

TEACHER'S GUIDE

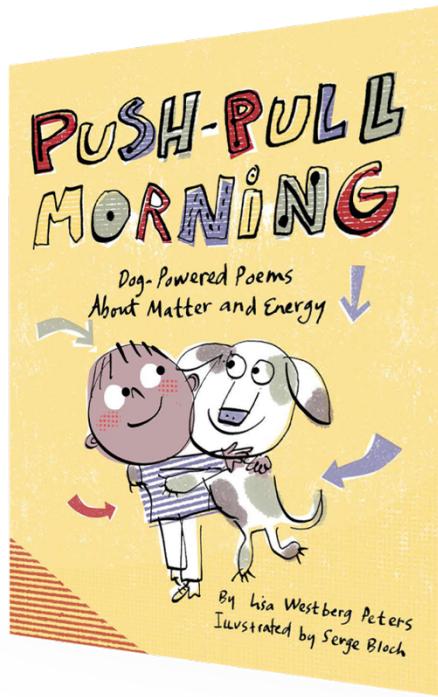
WITH STUDENT ACTIVITIES AND THE AUTHOR'S INSIDE SCOOP

PUSH-PULL MORNING: DOG-POWERED POEMS ABOUT MATTER AND ENERGY

Written by Lisa Westberg Peters
Illustrated by Serge Bloch

\$18.99 US / \$24.99 CAN
ISBN 9781635925272 HC
ISBN 9781635925463 eBook

Grades: PreK-3
Ages: 4-8



ABOUT THE BOOK

Introduce children to physics through play, poetry, and a puppy in this joyous celebration of how physics matters in our everyday lives.

This remarkable picture book explores scientific concepts (gravity, magnetism, electricity, friction, etc.) through the story of the relationship between a child and a puppy. Acclaimed author Lisa Westberg Peters' poems convey concepts in a way that children will remember—often with humor. Who could forget the various phases when they're presented in the form of a dog—solid when eating dinner, liquid when pouring herself into her basket, and gas when leaping erratically after a fly? Serge Bloch's whimsical illustrations extend the humor—and the love—in this tale of a child, a dog,

 **ASTRA BOOKS FOR YOUNG READERS**

WORDSONG

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and the energy that abounds in their world. Extensive notes at the end of the book define and explain the physics subjects included in the poems.

PRAISE FOR *PUSH-PULL MORNING*

"A dog and a child joyously demonstrate gravity, friction, inertia, and other physical phenomena...With an eye to her STEM-centric theme, Peters outfits her free-verse romps with titular references to physics and parenthetical identifications of relevant topics or principles...Playfulness and pedagogy intertwined." —*Kirkus Reviews*

"Picture book poetry, stated by a dog-loving young boy, introduces principles of physics in an inventive blend likely to intrigue... (with) deft blank verse and energetic, comic line drawings... the dual thrust should interest fans of Peters' many other books and may invite or challenge pet lovers, as well as readers and teachers of poetry or science."—*School Library Journal*

"Peters' energetic and educational book follows a child and their dog as together they explore unconditional love and the world of science. Each scientific topic, focused on matter and energy, is expressed through a delightful first-person free-verse poem and a lively, vivid illustration from Bloch that demonstrates movement and fluctuation of energy....Peters and Bloch take on important educational concepts and, in classic scientific fashion, transform them into something wholly original and interesting."

—*Booklist*

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This guide, written by author and poet Lisa Westberg Peters, features book activities, questions for kids, and the author's "inside scoop".

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Familiar concepts

Most of the concepts in PUSH-PULL MORNING are familiar to kids, but often go unexamined in their daily lives. This book offers a fun and friendly introduction to everyday concepts like friction, gravity, and electricity.

Point of view

These poems are written from the point of view of the child. This means that the reader sees the action through the child's eyes, even if the child doesn't appear on the page. The opening descriptions of the dog are a clue: they always start with the word "my." For example, my patient dog, my new dog, and so on. At first, we wonder who that is. Then we realize it's the child talking.

Questions for kids:

- Can you think of a different point of view?
- How would that change the poems?
- For example, what if the poems were written by gravity?
- How would gravity feel about kids and dogs trying to resist it when they jump and leap into the air?

Reading tip

At the opening of each poem, an adjective describes the dog: new, amazing, squirrel-chasing, and so on. The adjectives are a clue to the mood or personality of the dog, the action coming up, or the relationship between child and dog. Sometimes those adjectives stay the same throughout the poem; sometimes they change to help tell the "story" of each poem. In "Dog in Motion," the squirrel-chasing dog becomes the tongue-hanging dog midway through. In "Push-Pull Morning," the let's-go-for-a-walk dog becomes the let's-get-out-of-here dog as she grows weary of her visit with the vet.

Question for kids:

- Do you have suggestions for other adjectives that might also work in these poems?

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Pairs of poems

Some of the poems come in pairs. They might demonstrate opposite or different aspects of a concept. Sometimes they take a fresh approach to a concept, such as remembering and forgetting friction, a poem that describes the child's difficulties in giving the dog a bath.

Question for kids:

- In the book, the two electricity poems are about lightning and static electricity. What other aspects of electricity could you write about? (possibilities: power failures; electricity-powered appliances and devices; solar power; electric cars; remote-controlled toys)

Shape poetry

Some of the poems are concrete, that is, shape, poems. "Extra Electrons #1" is shaped like lightning; the "Falling Toward Earth" poems are sloped like the slide in the poems.

Questions for kids:

- What other physical science concepts could be shape poems?
- Could the words of a magnetism poem be pulled toward a magnetic object?
- Could a poem about the reflection of light show its own reflection on the page?
- Could the words in a poem about friction gradually pile up and come to a stop on the page?

Fun words

One of the poems, "Stuff in Common," contains a few examples of words that are called reduplicatives. That is a long, hard-to-pronounce (re-DUPE-lick-a-tiv) name for fun words that contain two identical or similar parts. See if your students can find them. (wiggly-jiggly, super-duper) Here's a helpful link:

<https://www.thoughtco.com/reduplicative-words-1692030>

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Questions for kids:

- Can you think of any other examples of reduplicatives? (bye-bye, flip-flop, hocus-pocus, etc.)
- Can you write a poem with lots of those fun words?

Read the glossary!

Don't forget to check the glossary in the back of the book! It offers two things: a lay person's definition of each concept and cool background information to fill out the basic definition.

If kids write their own poems...

Some kids are afraid to write poems. But kids are very good at seeing the world in a fresh way, and that's a very simple and useful definition of poetry.

After reading the poems in PUSH-PULL MORNING, kids can think about how the physical science concepts apply to their own lives. Maybe they don't slide down slides, but they like to leap off couches or "mountain climb" a door frame (my 10-year-old granddaughter in St. Paul, Minnesota, likes to do this!)

- How does gravity make it hard to climb up a door frame?
- How does friction make it possible?
- What if the door climber's sister smeared butter on the door frame first?
- What if the solid door frame suddenly turned into a liquid?

Below is a more detailed walk through three PUSH-PULL MORNING poems:

PHASE-CRAZY DOG

Pay attention to words:

- Listen to the long A sounds (phase, crazy, amazing, shape, chase)
- Notice the repetition of the description of the dog: amazing
- Notice the repetition of the word definite in the "solid" portion



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- Notice the similes that compare the dog to phases of matter: solid, liquid, gas

Questions for kids:

- Is there another animal that could also demonstrate concepts like matter and energy?
- What concepts could you demonstrate if the poems featured a hamster? A fish in the water? A worm underground?

The poem has two jobs...

- To introduce the concept that matter has three basic phases
- To show the dog and child getting to know each other and introduce the Aunty Rosa character, even though she isn't pictured.

How does the art help?

Illustrator Serge Bloch shows the "solid" dog as though she's made of bricks, a great way to demonstrate something that doesn't change shape or size. Portraying a solid dog as a liquid and gas is tricky but Serge helps us out. He found a way to make that dog look as though she'd been poured into the basket like a liquid, and to show the dog as a gas, he chose to make the dog airborne and almost invisible on the page. By this point in the collection, we're getting to know the artist's color palette: lavender and mustard yellow with accents of pale green and fire-engine red.

Question for kids:

- Why do you think he chose these colors?

Author's "inside scoop"

My first drafts of these poems did not feature a dog. They were all written in a poetic form that attracted me: tanka, a Japanese form that is longer and roomier than haiku. But I gradually realized that I needed to work harder to make potentially hard concepts accessible and appealing to kids. So, I rewrote them in the more flexible form of free verse and added a dog.

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Believe it or not, I am not a dog person. Cats are my thing. But I grew up with a dog and those memories served me well. Besides, many of my family members and friends—and it seems most Americans—have dogs.

FALLING TOWARD EARTH 1 and 2

These are **concrete**, or **shape**, poems

They resemble the slide that the child (not the dog) wants to go down. In this case, the two poems feature opposite slants. The dog is a scaredy-cat dog in the first poem because she doesn't want to go down the slide, and she's an eager-beaver dog in the second because she knows she'll be reunited with her friends.

Questions for kids:

- Why can't the child and Aunty Rosa fall up?
- What would it mean if they could fall up or float?

The poem has two jobs:

To demonstrate that gravity always pulls us toward the earth
To show the dog's personality and growing relationship with the child

How does the art help?

The facial expressions make clear when the characters are happy and when they're not. The slant of the slides matches each half of this pair of poems, making it easier to follow and understand. The words in large type add a sense of action and energy.

Author's "inside scoop"

Doing research is one of the best parts about writing. In a way, it's a black hole; sometimes it's hard to leave the research and start writing. For these poems, I needed to read about Galileo and his work in the 16th century with inclined planes to try to understand what he discovered about gravity. I finally consulted with a mathematician

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friend who knows these things. Even though the laws of physics govern our lives—we can't fall up a slide (an inclined plane), we always fall down—understanding why that's true was a challenge for me. But now, when I see kids slide down slides, I always marvel at the power of gravity. And, as often happens with a writing project, the more I learned about gravity, the more I wanted to learn.

OUR PLACE IN THE UNIVERSE

The concept

Paradox is a statement that seems to contradict itself but might be true anyway. Paradox might not seem to fall into the same category as gravity and friction. But the concept relates to science because sometimes scientists discover facts that contradict each other and yet both seem to be true.

In this case, the paradox comes about because of a difference in scale. Compared to the immense size of the universe, we humans are very, very small. But in our living rooms with our families, we are large in two ways—we occupy a larger space in our relatively small living rooms and we're also important to our families.

Questions for kids:

- What are other examples of paradox? (Can we be happy and sad at the same time? Can we be exhausted and energetic at the same time? Can something be beautiful and terrible at the same time? Examples are everywhere.)

How does the art help?

On the page, Serge shows a background of astronomical "objects": planets, stars, moons, even a rocket ship. But the story-time chair is large and in the center of the illustration.

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Question for kids:

- Why did the illustrator make the story-time chair so large?

Author's "inside scoop"

I worried that the concept of paradox would be too intimidating for teachers, parents, and kids. And when I'm worried about what to write, I pace around in my study, which is pretty small, so there's a lot of backing and forthing, and then I go to the kitchen to make a cup of tea because I'm often cold. I live in Minnesota! But I also feel strongly about stretching kids a bit. I knew kids could grasp the contrast between the size of the universe and the size of the story-time chair. And I knew that kids would like to be reassured that they are important to their families, so those arguments won the day for me. It felt like a great way to end a book about the physical science concepts that govern our lives, but that we don't always pay attention to.

If kids say they're confused about a concept, that's totally normal. Physics can be mind-bending, and many of us don't understand the concepts completely. But that leaves room for wonder and discovery.