

Be an Eco-Hero— Tame the Savage Planet

Dear Educator,

We are pleased to bring you this free educational program, **Be an Eco-Hero—Tame the Savage Planet**, created by the curriculum experts at Young Minds Inspired in cooperation with LEGO®, whose mission is to inspire children to think creatively, reason systematically, and develop their full potential. Based on the exciting new robotic action figures from LEGO's Hero Factory, this program introduces students to Rocka, Stormer, and other Heroes as they use their smarts to save planet Quatros from the evil Witch Doctor.

Your students will share in this adventure as they explore environmental concepts, such as adaptation and conservation, and learn about the role that technology plays in protecting Earth's resources, through classroom activities designed to sharpen crucial language arts and social studies skills. And to enhance this learning experience, **Be an Eco-Hero—Tame the Savage Planet** also includes online resources available at www.ymiclassroom.com/heroes.html, where you will find digital versions of each classroom activity specially designed for your interactive whiteboard.

We hope that you will share this exciting program with other teachers in your school. Although these materials are protected by copyright, you have permission to reproduce all components of the program for educational purposes.

Your opinion of this program is important to us. Please use the enclosed reply card to share your thoughts and suggestions. We depend on your feedback to continue providing free, quality educational programs that make a real difference in the classroom.

Sincerely,



Dr. Dominic Kinsley,
Editor in Chief



is the only company developing free, innovative classroom materials that is owned and directed by award-winning former teachers. Visit our website at www.ymiclassroom.com to send feedback and download more free programs. For questions, contact us at 1-800-859-8005 or email us at feedback@ymiclassroom.com.



Program Objectives

- To strengthen earth science and environmental science skills through lessons that focus on adaptation, biodiversity, and conservation.
- To enhance social studies skills through awareness of the impact of human activity on the environment.
- To deepen knowledge and experience with technology and its importance in the field of science.
- To strengthen language arts skills, including decoding, spelling, and comprehension.

Please visit www.ymiclassroom.com/heroes.html to review alignment of individual activities to national standards.

Target Audience

This program is designed for use with students in grades 2-4. The activities may be tailored to suit the specific needs and abilities of your students.

Program Components

- This teacher's guide
- Four reproducible student activities
- A wall poster for display in your classroom
- Four interactive whiteboard activities available at www.ymiclassroom.com/heroes.html
- A reply card for your important comments

How to Use This Program

Review the print and online materials included in the program and schedule time for students to complete the activities. Photocopy the enclosed activity sheets and provide copies to all students. You will need in-class computer access to complete the interactive whiteboard versions of the activities.

How to Use the Wall Poster

Display the poster prominently in your classroom to generate enthusiasm. Then use the poster for a follow-up at the program's conclusion. Read the following background information aloud and lead a class discussion on each character's eco-tips. Encourage students to research and share other practices that exemplify each eco-tip.

- **Nex's** techno-skills make him an expert in ways to save energy. **Extra tip:** Unplug from electronics one day a week and play with friends instead.
- **Bulk's** tracker instincts give him an up-close view of the wild. **Extra tips:** Follow Reduce-Reuse-Recycle rules. Secure trash to keep wildlife safe.
- **Furno's** scouting and soaring skills give him a good look at Earth's

water sources. **Extra tips:** Take 5-minute showers. Turn off the water while brushing teeth.

- **Rocka** knows that earth's soil must be strong like him to grow healthy plants, veggies, and trees. **Extra tips:** Compost leftover veggies and fruits, along with yard trimmings, to create new healthy soil to use in your garden.
- **Stormer** is the team leader so he knows teamwork is key to any mission. **Extra tips:** Start an eco-group at school, host a community bake sale, and donate proceeds to a wildlife organization.

Activity 1

Adapting to a Savage Planet

Part A. Explain that, for animals, *adaptation* means having special body parts or behaviors that allow animals to survive and thrive in their habitats. An animal's ability to adapt can be a matter of life and death.

ANSWERS:
Rocka/Lion, Furno/
Eagle, Bulk/Wolf,
Stringer/Bear

Part B. Write the following words and phrases on the board: *velcro, machines to help the blind, specialized helicopters, highway reflectors, ship coatings*. Engage students in a group discussion as they match the technology written on the board to its origins in nature listed on the activity sheet. Students may conduct research online or in books to learn more nature/technology connections. Students can use the images on the activity sheet, plus others they find or sketch, as part of a book or collage.

ANSWERS:

- **Burrs/velcro:** An engineer noticed how the tiny microscopic hooks of the seed pod attached themselves to his dog's coat after walking in the woods.
- **Sharkskin/coatings for ships:** The water-repellent quality of sharkskin inspired an environmentally-friendly coating that allows an increase in ship speeds and also saves fuel.
- **Cat eyes/highway reflectors:** Cats' reflective eyes inspired the invention of highway reflectors to help motorists see road lines in the dark.
- **Bats/sound-sensor machines for the blind:** Bats emit sounds that help them "see" objects in their path through the sound's echo (echolocation), which has inspired machines that allow blind people to walk without a cane.
- **Dragonfly/specialized helicopters:** The dragonfly's flying skills have inspired the development of more efficient helicopters and wind turbines.

Activity 2

Fighting to Protect Resources

Part A. Discuss how Earth's natural resources occur naturally without human interference. Remind students that protecting Earth's resources is important because many of them are essential to life. Explain that today these resources are quickly becoming polluted, are in limited supply, and in danger of being lost forever. Help children classify which words from the word search list are renewable. Then have them complete the word search.



Part B. Direct students to use the words from the word search to complete the sentences. Then have students read the sentences aloud. Have students discuss their thoughts on what life would be like without these important resources.

ANSWERS:

1. soil, air, minerals;
2. forests, woodlands, wildlife;
3. rivers, lakes, glaciers;
4. tree, plants;
5. oceans, mountains

Activity 3

Meet the Planet Protectors

Part A. Lead students in a discussion of the scene on the activity page. Explain that the devices they see on the activity sheet are part imagination, but also partly based on many technology devices scientists use today to learn more about conditions and changes on Earth. Help them match the devices to their descriptions.

ANSWERS:
1D, 2C, 3B, 4A

Part B. Have students match the Hero gadgets to their real-life scientific counterparts by writing the matching Hero Factory device's number on the blank lines. Follow up by having students share the kinds of technology they use at home. Ask them to consider and share ways they use technology in their everyday lives.

ANSWERS: GPS monitor-2, Wildlife cams-1, Weather satellite-4, Seismograph-3

Activity 4

Be an Eco-Hero

After students complete this lesson, lead them in the poster activity described in the *How to Use the Wall Poster* section.

ANSWERS:

LETTER FROM OUR FOUNDER

Quatros and Earth are two different planets (*delete question mark, insert comma*) but they each need help to protect their important resources. The Hero Factory is asking you to be (*delete comma*) part of the team and join the fight for your planet. You may not have special armor and powers like Furno or Stormer (*insert comma*) but the choices you make (*delete extra "make"*) in your everyday actions will make the difference for a healthier planet. Are you ready to become a skilled warrior. (*change period to question mark*) Start with the training tips on the Eco-Hero Team poster in your classroom. Remember to practice them as much as possible to defend your beautiful Planet Earth.

I look forward to welcoming you as part of the Hero Factory Team!

Akiyama Makuro
Founder (*insert comma*) Hero Factory

Resources

<http://herofactory.lego.com>
www.ymiclassroom.com



Activity 1

Adapting to a Savage Planet

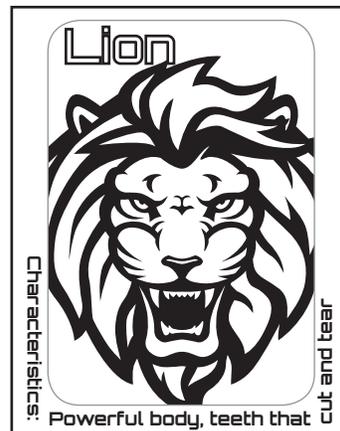
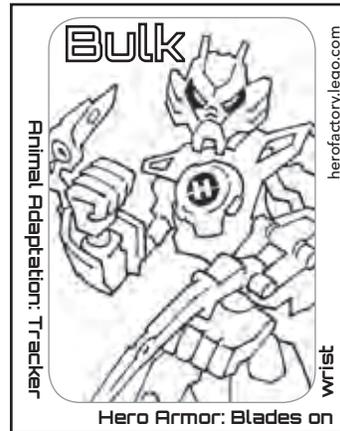
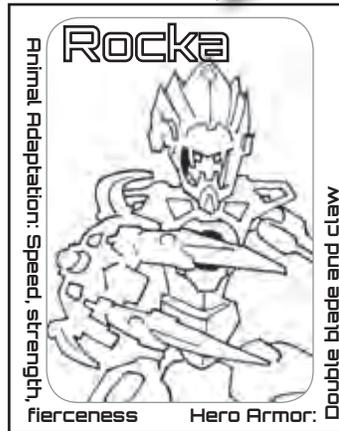


>>>> Important message from Akiyama Makuro:

Greetings, friends! I am the Hero Factory founder. Meet my new brave warriors. They must adapt their robotics with specially-designed armor to battle the Witch Doctor and save Planet Quatros. Join us!

Part A.

Color and cut out the images below. Match the Hero Factory team member to his animal adaptation. Glue the pictures back-to-back to create your own Hero Factory collectible cards!



Part B.

Did you know that plants and animals have inspired real-life technology? Look at the plants and animals shown below. Then follow your teacher's directions to learn more!

Burrs



Sharkskin



Cat Eyes



Bat



Dragonfly



Learn more about the Hero Factory team at herofactory.lego.com.

See them in action on the Lego Hero Factory Savage Planet DVD on October 4, 2011.



Activity 2

Fighting to Protect Resources



>>>> Important message from Akiyama Makuro:
 The Witch Doctor is destroying Planet Quatros by mining its Quaza. Quaza is a special super fuel that is a non-renewable resource. He must be stopped! Please help!



- air
- forests
- glaciers
- lakes
- minerals
- mountains
- oceans
- plants
- soil
- tree
- wildlife
- woodlands
- rivers

Part A.

Just like Quatros, Earth has many natural resources that cannot be replaced. Find these important resources in the word search puzzle:

M	O	U	N	T	A	I	N	S	A	R	R
P	R	W	I	L	D	L	I	F	E	O	W
S	P	S	R	T	Q	P	A	F	S	R	O
L	M	R	S	O	I	L	L	M	N	I	O
A	T	E	A	T	U	A	A	V	A	V	D
R	Q	I	A	I	R	N	K	S	E	E	L
E	V	C	R	X	E	T	E	B	C	R	A
N	I	A	A	P	D	S	S	Q	O	S	N
I	J	L	T	R	E	E	I	C	E	E	D
M	X	G	R	R	F	O	R	E	S	T	S

Part B.

Use the words from the puzzle to complete these sentences.

1. Most life on Earth depends on _____. It is made of organic matter, _____, rocks, _____, and water.
2. Many products such as paper and wood come from _____ and _____. These important resources also help to purify the air and provide shelter for _____.
3. Water is necessary for all life on earth. Rainfall and melting snow fill _____ and _____. _____ store 75% of the world's fresh water.
4. The fruits and vegetables you eat and a _____ that provides oxygen and shelter for animals are all examples of how _____ are natural resources.
5. Many natural resources are places to relax and have fun, like _____, where people can surf and swim, and _____, where people can hike and camp.



Learn more about the Heroes' mission to Quatros at herofactory.lego.com.

See them in action on the Lego Hero Factory Savage Planet DVD on October 4, 2011.



Activity 3

Meet the Planet Protectors



>>>> Important message from
Akiyama Makuro:

Zib and Quadal are Hero Factory team members who run the technology stations at Mission Control. They use these devices to monitor conditions on Quatros and help our Heroes battle the Witch Doctor. And now they need your help!



Part A.

Write the number of the Hero Factory device next to its matching description.

Hero Factory Mission Control Devices

Device Descriptions



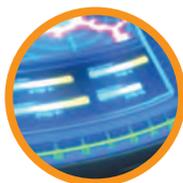
1. POV screen



2. Tracking monitor



3. Shock-wave screen



4. Atmosphere panel

- ___ A. Reads data on Quatros' air temperature and weather.
- ___ B. Measures underground vibrations on Quatros. It's very important because Quaza is found below the planet's surface!
- ___ C. Maps and identifies locations on Quatros. The Heroes depend on it to track the Witch Doctor and learn about his activities.
- ___ D. Shows action as it's really happening to help the Heroes keep Mission Control up to date on their movements.

Part B.

Hero Factory science might remind you of real-life technologies. In the circles below, write the number of the Hero Factory device in the list above that matches each of the real-life environmental science technologies described below.



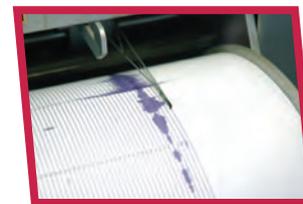
GPS monitor – Monitors location and distances between objects to create maps of environmentally sensitive areas. Also helps people find their location and determine directions.



Wildlife cams – Records wildlife behaviors to help scientists better understand the needs of animals and threats to their habitats.



Weather satellite – Records changes in Earth's atmosphere, including temperature, cloud formations, weather, and wind conditions.



Seismograph – Measures vibrations produced by underground movements like earthquakes.

Learn more
about Zib, Quadal,
and the Mission
Control Center at
herofactory.lego.com.

See them in action on
the Lego Hero Factory
Savage Planet DVD on
October 4, 2011.



Activity 4

Be an Eco-Hero



Akiyama Makuro's letter has been scrambled by the evil Witch Doctor! The planet Quatros is in danger! Please help! We need to read it! If a word is completely scrambled, write its corrected version underneath. Then read Makuro's message to kid Eco-Heroes everywhere.



TELETYPE FROM FOUNDER

Quatros and Earth are different planets? but they each need help to protect their important resources. The Hero Factory is asking you to be part of the team and join the fight for your planet. you may not have armor special and powers like Onur or Stormer but the choices you make in your every day actions will make the difference for a healthier planet. are you ready become to a skilled warrior. start with the training tips on the Eco-Hero Team poster in your class room. Remember to practice them as much as possible to defend your beautiful Planet Earth.

I forward look to welcoming you as part of the Hero Factory Team!

akiyama makuro

founder hero factory



See how you can be a hero—

at home and at school. Learn more about what it takes to be part of the Hero Factory team at herofactory.lego.com.

See them in action on the Lego Hero Factory Savage Planet DVD on October 4, 2011.



Join the LEGO® HERO FACTORY TEAM and Be an ECO-HERO

SAVE WATER!

Use less and keep our water supply clean.

—Bulk



SAVE SOMETHING WILD!

Reduce, Re-Use, and Recycle to keep trash out of wild places.

—Furno



SAVE TOGETHER!

Organize your friends to form an eco-club and take action as a team!

—Stormer



SAVE LAND AND SOIL!



Instead of using pesticides in your yard or garden, encourage parents to buy ladybugs and preying mantises from your local nursery. The good bugs will eat up the bad bugs, and your soil will stay clear of chemicals!

—Rocka



SAVE ENERGY!



Unplug electrical devices like cell phone and iPod chargers, computers, and TV's when not in use.

—Nex



Visit the LEGO Hero Factory website at herofactory.lego.com to find out more about Rocko, Stormer, Nex, and other exciting members of the LEGO Hero Factory team!

See them in action on the Lego Hero Factory *Savage Planet* DVD on October 4, 2011.



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