6TH GRADE 4-H

RESOURCES AND POPULATION

Resource Availability and Population Growth/Decline

Materials: 1 deck of cards for every group of 6-8. Watch this video to learn how to play the traditional game of "spoons." www.youtube.com/watch?v=p8FZl5leLb4

Supply of items, “chips,” to keep track of how the participant has fared over multiple rounds of cards. (Plastic spoons, sticks, etc.)

Game Design: Break the class up into groups of 6-8. Shuffle a deck of cards, have a “dealer” give each participant 4 cards, and put four "spoons" in the middle of the group for each round.

The game design is similar to the traditional “Spoons” game; however, in this game, the cards represent resources (diamonds represent water, the hearts represent air, the spades represent food, and the clubs represent shelter). Remember, each player can only hold 4 cards at a time. Students represent a type of animal or plant in our ecosystem. That animal/plant needs one of each of these resources to survive the year and the cards need to be the same “kind.” Thus, the student needs “four of a kind” to win. For example, four nines, four twos, four aces are all winners. Four of any “kind” of card wins. The first player out (getting four of a kind) gets two spoons. They earned all of their resources early in the year and had time to reproduce. The game continues without the first player out and the next two players with four of a kind get each of the two remaining spoons. Good news for them, they got all the resources they needed for the year; but it was too late to for them to reproduce. Bad news for those who did not get spoons, they are short on resources; and their survival is questionable. After the first round, if someone with a spoon does not earn a spoon in that round, they need to give a spoon to the person on their left.

After the second round, go to each group and remove 3 “random” cards from each suit (12 cards total). Don’t tell students which cards you are removing. Make sure that you leave at least 3 possible “4 of a kind combinations” remaining in the deck.

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Let students know that we have had a rough year, fire has destroyed much of our shelter, some water was polluted by the run-off, food supplies were burned, and the air has stayed polluted from the smoke. Thus, there are less resources for everyone. Play two rounds more. Of course, if time allows, play as many rounds as you would like.

Allow at least 10 minutes to wrap-up. First, ask students: "When the resources were more limited after the fire, was it harder to collect what you needed to survive?" Hopefully, the answer will be "yes." "So, when we have disasters on earth, what happens to the resources needed for human survival? "Hopefully, they will understand that the resources decrease.

Ask the students: "If we find a way to create more resources (more cards and spoons), what would likely happen to the number of humans living on earth?" (Increase)

"If a large enough disaster happens, and resources became scarcer (less spoons and cards), what would likely happen to the number of humans on earth." (Decrease)

If the number of humans keeps increasing (more players, no more cards or spoons), and we don't find a way to create more resources, what will eventually happen to the human population. (Decrease)

Then, have members of the teams stand for how many spoons they collected. Ask, "Who has 5 or more spoons? If you do, your animal is doing well." At 4 spoons, let them know that they generally preserved the population of their animal. At 3 spoons let them know that they had a slight population decrease. At 2 spoons, let them know that they have lost so much of their population that people are concerned with their survival. At 1 spoon, let them know that their species is critically endangered. A 0 spoons, let them know that they, sadly, are now extinct.

Indiana Standards:

MS-LS2-1 Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

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