



Gold Wing Road Riders Association Middle School Motorist Awareness and Motorcycle Safety Program

Rationale:

Middle school students, especially 8th graders, are roughly a year or two away from getting their learners permit (15 years old in Georgia). Some of these students are going to ride motorcycles while others are going to drive cars or trucks. This program includes a Motorcycle Safety presentation as well as a Motorist Awareness presentation. While these students are still young and impressionable, we would be making them aware of motorcycle safety and motorist awareness before they swing a leg over the seat or get behind the wheel of a car or truck. The goal of this program is to start them on a life long journey as safe motorcyclists and having awareness about sharing the road. The content of this program is closely tied to National Standards for middle school science.

Materials and Supplies:

Motorcycle and/or trike

MSF literature

GWRRA Motorist Awareness literature and bumper stickers

Examples of personal protection gear—as listed below.

Old helmet and 2 small human head size watermelons or cantaloupes

90 grit sandpaper mounted on a block of wood or a piece of asphalt

Latex or nitrile glove mounted on a small block of wood

Swatch of denim tacked to a small block of wood

Old leather glove or swatch of leather tacked to a small block of wood

Colored construction paper (8 ½ x 11 white, black, blue, green, and gray)

Colored numbers

Activities:

1. Initial discussion about motorcycle safety.
 - a. Motorcycle Safety Foundation Courses
 - b. Personal Protection Gear (ask students to list personal protective gear for motorcycling)
 - i. Helmets
 - ii. Safety Jackets
 - iii. Safety Pants/Chaps
 - iv. Boots
 - v. Gloves
 - vi. Eye Protection
2. Using helmets for head protection
 - a. Demonstration: Ask students to predict what will happen to a watermelon or cantaloupe when dropped from a height of five feet with and without protection.
 - i. Drop an unprotected watermelon or cantaloupe from a height of five (5) feet. Have students observe the splatter pattern.

- ii. Drop a watermelon or cantaloupe that is buckled in a motorcycle helmet from the same height. Have students make observations.

Standard: Students will recognize characteristics of gravity, electricity, and magnetism as major kinds of forces acting in nature.

Recognize that every object exerts gravitational force on every other object and that the force exerted depends on how much mass the objects have and how far apart they are.

3. Abrasion protection resulting from friction due to asphalt.
 - a. Demonstration: Prior to each activity below, ask students to predict the effect or result.
 - i. Drag a block of wood covered with a thin material such as latex or nitrile across the sandpaper or asphalt to simulate the effect of abrasion on unprotected skin.
 - ii. Drag a block of wood covered with denim or some other fabric across the sandpaper or asphalt to simulate the effect of abrasion on these materials and how much better they would protect the skin than nothing at all.
 - iii. Drag a block of wood covered with leather or composite material across the sandpaper or asphalt to simulate the effect of abrasion on these materials and how much better they would protect the skin than denim or other fabric.
 - b. Have students predict the amount of abrasion on skin when the following conditions are present: gravel, sand, concrete, and other materials they may suggest.
 - c. Ask students to predict how speed and mass effect abrasion.

Standard: Students will investigate relationship between force, mass, and the motion of objects.

Demonstrate the effect of balanced and unbalanced forces on an object in terms of gravity, inertia, and friction.

4. Motorcycle visibility has been cited as a contributing factor in over 50% of motorcycle versus automobile/truck accidents (Hurt, 1981). The demonstration below shows how contrasting colors makes a difference in visibility.
 - a. Demonstration
 - i. Using a variety of colored backgrounds (white, gray, green, black, and blue) place a number cut from each color on each background. Example: On a piece of white paper glue the number 1 cut from white paper. To this same piece of white paper, glue a number 2 cut from a gray paper, then the number 3 cut from green paper, next the number 4 from black paper, and finally the number 5 from blue paper. Repeat this process for the remainder of the background colors.
 - ii. Have students predict which colored number will be the most visible at a distance for each background.
 - iii. Move each background color, in turn, away from the students. Ask students to indicate which color is most visible with each background to verify their predictions.

Standard: Students will explore the wave nature of sound and electromagnetic radiation.

Explain how the human eye sees objects and colors in terms of wavelengths.

We see light that bounces off of things around us. When the light enters our eyes, special cells tell our brains about the light. These cells are called photoreceptors. We have two main types of photoreceptors called rods and cones. They are called rods and cones because of their shapes. These cells are located in a layer at the back of the eye called the retina. Rods are used to see in very dim light and only show the world to us in black and white. This is why you see only black and white when you are outside in the evening or in a dimly lit room. The other type of photoreceptor, the cones, allows us to see colors. They are not as sensitive as the rods so they only work in bright light. There are three types of cones, one for each of the three main colors we see, red, green and blue.

Light is made of little bits called photons. When the sun shines, trillions and trillions of these little bits of light fall on the earth. The photons bounce off of almost everything and some of them enter our eyes. Those bits that enter our eyes allow us to see. White light produces the same effect as sunlight.

Starting in the 1600s with Sir Isaac Newton, scientists have believed that there are different kinds of photons. Different types give rise to our sense of colors. The different photons are said to have different wavelengths. Sunlight contains all the different wavelengths of photons. The visible wavelength colors can be seen when you look at a rainbow. Raindrops acting as natural prisms produce the colors. (ASU Ask A Biologist)

5. Motorist Awareness – Pass out tri-fold pamphlets
Explain becoming familiar with motorcycles reduces the odds of having a collision with a motorcyclist (Brooks, 1990).
 - a. Discuss with students other factors hiding motorcycles from a driver's view – Blind Spots.
 - i. Vehicle window pillar posts
 - ii. Other motor vehicles
 - iii. Signs
 - iv. Trees
 - v. Buildings
 - vi. Motorists hanging objects on mirrors & windows
 - b. Show students the safety features on the Gold Wing bike and trike that make it more visible to motorists.
When the presentation moves to the bikes / trikes one presenter can do something in the background while the other is talking, i.e. open a trunk looking for something...maybe pull out a specific tool and then put it back away, juggle, put on a hat and then take it back off, take out their cell phone and then put it back away, put on a doo-rag and take it back off... anything to take their attention away from the speaker. When the speaker stops, ask the students questions about what the other presenter was doing. (What color was the hat or doo-rag, what tool was pulled out, what color was the cell phone, what was juggled....you get the idea) When they answer, and they will, explain to them we just gave them an example of distractions or being distracted.
 - c. Ask students about distractions while operating a motor vehicle.
 - i. Talking on a cell phone
 - ii. Texting
 - iii. Eating
 - iv. Drinking (not necessarily alcohol)
 - v. Programming GPS
 - vi. Other?
6. Closing Statement – Please remember most motorcycle collisions with other vehicles occur at or near intersections, “Look Twice & Save-A-Life!”