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This page describes several of the ways we relate concepts and facts taught in standard grade school curricula in our bicycle safety education programs. We wouldn't pretend that we will teach students answers to questions on standardized tests, but hope that, by mentioning topics like "vocabulary" and "pi" in discussing a subject of interest to most children, we can help nurture a love of learning; and that by involving those students who know the concepts we relate, we can demonstrate tangible value of knowledge gained from school. If there are any other concepts you would like us to touch upon in our presentations, please feel free to contact me.

Jim Sheehan, Director

Language arts (Vocabulary, Etymology): We stress the value of learning vocabulary by explaining that it's easier to work on bikes together if we all to use the same, correct names of the parts. We then name the parts while pointing to them on a bike, and describe them, and some mnemonic devices to help remember them. "Derailleur" comes from French, and is an important part of most bikes (see below).

History: "Women's" step-through bike frames are a hold-over from the 1800's bike boom, when women did not wear pants; the bicycle may have contributed to the suffrage movement. In explaining the important safety concept of "standover height," we first ask who knows why only women would need a bike like that, and then explain as much of this history as time permits. The derailleur was invented by a Frenchman, Paul de Vivie, and perfected by an Italian, Tullio Campagnolo, but no one person is credited with the invention of the bicycle. It is a fun exercise to plot the range of answers to "How long have people been riding bikes?"

Mathematics (ratios, geometry, trigonometry): Math is very important to bike mechanics. In discussing wheels we use -- and ask students to define -- the terms circumference, diameter, radius, and pi; and discuss multiplication and ratios in relation to gears. Trigonometry is needed to measure spoke length.

Physics: One of the first tools we use is a tire lever, so we discuss simple machines and what they do for us. Various forces are also mentioned, and are defined as physics concepts. Friction in braking is also discussed.

Health: Causes and effects of concussions are explained in relation to helmet use.