Confucian Tai Shing Primary School
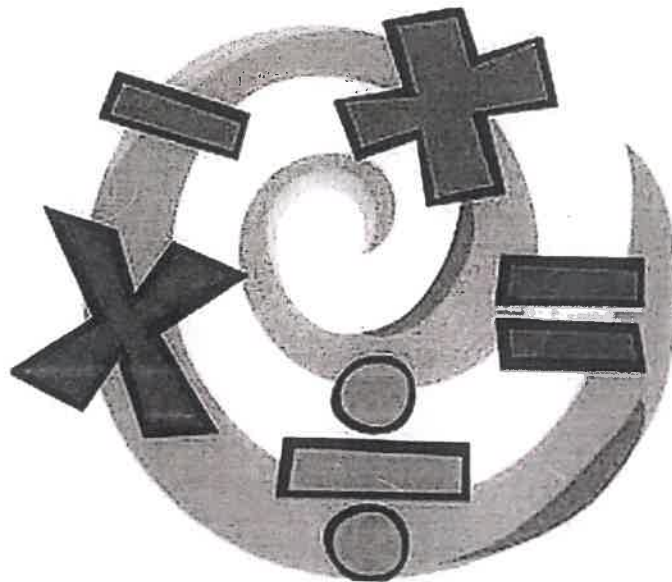## 2021-2022   1st Term

Mathematic Quality Assignment

(L.C.M. and H.C.F. 4N5✿)

Name: _kitty_ (16)   Class: _4 Joy_

(A) Complete the following questions

> Learning objective: Revising (溫習) the relationship of number of factors (因數) and number of multiples (倍數).

1. $9 \times 9 =$ _____81_____, _____81_____ $\div 9 = 9$

   9 is a factor of ___81___, therefore ___81___ is the multiple of 9.

2. $2 \times 36 =$ ___72___, $9 \times 8 =$ ___72___, ___72___ $\div 2 = 36$,

   ___72___ $\div 9 = 8$

   2, 8, 9 and 36 are the ((factors)/ multiples) of 36.

   Therefore ___36___ is the (factor / (multiple)) of 2, 8, 9 and 36.

3. List the first 8 multiples of 3:
   3, 6, 9, 12, 15, 18, 21, 24

   List the first 8 multiples of 9:
   9, 18, 27, 36, 45, 54, 63, 72

   According to the pattern, the multiples of 9 ((are) / are not) also the multiples of 3.

   (are not) ✓

   All multiples of 3 (are / (are not)) also the multiples of 9.

4. List all the factors of 4: 1, 2, 4

   List all the factors of 8: 1, 2, 4, 8

   According to the pattern, the factors of 8 (are / (are not)) also the factors of 4.

   All multiples of 4 ((are) / are not) also the multiples of 8.

   (are not) ✓

(B) Complete the following questions.

Key learning points: Use the listing method (列舉法)to find the Highest Common Factor (最大公因數).

5. Use the listing method to find the H.C.F. of 32 and 44.

List all the factors of 32 and 44

The factors of 32 are 1, 2, 4, 8, 16, 32 ___. $32 = 2 \times 16$

The factors of 44 are 1, 2, 4, 11, 22, 44 ___.

The common factors of 32 and 44 are 1, 2, 4 ___.

The H.C.F. of 32 and 44 is 4 ___.

6. Use the listing method to find the H.C.F. of 12 and 30.

The factors of 12 are 1, 2, 3, 4, 6, 12 ___.

The factors of 30 are 1, 2, 3, 5, 6, 10, 15, 30 ___.

The common factors of 12 and 30 are 1, 2, 3, 6 ___.

The H.C.F. of 12 and 30 is 6 ___.

7. Use the listing method to find the H.C.F. of 36 and 72.

The factors of 36 are 1, 2, 3, 4, 6, 9, 12, 18, 36 ___.

The factors of 72 are 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72 ___.

The common factors of 36 and 72 are 1, 2, 3, 4, 6, 9, 12, 18, 36 ___.

The H.C.F. of 36 and 72 is 36 ___.

(C) Complete the following questions.

Key learning points: Use short division (短除法) to find the H.C.F.

8. Use short division to find the H.C.F. of 24 and 60.

$2 \times 3 \times 2$

$= 12$

∴ The H.C.F. of 24 and 60 is __12__ ∴ ○

Which number can be divided exactly by 24 and 60 at the same time?

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2 | 24   60
3 | 12   30
2 |  4   10
      2    5
```

9. Use short division to find the H.C.F. of 36 and 90.

$3 \times 3 \times 2$

$= 18$

∴ The H.C.F. of 36 and 90 is __18__ .

Which number can be divided exactly by 36 and 90 at the same time?

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3 | 36   90
3 | 12   30
2 |  4   10
      2    5
```

10. Use short division to find the H.C.F. of 16 and 68.

2×2

$= 4$

∴ The H.C.F. of 16 and 68 is __(4)__ ?

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2 | 16   68
2 |  8   34
      4   17
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(D) Complete the following questions.

> Key learning points: Use the listing method to find the L.C.M.

> How many multiples need to be listed to find the number?

11. Use the listing method to find the L.C.M. of 3 and 8.

The multiples of 3 are ___3, 6, 9, 12, 15, 18, 21, 24, 27......, 30___

The multiples of 8 are ___8, 16, 24, 32, 40, 48___ ......

The L.C.M. of 3 and 8 are ___24___.

12. Use the listing method to find the L.C.M. of 14 and 42.

> Which one (14 or 42) will be listed first? How many multiples you need to list to find the number?

The multiples of ___14___

are ___14, 28, 42, 56, 70, 84___ ......

The multiples of ___42___ are ___42, 84, 126___ ......

The L.C.M. of 14 and 42 are ___42___.

13. Use the listing method to find the L.C.M. of 15 and 20.

The multiples of ___15___ are ___15, 30, 45, 60, 90___ ......

The multiples of ___20___ are ___20, 40, 60, 80, 100___ ......

The L.C.M. of 15 and 20 are ___60___.

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(E) Complete the following questions.

Key learning points: Use short division to find the L.C.M.

14. Use short division to find the L.C.M. of 9 and 24.

$$3 \times 3 \times 8 \quad \checkmark$$

$$= 72 \quad \checkmark$$

∴ The L.C.M. of 9 and 24 is __72__ $\checkmark$.

$$\begin{array}{c|cc} 3 & 9 & 24 \\ \hline & 3 & 8 \end{array}$$

Which number can be divided exactly by 9 and 24 at the same time?

15. Use short division to find the L.C.M. of 56 and 64.

$$2 \times 2 \times 2 \times 7 \times 8 \quad \checkmark$$

$$= 448 \quad \checkmark$$

∴ The L.C.M. of 56 and 64 is __448__ $\checkmark$.

$$\begin{array}{c|cc} 2 & 56 & 64 \\ 2 & 28 & 32 \\ 2 & 14 & 16 \\ \hline & 7 & 8 \end{array}$$

Which number can be divided exactly by 56 and 64 at the same time?

16. Use short division to find the L.C.M. of 24 and 74.

$$3 \times 12 \times 37 \quad \times (\ 2 \times 12 \times 37 \quad \checkmark \ )$$

$$= 444 \quad \times (\ 888 \quad \checkmark \ )$$

∴ The L.C.M. of 24 and 74 is __444__ $\times$.

$$(\ 888\ )$$

$$(2)(3)\begin{array}{c|cc} & 24 & 74 \\ \hline & 12 & 37 \end{array} \quad \times$$

(F) Value-added Learning Area (延伸學習)

Find H.C.F. by using short division method. The divisor (除數) must be divided exactly (整除) by all three dividends (被除數).

17. Use short division to find the L.C.M. of 12, 24 and 48.

$$\underline{4 \times 3 \times 1 \times 2 \times 4}$$

$$= \underline{88 \quad ✗ \quad (96)}$$

∴ The L.C.M. of 12, 24 and 48 is _____96_____.

4	12	24	48
3	3	6	12
	1	2	4

18. Use short division to find the H.C.F. of 18, 54 and 72.

$$\underline{2 \times 27 \times 36 \quad ✗ \quad (2 \times 3 \times 3}$$

$$= \underline{952 \quad ✗ \quad (18}$$

∴ The H.C.F. of 18, 54 and 72 is _____952 ✗_____ (18)

2	54	72	18
(3)	27	36	(9)
	(1)	(9)	(3)

Which number can be divided exactly by 18, 54 and 72 at the same time?

19. Find the H.C.F. of 42, 84 and 105.

$$\underline{3 \times 14 \times 28 \times 35 \quad (3 \times 7}$$

$$= \underline{980 \quad ✗ \quad (21}$$

∴ The H.C.F. of 42, 84 and 105 is _____980 ✗_____ (21)

3	42	84	105
(7)	14	28	35
	(2)	(4)	(5)

Which number can be divided exactly by 42, 84 and 105 at the same time?

(G) Challenging question

20. Set a question to find the H.C.F. of 3 numbers. The H.C.F. must be two digital numbers (兩位數). And then solve it by using short division method.

The H.C.F. of __16__ , __18__ and __10__ is

$$\frac{16}{=16} \quad \frac{(2)}{(2)}$$

∴ The H.C.F of 16, 18, 20 is 168 ✗

(The H.C F of 16, 18, 20 is 2.)

$$16 \overline{)\,16 \quad 18 \quad 20}$$
$$\quad 1 \quad 5\overline{)\,10} -$$

$$2 \overline{)\,16 \quad 18 \quad 20}$$
$$\quad 8 \quad 9 \quad 10$$

Marks:____/20

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Summary:

1. We can use ___listing___ method and ___short division___ (short division) method to find the L.C.M. of two numbers.

2. When using short division method to find the H.C.F. of any two numbers and choosing common factors as divisors, you can make different choices or put it in different ___order___.

3. ___1___ is the factor of any number. Therefore any two numbers should have at least one common factor, which is ___1___.

4. When using short division method to find the L.C.M. of any two numbers and choosing ___common factors___ as divisors, you can make different ___choices___ or put it in different order. (common factors)

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Assessments:

Self-assessment:
After studying this chapter,

☑ I can use listing method to find the H.C.F. of two numbers.

☐ I can use short division method to find the H.C.F. of two numbers.

☑ I can use listing method to find the L.C.M. of two numbers.

☐ I can use short division method to find the L.C.M. of two numbers.

☐ I calculate carefully.(Work)

☐ I learned with effort.(Attitude)

☐ I check the steps carefully.(Ability)

I have learned that ~~is good~~ *using short division* faster than using listing method to find the H.C.F. and L.C.M. of two numbers.

Peer assessment: very good! You can do more revision

Parents' Feedback:

☑ Able to work independently
(能獨立完成課業)

☐ Finish assignments only with guidance (須指導才能完成課業)

☑ Neat writings (字體端正)

☐ Sloppy writings (字體草率)

☑ Tidy assignment (課業整潔)

☐ Pay attention to tidiness (要注意整潔)

☐ Complete assignment seriously (認真完成課業)

☑ More effort required (仍須努力)

☐ Other comments (其他意見): _____

Teacher's Feedback:

☐ Able to master the learning objectives of the unit

☑ Unable to master some learning objectives of the unit

☑ Neat writings

☐ Sloppy writings

☐ Tidy assignment

☐ Pay attention to tidiness

☐ Completed assignment according to instructions

☑ Be more careful in reading questions

- -

☐ Excellent

☑ Good

☐ Satisfactory

☐ Improvement needed

☑ Other comments: _____ Pay attention to short division _____

_____.

The End