Frequently Asked Questions

Q: **How can you estimate the product of a decimal number and a one-digit whole number?**

A: You can estimate the decimal number using a nearby whole number and then multiply the whole numbers.
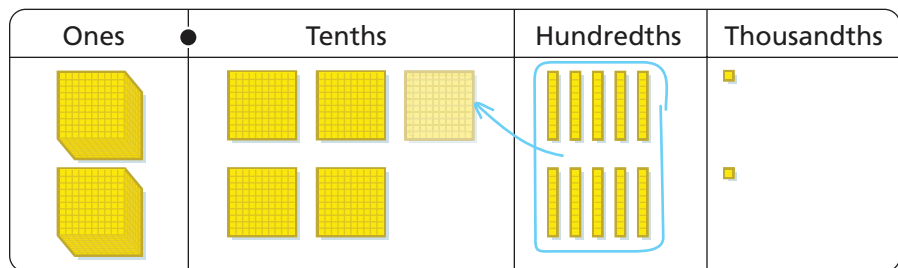
For example, 7×3.142 is about $7 \times 3 = 21$. The actual product is more than 21, since 3.142 is greater than 3.

Q: **How can you multiply a decimal number by a one-digit whole number?**

A1: You can use base ten blocks to model the ones, tenths, hundredths, and thousandths.

For example, to calculate 2×1.251, let the large block represent 1 and model 2 groups of 1.251. Regroup if needed.

$2 \times 1.251 = 2.502$

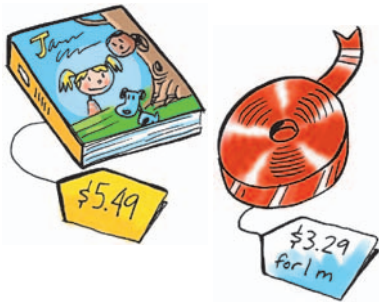| Ones	•	Tenths	Hundredths	Thousandths

A2: You can think of the decimal number as a whole number of tenths, hundredths, or thousandths. Then you can multiply by the whole number and place the decimal point.

For example, 2×1251 thousandths = 2502 thousandths.

Since 2×1.251 is about 2, the first 2 in 2502 thousandths must represent 2 ones. So the product is 2.502.
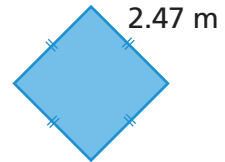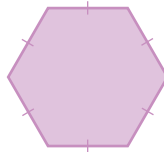
Practice

Lesson 1

1. Estimate each cost. Use the prices at the left.
   a) five paperback books   **b)** 3 m of ribbon

2. Estimate each product. Is your estimate higher or lower than the actual answer? Explain.
   a) 2.4×7 **c)** 5×11.872
   b) 3.16×8 **d)** 2.51×6
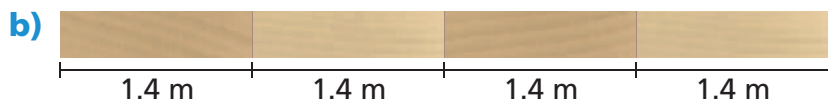
Lesson 2

3. How much would two packs of paper and two packs of pens cost altogether? Use the prices at the left.

4. Estimate and then calculate each perimeter. All sides are equal. Explain your thinking.
   a)   1.24 m

   b)   2.47 m

5. a) Explain how you know there is an error in the calculation below.
   $5 \times 3.12 = 1.560$
   b) Correct the error.

Lesson 3

6. Calculate the total length.
   a)

   2.3 cm

   b)

   1.4 m   1.4 m   1.4 m   1.4 m

7. Suppose you have three packages, each with a mass of 2.578 kg.
   a) What is the total mass of the packages?
   b) How do you know your answer is reasonable?