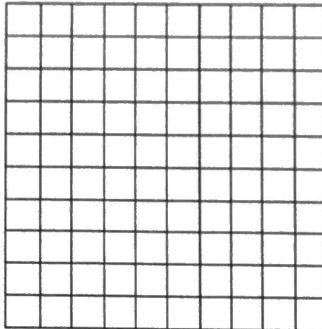# Day 3: Introduction to Percents

Robb's Fruit Farm consists of 100 acres on which three different types of apples grow. On 25 acres, the farm grows Honeycrisp apples. McIntosh apples grow on 30% of the farm. The remainder of the farm grows Fuji apples. Shade in the grid below to represent the portion of the farm each type of apple occupies.

✱ Given

Type	Color	Fraction	Decimal	Percent
Honeycrisp	Red	$\frac{25}{100}$ ✱	0.25	25%
McIntosh	Yellow	$\frac{30}{100}$	0.30	30% ✱
Fuji	Green	$\frac{45}{100}$	0.45	45%

Fuji: $100 - 30 - 25 = 45$

Percents, fractions, and decimals can be used interchangeably. Percents are fractions that are out of 100. Percent is also another name for hundredths. The percent symbol "%" means out of 100. Percents are also considered ratios.
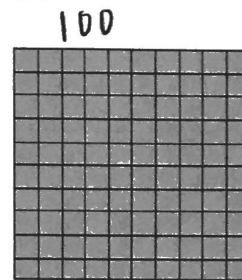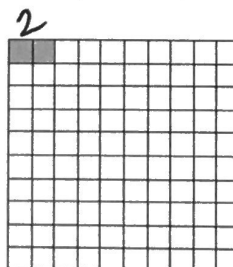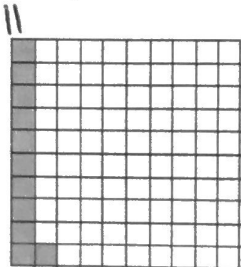
> ## Percents
>
> 35% means 35 out of 100.
>
> 35% as a fraction is $\frac{35}{100}$.
>
> 35% as a decimal is 0.35.
>
> 35% as a ratio is 35 to 100 or 35:100.

a. Represent each hundredth grid as a percent, fraction, and decimal.

Percent: 11%

Fraction: $\frac{11}{100}$

Decimal: 0.11

P: 2%

F: $\frac{2}{100}$ OR $\frac{1}{50}$

D: 0.02

P: 100%

F: $\frac{100}{100}$ OR 1

D: 1.00

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Converting Between Decimals, Percents, & Fractions

Percents to Decimals: Left Two   ←

a. 13%   .13   b. 6%   .06   c. 90%   .90   d. 125%   1.25

.13   .06   .90   1.25

Decimals to Percents: Right Two   →

a. 0.4   0.40   b. 0.32   0.32   c. 0.8427   0.8427   d. 3.26   3.26

40%.   32%.   84.27%.   326%.

Fractions to Percents: Decimal form, then Right Two →

a. $\frac{4}{5}$ = .80   b. $\frac{3}{8}$ = .375   c. $\frac{3}{10}$ = .30   d. $\frac{1}{3}$ = .33

80%.   37.5%.   30%.   33%.

Graphic Organizer for Converting Between Percents, Decimals, & Fractions

TO	Fraction	Decimal	Percent
Percent	Write the percent as a fraction with a denominator of 100. Percent to Fraction 35%. to $\frac{35}{100}$	Move the decimal point two places to the left and remove the % sign. Percent to Decimal 35%. to .35	
Fraction		Divide the numerator by the denominator. Fraction to Decimal $\frac{35}{100}$ to .35	Use division to write the fraction as a decimal, and then convert to a percent (Move decimal two points to the right) Fraction to Percent $\frac{35}{100}$ to .35 to 35%.
Decimal	Write the decimal as a fraction with a denominator of 10, 100, or 1000. Decimal to Fraction .35 to $\frac{35}{100}$		Move the decimal point two places to the right and add the % sign. Decimal to Percent .35 to 35%.

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Calculating Percents of a Number with Common Percents

Discover: Use your calculator to determine the percent of each number:

a. 1% of 28 = **.28**

b. 1% of 234 = **2.34**

c. 1% of 0.85 = **.0085**

d. 1% of 5.86 = **.0586**

e. 1% of 56.79 = **.5679**

f. 1% equals the decimal **.01**

g. 10% of 28 = **2.8**

h. 10% of 234 = **23.4**

i. 10% of 0.85 = **.085**

j. 10% of 5.86 = **.586**

k. 10% of 56.79 = **5.679**

l. 10% equals the decimal **.1 OR .10**

Calculating 1% of a Number
• Move decimal left 2
• divide by 100

Calculating 10% of a Number
• move decimal left 1
• divide by 10

Practice: Calculate the following percents:

a. 1% of 90 = **.9**

b. 1% of 75 = **.75**

c. 1% of 200 = **2.0**

d. 10% of 90 = **9.0**

e. 10% of 75 = **7.5**

f. 10% of 200 = **20.0**

There are certain percents, called **benchmark percents**, that are used commonly in real life. They are 1%, 5%, 10%, 25%, 50%, and 100%. State each relationship below:

a. How is 50% related to 100%?   **HALF**

b. How is 25% related to 100%?   **- HALF OF 50**
- TAKE HALF TWICE

c. How is 10% related to 100%?

d. How is 5% related to 10%?   **HALF**

e. How is 1% related to 10%?

f. How is 25% related to 50%?   **HALF**

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Practice: Try calculating the following percents mentally.

Number	50%	10%	1%	5%	25%
300	150	30	3	15	75
50	25	5	.5	2.5	12.5
400	200	40	4	20	100
16	8	1.6	.16	.8	4

Common Equivalent Fractions, Decimals, and Percents

Fraction	$\frac{1}{5}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{2}{5}$	$\frac{1}{2}$	$\frac{3}{5}$	$\frac{2}{3}$	$\frac{3}{4}$	$\frac{4}{5}$
Decimal	0.2	0.25	$0.33\overline{3}$	0.4	0.5	0.6	$0.66\overline{6}$	0.75	0.8
Percent	20%	25%	$33\frac{1}{3}\%$	40%	50%	60%	$66\frac{2}{3}\%$	75%	80%