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There is Math in Your Heart

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This curriculum unit can be used for students in Algebra 1 and Algebra 2. The math concepts used in this unit are: scientific notation, ratio and proportion, formulas, equation of a line and graphs; sequences, series and summation; speed of circulation of the blood, properly called flow, blood pressure, atmospheric pressure and conversion of units.

Pressure, whether blood pressure or atmospheric pressure, is measured and described using a common approach, although a variety of units can be used to quantify them. Some of the units used to express pressure are presented in this unit providing a comparison between the metric and the U.S. system. Currently, the metric system is the international system used.

Facts about the cardiovascular system and the heart are introduced as a background to stimulate interest in math exercises. The speed of the blood in our circulatory system depends on the actions we are performing, the size and the age of a person. Assuming that our analysis is done in persons without health problems, the calculations should be very similar for people of the same age and within a similar weight range. This is one of the reasons why the heart rate is different for people of different age, weight or size. How much different? Calculations of diameter of vessels will be very important to analyze the speed of the blood.

(Developed for Algebra I, grades 9-12, and Algebra II, grades 11-12; recommended for Algebra I, grades 8-12, and Algebra II, grades 9-12)