

# Connecting Decimal Multiplication to Fraction Multiplication

M4 L17 & 18

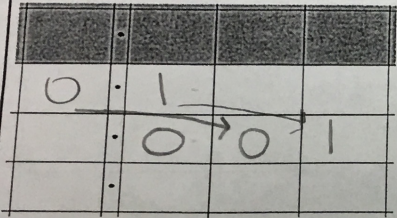
\* Don't forget to TRANSLATE the expressions and equations when you read them!

## 1 tenth of 1 hundredth

Decimal Expression:

$$0.1 \times 0.01$$

$$0.1 \div 100 = 0.001$$



Fraction Expression:

$$\frac{1}{10} \times \frac{1}{100} =$$

$$= \frac{1 \times 1}{10 \times 100}$$

$$= \frac{1}{1000}$$

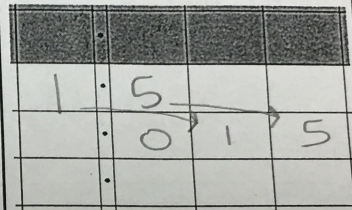
"one thousandths"

## 1.5 times 1 hundredth ← unit form

Decimal Expression:

$$1.5 \times 0.01$$

$$0.015$$



Fraction Expression:

$$\frac{15}{10} \times \frac{1}{100}$$

$$= \frac{15 \times 1}{10 \times 100}$$

$$= \frac{15}{1000} = 0.015$$

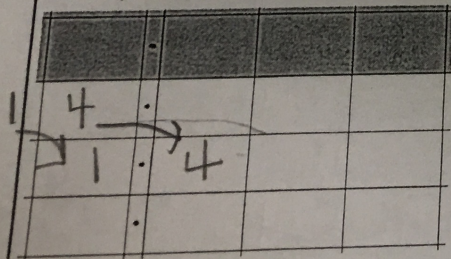
## seven times 2 tenths

Decimal Expression:

$$7 \times 0.2$$

$$7 \times 2 \times 0.1$$

$$14 \times 0.1 = 1.4$$



Fraction Expression:

$$7 \times \frac{2}{10}$$

$$= \frac{7 \times 2}{10}$$

$$= \frac{14}{10} = 1.4$$

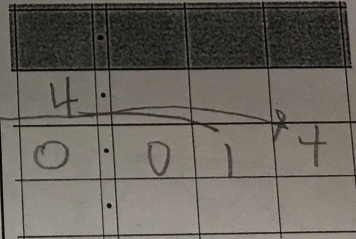
## 7 hundredths times 2 tenths

Decimal Expression:

$$0.07 \times 0.2$$

$$7 \times 0.01 \times 2 \times 0.1$$

$$14 \times 0.001 = 0.014$$



Fraction Expression:

$$\frac{7}{100} \times \frac{2}{10}$$

$$= \frac{7 \times 2}{100 \times 10}$$

$$= \frac{14}{1000} = 0.014$$

2 and 6 tenths x 0.4

unit form

Decimal Expression:

$$\begin{aligned} &2.6 \times 0.4 \\ &26 \times 0.1 \times 4 \times 0.1 \\ &26 \times 4 \times 0.01 \\ &104 \times 0.01 \\ &= 1.04 \end{aligned}$$

Fraction Expression:

$$\begin{aligned} &\frac{26}{10} \times \frac{4}{10} \\ &= \frac{26 \times 4}{10 \times 10} \\ &= \frac{104}{100} = 1.04 \end{aligned}$$

3 and 1 tenth times 1.4

Decimal Expression:

$$\begin{aligned} &= 3.1 \times 1.4 \\ &= 31 \times 0.1 \times 14 \times 0.1 \\ &= 434 \times 0.01 \\ &= 4.34 \end{aligned}$$

Fraction Expression:

$$\begin{aligned} &\frac{31}{10} \times \frac{14}{10} \\ &= \frac{31 \times 14}{10 \times 10} \\ &= \frac{434}{100} = 4.34 \end{aligned}$$

31 hundredths times 14 tenths

Decimal Expression:

$$\begin{aligned} &0.31 \times 1.4 \\ &31 \times 14 \times 0.01 \times 0.1 \\ &= 434 \times 0.001 \\ &= 0.434 \end{aligned}$$

Fraction Expression:

$$\begin{aligned} &\frac{31}{100} \times \frac{14}{10} \\ &= \frac{31 \times 14}{100 \times 10} \\ &= \frac{434}{1000} \\ &= 0.434 \end{aligned}$$

4.2 x twelve hundredths

Decimal Expression:

$$\begin{aligned} &4.2 \times 0.12 \\ &42 \times 12 \times 0.1 \times 0.01 \\ &504 \times 0.001 \\ &= 0.504 \end{aligned}$$

Fraction Expression:

$$\begin{aligned} &\frac{42}{10} \times \frac{12}{100} \\ &= \frac{42 \times 12}{10 \times 100} \\ &= \frac{504}{1000} \\ &= 0.504 \end{aligned}$$