https://www.youtube.com/watch?v=LlQ37_jNkkY) * [*English Hummingbird vid*](https://www.youtube.com/watch?v=8MWVDA7gDGw) * *Exploratory Activity*    + [*A Day in the Desert: Saguaro Wilderness*](https://youtu.be/xWM0hYyHDvQ)   + [*Aves de Sonora*](https://youtu.be/CFkA5dJgDOU) * *Google slide:*    + [*Pollinators (Birds)*](https://share.nearpod.com/e/BcGGPpmKTeb)   + [*Pájaros Polinizadores*](https://share.nearpod.com/e/xDIJ2OfKTeb) * [*Edwin Juarez Bio*](http://www.azfo.org/aboutusbios/bios.html) | | |
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| **Seasonality:** (If more specificity is required, please note date/time range under the season)  Highlight which season(s) your lesson would be most suited to. When working with the natural world, it is important to keep this in mind for your planning! Some activities are possible for a brief window of time while others may be appropriate during any time of year. | | | | | |
| *Monsoons*  July-Sept. | *Autumn*  Oct.-Nov. | *Winter*  Dec.- Feb. | | *Spring*  Mar.-Apr. | *Dry Summer*  May-June |
| **Guiding Questions:**  Write down bulleted, guiding questions that you will ask students in order to promote a deeper understanding of the subject matter. These are questions you will ask students to open the conversation on this topic. You may copy and paste these directly from the Scope and Sequence Guide document.  For example:   * *What is an adaptation? What sort of adaptations do flowers have in relation to birds?* * *What adaptations are there to Sonoran Desert Birds?* | | | | | |

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| **5E Steps** | **Teacher Strategies** | **Student Behavior** |
| **Engagement/Introductory Activity:**  This is what you will do to get the students engaged in and excited about the topic of the lesson! It should also provide an opportunity for you to get an idea of what they do (and do not) already know, and the assumptions that they have going into the lesson. | Interns will play a Youtube video of a Sonoran Desert bird: the hummingbird!  [*Spanish Hummingbird Vid*](https://www.youtube.com/watch?v=LlQ37_jNkkY)  [*English Hummingbird vid*](https://www.youtube.com/watch?v=8MWVDA7gDGw)  Zoom Chat Bomb!  The students will be asked to think of something they know about pollinating Sonoran Desert birds. They will be asked to type in the zoom chat but wait to send it in. The teacher will countdown from 3 and everyone will send in their answers at the same time. Teachers will read their responses and ask a few students to share. | Students will actively watch the short hummingbird activity.  Students will be given 2-3 minutes to think of something they know about pollinating Sonoran Desert birds.  Students will type their answers in the Zoom chat and will send in their answers after the teachers countdown.  Students will be prepared to share!  (5 minutes) |
| **Exploratory Activity:**  Provide step-by-step instructions on what the teacher and students will do in this activity to gain new skills and/or knowledge. Attach worksheets, PowerPoints, video links, or other material used to this section. | Interns will describe the birds that students are about to see before starting the video.  Youtube videos of Sonoran Birds (ENG and SPAN)  [*A Day in the Desert: Saguaro Wilderness*](https://youtu.be/xWM0hYyHDvQ)  [*Aves de Sonora*](https://youtu.be/CFkA5dJgDOU)  Teachers will explain the videos and introduce adaptation concepts to students by using a powerpoint slide as a way to get an understanding of a student's prior knowledge of adaptation.  Nearpod slides:  [*Pollinators (Birds)*](https://share.nearpod.com/e/BcGGPpmKTeb)  [*Pájaros Polinizadores*](https://share.nearpod.com/e/xDIJ2OfKTeb) | Videos will be 2-3 minutes.  Students will be instructed to pay attention to the video as it will be important to the following activity.  Students will pay attention to the presentation in recapping the video and introducing adaptation.  (15 minutes) |
| **Explain:**  What questions or prompts will you use to get students to explain their observations or to explain what the outcomes of the activity that they participated in were? This should provide an opportunity for students to communicate their new understandings, as well as to articulate what they still do not understand. | Jamboard (Adaptation Activity)  Teachers will instruct students to draw a specific bird they like and ask to name a specific adaptation they believe their bird has.  To pave the way into getting to understand their understanding of the video and introduce the lesson.  Jamboard:  [*Draw an Adaptation Activity*](https://jamboard.google.com/d/1sAZqqPGnb8dfWjqbzbAuA6m1XvBjfyWzuygtph7xxEI/edit?usp=sharing)  [*Dibuje un Adaptación Actividad*](https://jamboard.google.com/d/1iSHh-owLuatWNpi-PyQWhfIqI-h9WjiFcKOinib2xBw/edit?usp=sharing) | Activity will take 5 minutes  Students will be instructed in drawing out their favorite sonoran bird from the video. Instructed to explain by volunteering, to say what specific adaptations their birds have and why it's their favorite.  (6 minutes) |
| **Extension Activity/Questions:**  This section provides an opportunity for students to connect the knowledge that they have gained to other contexts – can they take what they learned and logically expand upon it, or apply it to alternate situations? Provide one or two additional ideas for activities that students can use to expand upon the new knowledge that they have gained. | Would a bird pollinate this flower? activity  Interns will have students think about what adaptations a flower might use to get birds to pollinate it.  Interns will then show pictures of different flowers and ask the students if they think they are adapted to bird pollination.  Interns will choose volunteers to explain why they think the flower is bird pollinated.  Interns will reveal whether or not the flowers are bird pollinated and explain the different adaptations the flowers use to attract birds and not other pollinators.  *Adapted from:*  [*Flower Pollination Activity*](https://www.nps.gov/sagu/learn/kidsyouth/upload/pollinator-activity-booklet.pdf) | Students will be given a minute to think about the types of adaptations flowers use to encourage birds to pollinate them.  Students will then view slides with different flower species and say whether or not they think birds pollinate each flower.  Students will prepare to explain why they think the flowers are/aren’t adapted to bird pollination.  (6 minutes) |
| **Evaluation Activity:**  How will you evaluate whether or not the students have achieved the learning objective(s) of the lesson? | Interns will ask students to share one interesting fact they learned or one question they have in Nearpod as a ticket to “leave” the class. | Students will write one question/interesting fact they learned in class on the Nearpod link.  (3 minutes) |