



U-STARs~PLUS

Science & Nonfiction Connections

*Using Science, Talents, and Abilities
to Recognize Students~Promoting
Learning for Underrepresented Students*

Mary Roth Coleman

Jennifer Job



U-STAR~PLUS

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Table of Contents

About the Authors	v
Acknowledgments	vii
Foreword From the National Association for Gifted Children	ix
Foreword From The Association for the Gifted	xi
Introduction	1

Title	Author	Page
<i>Simple Machines</i>	Deborah Hodge	35
<i>Here Is the African Savanna</i>	Madeleine Dunphy	41
<i>The Kids' Book of Weather Forecasting</i>	Mark Breen & Kathleen Friestad	47
<i>Down Comes the Rain</i>	Franklyn M. Branley	53
<i>Heroes of the Environment: True Stories of People Who Are Helping to Protect Our Planet</i>	Harriet Rohmer	59
<i>If You Lived With the Cherokee</i>	Peter & Connie Roop	65
<i>Tadpoles to Frogs</i>	Bobbie Kalman	71
<i>Germes Make Me Sick!</i>	Melvin Berger	77
<i>Rain Forest</i>	Elinor Greenwood	83
<i>Good Enough to Eat: A Kid's Guide to Food and Nutrition</i>	Lizzy Rockwell	89
<i>Eyewitness Plant</i>	David Burnie	93
<i>Rachel Carson: Pioneer of Ecology</i>	Kathleen V. Kudlinski	99
<i>Native Defenders of the Environment</i>	Vincent Schilling	105
<i>Pictures & Poetry</i>	Janis Bunchman & Stephanie Bissell Briggs ..	111
<i>Animals and Their Young: How Animals Produce and Care for Their Babies</i>	Pamela Hickman	117
<i>The Adventures of a Plastic Bottle: A Story About Recycling</i>	Alison Inches	123
<i>Why Do Shadows Lengthen? All About Light</i>	Nicolas Brasch	127
<i>Earth Day</i>	Trudi Strain Trueit	131
<i>Spiders</i>	Seymour Simon	135
<i>The Life Cycle of a Flower</i>	Molly Aloian & Bobbie Kalman	141
<i>Looking at Rocks</i>	Jennifer Dussling	145



Title	Author	Page
<i>Science Arts: Discovering Science Through Art Experiences</i>	MaryAnn Kohl & Jean Potter	149
<i>Snow</i>	Ann Herriges	155
<i>Animals in Winter</i>	Henrietta Bancroft & Richard G. Van Gelder . .	159
<i>The Tree Book for Kids and Their Grown-Ups</i>	Gina Ingoglia	165
<i>Bats</i>	Elizabeth Carney	169
<i>Sun, Moon and Stars</i>	Stephanie Turnbull	173
<i>Face to Face With Whales</i>	Flip & Linda Nicklin	179
<i>Seeds</i>	Ken Robbins	185
<i>From Caterpillar to Butterfly</i>	Gerald Legg	191
<i>Weather Words and What They Mean</i>	Gail Gibbons.	195
<i>The Story of Snow:</i> <i>The Science of Winter's Wonder</i>	Mark Cassino with Jon Nelson	201
<i>Magnets Push, Magnets Pull</i>	Mark Weakland	207
Appendix A: Science Topics Matrix.		213
Appendix B: Next Generation Science Standards Correlations		215
Appendix C: Common Core State Standards – Reading Standards for Informational Texts		217
Appendix D: Bloom's Taxonomy of Cognitive Thinking		221



About the Authors

Mary Ruth Coleman

Mary Ruth Coleman is Senior Scientist Emeritus at the FPG Child Development Institute at the University of North Carolina at Chapel Hill. She directs Project *U-STARS~PLUS* (Using Science, Talents, and Abilities to Recognize Students~Promoting Learning in Underrepresented Students), and Project ACCESS (Achievement in Content and Curriculum for Every Student's Success). She was Co-Principal Investigator for the Early Learning Disabilities Initiative sponsored by the Emily Hall Tremaine Foundation. Dr. Coleman has numerous publications including the seminal textbook, *Educating Exceptional Children* (14th ed.; Kirk, Gallagher, & Coleman, 2015). She has served three terms (nine years) on the board of directors for the Association for the Gifted (TAG), one of which she was president; three terms (nine years) on the board of directors for the National Association for Gifted Children (NAGC); and two terms (six years) on the board of directors for the Council for Exceptional Children (CEC). She served as president of CEC in 2007.

Jennifer Job

Jennifer Job is currently Assistant Professor of Curriculum Studies at Oklahoma State University in Stillwater, OK. She previously worked as a research assistant for Dr. Coleman at the Frank Porter Graham Child Development Institute where she worked on Dr. Coleman's seminal textbook *Educating Exceptional Children* (13th ed., Kirk, Gallagher, & Coleman, 2011). She also served as managing editor for *High School Journal*. Through her work, Dr. Job aims to strengthen teacher agency in the classroom by researching best practice resources and advocating for systems that allow teachers to respond to the needs of their particular students. Her publications have appeared in *Gifted Child Today*, *Critical Literacy Journal*, *Interchange: A Quarterly Review of Education*, and *National Teacher Education Journal*.

Introduction

Passionate educators with issue expertise can make all the difference, enabling hands-on learning that truly engages students—including girls and underrepresented minorities—and preparing them to tackle the grand challenges of the 21st century, such as increasing energy independence, improving people’s health, protecting the environment, and strengthening national security.

~**President Barack Obama**, January 6, 2010

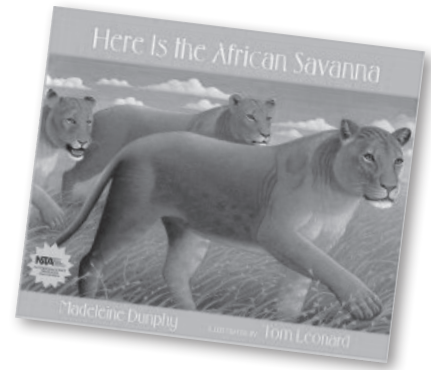
U-STARs~PLUS (Using-Science, Talents, and Abilities to Recognize Students~Promoting Learning for Underrepresented Students) Science & Nonfiction Connections was developed to support teachers working to help young children read content-specific nonfiction. Because traditional focus of reading with young children has been on fictional literature (Leal & Moss, 1999), *U-STARs~PLUS Science & Literature Connections* (Coleman & Shah-Coltrane, 2010) was developed to inspire children to learn about science through reading fictional literature. With the growing emphasis on reading in the content areas, however, it is also essential for young children to read nonfiction books.

Although the use of nonfiction books can benefit all young children, nonfiction can be especially helpful for culturally and linguistically diverse students. Connecting reading to the student’s prior knowledge is one of the most critical methods of teaching literacy to students from diverse backgrounds (Blair, 2013). Utilizing nonfiction facilitates these connections: Nonfiction encourages students to read by activating their prior knowledge and allowing them to explore their own interests. Using nonfiction also can provide an authentic way of introducing content material into the classroom to answer students’ questions in straightforward ways (Camp, 2000), another necessity for diverse student populations according to Blair (2013). Moreover, studies in nonfiction reading (Kletzien & Dreher, 2004; Pappas, 1993) have shown that students as young as kindergarten age can access nonfiction texts as well as they can fiction, debunking the myth that fiction is necessary in early years because young children can only process narrative literature.

One of the strongest arguments for teaching literacy through nonfiction is its ability to build vocabulary for students from linguistically and economically diverse backgrounds.



Here Is the African Savanna



Written by: Madeleine Dunphy

Illustrated by: Tom Leonard

Published by: Web of Life Children's Books, 2006

Pages: 31

Lexile Level: Beginning Reader

ISBN: 0-9773795-2-3

Major Topics:

Ecosystems, Interdependence of Living Things Biodiversity, Survival, Seasons

Generalization

Students will learn that living things form a complex and interdependent network.

Summary

This beautifully illustrated book shares life on the African savanna, showing the interdependence of the animals and plants that live there. Grass is key to animal life on the savanna, and rain is key to the grass. The diversity of life on the plains depends on the weather and on maintaining a habitat where animals can migrate in search of water and food.

Science & Literature Connections Book Correlation

Bringing the Rain to Kapiti Plain

Written by: Verna Aardema

The Kids' Book of Weather Forecasting

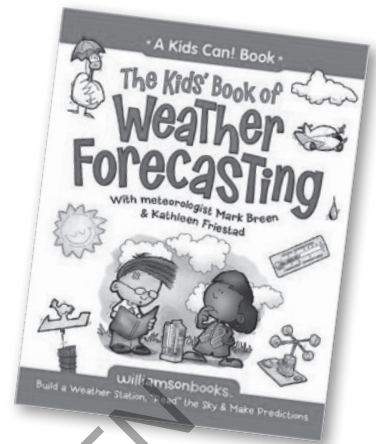
Written by: Mark Breen & Kathleen Friestad

Illustrated by: Michael Kline

Published by: Ideals Publishing Corporation, 2008

Pages: 141

ISBN: 978-0-8249-6823-6



Major Topics:

Weather, Atmosphere, Energy From the Sun, Weather Forecasting

Generalization

Students will learn that weather impacts all living things in positive and negative ways.

Summary

Weather affects everyone every day. Measurements of the air, sun, wind, and rain can help us understand and forecast the weather. Simple measurement instruments we can make ourselves allow us to collect data, analyze the information, look for patterns, and make predictions for future weather. Observing the weather is fun, helpful, and important.

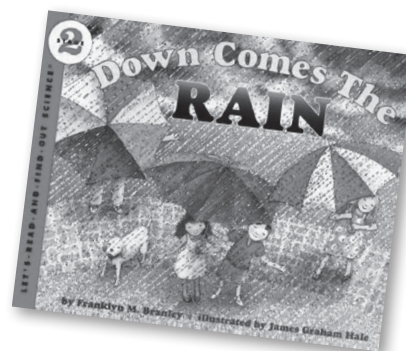
Science & Literature Connections Book Correlation

Cloudy With a Chance of Meatballs

Written by: Judi Barrett

Down Comes the Rain

Written by: Franklyn M. Branley
 Illustrated by: James Graham Hale
 Published by: HarperCollins, 1997
 Pages: 32
 Lexile Score: 560L
 ISBN: 0-06-445166-6



Major Topics:

Weather, Water Cycle, Rain, Snow, Hail

Generalization

Students will learn that all living things depend on rain and water.

Summary

This book explains how the water cycle works. It shows how water evaporates into droplets smaller than a speck to form clouds. Water vapor comes from water all across the earth and even comes from living things such as plants, animals, and people. The water in the clouds condenses to form water drops that can fall to earth as rain, snow, or hail. This cycle continues as water evaporates, forms clouds, condenses, and falls back to earth.

Science & Literature Connections Book Correlation

Come on, Rain!

Written by: Karen Hesse



Heroes of the Environment: True Stories of People Who Are Helping to Protect Our Planet



Written by: Harriet Rohmer

Illustrated by: Julie McLaughlin

Published by: Chronicle Books, LLC, 2009

Pages: 109

Lexile Score: 1070L

ISBN: 978-0-8118-6779-5

Major Topics:

Interdependence of People With Their Environment,
Human Impact on Their Environment

Generalization

Students will learn that humans have an impact on their environment and this impact can be either positive or negative.

Summary

If kids ever wondered if an individual can make a difference, this book provides a definitive answer: yes! Twelve stories of individuals around the world show how ingenuity and dedication can help to solve difficult environmental problems. These stories share innovative approaches to air and water pollution, recycling needs, and food production. The stories show the interdependence of people and their environment. Each story provides an inspiring example of how people can make a positive difference.

Science & Literature Connections Book Correlation

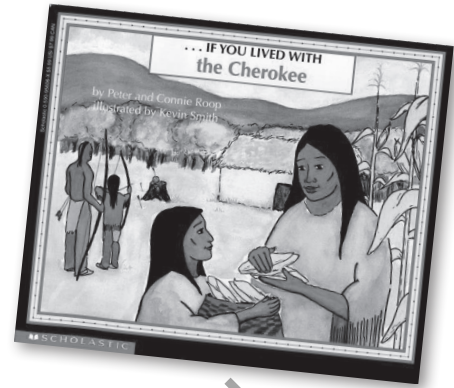
The Empty Lot

Written by: Dale H. Fife



If You Lived With the Cherokee

Written by: Peter & Connie Roop
Illustrated by: Kevin Smith
Published by: Scholastic, Inc., 1998
Pages: 79
Lexile Score: 800L
ISBN: 978-0-590-95606-2



Major Topics:

Interdependence of Living Things, What Humans
Need to Survive, Creating Tools

Generalization

Students will learn that all living things are interdependent, including humans.

Summary

Before the European settlers came to what is now the United States, the Cherokee people lived in harmony with their environment. The women tended gardens and gathered wild nuts, berries, and honey. The men hunted, fished, and trapped. The Cherokee made clothes from animal hides and made tools from bone, teeth and rock. They used plants to make baskets, dug-out canoes, and to build houses. The Cherokee believed animals had spirits and should only be killed if truly needed for food or hides. They also believed plants were their friends and would help them, especially during times of sickness. Many things changed for the Cherokee people after they lost their lands when the European settlers came.

Science & Literature Connections Book Correlation

The First Strawberries

Written by: Joseph Bruchac

Tadpoles to Frogs

Written by: Bobbie Kalman

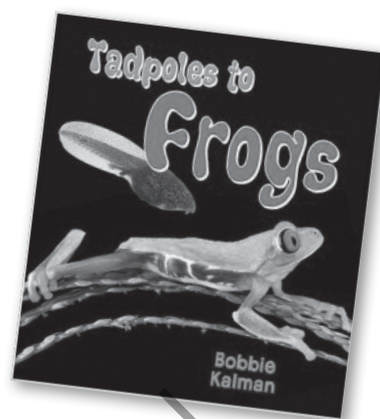
Illustrated by: Katherine Berti & Bonna Rouse

Published by: Crabtree Publishing Company, 2009

Pages: 24

Lexile Score: IG610L

ISBN: 978-0-7787-3956-2



Major Topics:

Amphibians, Life Cycle, Reproduction, Metamorphosis

Generalization

Students will learn that all animals have a life cycle that includes birth, growth, reproduction, and death.

Summary

There are over 4,000 kinds of frogs. They come in all kinds of colors and live in all kinds of damp or wet places, including in trees. All frogs are cold-blooded amphibians, starting their lives in water before moving to land. The life cycle of a frog moves from egg, to tadpole, to froglet, to adult frog. There are many changes to a frog's body as it grows up. It moves from breathing with gills (like a fish), to breathing air with lungs (like people). Eventually, a froglet loses its tail and grows legs.

Science & Literature Connections Book Correlation

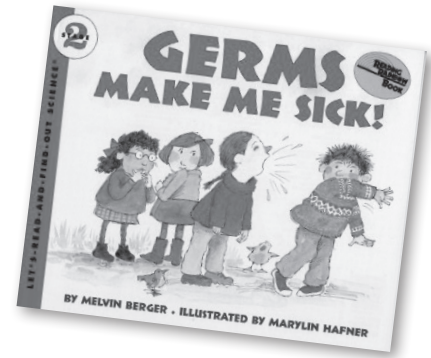
Fish Is Fish

Written by: Leo Lionni



Germes Make Me Sick!

Written by: Melvin Berger
Illustrated by: Marilyn Hafner
Published by: HarperCollins, 1995
Pages: 32
Lexile Score: 530L
ISBN: 0-06-445154-2



Major Topics:

Germes, Body Defenses Against Sickness

Generalization

Students will learn there are germes everywhere that can make us sick but that our bodies also have natural defenses to keep us healthy.

Summary

There are thousands of germes everywhere, but not all of them can make us sick. Bacteria and viruses can attack our bodies and cause us to become sick, but our bodies have many natural defenses to help keep us healthy. Our skin keeps out germes where as the hair in our noses and mucus in our throats traps germes. If germes do get into our bodies, our white blood cells can eat them, or antibodies can destroy them. But sometimes we get sick in spite of these defenses. In most cases, we will get better with rest and good food. If we do not get better in a few days, we may need to see a doctor. We can stay healthier by following some simple rules: avoid sick people, wash our hands, eat healthy food, brush our teeth, get plenty of rest, exercise, get check-ups, and get the shots we need.

Science & Literature Connections Book Correlation

Germes

Written by: Ross Collins