

Shift Into Learning

Books about bikes are a terrific way to introduce STEM lessons. They can also be a great way to help students make the intellectual leap from those STEM lessons to language arts.

Preparation

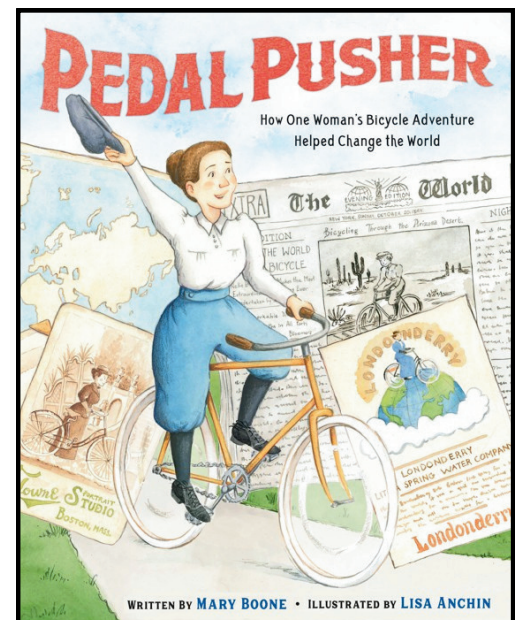
Introduce students to *Pedal Pusher: How One Woman's Bicycle Adventure Helped Change the World* by Mary Boone. Help them understand why cyclist Annie Cohen Kopchovsky's bike adventure was significant. You might ask:

- Have you ever learned to ride a bike? What do you remember about that? What was the most challenging part of the process?
- Why do you think bicycles are an important part of history?
- Why do bikes matter today?
- How has bicycling changed over the years?

Activity #1

The “penny farthing bike” (illustration included) with a tall front wheel quickly went out of fashion when the “safety bicycle” was introduced in the 1890s. The safety bike closely resembles today's bikes – with two wheels of the same size, a chain drive, and air-filled tires.

That's the past. Now it's time to dream about the future. Ask students to pretend it's the year 2150. People now live on Mars, cars drive themselves, and Taylor Swift's great-great-granddaughter is a pop star. Challenge students to create futuristic bikes befitting this new world.



Bike Design

Each student should draw or otherwise create a labeled diagram of their futuristic bike. Encourage them to include key parts, such as wheels, seat, handlebars, and any new features.

Now Start Writing

Your bike designers need to start by giving their new creations names. Each student should write a description of their bike, explaining what makes it different from today's bikes.

Encourage students to use clear and descriptive writing, including:

- A description of at least three special design features.
- Details about how the bike helps the environment or makes biking easier.
- Information about who would use this bike and why it's helpful or fun.

Shift Into Learning



Activity #2

Annie Cohen Kopchovskt was an unlikely person to take on the challenge of riding around the world for a number of reasons. She was frail, she was a mother with three young children and – the biggest reason of all – she had never ever ridden a bike.

She had to take lessons before she could begin her journey.

Tell students to imagine they are teaching someone who has never ridden a bicycle.

Their task is to write step-by-step instructions to help them learn to ride.

Introduction

Your would-be instructors should start with a short paragraph explaining why learning to ride a bike is important and fun.

Materials Needed

Students should list all required equipment and materials.

Directions

1. Use clear, numbered steps.
2. Start with basics like checking the bike and putting on a helmet.
3. Include tips on balancing, pedaling, steering, and stopping.
4. Explain what to do if they lose balance.
5. Be sure to mention safety rules.

Conclusion

End with a few sentences about the need for practice and how rewarding it can be when you're able to ride well.

Review and Revise

Students can work with a partner or in small groups to reach each other's instructions. Ask them to note: Are any of the steps difficult to follow? Does reading someone else's instructions remind them of a step they missed? Can they revise to make their writing easier to understand.

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Penny farthing bike

You can use this photo to help students understand what a penny farthy bike looks like (Activity #1).

Eugene Meyer, a Frenchman, invented what is thought to be the first version of the penny farthing bike in 1869. James Starley, a British engineer, improved the design in 1871, bringing mass production and widespread popularity to the bicycle.

Penny farthings became popular in popular in the 1870s and 1880s because they could be pedaled faster than other bikes of the time, sometimes traveling as fast as 25 miles (40 km) per hour. The downside? They were dangerous because riders had to take a running start to mount the bicycle and a jump off to dismount. Serious accidents were common, often involving major injuries or death.

_____’s bike of the future is called

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins or other markings visible.

_____’s Instructions
for Riding a Bicycle
Step Number _____

[illegible]