



Fantasy Manu

Science Performance Assessment
Grade 1

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About This Task

Task Name	Fantasy Manu	Grade Level or Course	Grade 1
Phenomenon	Why do the manu we see on our nature walk and in Hawai'i look and act differently?	What instruction or experiences should learners have before completing this task?	Students should have had experiences with making observations and looking for patterns in the external parts of organisms and their structure and function.
Time Required & Materials	Time: ~3 days; 1 part per day, 30-45 minutes per part Materials Part 1: • Access to outdoors and live birds in the area • Copies of manu cards, 1 card per student • Chart paper Part 2: • 5 sheets of paper cut into 3 strips (per student) • Some type of binding (that allows students to flip through easily) • Drawing pencils and markers Part 3: • Copies of the book page for each student Possible Read Aloud: No Ka 'Elepaio Kolohe		
Considerations and Adaptation Suggestion(s)	For this task, students need access to seeing birds in person and setting up this experience should be a priority for supporting students in this task. This has an optional read aloud book and students' stories about their birds could be connected to relevant 1st grade ELA standards.		

Standards Emphasis

Assessment is a balancing act involving multiple tradeoffs. No one task can do everything, and often good design carefully considers what *not* to assess. The targeted NGSS Performance Expectation and supporting dimensions are shown below. The parts of the standard not addressed in the task are ~~struck through~~. Each item in the task may target one or more of the dimensions - not every item has to assess every dimension. What matters is that the task as a whole addresses all three dimensions.

NGSS Performance Expectations

- **1-LS1-1:** Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

Clarification Statement: Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; and, detecting intruders by mimicking eyes and ears.

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Constructing Explanations and Designing Solutions Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.	LS1.A: Structure and Function All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. LS1.D: Information Processing Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs.	Patterns Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence. Structure and Function The shape and stability of structures of natural and designed objects are related to their function(s).

PADI Design Principles Emphasis

The PADI design principles are present in varying ways and to different degrees across these teacher-created science performance tasks. The design principles highlighted for each task represent those that are intentionally emphasized in the task. Educators utilizing these tasks may develop their own interpretations of the application of the design principles, and modifications to the tasks could naturally influence the extent to which each principle manifests.

The PADI Design Principles are:

Student Voice & Agency. Task or activity ensures that the students can make choices within and have agency over some aspects of the learning and assessment experience.

Relationships. Task or activity provides opportunities for students to make connections with others both within and beyond the classroom.

Identity and Inclusion. Task or activity ensures that each student can bring a sense of joy and pride around their identity and individuality to the task. Students should feel safe to be vulnerable and should feel supported by their classroom community (teachers and students).

Groundedness. Task or activity ensures that students can complete the task in their current environment using their current context to apply real-world knowledge to the place where they live. All participants should have awareness of self, others, and surroundings. Task or activity should prioritize presence over productivity. Students should feel like they can answer the question: "Where are my feet planted? What can I do from here?"

This task foregrounds:

- **Groundedness** by locating student observations in a school-based nature walk and investigating native Hawaiian birds as part of their fantasy bird class book.
- **Relationships** by including opportunities for students to learn and be aware of the Hawaiian language and native species and by centering whole class discussions and a class project as the central focus of the task.

Teacher Facilitation Guidance

Often performance assessments are new to students. They usually require some degree of transfer from their classroom learning experience and students will need support to share all their ideas in the task.

- 1. Review the Task.** Complete the performance assessment acting as a student in your classroom. Think about the unit you have taught/are teaching. Where might your learners need additional support? What additional activities might you need to do before the Performance Assessment? What adjustments do you need to make to the assessment (e.g., a classroom discussion of the phenomenon) before you send students to complete the task.

2. Part 1: Learning & Making Observations.

- a. Nature Walk.** Take students on a nature walk around the school. Remind them to practice their observation skills and to pay careful attention to the manu/birds and what they are doing. Say, *"We are going to take a nature walk, on our nature walk we will be looking for manu/birds. I want you to keep in mind what they look like, what they're doing, if they're the same or different and how they are the same or different. After our nature walk we will come back to write our observations down and discuss it."*
- b. Take a 5-10 Minute Nature Walk.**
- c. Debrief the Nature Walk.** Ask students what manu/birds they saw and what those birds were doing. Ask them what they observed about the external parts of the birds. On the board or on chart paper, list the birds and a summary of their observations. Also ask students to describe the area/habitat and what it was like, what food was available for the birds to eat.
- d. Introduce New Birds.** Pass out [1 manu card](#) per student making sure students next to each other have different cards. Say, *"Now that we did our nature walk and discussed what we observed, we are going to begin investigating the different bodies and habitats of other manu in Hawai'i. I am going to give each of you a manu card. You will look at your card and then discuss with a neighbor - what is the same and different about your birds?"*
- e. Discuss and Chart.** As a class build a chart that looks like:

<i>Body Feature</i>	<i>Function/Why it helps the bird</i>	<i>How many manu have this feature</i>
<i>Long legs</i>	<i>For walking in water</i>	<i>1</i>
<i>Small pointy beak</i>	<i>Eating insects</i>	<i>2</i>
<i>...</i>	<i>...</i>	<i>...</i>

Ask students to generate their ideas and continue to add them to the table. Make sure this chart is visible for everyone to see to help for Parts 2 and 3.

3. Part 2 Making Flipbooks

- a. Preparation.** Make sure to prepare the sheets of paper and your desired binding method that allows for students to flip through easily. Here is an example: https://www.firstpalette.com/craft/body-flipbook.html#google_vignette
- b. Make the Books.** Give students their sheets of paper and drawing supplies. Say, *"Today we are going to make flip books of the birds we investigated last class. You will be given sheets of paper that I cut into strips. One strip will be for you to draw the head of the bird, one strip will be for you to draw the wings and body of the bird and the last strip will be for you to draw the legs and feet of the bird. Choose at least 3 birds to draw. You may include a bird we say on our*

nature walk in addition to the ones we have on our cards. When your drawings are done we will bind it to make flipbooks.

- c. Assemble the Books.** Before part 3, assemble each student's book.

4. Part 3 Puke Manu (Bird Book)

- a. Introduce the Class's Puke Manu.** *"In Hawai'i some people speak Hawaiian so today we will learn some hua 'ōlelo which are Hawaiian vocabulary words. The Hawaiian word for bird is manu and the Hawaiian word for book is puke, as a class we will be creating a puke manu by using your flipbooks you are going to create a new bird! For example, (flipping through a book as you speak) I like the wings of the Koa'e, the beak and the head of the 'Akiapōlā'au and the feet of the nēnē and that's my fantasy manu (bird). You are creating your own manu (bird) that can look how you would like it to look so that we can create a book of different fantasy birds that we imagined."* *Emphasize that only one body part section is from one animal. For example, your manu (bird) can't have two different types of feet or two different heads on one body.
- b. Students' Manu.** Give each student their flipbook and own book page to complete. Ask them to spend a few minutes deciding which features they want their fantasy manu to have. Then say, *"Now that you have decided on how your new bird will look, you can draw it on this sheet of paper and complete the sentences at the bottom of the page to tell everyone about your manu."*
- c. Work Time.** Give students time to complete their pages.
- d. Book Construction.** Put together the book. If time allows, have each student present their bird to the class.

Student Task Worksheet

The student book page is linked [here](#).

Feedback and Scoring Guidance

Use the discussion in Part 1 to get an idea of how well students are observing the external parts of the birds on your walk. You can gather additional information about their connection between the external parts of the birds, patterns, and structure function when you make the chart as a whole class during Part 1. The table above is a reference of the key points to listen for when students are discussing the differences between bird bodies and how their bodies support their needs.

Information Highlights			
Bird Type	Bird Name	Distinct Features	Purpose
Forest Bird	'Akiapōlā'au	- Long and curved beak - Short wings - Small feet	- Curved beaks are used for finding insects in tree bark. - Small wings because they do not fly long distances. - Small feet are used to grab onto tree branches.

Raptor	Pueo	• Small beak • Big wing span • Big strong talons	• Big wing span is used to fly over open areas. • Talons are used to grab their food as they fly.
Water Bird	Nēnē	• Medium beak • Medium wingspan • Less webbed feet (different from ducks)	• Different webbed feet for traveling on lava rocks.
Sea Bird	Koa'e 'Ula	• Small beak • Big wing span • Small feet	• Wing span allows them to travel long distances between islands.
Migratory Bird	Kōlea	• Small pointy beak • Medium wing span • Long legs	• Long legs to be able to walk in shallow water. • Pointy beak so they are able to grab insects.

The student book pages in Part 3 to gather information about how well your students are using the DCI and CCC together to connect the external parts of the birds to survival and growth in their environments via the structure function sentence completions.

Background Information

For additional information about the birds in this task or to create additional bird cards, here are two websites:

- Hawaiian Birds: <https://dlnr.hawaii.gov/wildlife/birds/>
- Continent Birds: <https://www.nps.gov/cabr/blogs/the-remarkable-adaptations-of-birds-to-their-environment.htm>