Engage: Survival of the Fittest Challenge

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Objective

In this game, you will simulate how animals with different traits compete for limited resources across multiple generations, modeling the process of natural selection. Your goal is to keep your animal alive by adapting to various environmental changes and resource availability.

Game Components

- **Animal Trait Cards**: Represent different animals with distinct traits like speed, camouflage, and size.
- **Environment Cards**: Describe specific environmental conditions that affect resource availability (food, water, shelter).
- **Resource Tokens**: Each round begins with **30 tokens** for each resource category: food, water, and shelter.
- **Scenario Cards**: Present real-world challenges such as drought, flooding, or human impact that affect resources.
- **Drawing Box/Bag**: A small box or bag for players to draw cards from randomly.

How to Play

Setup

1. **Group Formation**: Divide into groups of 3-5 students.
2. **Prepare Cards**: Shuffle the **Animal Trait Cards**, **Environment Cards**, and **Scenario Cards** separately.
3. **Drawing Box/Bag**: Place the shuffled **Animal Trait Cards**, **Environment Cards**, and **Scenario Cards** into separate boxes or bags. This ensures cards are drawn at random without players seeing them.

4. **Resource Tokens**: Place **30 tokens** for each resource category (food, water, shelter) in the center of the playing area.

Game Rounds

Each round represents one "generation" of animals surviving in a specific environment.

1. **Every Player chooses their animal with traits from the Animal traits cards.**
2. **Draw Environment Card**: At the start of each round, one player draws an **Environment Card** from the designated box or bag and reads it aloud. Place the card face up.
3. **Match the Scenario Card**: Next, match the **Scenario Card to the Environment Card** and apply its effects to the available resources, adjusting the number of tokens based on the scenario.
4. **Starting with 60 tokens per category, compete for Resources**: Each player must now **compete for resources** based on their animal's traits:
   ○ Go around the table, and each player states how their animal's traits help them compete for **food**, **water**, or **shelter**.
   ○ Players may ask questions like "How does my camouflage help in this environment?" or "Does my speed give me an advantage over other animals?"
5. **Claim Resources**: After discussing, players take turns **claiming resources** (food, water, and shelter). If there aren't enough resources for everyone, players with traits that provide an advantage in that environment will claim first. Discuss and decide fairly which traits give the best advantages.
6. **Survival Check**: After claiming resources:
   ○ If you get **at least 1 food, 1 water, and 1 shelter**, your animal survives the round and you keep all your survival points.
   ○ If you cannot get enough resources, lose **1 survival point** for every missing resource (food, water, or shelter).

Ending the Round

- After every round, discard the current environment and scenario cards and draw new ones.
- Continue playing rounds until each group has played **5 rounds** (5 generations).

Winning the Game

- The player with the most survival points after 5 rounds is the winner.
- If all players lose their survival points, no one wins, symbolizing extinction.

Name: _____

Date: _____

Survival of the Fittest: Game Tracking and Reflection Worksheet

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1. Animal Traits and Strategy

- What animal did you play as?

- What were your animal's main traits?

- How did these traits help or hinder your survival in different environments?

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2. Game Rounds Tracking

Round	Environment	Scenario	Tokens Gained (Food, Water, Shelter)	Tokens Lost (Food, Water, Shelter)	Survival Outcome
1					
2					
3					
4					
5					

3. Reflection Questions

1. **Natural Selection Insight**: How does this game represent the process of natural selection? Provide specific examples from your gameplay.

2. **Resource Competition**: Were there any rounds where you struggled to secure resources? If so, why?

3. **Adaptation and Strategy**: Did your animal adapt or change its strategy as the game went on? If yes, how?

4. **Survival and Traits**: Which traits turned out to be most helpful in the game, and why?
   Answer:

[   ]

5. **Real-World Connections**: What real-world scenarios might mirror the game's events (e.g., climate change, habitat destruction)?

[   ]

4. Conclusion

- Summarize your experience with the game and what you learned about survival and competition among animals.

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Teacher's Guide: Facilitating the "Survival of the Fittest" Card Game

Objective

To help students model natural selection by simulating a population of animals competing for limited resources in various environments, encouraging critical thinking about survival traits and adaptation.

Preparation

1. **Materials Needed:**
   - **Animal Trait Cards**: 40 different cards representing various animals with distinct traits.
   - **Environment Cards**: 20 different cards representing diverse environmental conditions.
   - **Scenario Cards**: 15 cards describing real-world challenges (e.g., drought, flood).
   - **Resource Tokens**: 90 tokens each for food, water, and shelter (total of 270 tokens).
   - **Drawing Box/Bag**: Three separate boxes or bags for animal trait cards, environment cards, and scenario cards.
   - **Student Tracking Document**: Copies of the gameplay tracking and reflection worksheet for each student.
   - **Timer**: Optional, to keep track of round duration.
2. **Setup:**
   - **Organize the Classroom**: Arrange desks or tables in groups of 3-5 to facilitate teamwork.
   - **Prepare the Cards**: Shuffle each set of cards (Animal Trait, Environment, and Scenario) separately and place them in their designated boxes/bags.
   - **Distribute Resource Tokens**: Place **60 tokens each** for food, water, and shelter in the center of the playing area.
3. **Explain the Objective**: Briefly introduce the concept of natural selection and how this game will simulate the competition for resources among animals.

Facilitating the Game

1. **Group Formation**:
   - Divide the class into groups of 3-5 students. Ensure that each group has enough space to discuss and strategize.
2. **Distributing Animal Trait Cards**:

- Instruct each student to draw one Animal Trait Card from the box/bag at random. Remind them not to look at the other cards.
- Allow a moment for students to read and understand their traits. They can refer to the traits during gameplay to develop strategies.

3. **Gameplay Rounds**:
   - **Start Each Round**:
     - Announce the beginning of the first round.
     - Instruct one player from the group to draw an Environment Card from the box/bag and read it aloud.
     - Display the Environment Card where all students can see it.
   - **Distribute Resource Tokens**:
     - Inform students that **60 tokens** of each resource (food, water, shelter) are available to compete for this round.
   - **Draw a Scenario Card**:
     - Have another student draw a Scenario Card and read it aloud. Discuss its implications on the resource availability.
   - **Competing for Resources**:
     - Go around the table and let each student explain how their animal's traits help them compete for food, water, or shelter.
     - Encourage discussion by asking questions like: "What advantages does your animal have in this environment?"
   - **Claiming Resources**:
     - Allow students to take turns claiming resources. Ensure fairness by discussing which traits give the best advantages in resource acquisition.
     - If resources are limited, students with advantageous traits should have the first opportunity to claim.
   - **Survival Check**:
     - After all resources are claimed, check if each student has at least **1 food, 1 water, and 1 shelter**.
     - If they do, they survive and keep their points. If not, they lose survival points based on missing resources.

4. **Ending Each Round**:
   - Announce the end of the round. Discard the current Environment and Scenario Cards.
   - Repeat the process for a total of **5 rounds** (5 generations).

5. **Wrap-Up**:
   - After the final round, tally the survival points for each student. Discuss the outcomes.

- Ask students to reflect on their strategies and the traits that helped or hindered their survival.

Post-Game Activities

1. **Group Discussion**:
   - Lead a class discussion about the experiences and observations made during the game.
   - Ask guiding questions:
     - How did different traits affect survival?
     - Were there any surprises in how traits played out in different environments?
     - How can this game be related to real-world examples of natural selection?
2. **Reflection Assignment**:
   - Collect the student tracking documents. Encourage students to complete their reflection questions based on their gameplay experiences.
3. **Assessment**:
   - Consider assessing students on their participation, understanding of natural selection concepts, and their ability to articulate their strategies and reflections.

Tips for a Successful Game

- **Encourage Teamwork**: Remind students that this is a collaborative learning experience. They should support each other's strategies.
- **Facilitate Discussions**: Engage with students during discussions to deepen their understanding of the traits and environmental impacts.
- **Be Flexible**: If students have questions or need clarification, be prepared to adapt the game rules or provide additional context.
- **Emphasize Learning Outcomes**: Reinforce the connection between gameplay and real-world concepts of natural selection, adaptation, and survival.

Animal Cards: LINK   Token Cards

Environment Cards: LINK

Scenario Cards: LINK