

Bicycle Safety Lessons

Connecting Bicycle Transportation and Safety to the Curriculum

History and Social Science

- Research the Wright Brothers and their history as bicycle mechanics before they invented a working airplane.
- Research Amelia Bloomer or the African American champion racer, Major Taylor.
- Research the bicycle boom in the 1970s and 1980s.
- Assess the “bikeability” of routes to school and identify needed safety improvements and a plan to obtain community support for these changes.



Courtesy www.pedbikeimages.org/ Dan Burden

Science

- Ask students to show how and why bicycles stay upright when moving forward (gyroscopic effect).
- Ask students to draw a bicycle and label the parts and what they do.
- Ask students to guess how much area of a bike tire is in contact with the road. Using ink, blank newsprint and ink spot test to show how small the point of contact with the road is. (It's the size of a dime for road bike tires.) Discuss speed, friction and slipping.
- Ask the students to discuss what happens at intersections. What should happen? What does happen? What are some ways they can be safer when turning or crossing at intersections on their bikes?
 - Act like a car; look for other traffic, signal, move to turning lane and make the turn if it is safe.
 - Act like a pedestrian; get off bike and use crosswalk.

Physical Education and Health

- Cut wax paper into 8 ½-inch-by-11-inch pieces and have the children hold them up to their faces. Have the children pretend that the wax paper is snow, fog or rain, and explain that they are dangerous. No one sees very well in the snow or fog or rain whether they are driving a car, a bicycle or walking!
- Ask students to trace their footprints and handprints and write their pledge to be safe bicyclists. The completed prints can be displayed at a school assembly or in the halls and classrooms.
- Research the health benefits of riding a bicycle.
- Invite each grade level or classroom to write a safety cheer that incorporates bicycle safety messages and perform them at a school assembly.
- Hold a bicycle rodeo to practice safe bicycle riding.
- Have a bicycle safety poster contest that promotes fun and safety for both children and adults. Display them throughout the school.
- Design mock streets with intersections (using yellow tape) in the hallways, playground, basketball court or gymnasium with. As the children walk the hallways and grounds they must obey the rules of the road. Some children could wear special T-shirts or clothing to portray themselves as bicycles and other vehicles such as fire trucks or delivery vehicles.

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Connecting Bicycle Transportation and Safety to the Curriculum, cont.

- If a working red light can be obtained from the local city public works or county road commission, it could be set up to simulate different traffic/pedestrian scenarios. Other street signs (i.e., stop, yield) can be borrowed or created to enhance role-plays.
- Paint a bird's-eye view of a block of a town on an 8' X 10' tarp. Children in a classroom situation can use this to describe and practice safe bicycle and pedestrian behaviors.
- Test every child's balance by asking them to stand on one foot with eyes closed and do a single leg, deep knee bend without falling over.
- Show the class how to calculate energy expended while bicycling. Tell them food is fuel for their "engine" when they ride.

MPH	Kcal/lb	
8	0.0295	MPH= miles per hour
10	0.0355	Kcal=measurement of energy
12	0.0426	lb=weight in pounds
14	0.0512	
15	0.0561	
16	0.0615	
17	0.0675	
18	0.0740	
19	0.0811	
20	0.0891	
21	0.0975	
23	0.1173	
25	0.1441	

Multiply the MPH X Kcal X weight in pounds X time in minutes.

Example: A bicycle rider traveling at 12 mph who weighs 90 pounds who rides for an hour (60 minutes) would burn off at least 230 calories.

$$0.0426 \times 90 \times 60 = 230 \text{ calories.}$$

Add 22 kcal for every 100 ft of elevation climbed.

English or Social Studies

- Use the Internet and library to research bicycle use in other countries such as China, Holland, Italy, Japan or Germany.
- Use the Internet and library to research internationally famous known current bicyclists such as Joe Breeze, Lance Armstrong or Hans Rey, or Michigan bicycle celebrities such Tour de France rider Frankie Andreu (a Dearborn resident).

Art and Music

- Draw a bicycle T-shirt or bicycle jersey design that promotes fun and safety.
- Have a bicycle safety poster contest that promotes fun and safety for both children and adults.
- Create a bicycle safety song and perform it at an assembly.

