

MATTER CYCLES GAME - TEACHER DIRECTIONS

Materials

Item	Quantity	Notes
Classroom Supplies		
Connectible blocks, such as Unifix® cubes or Legos®	150	To represent nutrients in the game.
Ribbon or tags, four colors	1 per student	For students to wear to identify their in roles (plant, herbivore, carnivore, and scavenger or decomposer).
Tubs, plastic	3	To hold blocks of "air," "water," and "soil."

Game Set Up

1. Prepare an open space in the classroom to play the game.
2. Assign each student a role in the game: Plant, Herbivore, Carnivore, Decomposer, or Scavenger. Give each an identifying tag or colored ribbon to wear.

TEACHER NOTE: You may need to explain that this game involves a simplified version of a food chain. There will be only one kind of carnivore.

3. Explain that the loose blocks in the three tubs represent "Air," "Water," and "Soil." Further explain that when the blocks are stacked, it means that matter has been "locked up" in an organism's body.

TEACHER NOTE: You may be familiar with some games that use yarn to represent energy flowing through food webs. This game uses blocks because nutrients are matter, not energy.

Playing the Game

Guide the students to play the game following the directions on their Teacher Masters. Use the following steps to assist them.

1. Plants represent their use of matter by stacking three of the blocks together to make a plant. Each Plant collects 12 blocks and makes four "plants." They stand together in a "meadow," holding the plants in their hands.
2. Herbivores go to the meadow to eat plants. Each Herbivore collects six stacked plants. (If a Plant is left without any blocks, it walks back to the three tubs of extra matter and builds a new plant.)
3. Herbivores drop two stacks of blocks on the floor to represent dung.
4. Decomposers and Scavengers collect all the dropped stacks, pull apart the matter, and bring it back to the tubs. Plants continue to build new plants with this extra matter (with a limit of four plants each).
5. Carnivores eat Herbivores. Each Carnivore takes all of the stacked matter from one Herbivore. "Consumed" Herbivores leave the game.
6. Carnivores drop one stack of blocks on the floor as dung.

7. Again, the Decomposers and Scavengers collect the dropped stacks, pull apart the matter and bring it back to the tubs.
8. Herbivores and Carnivores look at their tags or ribbons, and identify those that are now “dead” of natural causes. The dead drop their block stacks on the floor and leave the game.
9. Decomposers and Scavengers collect the dropped stacks, pull apart the matter, and bring it back to the tubs.
10. After a few herbivores have been consumed, call a “time out” in the game, and ask the students to look at where the matter is. Explain that what is missing in the game are all the Herbivore and Carnivore offspring that would continue the cycle of feeding.
11. The “eaten” and “dead” Herbivores return to the game, to be followed by the “dead” Carnivores.