GRADE 4

UNIT 1

Lesson 7

<u>Percents</u>

In this lesson you will learn about percents. The word percent means "per hundred" or "out of a hundred." When someone says, "My rent is 20% of my salary," she means that $20 out every $100 that she earns goes towards her rent. If her salary is $5000 then her rent is $50 \times \$20 = \$1000$.

Example 1: Andy has interviewed 100 people about the color of their car. The following table lists the results of the survey.

Color of Cars

Color of car	Number of people
Black	20
White	25
Grey	12
Blue	10
Red	8
Silver	25
Total	100

What percent of the people interviewed had a red car? What percent had a white car? What percent had a silver car? Remember that percent means "out of a hundred." The number of

people who had a red car is 8 or 8 out of 100 (8/100), which is 8%. Similarly, the number of people who had a white car is 25% and the number of people who had a silver car is also 25%.

It may be noticed that there is a connection between fractions and percents. Since 25% is equal to 25/100, and this is equivalent to 1/4 then 25% is equivalent to 1/4. Here are some conversions from fractions to percent with which you should be familiar.

Fraction	Percent
1/8	12½%
1/4	25%
3/8	37½%
1/2	50%
5/8	62½%
3/4	75%
7/8	87½%

Independent Work

Write each fraction as a percent.

(1) 1/4

    (A) 25%

    (B) 1%

(C) 4%

(D) 40%

(2) 3/4

   (A) 30%

   (B) 40%

   (C) 3%

   (D) 75%

(3) 33/100

   (A) 3%

   (B) 100%

   (C) 33%

   (D) 30%

(4) 1/2

   (A) 1%

   (B) 50%

   (C) 2%

   (D) 1/2%

(5) 67/100

   (A) 7%

   (B) 6%

   (C) 13%

   (D) 67%

Answers: (1) A; (2) D; (3) C; (4) B; (5) D.

Writing percent as a fraction

Just as we could write a fraction as a percent so too a percent could be written as a fraction. For example, 20% could be written as. $\frac{1}{5}$ Remember that 20% is, $\frac{20}{100}$, and if we divide both numerator and dominator by 20 we will obtain the equivalent fraction, $\frac{1}{5}$.

Example 2: Write 40% as a fraction.

Remember 40% $= \frac{40}{100}$, therefore if we divide both numerator and denominator by 20, we obtain, $40 \div 20 = 2$, and $100 \div 20 = 5$. The equivalent fraction is, $\frac{2}{5}$.

Independent Work

Write the following percents as fractions

(1) 80%

    (A) 1/8

    (B) 4/5

    (C) 8/100

    (D) 80/10

(2) 75%

    (A) 5/7

    (B) 7/10

    (C) 3/4

    (D) 5/10

(3) 50%

    (A) 1/2

(B) 5/100

(C) 1/5

(D) 1/100

(4) 30%

    (A) 3/100

    (B) 3/5

    (C) 1/3

    (D) 3/10

(5) 70%

    (A) 7/100

    (B) 7/10

    (C) 1/7

    (D) 70/10

Answers: (1) B; (2) C; (3) A; (4) D; (5) B.

How to Find the Percent of a Number

Earlier in this lesson you learnt that percent means "out of a hundred." Very often however, we are required to find a percent of a number other than a hundred. For example, if we want to find 35% of 200 we could be a little confused. Here is one simple method.

Since we know that 35% of 100 = 35, therefore 35% of 200 = $2 \times 35 = 70$. We could have also done $\frac{35}{100} \times \cdot 200 = 70$.

Example 3: Find 22% of 350. (You may use a calculator).

Solution: $\frac{22}{100} \times 350 = 77$.

Example 4: Find 15% of 270.

Solution: $\frac{15}{100} \times 270 = 40.5$.

Independent Work

Find each percent.

(1) 25% of 400

    (A) 40

    (B) 25

    (C) 100

    (D) 50

(2) 30% of 300

    (A) 90

    (B) 30

    (C) 60

    (D) 270

(3) 40% of 250.

    (A) 25

    (B) 40

    (C) 210

    (D) 100

(4) 15% of 360.

    (A) 15

    (B) 54

    (C) 36

(D) 345

(5) 75% of 480.

    (A) 405

    (B) 75

    (C) 360

    (D) 48

Answers: (1) C; (2) A; (3) D; (4) B; (5) C.

Lesson 7 Quiz

Write each fraction as a percent.

(1) 1/4

    (A) 4%

    (B) 25%

    (C) 1%

    (D) 40%

(2) 1/5

    (A) 1%

    (B) 5%

    (C) 20%

    (D) 50%

(3) 3/4

    (A) 75%

    (B) 3%

(C) 4%

(D) 25%

Write the following percents as fractions.

(4) 60%

    (A) 6/100

    (B) 1/6

    (C) 6/60

    (D) 60/100

(5) 40%

    (A) 40/100

    (B) 4/100

    (C) 1/4

    (D) 3/4

(6) 15%

    (A) 15/10

    (B) 1/15

    (C) 15/30

    (D) 15/100

Find each percent.

(7) 25% of 80.

    (A) 25

    (B) 20

    (C) 5

(D) 2

(8) 50% of 60

    (A) 50

    (B) 60

    (C) 5

    (D) 30

(9) 45% of 360

    (A) 36

    (B) 5

    (C) 162

    (D) 45

(10) 60% of 300

    (A) 180

    (B) 60

    (C) 30

    (D) 100

Answers: (1) B; (2) C; (3) A; (4) D; (5) A; (6) D; (7) B; (8) D; (9) C; (10) A.