

Activity #3

Adaptations Game Show

● ● ● Class Period One *Adaptations Game Show*

Materials & Setup

- Horn or obnoxious-sounding noisemaker
- Timer or watch with second hand
- Chalkboard or large dry-erase board

For each team of two to four students

- A bell, buzzer, or noisemaker.

Instructions

- 1) Conduct the “Adaptations Game Show” using the instructions detailed in the teacher background section (pp. 24-26).

Journal Ideas

- Imagine a plant or insect that is perfectly adapted for life in the alpine/aeolian ecosystem. Draw or describe that “perfect” organism.

Assessment Tools

- Participation and conduct during the game
- Demonstrated knowledge of content learned during the unit
- Journal entries



Teacher Background

Hosting the Adaptations Game Show

Overview

This game helps students solidify and demonstrate their knowledge of environmental conditions in the alpine/aeolian ecosystem and how plant and animal life is adapted to these conditions.

The “Adaptations Game Show” is based on the T.V. game show, “Family Feud.” In “Family Feud,” teams compete with each other to provide the top eight or five (or another number) answers to a question that was posed to a group of survey participants. It is perhaps best known for the line, “Survey says...”

The basic idea behind the “Adaptations Game Show” is for teams of students to compete with each other to provide items on a list of adaptations that alpine/aeolian species exhibit to a particular environmental condition or challenge. The items on the list are based on readings and activities from the other activities in the unit.

Instructions

- 1) Ask one student to volunteer to be the time-keeper. Give that student the stopwatch to use.
- 2) Divide the class into two to four teams. It is difficult to manage more than four teams in this game. Have students move around the classroom so that team members are sitting together.
- 3) Each team should pick one spokesperson. Give each spokesperson a bell or noisemaker. This will be used for signaling that the team wants to try to answer the question in front of the group.
- 4) Once the teams are settled in, go over the object and rules of the game, which are:

Object: To answer the questions quickly and correctly, identifying plant and animal adaptations that help them survive and thrive in the environmental conditions of the alpine/aeolian zone.

Rules: Each team has a bell or noisemaker to signal that it wants to try to answer a question. The spokesperson is the only team member who can use this noisemaker or bell. She or he is also the only team member who can give the answer to the game host (teacher). Other team members can give suggestions to the spokesperson during the time allowed.

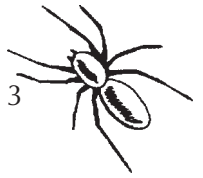
Summarize the remaining rules and procedures based on the rest of the instructions given below.

- 5) Write an environmental challenge on the board. Leave several blank spaces under it. Each of these corresponds with a plant or animal adaptation to that challenge.

For example:

Challenge: It’s WINDY up here!

- 1.
 - 2.
 - 3.
 - 4.
 - 5.
 - 6.
- 6) Read the environmental challenge to the class and say, “Go.” The first team whose spokesperson rings the bell gets to try to name one adaptation that fits that challenge.



- 7) Once you recognize the team that will be playing, the spokesperson has **20 seconds** to give an answer. Have the timekeeper measure 20 seconds, give a warning when 15 seconds have passed, and call “Time” when 20 seconds are up.

During the allotted time, team members may call out ideas to the spokesperson. After considering the suggestions, the spokesperson will answer the challenge with one plant or animal adaptation.

If that adaptation IS on the game host’s list:

- **Write the answer** on the board in one of the blank spots.
- **Score a point** for that team.
- **Give that team another 20 seconds to come up with another adaptation.** Continue on until all adaptations have been listed OR until the team fails to give an answer that is on the game host’s list.

If the spokesperson does not give an answer within 20 seconds, OR if the answer given is not on the list:

- **Let the other teams have a chance** to add an adaptation. Read the challenge again, say “Go,” and allow the team that rings their bell first to play.

- 8) Continue this process until all adaptations for each challenge have been listed.

- Use an “applause meter.” If a team’s response is not on your list and they protest that it should be, let the spokesperson explain their reasoning. Then ask the rest of the class to applaud if they think the response is actually an adaptation to the environmental challenge. Use the level of applause and your own discretion about whether to score a point for the response.
- Make sure all teams have a chance to play, even if it means bending the rules a little. You’re the boss!
- Optional bonus round. At the end, let the team that has the fewest points play this bonus round, with the “prize” for getting both answers being the number of points needed to tie with the first place team.

Challenge: There’s nothing to eat up here!
[You may explain this further by saying that the total amount of plant and animal life (or biomass) in the alpine/aeolian ecosystem is low compared to other ecosystems.]

- Eating insects blown in from below
- Going out to eat (petrels)

Other Tips for Hosting the Alpine/Aeolian Adaptations Game

- Keep score on the board where everyone can see.
- Have fun and be dramatic! Use your own noisemaker to signal a team response that is not on your list of adaptations. Use a game show host voice or gimmicks.



Game Host Challenge and Adaptations List

Challenge: It's WINDY up here

- Tough leaves
- Strong, woody stems
- Tall flower stems with small seeds that can be easily carried by the wind
- Dense, compact foliage growing close to the ground
- Flightlessness
- Finding shelter in rock crevices or burrows
- Eating insects and plant materials blown in from elsewhere
- Using wind-blown debris in burrows or larval tubes

Challenge: It's SUNNY and HOT during the day (and the ground is hot, too)

- Silver hairs (reflecting solar radiation)
- Light colored leaves
- Leaves that spread out (shading the ground under the plant)
- Activity at night, in the early mornings, or in the evenings (foraging, for example)
- Take shelter during the hot part of the day
- Shelter nests and young under rocks or in burrows (especially in plant roots or other parts where they'll have plenty to eat while they're growing up)
- Narrow and/or small leaves (minimize surface area exposed to the sun)

Challenge: It's DRY up here!

- Succulent leaves (store water in their tissues)
- Waxy leaf surfaces
- Shallow, spreading roots that catch water as it filters through
- Insects take moisture from plant leaves and roots
- Thick exoskeletons
- Semi-dormancy or burrowing during long dry periods

Challenge: It's COLD at night

- Leaves grow in a rosette form (protecting the center part of the plant)
- Hairy coverings (help insulate leaf tissues and insects)
- Succulent leaves containing a gel
- Small flowers that are encased in thick protective shell to protect sensitive flower parts
- Shelter nests and young in protective, insulating cases
- Take refuge in burrows or under rocks

Challenge: It's RAINY and COLDER here during the winter

- Seasonal life cycles (moths, flowering plants)
- Leave during the winter (petrels)