



# YALE NATIONAL INITIATIVE

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Curriculum Units by Fellows of the National Initiative  
2018 Volume IV: Big Numbers, Small Numbers

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## Estimating Big Numbers: Do You Really Understand Them?

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by Lynnette Shouse

Numbers are all around us every day. They are a crucial part of our everyday life. The unit focus will be on developing deeper number sense, interpreting place value and order of magnitude, and how all of these lead to reasonable estimations. The theme of my unit will be on clarification of place value and order of magnitude.

By reviewing what estimation is and how we can create a reasonable guess, my hope is that students become more comfortable working with and manipulating larger numbers such as ten thousand, hundred thousand, and continuing into the billions. In keeping with our theme I will use three key texts with students: *Great Estimations* and *Greater Estimations* by Bruce Goldstone and *Millions, Billions, and Trillions, Understanding Big Numbers* by David Adler. This unit is designed to have students take a deep “dive” into using the above mentioned skills and fully develop their number sense and ability to work with numbers in a strategic and flexible manner as well as to make a direct connection to their daily lives.

This unit has been designed to be used with academically advanced fourth graders, but it could be used for fourth through sixth grades.

(Developed for Mathematics, grade 4; recommended for Mathematics, grades 3-5)

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