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SUDBURY, ONTARIO, CANADA

Interactions in Ecosystems	Grade 7 – Interactions in the Environment

Game Rules Summary

This document contains a summary of the game rules for each day, with the intent of providing a good overview of how the game unfolds. For some of the detailed instructions on how to play each day you will need to look at that day's lesson plan.

- Each game board consists of four parts made by four students (ideally). The game can also be played by 3 or 5 players (or even more if desired), but always by connecting four sheets to make one whole game board. If you have groups of 3 or 5 students you will have to adjust how many cards each student picks up etc. a few times.
- Students take turns moving their game token around the board by rolling a dice.
- When students land on a field they have to pick up or play ONE card in accordance with the rules of the day.
- Cards that are picked up will give or subtract points from the player. The goal is not always to accumulate the most points – see daily rules.
- On some days, fields are colour coded. Each day the colours represent something different but they determine from which pile players pick up a card when they land on a particular field.
- Every day there will be new cards. Some cards will be used on multiple days, helping to re-enforce their content.

- **Day 1 – Biotic versus Abiotic**
  - Card types: biotic and abiotic
  - Colour coding: randomly place equal numbers of green and gray fields on the path.
  - As you move around you encounter biotic or abiotic elements of ecosystem.
  - All points are positive.
  - Goal: accumulate the most points.
- **Day 2 – The Food Web**
  - We are learning about producers, consumers and decomposers, the food web, and what happens if a link in the web breaks.

- Card types: producers (green points), consumers (turn green points into red points), decomposers (erase red points)
- Goal: To survive for as long as possible (not run out of green points)
- Round 1 Colour Coding: More production than consumption. Randomly place 22 Green fields (producers), 13 red fields (consumers), and 13 gray fields (decomposers).
- Round 2: have fewer production fields (e.g. 13) and more consumption (e.g. 22)
    - This will show what happens if consumption outweighs production – an ecosystem reaches a limit.
- Round 3: 16 fields of each colour.
    - Distribute "break in food web" cards to all groups once the round has run for a few minutes. These cards have to be picked up by the next player whose turn is next, no matter what colour field they land on. **Keep playing until you've handed out all three cards.** You can now see the cumulative effect of breaks in the food web (with the example of the bear being affected the most).

- **Day 3 – Invasive Species**
    - Today each player represents a life form that lives in the ecosystem and consumes "resources". One player will be an invasive species. Each player receives a profile card for his or her animal.
    - We add a food and habitat resource "bank".
    - Each turn players have to use a certain amount of resources (based on the animal profile they are given).
        - The invasive species has a chance to expand habitat faster, which will lead it to eventually take over from the others.
    - Some food resources are added each turn.
    - Goal: to survive the longest.
- **Day 4 – Human Influence**
    - Round 1: players play humans.
        - Humans get to make decisions – draw cards at beginning that they then play when they want to.
        - Place the card beside the field where they have altered the environment. The card says what roll will allow life forms to adapt and what rolls will make them lose points. Rolls are different for each life form as some life forms more readily adapt to certain changes.
        - 10 cards are "no impact" cards.

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- All humans start in different places. This round should be fairly quick – it will take 6 turns per player if you have 4 players playing (as they each have 6 cards to place)
  - Round 2: Players play life forms.
    - Life forms start with 10 points. If they can't adapt they lose one or several points.
    - All life forms start from the same field (players can freely choose this field)
    - Goal: To make it around the track without reaching zero.
  - Repeat several times with more and more changes by humans. To see that life forms can adapt to some changes but can't if it's just too much.
    - Number of "no impact" cards is reduced each round.
- **Day 5 – Protection Programs**
  - Same rules as day 4
  - However, we now add cards allowing humans to institute protection (these replace the "no impact" cards from the day before) –
    - When life forms step onto those fields they recover from losses they may have sustained earlier (when hitting an altered field).
  - How many points do they end up with? Can you reach a balance between human activity and protection (yes)? Design it so that life forms may end up with roughly the same number of points they started out with.

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