



Global Atmospheric Change

Post-assessment activity from *The Science of Global Atmospheric Change Teacher's Guide*
and for *Mr. Slaptail's Curious Contraption*

Written by

Nancy P. Moreno Ph.D.

Barbara Z. Tharp, M.S.

Judith Dresden, M.S.

BioEdSM

Teacher Resources from the
Center for Educational Outreach at
Baylor College of Medicine

© 2012 Baylor College of Medicine. This activity is part of The Science of Global Atmospheric Change unit. *The Science of Global Atmospheric Change Teacher's Guide* may be used alone or with integrated unit components. The Global unit is comprised of the guide, *Mr. Slaptail's Curious Contraption* student storybook, *Explorations* magazine, and two supplements: *The Reading Link* and *The Math Link*. For more information on this and other educational programs, contact the Center for Educational Outreach at 713-798-8200, 800-798-8244, or visit www.bcm.edu/edoutreach.

© 2012 by Baylor College of Medicine. All rights reserved.
Third edition. First edition published 1998.
Printed in the United States of America

ISBN: 978-1-888997-75-0

BioEdSM

Teacher Resources from the Center for Educational Outreach at Baylor College of Medicine.

The mark “BioEd” is a service mark of Baylor College of Medicine. The mark “My Health My World” is a trademark of Baylor College of Medicine.

No part of this book may be reproduced by any mechanical, photographic or electronic process, or in the form of an audio recording, nor may it be stored in a retrieval system, transmitted, or otherwise copied for public or private use without prior written permission of the publisher. Black-line masters may be photocopied for classroom use.

The activities described in this book are intended for school-age children under direct supervision of adults. The authors and Baylor College of Medicine cannot be responsible for any accidents or injuries that may result from conduct of the activities, from not specifically following directions, or from ignoring cautions contained in the text.

Development of this unit was supported, in part, by grant numbers R25 ES06932 and R25 ES010698 from the National Institute of Environmental Health Sciences (NIEHS) of the National Institutes of Health (NIH). The opinions, findings and conclusions expressed in this publication are solely those of the authors and do not necessarily reflect the official views of Baylor College of Medicine, NIEHS or NIH.

Authors: Nancy P. Moreno, Ph.D., Barbara Z. Tharp, M.S., and Judith H. Dresden, M.S.
Editor: James P. Denk, M.A.
Designer and Illustrator: Martha S. Young, B.F.A.

ACKNOWLEDGMENTS

The Science of Global Atmospheric Change educational materials, first developed as part of the My Health My World® project at Baylor College of Medicine, have benefited from the vision and expertise of scientists and educators representing a wide range of specialties. Our heartfelt appreciation goes to Michael Lieberman, M.D., Ph.D., William A. Thomson, Ph.D., and Carlos Vallbona, M.D., who have lent their support and expertise to the project.

Special acknowledgment is due to our original partners in this project, the Texas Medical Association and the American Physiological Society (APS). We especially thank Marsha Lakes Matyas, Ph.D., of APS, for her direction of field test activities and ongoing collaboration.

Several colleagues provided valuable assistance during the development of this guide. In particular, we would like to thank Cassius Bordelon, Ph.D., Ronald Sass, Ph.D., Sandra Saunders, M.A., Lief Sigren, Ph.D., and Ellison Wittels, M.D.

Special thanks go to the National Institute of Environmental Health Sciences, Allen Dearry, Ph.D., Frederick Tyson, Ph.D., and Liam O’Fallon for their support of the My Health My World project and the related Environment as a Context for Opportunities in Schools (ECOS) project.

We are especially grateful to the many classroom teachers in Washington, D.C., and Houston and Austin, Texas, who participated in the field tests of these materials and provided invaluable feedback.

BCM
Baylor College of Medicine

Center for Educational Outreach
Baylor College of Medicine
One Baylor Plaza, BCM411
Houston, Texas 77030
713-798-8200 | 800-798-8244 | edoutreach@bcm.edu
www.bcm.edu/edoutreach | www.bioedonline.org | www.k8science.org

SOURCE URLS

BAYLOR COLLEGE OF MEDICINE

www.bcm.edu

CENTER FOR DISEASE CONTROL AND PREVENTION

cdc.gov/climatechange

KOEN VAN GORP - ASTRONOMY AND PHOTOGRAPHY

www.koenvangorp.be/events/eclipse_2006.html

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

ipcc.ch

NASA EARTH OBSERVATORY

earthobservatory.nasa.gov

NASA’S EYES ON THE EARTH

climate.nasa.gov

NATIONAL ACADEMIES OF SCIENCES

dels.nas.edu/Climate/Climate-Change/Reports-Academies-Findings

NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES

niehs.nih.gov/about/od/programs/climatechange

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, CLIMATE SERVICES

climate.gov/#education

NATIONAL PARK SERVICE, CLIMATE CHANGE RESPONSE PROGRAM

nature.nps.gov/climatechange

DAVID SHAND

www.flickr.com/photos/14508691@N08/with/5187817955/

TAU’OLUNGA

http://en.wikipedia.org/wiki/File:North_season.jpg

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

sis.nlm.nih.gov/enviro/climatechange.html

U.S. GEOLOGICAL SURVEY, OFFICE OF GLOBAL CHANGE

usgs.gov/global_change

U.S. GLOBAL CHANGE RESEARCH PROGRAM

globalchange.gov

GRAY WATSON

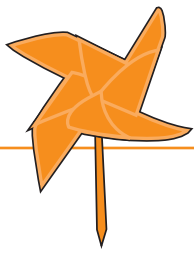
http://en.wikipedia.org/wiki/File:Solar_panels_on_house_roof.jpg

ALAN E. WHEELS, PH.D., UNIVERSITY OF BATH

<http://www.bath.ac.uk/bio-sci/research/profiles/wheels-a.html>

WORLD HEALTH ORGANIZATION

who.int/global-change/environment



Global Atmospheric Change

Post-assessment

CONCEPTS

- Students are able to improve their own health and that of the planet.

OVERVIEW

Students will review ideas covered in this unit and reach conclusions regarding the importance of the global environment to their health. Students will write persuasive letters and examine and revise the preassessment they completed at the beginning of the unit.

SCIENCE, HEALTH & MATH SKILLS

- Comparing
- Identifying relationships
- Inferring
- Applying prior knowledge to new situations

TIME

Preparation: 10 minutes
Class: 45 minutes

MATERIALS

Each group will need:

- Crayons or markers
- Drawing paper
- Pencils or pens

Each student will need:

- Copy of his or her pre-assessment

For more than 100 years, human actions have been changing the composition of Earth's atmosphere. Increases in the levels of heat-trapping greenhouse gases (especially carbon dioxide) and decreases in the amounts of stratospheric ozone both have been measured. These processes have the potential to impact humans in many ways.



Unit Links

Mr. Slaptail's Curious Contraption

Review Science boxes throughout

Explorations

Tips for Healthy Living, p. 3

This activity is designed to assess student understanding of concepts related to global atmospheric change. Each student will write a persuasive letter about a topic related to protecting the atmosphere.

SETUP

Begin with a whole-class discussion, after which students will work individually.

PROCEDURE

1. Tell students that they will write persuasive letters to each other related to global atmospheric change. Introduce letter writing skills if needed. Mention that global atmospheric change is a broad category that includes global warming and loss of atmospheric ozone. Also mention that all of us do things every day that contribute to these problems. Each student should try to convince the reader to help protect the atmosphere by changing behaviors to reduce the possibility or impact of global warming or ozone depletion.
2. Review the importance of our global environment to individual health and to the health of the planet. You may use the "Tips for Healthy Living" on page 3 of *Explorations* or pages 34–35 in *Mr. Slaptail's Curious Contraption*, or a review of the activities in this unit to guide students.
3. Each student should select one issue presented in this unit and write a letter to try to convince someone to help protect the atmosphere.
4. Distribute pre-assessments back to each student. Ask students to examine their answers and, using a different color, to circle new answers based on information they have learned.
5. Discuss students' changes as a group.

TEACHER RESOURCES

Downloadable lessons and supplemental materials on global atmospheric change and other science education topics are available free at K8 Science (www.k8science.org) and BioEd Online (bioedonline.org).

