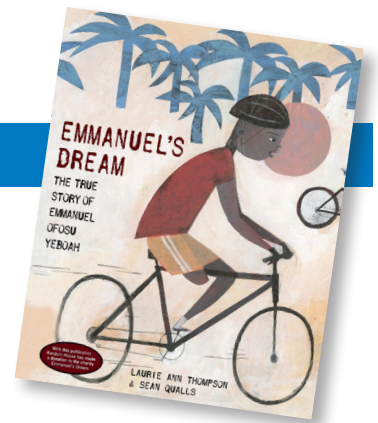


# Emmanuel's Dream

## RIF EXTENSION ACTIVITIES FOR EDUCATORS

STEAM-THEMED: SCIENCE, TECHNOLOGY, ENGINEERING, ART, MATH



### SCIENCE, ENGINEERING DYNAMIC DYNAMICS

Serious bike riders often wear very tight clothing and long, pointy helmets. Bike racers also ride bent down over the handlebars. Why might that be? When you're moving very quickly, the force of the air pushing against you slows you down. This is called *drag*. The less *surface area* an object has for the air to hit, the less drag—and the faster the object can go. With a partner, design a simple experiment to test this rule. Write out the hypothesis, materials, and procedure. If possible, trade experiments with another group and try them out!



### TECHNOLOGY, ART CHILDREN'S CHARITY

Emmanuel made a huge difference in the world at a young age. The Ladybug Foundation ([www.ladybugfoundation.ca](http://www.ladybugfoundation.ca)), Free the Children ([www.freethechildren.com](http://www.freethechildren.com)), and Kids Saving the Rainforest ([www.kidssavingtherainforest.org](http://www.kidssavingtherainforest.org)) are all charities started by kids. Visit these websites to read about what the charities do and how they were founded. If you could start your own charity, what would it do? Who or what would you help? Work with a small group to create an imaginary charity. Think of a name and mission for your charity. Design a website for it using a computer or white paper.

### ART, SCIENCE HEADS UP!

Materials: paper, crayons or markers

When Emmanuel biked around Ghana, he made sure to wear a helmet! Why is it important to wear a helmet when you ride a bike? How does it protect you? Make a colorful poster or brochure that explains why people should wear bicycle helmets. List at least 3 reasons.

### ENGINEERING, SCIENCE, ART BIKE TO THE FUTURE

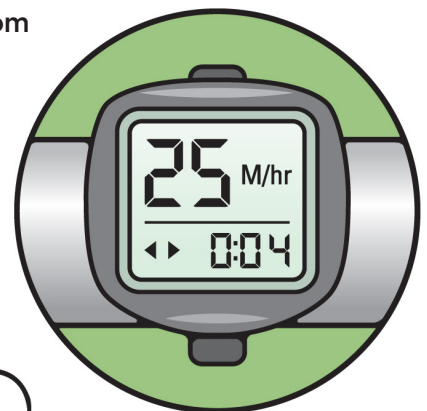
The bicycle was invented in the 1800s. Research to see what early bikes looked like. How have bikes changed over the years? Why? What was wrong with the early models? Using what you learn, draw a picture of what you think bikes will look like in 50 years. How do you think they'll change and why? Do you think people will still ride bikes, or will they be replaced by new technology? If so, what? Draw and label your picture, then write a paragraph explaining your choices.

### MATH BIG WHEELS

**For younger students:** Unicycles have 1 wheel, bicycles have 2 wheels, and tricycles have 3 wheels. Write (or draw!) at least 3 math problems using all these different kinds of cycles. When you're done, trade problems with a partner and solve.

**For older students:** Emmanuel traveled about 400 miles in 10 days. How many miles is that per day? If he rode for 10 hours every day, what was his average speed in miles per hour? What if he rode 12 hours every day?

Use [maps.google.com](http://maps.google.com) to find a city that is about 400 miles away from your hometown.



Reading Is  
Fundamental