# Grading Rubric Scenario: High School

## Introduction

Ms. Thomas has a high school special education class that includes two students enrolled in Biology. She provides her students with instruction aligned with the Texas Essential Knowledge and Skills (TEKS) for the course through their individual prerequisite access points. One student, Fabian, is accessing the curriculum using skills found in the Kindergarten TEKS, while the other, Maverick, is performing in the 0-8-month developmental range. Ms. Thomas takes grades using a task-analysis based grading rubric.

## Identify Prerequisite Skill Access Points to TEKS

In the general education Biology classroom, the students are working on TEKS 12(B).

*Science concepts: biological structures, functions, and processes. The student knows that multicellular organisms are composed of multiple systems that interact to perform complex functions.*

*The student is expected to: (B) explain how the interactions that occur among systems that perform functions of transport, reproduction, and response in plants are facilitated by their structures.*

(12) Science concepts--biological structures, functions, and processes. The student knows that multicellular organisms are composed of multiple systems that interact to perform complex functions. The student is expected to:

(A) analyze the interactions that occur among systems that perform the functions of regulation, nutrient absorption, reproduction, and defense from injury or illness in animals; and

(B) explain how the interactions that occur among systems that perform functions of transport, reproduction, and response in plants are facilitated by their structures.

(13) Science concepts--interdependence within environmental systems. The student knows that interactions at various levels of organization occur within an ecosystem to maintain stability. The student is expected to:

## Fabian

Ms. Thomas uses the Vertical Alignment document for Science to find the prerequisite access point for the student working at the kindergarten level. She finds the section on **Organisms and Environments** and sees that the student expectation to **observe and identify the dependence of plants on air, sunlight, water, nutrients in the soil, and space to grow** will work for Fabian.

**Organisms and Environments**

**Texas Prekindergarten Guidelines, VI. Science Domain, B. Life Science.** The student observes the unique features of organisms and what they need to survive and thrive.

**Texas Essential Knowledge and Skills, K–8, Organisms and environments.** The student knows that plants and animals depend on the environment to meet their basic needs for survival (K.12). The student knows that the environment is composed of relationships between living organisms and nonliving components (1.12). The student knows that living organisms have basic needs that must be met through interactions within their environment (2.12). The student describes patterns, cycles, systems, and relationships within environments (3.12; 4.12; 5.12). The student knows that interdependence occurs between living systems and the environment (6.12). The student understands that ecosystems are dependent upon the cycling of matter and the flow of energy (7.12). The student understands stability and change in populations and ecosystems (8.12).

**Texas Essential Knowledge and Skills, Biology, Science concepts.** The student knows evolutionary theory is a scientific explanation for the unity and diversity of life that has multiple lines of evidence (B.9). The student knows evolutionary theory is a scientific explanation for the unity and diversity of life that has multiple lines mechanisms (B.10). The student knows the significance of mater cycling, energy flow, and enzymes in living organisms (B.11). The student knows that multicellular organisms are composed of multiple systems that interact to perform complex functions (B.12). The student knows that interactions at various levels of organization occur within an ecosystem to maintain stability (B.13). The student is expected to:

- PK4.VI.B.1: Observe, investigate, describe, and discuss the characteristics of organisms.
- PK4.VI.B.2: Observe, describe, and discuss the life cycles of organisms.
- K.12.A: Observe and identify the dependence of plants on air, sunlight, water, nutrients in the soil, and space to grow.
- K.12.B: Observe and identify the dependence of animals on air, water, food, space, and shelter.
- 1.12.A: Classify living and nonliving things based upon whether they have basic needs and produce young.
- 1.12.B: Describe and record examples of interactions and dependence between living and
- nonliving components in terrariums or aquariums.
- 1.12.C: Identify and illustrate how living organisms depend on each other through food chains.
- 2.12.A: Describe how the physical characteristics of environments, including the amount of
- rainfall, support plants and animals within an ecosystem.
- 2.12.B: Create and describe food chains identifying producers and consumers to demonstrate how animals depend on other living things.
- 2.12.C: Explain and demonstrate how some plants depend on other living things, wind, or water for pollination and to move their seeds around.
- 3.12.A: Explain how temperature and precipitation affect animal growth and behavior through migration and hibernation and plant responses through dormancy.
- 3.12.B: Identify and describe the flow of energy in a food chain and predict how changes in a
- food chain such as removal of frogs from a pond or bees from a field affect the ecosystem.
- 3.12.C: Describe how natural changes to the environment such as floods and droughts cause some organisms to thrive and others to perish or move to new locations.
- 3.12.D: Identify fossils as evidence of past living organisms and environments, including common Texas fossils.

## Maverick

Maverick is accessing the curriculum within the 0-8-month developmental range, but the vertical alignment document only goes to the prekindergarten level. Ms. Thomas considers if the prekindergarten expectation to **observe, investigate, describe, and discuss the characteristics of organisms** would work for Maverick. To be sure, she checks the Texas Prekindergarten Guidelines for the child behaviors listed for the student to demonstrate the skill. However, those behaviors are too complex for her student's current performance level.

The student is expected to:

- PK4.VI.B.1: Observe, investigate, describe, and discuss the characteristics of organisms.
- PK4.VI.B.2: Observe, describe, and discuss the life cycles of organisms.

| PK3 Outcome | PK4 Outcome |
|---|---|
| ***No PK3 outcomes for this domain of learning.*** | **PK4.VI.B.1 Child observes, investigates, describes, and discusses the characteristics of organisms.** |

**Child Behaviors**

The child may:

- describe the color, size, and shape of organisms
- describe an organism's need for food, water, air, light, and shelter
- compare differences and similarities of animals and plants (e.g., fish live in water, all birds have feathers, we can eat some plants)

Next, Ms. Thomas consults the Texas Early Learning Guidelines and finds that the section on **Cognitive Development** under **Exploration and Discovery** will best match her student's learning needs. The student expectations for the **0-8-month range** to show understanding by **reaching out to touch objects** are within her student's level of performance.

| 0-8 months \| infants might | As a caregiver, you can |
|---|---|
| • Focus on caregivers' face and follow face or voice<br>• Turn head when a new person enters the room<br>• Reach out to touch objects<br>• Put objects in their mouth to touch and taste<br>• Reach out and grab new toys, and turn them over and over to explore or bang them<br>• Hit or kick toys to make them move over and over | • Stay close to and interact with infants<br>• Notice infants' reaction when new people enter the room<br>• Create surroundings without a lot of loud noises and distractions<br>• Place objects with different shapes, sizes, textures, and sounds within infants' reach (make sure the objects are safe to mouth)<br>• Name and describe objects infants are exploring and encourage them to continue to play with the objects by telling them you like their "music" or banging<br>• Give infants safe toys that produce interesting results or movements in response to their actions |

## Instruction and Grading

Mrs. Thomas integrates biology concepts into her lessons while tailoring instruction for Fabian and Maverick to align with the specially designed instruction (SDI) outlined in each of their IEPs. Currently, the general education Biology class is using diagrams and other graphic organizers as visual representations of the content as they discuss plant structure and interactions among plant systems. Ms. Thomas uses visual representations of the content for both students that incorporate the modifications and accommodations in their IEPs. During a whole group science activity, the students are observing, comparing, and discussing different plants from their experiment. One plant is healthy, while each of the other plants have been deprived of an element (light, water, nutrient-rich soil, space). Each of the unhealthy plants is labeled with an image that represents their deprived need. Ms. Thomas provides additional images, objects, and sensory experiences to reinforce the content. Later, Ms. Thomas will work with each student individually to evaluate their understanding of the content.

## Fabian

Ms. Thomas uses switches, an environmental control unit, images, and appliances with Fabian. Based on his prerequisite access point to the Biology TEKS, he is expected to **observe and identify the dependence of plants on air, sunlight, water, nutrients in the soil, and space to grow**.

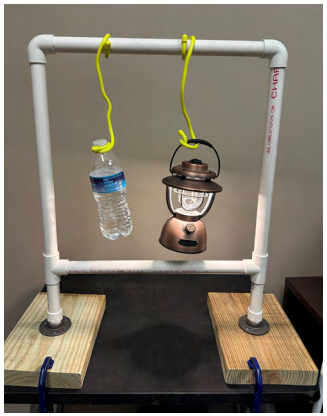
Throughout their unit on plants, Ms. Thomas used a lamp to represent light and a water flosser to represent water. For Fabian's comprehension activity, she will use these two appliances connected to an environmental control unit activated by two separate switches. One switch will turn on the lamp, while the other will turn on the water flosser, which squirts water into a cup. As part of the whole-group experiment, Ms. Thomas attached images to each unhealthy plant that represented their deprived need. The plant that did not receive light was labeled with an image of the sun, and the plant that did not receive water was labeled with a water droplet. Because Fabian requires visual supports to reinforce key vocabulary, the same images will be placed on the corresponding switches used during Fabian's activity. She uses the Hierarchy of Cueing and Prompting to preplan the basic supports Fabian needs built into the activity. Ms. Thomas knows she will need to model pressing the two switches before they begin. After each question, Ms. Thomas will also point to each switch and name Fabian's options before he responds. Any additional prompts Fabian requires, beyond those preplanned for each step, impact the prompt code and score. Fabian's physical responses are used for grading.

| Steps | Prompt Code and Score<br>**I** - Independent (5 points)<br>**V** - Verbal direction (4 points)<br>**G** - Gesture assist (3 points)<br>**M** - Adult model (2 points)<br>**P** - Physical assist (1 point) | Step Completion Score<br>5 points each |
|---|---|---|
| The teacher will say, "Plants need certain things to survive. Plants need light," then presses the sun/light switch. Then she will say, "Plants need water," then presses the water droplet/water switch. | | |
| 1. The teacher will ask, "What does the sun give plants that they need to survive?" The teacher will point to the switch with the sun image and say, "light" and then point to the switch with the water droplet image and say, "water." Fabian will press the switch with the sun image, activating the lamp. | I - 5 | 5 |
| 2. The teacher will ask, "What does the rain give plants that they need to survive?" The teacher will point to the switch with the sun image and say, "light" and then point to the switch with the water droplet image and say, "water." Fabian will press the switch with the water droplet image, activating the water flosser. | I - 5 | 5 |
| 3. The teacher will show Fabian the unhealthy plant deprived of water and ask, "What was needed to help this plant survive?" The teacher will point to the switch with the sun image and say, "light" and then point to the switch with the water droplet image and say, "water." Fabian will press the switch with the water droplet image, activating the water flosser. | V-4 (Prompted Fabian with, "Look at the plant, look at your choices, press your answer." | 5 |
| 4. The teacher will show Fabian the unhealthy plant deprived of light and ask, "What was needed to help this plant survive?" The teacher will point to the switch with the sun image and say, "light" and then point to the switch with the water droplet image and say, "water." Fabian will press the switch with the sun image, activating the lamp. | I-5 | 5 |
| **Total Points Available (# of steps x 10): 40** | **Prompt Score: 19** | **Completion Score: 20** |
| **Total Score** [(Prompt Score + Completion Score)/ Total Points Available] x 100= | [(19 + 20) / 40] x 100 = 97.5<br>**98** | |

**Comments in the Prompt Code and Score section have been included for training purposes and staff may find it helpful to list similar notes as they work with students.**

## Maverick

For Maverick, Ms. Thomas uses an activity mobile attached to his wheelchair tray to encourage him to reach towards objects. In his prerequisite access point to the Biology TEKS, Maverick is expected to **show understanding by reaching out to touch objects**.



Throughout their unit on plants, Ms. Thomas has been consistently pairing objects to the concepts discussed. In Maverick's comprehension activity, she will attach two paired objects from the science experiment to his activity mobile: a lit electric lantern (for light) and a half-filled plastic water bottle (for water). Ms. Thomas is going to provide an errorless learning experience by instructing Maverick to "Touch something a plant needs to survive," as both objects provided are correct responses. Maverick should reach out and touch an object on his activity mobile after the instruction is given. She uses the Hierarchy of Cueing and Prompting to preplan the basic supports Maverick needs built into the activity. Ms. Thomas knows that Maverick requires an auditory cue (jingling keys on a keychain) to orient his body in the direction he needs to reach for an object, and that he slumps back into his default neutral position in the chair after reaching. He also requires one minute of wait time between her instruction and when he may give a response. Any additional prompts Maverick requires, beyond those preplanned for each step, impact the prompt code and score. Maverick's physical responses are used for grading.

| Steps | Prompt Code and Score<br>**I** - Independent (5 points)<br>**V** - Verbal direction (4 points)<br>**G** - Gesture assist (3 points)<br>**M** - Adult model (2 points)<br>**P** - Physical assist (1 point) | Step Completion Score<br>5 points each |
|---|---|---|
| 1. The teacher will place a healthy plant on Maverick's wheelchair tray, shake the keychain above the plant, and state "Get ready." (One minute of wait time will be provided before expecting a response.) Maverick will shift his body in the wheelchair so his arm is able to reach forward. | I - 5 | 5 |
| 2. The teacher will say, "Plants need certain things to survive. Touch the plant." (One minute of wait time will be provided before expecting a response.) Maverick will touch the plant. | I - 5 | 5 |
| The teacher will remove the plant and attach the activity mobile to Maverick's wheelchair tray. | | |
| The teacher will touch the lantern and say, "Plants need light," then will touch the water bottle and say, "Plants need water." | | |
| 3. The teacher will shake the keychain above the activity frame and say, "Get ready." (One minute of wait time will be provided before expecting a response.) Maverick will shift his body in the wheelchair so his arm is able to reach forward. | I - 5 | 5 |
| 4. The teacher will say, "Touch something a plant needs to survive." (One minute of wait time will be provided before expecting a response.) Maverick will touch one of the two objects on the activity mobile. | G-3 (Knock on top of activity mobile three times to prompt Maverick to touch an attached object) | 5 |
| When Maverick touches an item teacher will reinforce the item touched by Maverick by stating, "A plant needs (light/water) to survive." | | |
| **Total Points Available (# of steps x 10): 40** | **Prompt Score: 18** | **Completion Score: 20** |
| **Total Score**<br>[(Prompt Score + Completion Score)/ Total Points Available] x 100= | [(15 + 20) / 40] x 100 = 87.5<br>**88** | |

**Comments in the Prompt Code and Score section have been included for training purposes and staff may find it helpful to list similar notes as they work with students.**

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