



Ideas from living systems

Objectives

- To explore how the natural world works.
- To define biomimicry and explore why it is a good idea to take insights from living systems.

Curriculum

Science

Materials

- Access to a natural area (e.g. woodland, field or a park)
- Pieces of paper
- Hat

Procedure

- Write a number of functions that nature does on individual pieces of paper (e.g. 'shed water', 'keep clean' or 'reduce erosion') - see 'What Nature Does' box below for ideas.
- In groups of 2 or 3, ask the children to pick one piece of paper out of a hat and to gather examples illustrating this function. Allow a period of time (10 to 20 minutes).
- Walk with the whole class through the area and share ideas. Children can explain how the natural elements they identified meet this function. For example, while walking by a tree, a group may say, "We found something here. Our function was 'reduce erosion'. This leaf has little teeth on the edges so that when water slips off of it, it is broken down into smaller drops. The smaller drops have less force to disturb soil, so the tree's leaves help reduce soil erosion".
- Stimulate discussion about what we can learn from living systems. "What did you learn through this activity? Is this how you're used to looking at plants and animals? How is it different? Explain what biomimicry means. *Bio* means life, *mimicry* means to imitate life or nature. Biomimicry is the science of studying nature's best ideas and then adapting them to solve human problems.

What nature does

Here are some examples of functions you can ask children to explore nature for.

Attach	Create flow	Move
Balance	Decompose	Power without pollution
Buffer (e.g. from impact)	Detect	Protect
Collect (e.g. water, sunlight, raw materials)	Grip	Recycle
Communicate	Heat up	Shed water
Connect	Hold onto	Stick together
Cool down	Insulate	Store
Cooperate	Keep clean	Withstand wind
Coordinate	Make stuff at ambient temperature	
Create colour		

Source: The Biomimicry 3.8 Institute