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Gravity: A Relatively Heavy Subject

Guide for Curriculum Unit 08.05.08
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Gravity affects us all, yet our understanding of this universal force is largely limited to our mathematical descriptions of its effects. For example, we can calculate the position and velocity of a falling object with great precision. We can also predict ocean tides with all their complexities. The underlying causes for these phenomena are much more difficult for us to articulate. This unit will demonstrate the use of data collection and mathematical models as powerful tools in understanding the world around us. In order to do this discovery will be put into an historical context. The hope is to put a human face on what is ultimately a very human endeavor.

The unit will specifically look at the development of tide theory, from the earliest speculations to universal gravitation. Students will be directed to develop and interpret mathematical models using trigonometric functions.

(Developed for Pre-Calculus, grades 11-12; recommended for Pre-calculus, grades 11-12, and Calculus, grade 12)