



Warm up Grade 6

Date: \_\_\_\_\_



Mrs. O'Keefe was busy Friday, Saturday and Sunday. She drove a total of 2343 miles. How many miles did she drive each day?



\* Estimate

\* What operation?

\* Is your answer reasonable?

Division (Given total)  
Yes est. is close to actual!

Estimate  $2100 \div 3 \text{ day} \approx 700 \text{ miles}$

Actual  $2343 \text{ miles} \div 3 \text{ days} = 781 \text{ miles}$

She drove 781 miles each day.

1) Estimate

Adult  $\rightarrow$   $30 \times 1350 \approx 10500$

Student  $\rightarrow$   $25 \times 700 \approx 17500$

$$\begin{array}{r} \text{Total} \\ 10500 \\ + 17500 \\ \hline \$ 28000 \end{array}$$

1) Actual

Adult  $\rightarrow$  \$28

Student  $\rightarrow$  \$24

$$\begin{array}{r} 357 \text{ Adults} \\ \times 28 \\ \hline 2856 \\ + 7140 \\ \hline 9996 \end{array}$$

Total Adult sales = \$9996

$$\begin{array}{r} 662 \text{ Kids} \\ \times 24 \\ \hline 2648 \\ + 13240 \\ \hline 15888 \end{array}$$

Total student sales = \$15888

Total Money = Adult + Student

$$= \$9996 + 15888$$

$$= 25884$$

$$\begin{array}{r} 15888 \\ + 9996 \\ \hline 25884 \end{array}$$

The ticket agent took in \$25 884.

2) 4 Western Provinces

Bc, Al, Sask, Man

$$\begin{array}{r} 4 \ 913 \ 487 \\ 3 \ 290 \ 350 \\ 968 \ 157 \\ + 1 \ 148 \ 401 \\ \hline 9 \ 520 \ 395 \end{array}$$

Can use a calculator

The total of the 4 western populations is 9 520 395 people.

2b) Sask - Nun

$$\begin{array}{r} 968 \ 757 \\ - 29 \ 474 \\ \hline 938 \ 683 \end{array}$$

Saskatchewan has 938 683 more people than Nunavut

3) 
$$\begin{array}{r} 31612897 \\ - 30007094 \\ \hline 1605803 \end{array}$$

The population increased by 1 605 803 from 2001 to 2006

4) 82 km per day

Total distance  $\Rightarrow$  3936 km

$$3936 \div 28 \text{ km} = 140.57$$

$\approx$  141 days for Butterfly

Homework Solutions

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#5, 6, 7, 8, 9, 10, 11

5) 1854 students and 58 teachers attended a performance. Theater has 49 rows, with 48 seats.

a) Were any seats left?

49 rows of a repeat of 48 seats

means multiply

$$49 \times 48 = 2352 \text{ seats}$$

Total People (add)

Students + teacher

$$1854 + 58 = 1912$$

More seats than people, so there will be seats left over.

6. This table shows the number of participants at the 2002 and 2006 North American Indigenous Games.

Year	Athletes	Coaches, Managers, and Chaperones
2002 (Winnipeg)	6136	1233
2006 (Denver)	7415	1360

6a) Total Participants in 2002 means all athletes and coaches, managers/chaperones (so add)

$$\text{Estimate } 6000 + 1200 = 7200$$

$$\text{Actual } 6136 + 1233 = 7369$$

The total participants for 2002 is 7369 people.

- a) What was the total number of participants in 2002?  
 b) How many more athletes participated in 2006 than in 2002?  
 c) About how many times as many athletes participated in 2002 as coaches, managers, and chaperones?  
 How did you decide which operation to use each time?

6b) Athletes (How many more, means subtract)

$$\text{Estimate } 7400 - 6000 = 1400$$

$$\text{Actual } 7415 - 6135 = 1280$$

1280 more athletes participated in 2006 than 2002

6c) Athletes compares to Man & Coaches (How many more times, means divide)

$$\text{Estimate } 6000 \div 1200 = 5$$

$$\text{Actual } 6136 \div 1233 = 4.97$$

There is about 4.97 times as many athletes who participated in 2006 than coaches.

7. The food bank received 325 cases of 24 cans of soup, and 227 cases of 48 cans of soup. Estimate first. Then find how many cases of 12 cans of soup can be made.

Estimate: 325 case of 24 is like 650 cases of 12 cans  
 220 case of 48 is like 880 cases of 12 cans  
 so  $650 + 880 = 1350$  cases of 12 cans

$$\text{Actual: } 325 \times 24 = 7800 \text{ cans (First batch)}$$

$$227 \times 48 = 10896 \text{ cans (Second batch)}$$

$$\text{Total cans} = 7800 + 10896$$

$$= 18696 \text{ cans}$$

Now put them in cases of 12

$$18696 \text{ cans} \div 12 = 1558 \text{ cases}$$

8. Ms. Talby's hens laid 257 dozen eggs last month.

- a) About how many eggs is that?  
 Explain your estimation strategy.  
 b) Exactly how many eggs is that?  
 How do you know your answer is reasonable?  
 b)  $257 \times 12 = 3084$  eggs

dozen has 12 eggs

a) Estimations:  $250 \times 12$  (Mental math half and double)

$$500 \times 6 = 3000 \text{ eggs}$$

9. The owner of a building renovated 18 apartments.  
Painting cost \$5580 and new lights cost \$3186.
- Which operation or operations will you use to find the cost for each apartment? Explain.
  - Estimate this cost. Explain the strategy you used.
  - Find the exact cost.

a) To find the cost of each apartment I will add the cost of the painting with the lighting THEN divide the total cost by 18.

b)  $\$5600 + \$3000 = \$8600$

Estimate

$8600 \div 20 = 430$

b)  $\$5580 + \$3186 = \$8766$

Actual

$8766 \div 18 = 487$

10. A newspaper prints 8762 papers, each with 16 pages.  
A roll of newsprint can be used to print 6150 pages.  
About how many rolls of newsprint are required?  
Show your work.  
How do you know your answer is reasonable?

Estimate:  $9000 \times 15 = 135\ 000$

Actual:  $8762 \times 16 = 140\ 192$

$135\ 000 \div 5000 = 27$

$140192 \div 6150 = 22.8$

About 23 rolls of news print are required.

My estimate is reasonable because the values are close.

11. The world's longest novel, *À la recherche du temps perdu* by Marcel Proust of France, contains about 9 609 000 letters.
- Suppose each page contains about 2400 letters.  
About how many pages does the novel contain?
  - Suppose it took Jacques 85 days to read the novel.  
He read the same number of pages per day.  
About how many pages did Jacques read each day?  
How do you know your answers are reasonable?



a) Estimate:  $10\ 000\ 000 \div 2500 = 4000$

Then use a calculator Actual :  $9\ 609\ 0000 \div 2400 = 4003.75$

b) Estimate  $4000 \div 80 = 50$  days

Actual  $4003.75 \div 85 = 47.1$  days

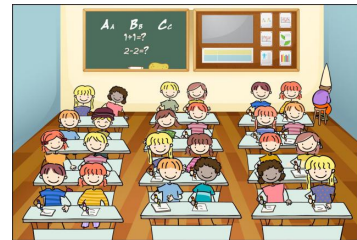
Jacques read about 47 pages a day

Estimates are close, so reasonable.

## Ch.2 (Lesson 3: Exploring Multiples)

### Specific Outcomes

- Demonstrate an understanding of place value for numbers greater than one million. (6N1)
- Solve problems involving large numbers, using technology. (6N2)
- Demonstrate an understanding of factors and multiples by:
  - determining multiples and factors of numbers less than 100
  - identifying prime and composite numbers
  - solving problems involving multiples. (6N3)
- Explain and apply the order of operations, excluding exponents, with and without technology (limited to whole numbers). (6N9)



● Today

Do you remember counting by 2's?

The kangaroo hops by 2's.



Can you count by 3's?

0, 3, 6, 9, 12, 15, 18 . . .  
↓ ↓ ↓  
3x1 3x2 3x3

 **Multiplication Chart**  
**1-100**

x	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Multiples of

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Multiples of 4

★ Multiplication Chart  
★ 1-100

x	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

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4  
8  
12  
16  
20  
24  
28  
32  
36  
40  
⋮

Multiples of 6

★ Multiplication Chart  
★ 1-100

x	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

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6  
12  
18  
24  
30  
36  
42  
48  
⋮

Common Multiples

12, 24, 36,



Wieners are sold in packages of 12. Hot dog buns are sold in packs of 8. If I want to sell around 75 hot dogs and have very little left over, then how many packages of each should I buy?



Must show work

Wieners- (pack 12) #1 2 3 4 5 6 packs  
 12, 24, 36, 48, 60, 72 / 84

Buns 8, 16, 24, 32, 40, 48, 56, 64, 72 / 80

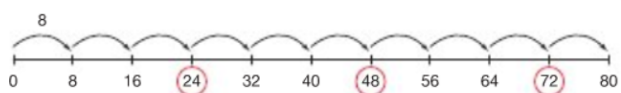
Circle the common multiples: 24, 48, 72

Who is the closest to 75? 72

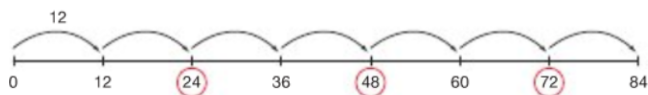
How many packs of wieners? 6 packs

How many Packs of buns? 9 packs

You can use number lines to find the multiples of 8 and 12.  
To find the multiples of 8, start at 0 and skip count by 8.



To find the multiples of 12, start at 0 and skip count by 12.



Draw a large Venn diagram with 2 overlapping loops.  
Label the loops **Multiples of 3** and **Multiples of 5**.

Sort these numbers in the Venn diagram:

30, 24, 21, 18, 27, 15, 40, 35

✓✓✓✓✓✓✓  
↑  
largest

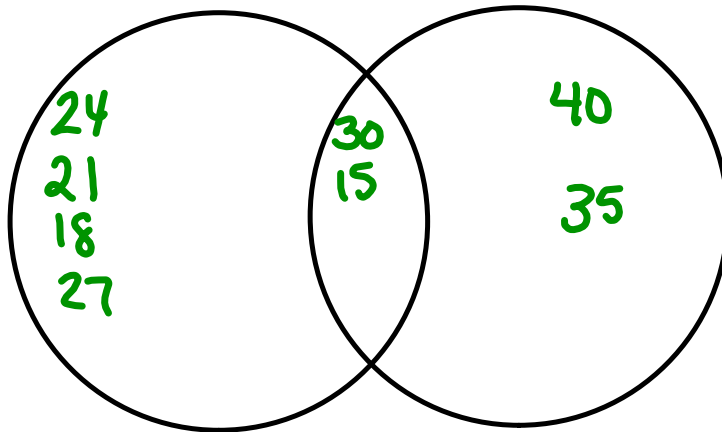
Multiples of 3

3, 6, 9, 12, 15, 18, 21, 24, 27, 30

33, 36, 39

Multiples of 3

Multiples of 5



Multiples of 5

5, 10, 15, 20, 25, 30

35, 40

Class/Homework

Page 56-58

#1, c, d

#2a, b

#4a, b, c, d

#5a, b

#6a

#8

We will work more on  
this on ~~Monday~~  
Wed

#9

#10

#13

#14

**Practice**

You may use a hundred chart or number lines to model your solutions.

1. List the first 10 multiples of each number.

a) 2

b) 5

c) 8

d) 7

2. List the first 6 multiples of each number.

a) 12

b) 11

c) 16

d) 15

3. Which numbers below are multiples of 6?

What strategy did you use to find out?

36    70    66    42    54    27    120    81

4. Which of the numbers 21, 24, 45, 30, 42, 60, and 84 are multiples of:
- a) 3?            b) 12?            c) 7?            d) 15?



5. Find the first 3 common multiples of each pair of numbers.
- a) 4 and 5
  - b) 7 and 4
  - c) 3 and 9
  - d) 10 and 15

6. Find the first 3 common multiples of each set of numbers.  
Which is the least common multiple? Explain your work.
- a) 3, 4, and 6      b) 2, 3, and 4      c) 4, 5, and 10

7. Find all the common multiples of 8 and 9 that are less than 100.

8. Two TV movies start at 8:00 P.M.  
One channel airs commercials every 6 min.  
The other channel airs commercials every 9 min.  
When will the two channels start commercial breaks at the same time?



9. A spider has 8 legs. An ant has 6 legs. There are a group of spiders and a group of ants. The groups have equal numbers of legs. What is the least number of spiders and ants in each group? Show your work.

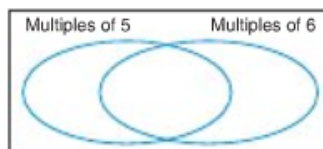


10. Make a large copy of this Venn diagram.

Sort these numbers.

45, 24, 52, 30, 66, 15, 85, 90, 72, 60, 20, 38

What can you say about the numbers in the overlap?



11. Taho plays shinny every 2 days. He plays lacrosse every 3 days. Suppose Taho plays shinny and plays lacrosse on October 1. What are the next 3 dates on which he will play shinny and play lacrosse? Explain how you know.



12. Find the first 2 common multiples of 36 and 48.



13. Which numbers are common multiples of 8 and 3?

How did you find out?

a) 32

b) 72

c) 48

d) 54

e) 66

f) 96

14. Veggie patties are sold in packages of 5.  
Buns are sold in packages of 8.  
You need about 125 veggie burgers for a school barbecue.  
You do not want any patties or buns left over.  
How many packages of each should you buy?  
What strategy did you use to find out?

15. Kevin, Yone, and Miroki work part-time at the YMCA in Kamloops.  
Kevin works every second day.  
Yone works every third day.  
Miroki works every fourth day.  
Today, they worked together.  
When will they work together again?  
Explain how you know.

16. a) A group of friends get together to make friendship bracelets. A package of embroidery floss can be shared equally among 3, 5, or 6 friends with no strands left over. What is the least number of strands the package can contain?
- b) Suppose the package in part a could also be shared equally between 2 friends. Does this change your answer to part a? Why or why not?



17. A common multiple of two numbers is 64.
- How could you find the two numbers?
  - Is there more than one possible answer?
  - If your answer to part b is yes, find as many pairs of numbers as you can.

Integer questions for practice Solutions.notebook