

Balancing Act in the Coral Reefs

Overview: Students will understand that there are many actions, both positive and negative, that can affect the health of a coral reef.

Episode Connection: Going Green

Time Required: One 40-50 minute class period.

Objectives

Students will be able to:

1. understand the positive and negative actions that can affect the health of a coral reef; and
2. learn what they can do to help with reef conservation and preservation.

Materials

- 1 Jenga™ or Uno Stacko™ game per 8 students
- 1 copy of the “Balancing Act” game cards, cut out, for every 4 students

Background for Instructor

The coral reef ecosystem is extremely interconnected; even a small action can impact the entire reef. In this activity, students will play a game to illustrate this point. Each activity indicated on the game cards can have either a positive or negative effect on the health of the reef system. Each action builds on the others—the positive actions make the reef more stable, while the negative actions will can cause the reef to collapse.

Instructions

1. Divide the students into teams of four and provide each team with a set of “Balancing Act” Cards and a Jenga™ or Uno Stacko™ game.
2. Ask students to follow the instructions provided with the game to stack the blocks but instead of using all of the blocks, have each team stack 24 blocks—three blocks per level and stacked eight levels high.
3. One student at a time will draw a card from the pile. When a student receives a negative card that asks them to remove blocks, they must remove the indicated number of blocks from any complete row (excluding the top) and place them on the top, completing a row or beginning a new row. This will make the game stack less stable. When a student receives a positive card, the students can remove the indicated number of blocks from the top row and keep them to the side. The fewer rows, the more stable the game stack.
4. The game continues until the game stack falls down.

Discussion

Have students reflect on the positive and negative things that occurred during the game. What are some actions that they could take part in to save coral reefs?

Extension

- Watch a coral reef DVD in class, such as Discovery's *Blue Planet* or Disney's *Oceans*
- Encourage students to become involved by writing letters to elected officials. Letters can include information about what was learned through the class debates and can ask elected officials to support research and conservation efforts for the coral reefs.
 - These are some addresses to consider sending your letter to:

President of the United States
The White House
1600 Pennsylvania Ave. NW
Washington, DC 20500

Vice-President of the United States
United States Senate
Washington, DC 20510

Your State Senators' Name
United States Senate
Washington, DC 20510

Your State Representatives' Name
U.S. House of Representatives
Washington, DC 20515

Resources

MacGillivray Freeman's Coral Reef Adventure's Educator's Guide <www.coralfilm.com>

Acknowledgments

Activity based on MacGillivray Freeman's Coral Reef Adventure's "Protecting the Reef is More than Just a Game!" Activity.

Balancing Act Game Cards

<p>Your reef becomes a marine preserve, increasing the health and stability of the reef. Take 4 blocks off the top.</p>	<p>Reefs photographed ten years ago are photographed again. There is no evidence of reef decline. Take 2 blocks off the top.</p>	<p>Global warming has increased the water temperature around the reef, killing coral polyps. Remove 3 blocks.</p>
<p>An IMAX® film on coral reefs debuts, increasing stewardship of coral reefs on a global scale. Take 1 block off the top.</p>	<p>A reef monitoring program is begun, allowing researchers to regularly monitor the reef health. Take 1 block off the top.</p>	<p>Collectors of aquarium fish use dynamite on the reef. Remove 1 block.</p>
<p>A new treatment for a human disease is discovered on a coral reef, prompting protection of the reef. Take 2 blocks off the top.</p>	<p>A new species of fish is discovered on a reef. Take 1 block off the top.</p>	<p>Harvesting for food from the reefs has increased this year due to poor offshore fishing. Remove 1 block.</p>
<p>Education group provides snorkels and masks to Fijian children, allowing them to appreciate the reef habitat. Take 1 block off the top.</p>	<p>Classroom students in the U.S. learn about coral reefs from their teacher. Take 1 block off the top.</p>	<p>A new resort with a golf course has been built along the shores of the reef. Remove 1 block.</p>
<p>A hurricane occurs near your reef, destroying coral. Fortunately, the reef begins to quickly recover. Do not remove any blocks.</p>	<p>An environmentally friendly resort is built on a tropical coastline, which decreases the environmental impact. Take 1 block off the top.</p>	<p>Deforestation of a local rainforest occurred to build a new resort. Remove 2 blocks.</p>
<p>Your local aquarium begins breeding tropical fish, decreasing collecting pressures on the reef. Take 1 block off the top.</p>	<p>Your local fish store stops buying fish from reefs whose numbers are depleted. Take 1 block off the top.</p>	<p>Rain has washed silt and sand into the ocean, covering the reef. Remove 2 blocks.</p>
<p>A boat has dropped its anchor on the coral reef, causing the coral to die. Remove 1 block.</p>	<p>A student in the U.S. buys a new tropical fish caught using cyanide. Remove 1 block.</p>	<p>Trash has covered the reef, causing death to corals and other animals. Remove 2 blocks.</p>
<p>Tourists accidentally step on the corals while diving and snorkeling, causing them to die. Remove 1 block.</p>	<p>Pesticides from local crops have reached the reef, causing various animals to die. Remove 1 block.</p>	<p>Fertilizers used on land wash into the ocean causing large blooms of marine algae, blocking sunlight from the reef. Remove 1 block.</p>

Standards Addressed:

National

- Grade 5
 - Standard E, F, G
- Grade 6
 - Standard E, F, G
- Grade 7
 - Standard E, F, G
- Grade 8
 - Standard E, F, G

Next Generation Sunshine State

- Grade 5
- Grade 6
 - SC.6.N.1, SC.6.N.2, SS.6.G.5
- Grade 7
 - SC.7.N.1, SC.7.N.2, SC.7.E.6, SC.7.L.17
- Grade 8
 - SC.8.N.1, SC.8.N.2, SC.8.N.4