INTERWOVEN STRANDS OF PROFICIENCY

- Conceptual Understanding
- Procedural Fluency
- Strategic Competence
- Adaptive Reasoning
- Productive Disposition

(National Research Council, 2001)

RELATING MATHEMATICS TO THE REAL WORLD

Productive disposition refers to the tendency to see sense in mathematics, to perceive it as both useful and worthwhile, to believe that steady effort in learning mathematics pays off, and to see oneself as an effective learner and doer of mathematics (NRC, 2001, p. 131).

The authors of Houghton Mifflin Math took great care to make sure that the mathematics in the program was interesting and enjoyable to students. The stories and problems in the program relate to the interests of students and help them to see real-world uses of mathematics. Two features of the program which can be used to illustrate this are the literature selections and the curriculum connections, the result of a special partnership with Weekly Reader.

The following examples show how literature is integrated into the teaching of mathematics in Houghton Mifflin Math.

- For the primary grades, read-aloud stories are provided. For example, in grade 2, students are introduced to a unit on adding two-digit numbers with the story Fifty-five Grandmas and a Llama. Read-aloud stories are an enjoyable and integral part of a young child's life.

- In the upper grades, students read the stories themselves. The topics are carefully matched to students' interests at each grade level. The selections are taken from a variety of sources. In a grade 6 selection, students read about a wildlife count-a-thon.

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Student Book, grade 1, page 257a

Student Book, grade 1, page 258

Student Book, grade 6, page 644
Van de Walle (2001) gives further justification for the use of literature in teaching mathematics.

Involving children with books in a variety of ways can serve to connect number with reality, make it a personal experience, and provide ample opportunity for problem solving (Van de Walle 2001, p. 104).

The curriculum connections done in partnership with *Weekly Reader* include connections to Science, Art, Reading, and Social Studies. For example:

- In a grade 1 Science connection, children learn how and why the shape of the moon looks different on different days.

- In a grade 3 Art connection, students learn about some relationships between geometry, gardens, and art.

- In a grade 6 Social Studies connection, students find out that it can be challenging to buy shoes in Switzerland unless you know the relationship between U.S. sizes and Continental sizes.