RIVERSIDE'S
KNOWLEDGE PATH

THE WEB OF LIFE
GRADE 3 – 5

Become a member of an ecological community and learn how you fit into the web of life in this role playing educational activity.

WHAT YOU'LL LEARN:

- How to define the concept of an ecosystem
- Understand the importance of interdependence to the function of an ecosystem
- How to construct a food web
- Vocabulary: Web of life, Ecology, Food chain Food web, Producer, Consumer, Herbivore, Carnivore, Omnivore, Decomposer

CURRICULUM OUTCOMES:

- Learners investigate variety of local natural habitats and their interconnectedness of and within local habitats

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MATERIALS:

- Index card with the name of the organisms written on one side or a piece if blank paper with the name of the organism written on it
- Ball of string
- Tape

This is an individual or group indoor/outdoor activity, it can be done in outdoor spaces of the school, home, backyard, or nearby parks/trails.

WHAT TO DO:

- Introduction:
    - A forest has complex interactions with all the living and non-living parts of the ecosystem. In a forest, a community of living organisms are dependable upon each other in many ways. For example, our community consists of our school, neighbourhoods, towns, families and the forest that houses our knowledge path.
    - Form an understanding of the ecological community with the identification of Greek words 'Oikos' (house) and ‘logos’ (study of) as the basis of word "ecology". Ecology is a study of how plants and animals interact with one another and the environment that they live in.

- Brainstorming session:
    - Encourage the class to name some of the members of ecological communities. Some suggestions are forests, fields, streams, oceans, a lake, our backyard, a pond, or a fallen log.
    - Encourage students to name the members of these communities. Example, trees, shrubs, grass, wildlife, insects, fish, fungi, bacteria, lichen are part of the forest community. Oceans have things such as fish, seaweed, clams, snails, algae, bacteria. A fallen log has fungi, bacteria, sow bugs, centipedes, mice, moss and so on.
    - The forest community distributes energy to all community members. Energy entering the ecosystems such as sunlight is transferred by the producers into chemical energy made during photosynthesis. The energy is transferred to all the organisms through the food web.
    - Plants are the producers of the ecosystems. They use sunlight to produce energy in the form of photosynthesis. Herbivores eat plants, carnivores are animals that eat other animals, omnivores eat both plants and animals. Decomposers break down waste materials and recycle in a form that plants could use it again. If we take all the food chains and examine their relationship with each other, we have a food web.
    - Brainstorm the concept of interdependence and adaptations within the community. Some ideas are,
        - They all need energy (concept of interdependence)
        - The success of a community depends upon the success of individuals. Example, what will happen to the school if there were no teachers or students (interdependence)

        - The success of individuals depends upon the success of the community, example, what will happen if we don't have hospitals, grocery stores? (interdependence)
        - Organisms react to changes in their community. For example, what if deer ate all the grass in the area it was foraging (concept of adaptations)
        - The community changes in response to changes by individual organisms. Example, more people, more houses (adaptations)

- Food web Activity:
    - When something happens to one part of the ecological community, everything that is connected to it is affected.
    - Encourage the students to play the role of a member of the forest community. Students should represent producers, herbivorous, carnivorous, decomposers, humans.
    - Provide every student with an index card with the organism name on one side. Motivate them to research about the community member and write the information on the other side of the card. Students should provide information on,
        - Where do they live?
        - What do they eat?
        - What other organisms might eat them?
        - How do they interact in the community? (with other plants and animals)
    - After the students are done with it, have them form a circle, get them tape their cards on their shirts so that other students can see what part of the community they represent.

- Making a food web:
    - Have the students share the information about the organism that they are representing
    - Hand over the end of a ball of string to one of the producers (plants)
    - Let the producer hold the string and pass the ball to the organism that eats it, then that organism passes the ball to the other organism who preys upon it.
    - Pass the ball to the decomposer. Continue with the process till everyone is connected

- Have everyone pull the food web gently and represent the interactions taking place in the food web. Ask what could happen if one or more organisms are removed from the food web.

ASSESSMENT:

- Learners could be assessed by demonstration of their research of the community member they represented during the activity and their understanding on the concept of interconnectivity, food webs and ecology. They would also be evaluated on their understanding of concepts while making a food web activity.

EXTENSION:

- Get students to write a scenario in their notebooks where they write and provide examples about how the success of individual is dependent on the success of community and the success of community depends upon the success of individual.

CREDIT/REFERENCES: This activity has been modified from The Web of Life activity that was developed by learnforest.org