

Multiplying and dividing decimals by 10, 100, 1000

CURRICULUM ALIGNMENT

NUM.OPS.4

build upon, select and make use of a range of operation strategies.

NUM.PVT.4

investigate how decimals and percentages (and fractions) can be compared, ordered and expressed in related terms.

INTERACTIVES **Place Value Chart (Sliding Digits)** · challenge, display, explore

WHAT THIS LESSON TEACHES

When you multiply a decimal by 10, 100 or 1000 every digit moves left one, two or three columns; when you divide, every digit moves the same number of columns right. The decimal point stays fixed.

$$\rightarrow 3.4 \times 10 = 34$$

$$\rightarrow 0.6 \times 100 = 60$$

MODEL THIS ON THE BOARD

MULTIPLY 0.3 BY 1000

- 1 Write 0.3 on the place-value chart with 3 in the tenths column.
- 2 Move each digit three columns left: the 3 lands in the hundreds column.
- 3 Zeros fill the tens and units columns, so the answer is 300.

ANSWER KEY

a) 27

b) 180

c) 6.4

Q1: 24 cent

Q2: 40 cent

Q3: €0.36

Q4: 900 cent

Q5: 6 m

a) **Always** : Multiplying by 10 always moves every digit one column left.b) **Never** : The decimal point never moves; the digits move right instead.c) **Sometimes** : True for $0.25 \times 1000 = 250$; false for $0.0005 \times 1000 = 0.5$.d) **Always** : Multiplying by 10 shifts every digit one column to the left.

EXTENSION SHEET · STRETCH ANSWERS

S1: 118.96

S4: 8796

S2: 5694

S5: 59.79

S3: 50534