

Literature: Duct Tape for the Science Curriculum

When we look at pictures in art galleries, we're supposed to delight in visual impressions. But when we look at the pictures in picture books, we're meant not just to do that but also to think about how they relate to the accompanying words and also to the pictures preceding and following them.

In other words, we must consider not only their beauty but also to how they contribute to our unfolding knowledge of the story. In fact, *everything* in such pictures is less important a source of aesthetic delight than a source of information about the story”
(Nodelman, 1996).

A good story is a strong teaching tool, which gives a concrete, "contained" perspective for learning or thinking about a topic (Carr, 2001, p. 147).

The use of literature to teach curricular concepts helps relate the concept being taught to real-life situations, bringing the concept into the child's world (Whitin, 1992, p. xii).

The simple, but imaginative worlds within picture books can provide students with an excellent and motivating introduction to complex curriculum topics. It is a great way to introduce a topic, especially to struggling learners in that it allows you to work from concrete, "simple" examples, before moving onto more abstract and complex examples (Carr, 2001, p. 148).

Picture books are “**bicultural**, that they share qualities of books and the visual arts” (Hammond, 1994, p. 11). For instance, “reading” a picture book engages a child in **both the visual arts and the language arts**.

One of the great advantages of visual texts [literacy] is that most of the information pictures provide is readily accessible to all readers, including very young children who are not yet fluent readers and older students whose first language is not that of the written text. Similarly, students who are judged to be “poor” readers or writers are sometime discovered to be excellent communicators if they are allowed the option to read or write information in a visual form. (I See What You Mean by Steve Moline, 1995)

Some will argue that picture storybooks can promote misconceptions in areas such as science and technology. This, in fact, can be true unless we provide students with ways in which to disseminate information for truth and accuracy. Students can be taught to **read** illustrations as well as text at a young age. When reading text and illustrations, students can learn to ask themselves a series of questions as to the truth and accuracy of the information being given.

The following are some sample questions that may help to get your students started in using picture books for scientific information: Ask yourself...

1. Is there new scientific terminology presented in the text? What are the meanings of the new vocabulary words and how do they relate to the topic of study? Are the new words defined in the text?
2. Can I find the facts presented in the story supported in another source (non-fiction book, encyclopaedia, on the internet)?
3. Is there other information included in the illustrations, not mentioned in the text, which can support my topic?
4. Does the text support other information shown in the illustrations?
5. Does the book contain more than one font type in the text to differentiate meaning (fact vs. fiction)?

Books Used in the workshop

Archibald Frisby written and illustrated by Michael Chesworth

Crow and the Pitcher written by Stephanie Gwyn Brown (introduction to inquiry)

Dinosaur Woods written and illustrated by George McClements

Dory's Story written by Jerry Pallotta, illustrated by David Beidrzycki,

Flip, Float, Fly: Seeds on the Move written by JoAnn Early Macken, illustrated by Pam Paparone

How Do You Lift a Lion? written and illustrated by Robert E. Wells

If I Built a Car written and illustrated by Chris Van Dusen

If You Find a Rock written and illustrated by Peggy Christian

June 29, 1999 written and illustrated by David Wiesner

Lion's Mane written by Navjot Kaur, illustrated by Jaspreet Sandhu

Living Sunlight written by Molly Bang, illustrated by Penny Chisholm

Polar Bear, Why is Your World Melting? written and illustrated by Robert E. Wells

Rabbit Problem written and illustrated by Emily Gravett

Rex written by Ursula Dubosarsky, illustrated by David McIntosh

Sprog Owner's Manual written and illustrated by Babette Cole

Under the Snow written by Melissa Stewart, illustrated by Constance R. Bergum

Varmints written by Helen Ward, illustrated by Marc Craste

When Rain Falls written by Melissa Stewart, illustrated by Constance R. Bergum

Who Likes the Rain? written by Etta Kaner, illustrated by Marie Lafrance

Who Likes the Snow? written by Etta Kaner, illustrated by Marie Lafrance

Who Likes the Sun? written by Etta Kaner, illustrated by Marie Lafrance

Who Likes the Wind? written by Etta Kaner, illustrated by Marie Lafrance

Winston of Churchill by Jean Davies Okimoto

Books to Inspire Content Teaching

Science

A Seed is Sleepy written by Dianna Aston, illustrated by Sylvia Long

An Egg is Quiet written by Dianna Aston, illustrated by Sylvia Long

Animals in Flight written by Robin Page, illustrated by Steve Jenkins

Dirt on Dirt, The written by Paulette Bourgeois, illustrated by Martha Newbigging

Dumpster Diver written by Jan Wong, illustrated by David Roberts

Feed the Good Wolf written by Frank Glew, illustrated by The Marna Twins

How Do You Lift a Lion? written and illustrated by Robert Wells

Jump into Science: Dirt written by Steve Tomecek, illustrated by Nancy Woodman

Jump into Science: Sand written by Ellen Prager, illustrated by Nancy Woodman

Jump into Science: Sun written by Steve Tomecek, illustrated by Carla Golembe

Living Color written and illustrated by Steve Jenkins

Monarch and Milkweed written by Helen Frost, illustrated by Leonid Gore

Mountain Dance written and illustrated by Thomas Locker

Move! Written by Steve Jenkins and Robin Page, illustrated by Steve Jenkins

Mrs. Riley Bought Five Itchy Aardvarks: and Other Painless Tricks for Memorizing Science Facts written by Brian Cleary, illustrated by J. P. Sandy

Pest Fest written by Julia Durango, illustrated by Kurt Cyrus

Planting the Trees of Kenya: The Story of Wangari Maathai written and illustrated by Claire Nivola

Thea's Treei written by Alison Jackson, illustrated by Janet Pendersen

Tin Lizzie written and illustrated by Allan Drummond

Up Down and Around written by Katherine Ayres, illustrated by Nadine Bernard

Velma Gratch and the Way Cool Butterfly written by Alan Madison, illustrated by Kevin Hawkes

Wangari's Trees of Peace written and illustrated by Jeanette Winter

What Do You Do When Something Wants to Eat You? written and illustrated by Steve Jenkins

What Do You Do With a Tail Like This? written by Steve Jenkins, illustrated by Robin Page

What's Smaller Than a Pygmy Shrew? Written and illustrated by Robert Wells

Wiggling Worms at Work written by Wendy Pfeffer, illustrated by Steve Jenkins

Wolves written and illustrated by Emily Gravett

Math

Albert 3 written and illustrated by Lani Yamamoto

Bean Thirteen written and illustrated by Matthew McElligot

Bees, Snails and Peacock Tails: Patterns and Shapes, Naturally written by Betsy Franco, illustrated by Steve Jenkins

Birdsongs written by Betsy Franco, illustrated by Steve Jenkins

City Lullaby written by Marilyn Singer, illustrated by Carl Cneut

How Many Mice? written and illustrated by Michael Garland

How Many Seeds in a Pumpkin? written by Margaret McNamara, illustrated by Brian Karas

Warlord's Alarm written by Virginia Pilegard, illustrated by Nicolas Debon

Social Studies

A Native American Thought of It written by Rocky Landon and David MacDonald

A Small Dog's Big Life written and illustrated by Irene Kelly

Arctic Adventures: Tales from the Lives of Inuit Artists written by Raquel Rivera, illustrated by Jiriana Marton

Chinese Thought of It written by Ting-xing Ye

The Enemy written by Davide Cali, illustrated by Serge Bloch

Follow that Map!: A First Book of Mapping Skills written and illustrated by Scot Ritchie

Great Paper Caper written and illustrated by Oliver Jeffers

Inuit Thought of It written by Alootook Ipellie and David MacDonald

Inuksuk Journey written and illustrated by Mary Wallace

Looking Down illustrated by Steve Jenkins

Magic Beads written and illustrated by Susin Nielsen-Fernlund

Mattland written by Hazel Hutchins and Gail Herbert, illustrated by Dusan Petricic

Museum Book, The written by Jan Mark, illustrated by Richard Holland

Rabbit and Squirrel: A Tale of War and Peas written by

Seventh Expert: An Interactive Medieval Adventure written by Mark Oakley, illustrated by John Mantha

Snow Leopard written and illustrated by Jackie Morris

Steel Town written by Jonah Winter, illustrated by Terry Widener

Wall, The written and illustrated by Peter Sis

War, The written and illustrated by Anaïs Vaugelade

Why War is Never a Good Idea written by Alice Walker, illustrated by Stefano Vitale

The Arts

3-D ABC written and illustrated by Bob Raczka

A is for Art: An Abstract Alphabet written by Stephen Johnson

Art Is written and illustrated by Bob Raczka

Art's Supplies written and illustrated by Chris Tougas

Art to Make You Scared! written and illustrated by Elizabeth Newberry

Art to Make You Smile written and illustrated by Elizabeth Newberry

Attack of the Killer Video Book written by Mark Shulman and Hazlitt Krog, illustrated by Martha Newbigging

Because written by Mikhail Baryshnikov, illustrated by Vladimir Radunsky

Blue Goose written and illustrated by Nancy Tafuri

Blues Journey written by Walter Myers, illustrated by Christopher Myers

Celebrity Cat written by Meredith Hooper, illustrated by Bee Willey

Dali and the Path of Dreams written by Anna Obiols, illustrated by Joan Subirana

Dog's Night written Meredith Hooper, illustrated by Mark Burgess & Alan Curless

Emily Carr's Attic written by Diane Leger, illustrated by Michael Leger

Fartiste written by Kathleen Krull and Paul Brewer, illustrated by Boris Kulikov

Follow the Line written and illustrated by Laura Ljungkvist

Forever Young written by Bob Dylan, illustrated by Paul Rogers

Four Pictures by Emily Carr written and illustrated by Nicolas Debon

Here's Looking at Me written and illustrated by Bob Raczka

How Do You Wokka-Wokka? written by Elisabeth Bluemle, illustrated by Randy Cecil

Look! Body Language in Art written and illustrated by Gillian Wolfe

Look! Drawing the Line in Art written and illustrated by Gillian Wolfe

Look! Seeing the Light in Art written and illustrated by Gillian Wolfe

Look! Zoom in on Art written and illustrated by Gillian Wolfe

Look! Look! Look! written by Nancy Wallace, illustrated by Linda Friedlaender

More Than Meets the Eye written and illustrated by Bob Raczka

No One Saw written and illustrated by Bob Raczka

Peter and the Wolf written and illustrated by Chris Raschka

Picturescape illustrated by Ella Gutierrez

Scribble written and illustrated by Deborah Freedman

Silent Music: A Story of Bagdad written and illustrated by James Rumford

Snow Music written and illustrated by Lynn Rae Perkins

Unlikely Pairs written and illustrated by Bob Raczka

References:

Carr, Kathryn S., & Buchanan, Dawna L. & Wentz, Joanna B. & Weiss, Mary L. & Brant, Kitty J. (2001). Not just for primary grades: a bibliography of picture books for secondary content teachers. *Journal of Adolescent & Adult Literacy*, 45 (2), p146-153.

Glaister, Bill Curriculum Lab Coordinator, February 2001. Retrieved from:
<http://www.uleth.ca/edu/currlab/handouts/picturebookcurr.html>

Hammond, M., Howard, P., Marantz, K., Packard, M., Shaw, J., & Wilson, H. M. (1994). *The picture book: Source and resource for art education*. Reston, VA: National Art Educators Association (NAEA).

Huck, Charlotte S., & Helper, Susan, & Hickman, Janet, & Kiefer, Barbara Z. (1997). *Children's Literature in the elementary school*. (6th ed.) Madison, WI: Brown & Benchmark.

Whitin David J. & White, Sandra (1992). *Read any good math lately?* Portsmouth, NH: Heinemann Educational Books.

Stauffer, Dr. Marilyn H. 1998, University of South Florida (Art in Children's Books lecture notes. Retrieved from: <http://nosferatu.cas.usf.edu/lis/lis6585/class/art.html>