

Lesson Plan: Ecosystem Super-Teams

Subject: Life Science

Grade Level: 6th Grade (Designed for Cora, age 11)

Time Allotment: 50 Minutes

Materials Needed

- Plain or construction paper (3-4 sheets)
 - Colored pencils, markers, or crayons
 - A pencil
 - Access to a device for watching a short video (e.g., a tablet or computer)
 - Pre-selected video clip: Search for "Meerkats Sentinel Duty" or "Wolf Pack Hunting" (a 2-3 minute clip from a nature documentary like Planet Earth works perfectly).
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1. Learning Objectives

By the end of this 50-minute lesson, Cora will be able to:

- **Identify** and **explain** at least two reasons why animals live in groups (e.g., for protection, hunting, or raising young).
- **Design** a "Team Playbook" for a specific animal group, illustrating their cooperative roles, communication methods, and survival strategies.
- **Analyze** and articulate one major advantage and one potential disadvantage of group behavior for an animal species.

2. Alignment with Standards

This lesson aligns with the Next Generation Science Standards (NGSS):

- **MS-LS2-2:** Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. This lesson focuses specifically on intraspecies interactions (cooperation and competition within a single species).

3. Lesson Procedure & Instructional Strategies

Part 1: The Hook - Are We Like a Wolf Pack? (5 minutes)

- **Instructional Strategy:** Inquiry-based discussion to activate prior knowledge.
- **Activity:** Begin with a relatable question. "Cora, think about a time you worked on a team, maybe in a sport, a game, or even just planning something with friends. What makes a team work well together? What kinds of problems can happen on a team?"
- **Transition:** After she shares, say: "That's really interesting! Animals have teams, too. They don't have coaches or rulebooks, but their survival depends on how well they work together. Today, we're going to become 'Ecosystem Coaches' and figure out their game plans."

Part 2: Exploring Animal Super-Teams (15 minutes)

- **Instructional Strategy:** Direct instruction combined with visual media and guided discussion.
 - **Activity 1 - Brainstorming (5 min):** "What animals can you think of that live and work in
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groups?" (Examples: wolves, lions, bees, ants, meerkats, dolphins). As she lists them, ask, "Why do you think it's better for them to be in a group instead of alone?" Guide the discussion toward two key ideas: **1. Safety in Numbers** (protection from predators) and **2. Better Teamwork** (hunting, finding food, caring for young).

- **Activity 2 - Video Analysis (5 min):** Watch the short video clip (e.g., "Meerkats Sentinel Duty"). Before playing, say: "As you watch, be a detective. Look for two things: How are these animals helping each other? And how are they communicating?" After the video, discuss what she observed (e.g., one meerkat stands guard while others eat; it makes a special sound to warn of danger).
- **Activity 3 - Pros vs. Cons (5 min):** "We've seen how great teamwork is. But can you think of any downsides to living in a big group?" Guide her to think about challenges like: having to share food (competition!), diseases spreading more easily, or being more noticeable to predators. Create a simple T-chart on a piece of paper labeled "Advantages of Group Life" and "Disadvantages of Group Life" and jot down the ideas.

Part 3: Main Activity - Design an Animal Team Playbook (20 minutes)

- **Instructional Strategy:** Project-based learning, creative expression, and application of knowledge.
- **Activity:** "Now it's your turn to be the coach! Your mission is to create a 'Team Playbook' for an animal group. You can pick a real animal we talked about, or you can invent your own! Your playbook needs to have three sections."
- **Instructions for the Playbook:**
 1. **The Roster and Formation (Drawing):** On the first page, draw the animal group in their habitat. Show them performing a group action (like hunting, building a home, or defending against a predator). Give your playbook a cool title, like "The Wolf Pack's Guide to Survival" or "The Secret Strategies of the Honeybee Hive."
 2. **Special Plays (Jobs & Roles):** On the next page, describe at least three "jobs" or roles that different animals in the group have. For example: The Lookout, The Hunter, The Babysitter, The Queen Bee, The Scout. Briefly write what each role does for the team.
 3. **Secret Signals (Communication):** On the last page, explain how your animal team communicates. Do they use sounds, body movements, or smells? Invent and describe at least two "secret signals." For example: "A high-pitched chirp means a hawk is overhead," or "Wagging a tail to the left means 'follow me to the food.'"

Part 4: The Post-Game Show - Presentation and Reflection (10 minutes)

- **Instructional Strategy:** Oral presentation and reflective discussion for assessment.
- **Activity:** Cora presents her "Animal Team Playbook." As she explains her drawings and ideas, ask guiding questions to check for understanding:
 - "What is the most important 'play' your team has for survival?"
 - "What would happen to your team if one animal didn't do its job correctly?"
 - "Based on your playbook, what do you think is the biggest advantage for your animal team? What's their biggest challenge or disadvantage?"
- **Closure:** Connect back to the beginning. "It seems like animal teams and human teams face some of the same challenges, like needing good communication and everyone doing their part. You did a fantastic job coaching your team today!"

4. Differentiation and Inclusivity

- **For Support:** If Cora is feeling stuck on which animal to choose, offer a "Starter Pack" with 3-4 animal choices (e.g., Meerkats, Lions, Ants) and a few fun facts about their group behavior to spark ideas. A simple worksheet template for the playbook can also be provided.
- **For Extension:** Challenge Cora to add a "Rival Teams" section to her playbook. How does her

animal group compete with another group in the same ecosystem for resources like food or territory? Or, ask her to write a one-paragraph story from the perspective of an animal in her group on a typical day.

5. Assessment Methods

- **Formative Assessment:** Teacher observation of Cora's participation in discussions, her answers to questions during the video analysis, and her thought process during the brainstorming session.
- **Summative Assessment:** The completed "Animal Team Playbook" serves as the primary assessment. It will be evaluated based on its creativity and how well it demonstrates an understanding of the key concepts:
 - Does the playbook clearly show cooperation?
 - Are specific roles or jobs identified?
 - Is there a clear method of communication included?
 - Can Cora articulate an advantage/disadvantage of her team's strategy during her presentation?