

Learning Area **Number Patterns and Sequences**

Learning Objective Recognise and extend number patterns and sequences formed by counting on and counting back in intervals of any size.

- Learning Outcomes**
- i. Describe the pattern of a given number sequence.
 - ii. Extend number sequences.
 - iii. Complete missing terms in given number sequences.
 - iv. Construct number sequences based on given patterns.

Vocabulary Number sequence, term, pattern, difference, count on, count back.

Resources Building blocks, calendar, paper grids (6×6, 9×9 and 10×10), matchsticks

Focus Communication in Mathematics, contextual learning, constructive learning, multiple intelligence, thinking skills.

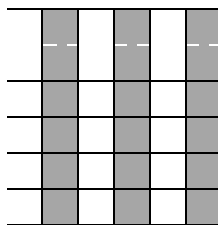
INTRODUCTORY ACTIVITIES

Teacher introduces the topic by asking students to identify patterns using different size grids.

Teacher distributes 6 x 6 grid to each student in the first two rows of the class, 9 x 9 grid to the next 2 rows and 10 x 10 grid to the rest of the class.

“Start counting from the top left hand corner. Shade the second square out of every two squares. At the end of one row, continue to the next row from the left. What do you get?”

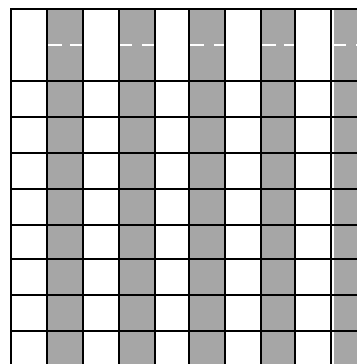
Expected result:



6 x 6 grid



9 x 9 grid



10 x 10 grid

***“What happens if you shade the fifth square out of every 5 squares.”
“Will you get the same pattern?”***

Expected response: Different patterns will be obtained

Teacher will now introduce patterns in numbers

***“Class, today we are going to learn about patterns related to numbers.
Can anyone give me an example of a pattern involving numbers,
that you see in our daily life.”***

Expected response: Accept any answer with reasonable pattern.

PROCEDURE

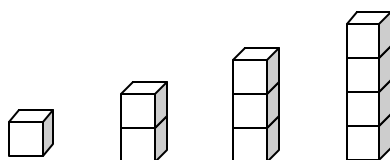
LO 1: Describing the pattern of a given number sequence.

Activity 1:

Teacher distributes building blocks to students who have been divided into groups of 4.

“Arrange the blocks in an orderly way.”

Teacher goes around and notes the different arrangements. Teacher picks an arrangement that shows the pattern below:

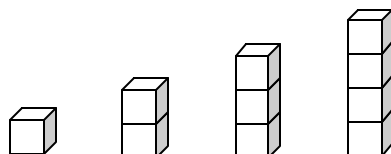


“What is the order of this arrangement?”

Expected response: Increasing height (or similar answer)

“This arrangement is called a pattern”

“Now! Let’s look at the arrangement again. Count the number of blocks in each column?”



Expected answer: 1, 2, 3, 4

Teacher writes down the numbers: 1, 2, 3, 4

Mathematics Teaching Scripts – Form 1

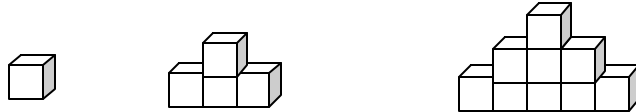
“The series 1, 2, 3, 4 is called a number sequence. Each number in this sequence is called a term. There are 4 terms in this sequence.”

“Can you tell me what is the first term in this sequence?”

Expected answer: 1

“Let’s look at another example”

Teacher rearranges the blocks in another way



“Can you tell me what is the number sequence for this arrangement?”

Expected answer: 1, 4, 9

Teacher writes down the sequence: 1, 4, 9

“Tell me all the terms in this sequence”

Expected answer: 1, 4, 9

“Good, let’s try another example using something in this classroom”

Activity 2:

Teacher shows the calendar for the month of January, 2003.

“Write down all the dates which fell on Thursday.”

Expected answer: 2, 9, 16, 23, 30

“What is the difference between 2 and 9, 9 and 16, 16 and 23, 23 and 30?”

Expected answer: 7.

“So, what is the pattern of this number sequence?”

Expected response: number increases by 7.

Teacher relates the number 7 to the numbers of days in a week.

Teacher gives the following number sequence: 60, 50, 40, ...

“Is there a pattern in this sequence? If yes, what is the pattern.”

Expected response: decreasing by 10.

Teacher explains the meaning of count on and count back.

“Class, when we increase the numbers in a sequence, we say count on. So for the number sequence 2, 9, 16, 23, 30 we count on in 7s. And when we decrease the numbers, we say count back. So for the number sequence 60, 50, 40 we count back in 10s.”

Students are then asked to count on and count back.

“ Give me a sequence where you count on in 2s from 10 to 30”

Expected answer: 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30.

“Good! Now count back in 5s from 40 to 5”

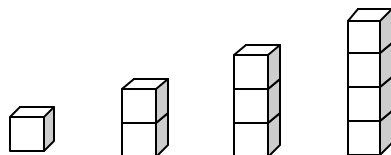
Expected answer: 40, 35, 30, 25, 20, 15, 10, 5,

LO 2: Extend number sequences

Activity 1:

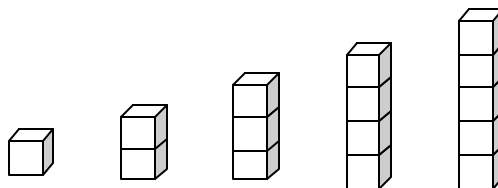
Teacher refers to the earlier block arrangement

“Let’s go back to our building blocks”



“Now that you know the pattern of a number sequence, can anyone show me the next arrangement? Please write down the number sequence”.

Expected result:



Number sequence: 1, 2, 3, 4, 5

“Without further arrangement, who can tell me the next number in that sequence?”

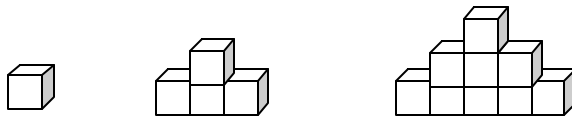
Expected answer: 6

“Good. Let’s try another example.”

Mathematics Teaching Scripts – Form 1

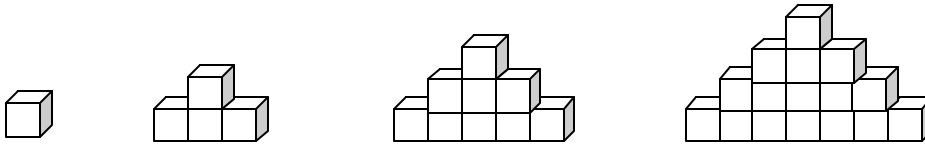
Activity 2:

Teacher refers to the other block arrangement.



“Can anyone show me the next arrangement? Please write down the number sequence”.

Expected result:



Number sequence: 1, 4, 9, 16.

“Without further arrangement, who can tell me the next term in that sequence.”

Expected answer: 25

“Good! How did you obtain this number?”

Expected response: Add 9.

“Very good! And why did you add 9”

Expected response: The pattern here is +3, +5, +7; thus the next term is +9

“Excellent! We will now try some other sequences”

Activity 3:

Teacher writes the following number sequence on the board

5, 10, 15, 20, __, __, __.

“Write down the next three numbers for this sequence”
“Explain how you obtained your answer?”

Expected response: 25, 30, 35. The pattern is +5

The above activity is repeated for the following number sequences.

38, 47, 56, 65, __, __, __

135, 137, 139, 141, __, __, __

81, 76, 71, __, __, __

40, 34, 28, __, __, __

LO 3: Complete missing terms in given number sequences.

“Now, we’ll try something more challenging”

Activity 1

Teacher shows the following arrangements using matchsticks



“Count the number of matchsticks for each arrangement and write down the numbers in sequence.”

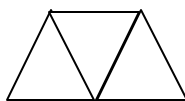
Expected answer: 3, 5, 9

“Is there a missing term?”

Expected response: Yes.

“Can you construct the missing diagram and write down the missing term.”

Expected responses:

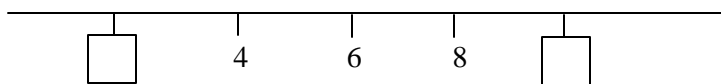


Missing term: 7

“Let’s try another sequence”

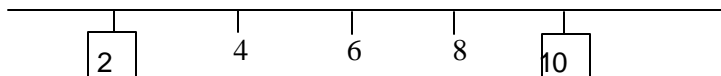
Activity 2

Teacher draws the following number line on the board.



“Fill in the missing numbers in this sequence.”

Expected answer:

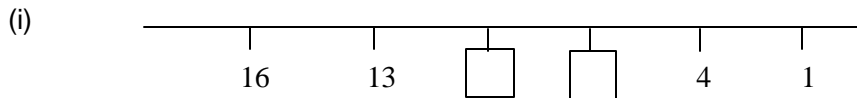


“Good! Can you tell us how you obtained your answer?”

Expected response: The pattern in this sequence is count on in 2s

“Very good! Now we will move on to other sequences”

Mathematics Teaching Scripts – Form 1



(ii) 1, 3, , 27, 81

(iii) 64, , 16, 8, 4,

Teacher discusses with the students in the same manner.

Answer: (i) - 3
(ii) $\times 3$
(iii) $\div 2$

LO 4: Construct number sequences based on given patterns

“So far, we have learnt how to extend a number sequence and how to find the missing terms. We will now learn how to construct a number sequence.”

Activity 1

Teacher distributes a box of matchsticks to each group.

“Use the matchsticks to build a number sequence. You can arrange them in any way as long as it shows a pattern in a sequence.”

Expected result: Accept any arrangement that shows a sequence. Students are encouraged to explain their number sequence.

“Write down the number sequence”

Teacher goes around to each group and comments on their arrangement. Weaker groups are given guidance.

Activity 2:

“Class, we will now build some other number sequences. List down the numbers by counting on in 4s from 10 to 30”

Expected answer: 10, 14, 18, 22, 26, 30.

“Good! Now count back in 9s from 81 to 45. Write down the sequence”

Expected answer: 81, 72, 63, 54, 45.

Teacher asks students to check their answers using the calculator.

“Class, take out your calculator and check your answers.”

CLOSURE

“Class, the last activity concludes this sub-topic. If you can construct a number sequence based on the given pattern; then you have achieved the objective of recognizing, extending and completing a number sequence.”

“Now, give me a number sequence starting from 50. You can either count on or count back.”

Expected response: accept any logical number sequence.

ADDITIONAL ACTIVITIES

1. What do you notice when you count on from 0 in 2s, 4s, and 8s.

<u>Twos</u>	<u>Fours</u>	<u>Eights</u>
2	4	8
4	8	16
6	12	24
8	16	32

Answer: 4s are double 2s; 8s are double 4s

2. Generating number sequences using calculator

Press the following buttons and look at the result.

(i)

Press button	Result
2	
+	
=	2
=	4
=	6
=	8
=	10

(ii)

Press button	Result
50	50
-	
5	
=	45
=	40
=	35
=	30

Repeat with other numbers to generate a new number sequence.

Learning Area **Number Patterns and Sequences**

Learning Objective Recognize odd and even numbers and make general statements about them

Learning Outcomes i. Identify and describe odd and even numbers.
ii. Make general statements about odd and even numbers.

Vocabulary Odd, even, sum, difference, product

Resources Worksheet 1.

Focus Communication in Mathematics, contextual learning, ICT.

INTRODUCTORY ACTIVITIES

Teacher asks a group of 6 students to stand in front of the class. They are then paired-up.

“Let’s have the 6 of you come up to the front of the class.”

“Now stand in pairs”.

“Is there anybody without a partner?”

Expected response: No

Repeat the activity with different students in groups of 7, 8 and 9.

“Which groups have a student without a partner?”

Expected answer: 7 and 9

“Which groups have complete pairs?”

Expected answer: 6 and 8

“So, you can see that we have two different types of groups. One group can be paired off completely. The other group, when paired-up will have one student left without a partner.”

PROCEDURE

L01: Identify and describe odd and even numbers.

Teacher introduces odd and even numbers.

“Which groups can be paired off completely? How many students are there in that group?”

Expected answer: Groups with 6 and 8 students.

Teacher introduces even numbers.

“Class, 6 and eight can be paired off completely. Therefore, 6 and 8 are even numbers. Can anyone tell me the properties of even numbers?”

Expected answer:

- i) Numbers when represented by objects, the objects can be paired off completely.
- ii) Numbers that can be divided completely by two.
- iii) Numbers when divided by two leaves no remainder.

Activity 1

Arranging numbers 1 to 20 into odd and even numbers.

Teacher draws two boxes with the heading ‘Odd’ and ‘Even’

Odd										
Even										

“I will call out numbers from 1 to 20 and I want you to put them into the correct boxes. You can use the pairing activity to help you determine whether the number is odd or even.”

Teacher calls out numbers in order.

Expected result:

Odd	1	3	5	7	9	11	13	15	17	19
Even	2	4	6	8	10	12	14	16	18	20

Mathematics Teaching Scripts – Form 1

Activity 2

Teacher shows the following Worksheet and asks students to determine all the even numbers.

Circle the even numbers				
30	51	22	84	13
29	38	91	17	46
42	98	72	69	75

“Ramu, circle all the even numbers.”

“Ahmad, did Ramu leave out any even numbers? If yes, please circle them.”

Expected result: 30, 22, 84, 38, 46, 42, 98, 72 are circled.

Activity 3

Using calculator to determine odd and even numbers.

“Jenny, use your calculator and try dividing all the even numbers circled by Ramu by 2. What kind of numbers do you get?”

Expected response: whole numbers

“Now Halim, try dividing with 2 all the numbers left out by Jenny. What kind of numbers do you get?”

Expected response: Decimals ending with ‘.5’

“So, we can conclude that all numbers divisible by two are even numbers and those which are not, are odd numbers”

LO 2: Make general statements about odd and even numbers.

Teacher hands out Worksheet 1 which contains a few group activities to explore some characteristics of odd and even numbers. Students are then asked to make general statements about odd and even numbers.

“Class, I want you to work in groups”

“Now, look at Worksheet 1.”

“For each of the nine activities, try out the exercises using your own numbers. After you have finished the exercises, complete the statements by filling in either ODD or EVEN. The first activity has been done for you.”

CLOSURE

Teacher summarises the fastest method to determine whether a number is odd or even.

“Class, if you are given a big number, such as 512348, 21095, and 72890, how do you determine whether it is odd or even?”

Teacher guides students to the conclusion that:

“For big numbers, we need only to look at the last digit. If the last digit is odd, the number is an odd number. If the last digit is ‘0’ or even, then the number is an even number.”

ACT		EXERCISES	STATEMENT
1.	ODD (+) ODD	$\boxed{1} + \boxed{3} = \boxed{4}$ $\boxed{7} + \boxed{13} = \boxed{20}$	ODD + ODD = <input type="text" value="EVEN"/>
2.	EVEN (+) EVEN		EVEN + EVEN = <input type="text"/>
3.	ODD (+) EVEN		ODD + EVEN = <input type="text"/>
4.	ODD (-) ODD		ODD - ODD = <input type="text"/>
5.	EVEN (-) EVEN		EVEN - EVEN = <input type="text"/>
6.	ODD (-) EVEN		ODD - EVEN = <input type="text"/>
7.	ODD (·) ODD		ODD × ODD = <input type="text"/>
8.	EVEN (·) EVEN		EVEN × EVEN = <input type="text"/>
9.	ODD (·) EVEN		ODD × EVEN = <input type="text"/>

Learning Area **Number Patterns and Sequences**

Learning Objective Understand the characteristics of prime numbers.

Learning Outcomes

- v. Identify the characteristics of prime numbers.
- vi. Determine whether a given number is a prime number.
- vii. Determine all the prime numbers less than 100.

Vocabulary Prime number, product, divisible.

Resources Table 1, Worksheet 1.

Focus Communication in Mathematics, constructive learning, ICT, thinking skills.

Introductory Activities

Teacher starts the class with a simple exercise on multiplication.
Teacher writes Table 1 on the board.

“Class, look at Table 1.”

“Based on the numbers listed, find as many ways as possible to express the number as a product of two numbers. For example, 2 is the product of 1 and 2 and 3 is the product of 1 and 3.”

“But for number 4, there are two methods to produce it, as shown in the table. Now, your task is to complete the table.”

Table 1

Number	1 st multiplication	2 nd multiplication	3 rd multiplication
2	1 x 2		
3	1 x 3		
4	1 x 4	2 x 2	
5			
6			
7			
8			
9			
10			
11			
12			

Mathematics Teaching Scripts – Form 1

Teacher asks students to come out and fill up the table 1.
Expected result:

Table 1

Number	1 st multiplication	2 nd multiplication	3 rd multiplication
2	1 x 2		
3	1 x 3		
4	1 x 4	2 x 2	
5	1 x 5		
6	1 x 6	2 x 3	
7	1 x 7		
8	1 x 8	2 x 4	
9	1 x 9	3 x 3	
10	1 x 10	2 x 5	
11	1 x 11		
12	1 x 12	2 x 6	3 x 4

“What can we derive from the above exercise?”

Teacher guides students to the following conclusion:

“There are numbers which have only one way to express as a product of two numbers, and there are numbers which have two or more ways.”

“Next, we are going to focus on those numbers which have only one way to express as a product of two numbers. These numbers are called prime numbers”

Teacher revises the relation between multiplication and division before moving on.
For example, 2 can be divided by 1 and 2, whereas 4 can be divided by 1, 2 and 4.

“As you know, since number 2 can only be produced by the multiplication of 1 and 2, we can say that 2 can only be divided by 1 and 2.”

“From $4 = 1 \times 4$ and $4 = 2 \times 2$, thus number 4 is divisible by 1, 2 and 4”

Procedure

LO 1: Identify the characteristics of prime numbers

“So can anyone tell me the definition of a prime number. A prime number is a whole number greater than 1 that can only be divided exactly by two numbers, which is 1 and the number itself.”

“Look at table 1 again. 2 is a prime number because it can only be divided exactly by 1 and itself. So is 3.”

“But 4 is not a prime number because 4 can be divided by three numbers, namely 1, 2 and 4.”

“Can you now list out all the prime numbers in Table 1?”

Expected answer: 2, 3, 5, 7, 11

“If we continue with table 1, is number 13 a prime number? Why?”

Expected response: 13 is a prime number because it can only be divided by 1 and 13.

“Good! How about 14.”

Expected response: 14 is divisible by 1, 2, 7 and 14, so it is not a prime number.

“Very good! Now I want you to think carefully, or discuss with your friend and determine whether number 1 is a prime number or not?”

Guided response: 1 is not a prime number because it is only divisible by one number.

“Excellent! I think you are now ready for any number.”

LO2: Determine whether a given number is a prime number

Teacher calls out numbers bigger than 10, and students use calculator to determine whether it is a prime number.

“Take out your calculator.”

“Is 31 a prime number?”

Teacher guides students on the usage of calculator to check whether the given number is divisible by 2, 3, 5 and 7.

Expected response: Yes, because it can only be divided by 1 and 31

“How about 32?”

Expected response: No, because it can be divided by 2

“And 33?”

Expected response: No, because it can be divided by 3

“Check for 35?”

Expected response: No, because it can be divided by 5

“Finally, try 49.”

Expected response: No, because it can be divided by 7

“Can you summarize how to determine a prime number?”

Teacher guides students to the following conclusion:

“Any number bigger than 10 is surely divisible by 1 and itself. To determine whether it is a prime number, we need to check whether the number can be divided by another number, especially 2, 3, 5 or 7. If so, then the given number is not a prime number.”

Teacher invokes students’ thinking skill as a prelude to the next topic.

“But if you are asked to determine all the prime numbers from 1 to 100, how long do you think you will need?”

LO3: Determine all the prime numbers less than 100.

Teacher hands out Worksheet 1, containing “Eratosthenes Sieve” which can be used to determine all the prime numbers less than 100.

“To generate all the prime numbers less than 100, we can use the method developed by a Greek Mathematician, called Eratosthenes. “

“Now, look at Worksheet 1, and work out all the instructions. At the end of it, you will be able to list out all the prime numbers from 1 to 100 in less than 10 minutes.”

Closure

Teacher organises a slogan writing competition, focusing on prime numbers.

“Today, all of you have been very cooperative and I wish to thank you with a competition. The winner will walk away with a handsome prize.”

“Complete the slogan below, in less than 30 words:

The best way to generate prime numbers is

.....

.....

The best slogan should have the main ideas of:

- i) memorize the first four prime numbers: 2, 3, 5, 7
- ii) check all subsequent numbers against division by 2, 3, 5 and 7

Example: The best way to generate prime numbers is to memorize the first four prime numbers: 2, 3, 5, 7 followed by numbers that cannot be divided by them.

Number Patterns and Sequences

Worksheet 1

The table below lists out all the numbers from 1 to 100. Strike out (X) all the numbers according to the instruction given. The first instruction has been done for you.

Notes: Remember that the first four prime numbers are 2, 3, 5, and 7.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Instruction:

1. Strike out number 1, which didn't qualify as a prime number.
2. Strike out all multiples of 2, except number 2.
Those numbers that have been struck out are in fact even numbers.
3. Strike out all multiples of 3, except number 3.
4. Strike out all multiples of 5, except number 5.
5. Strike out all multiples of 7, except number 7.
6. List out all the numbers left:

7. Check your list with your friend's answer.
8. The list above shows all the prime

Learning Area Number Patterns and Sequences

Learning Objective Understand the characteristics and use the knowledge of factors of whole numbers.

Learning Outcome i. List factors of whole numbers.
 ii. Determine whether a number is a factor of another whole number.

Vocabulary Factors, Multiples, Integers, Product

Resources Flash cards, model of a pizza, OHP

Focus Communication in Mathematics, Problems Solving, Constructive Learning, Cooperative Learning, Self Access Learning.

INTRODUCTORY ACTIVITIES

Teacher puts forward a problem for the students to solve.

“Ahmad is celebrating his birthday today and he is inviting his friends over to his house. His father has promised to buy two large sized pizzas, which are cut into 8 slices each. If Ahmad wants everybody to get the same number of slices, how many friends can he invite to his birthday party?”

Expected answer: Accept 16, 8, 4, 2, and 1.

“All those answers are correct. Now we are going to determine how many slices of pizza each one will get in every case.”

Teacher constructs the following table on the board and asks students to fill it up.

Number of friends	16	8	4	2	1
Number of slices					

Expected result:

Number of friends	16	8	4	2	1
Number of slices	1	2	4	8	16

Teacher highlights one interesting point of the table; where the product of each pair of numbers in the table is the same.

“Class, if you were to multiply each pair of numbers in the table, what will you get?”

Expected response: All will give the same answer, which is 16.

“Good! The numbers 1, 2, 4, 8 and 16 are factors of 16. We will now learn how to determine factors of a given number.”

PROCEDURE

LO 1: List factors of whole numbers

Teacher uses flash cards to help students list factors of any whole numbers.

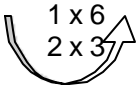

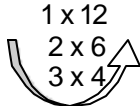
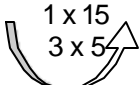
“Class, I will show you a number and I want you to list out all the possible pairs of numbers, when multiplied will give the number on the flash card.”

“Aziah, please write down all acceptable answers on the board.”

Number on flash card	Acceptable answers
6	1 x 6, 6 x 1, 2 x 3, 3 x 2
8	1 x 8, 8 x 1, 2 x 4, 4 x 2
12	1 x 12, 12 x 1, 2 x 6, 6 x 2, 3 x 4, 4 x 3
15	1 x 15, 15 x 1, 3 x 5, 5 x 3

Teacher rewrites the above answers into another format, and uses it to determine the factors of each number.

“Now, since $1 \times 6 = 6 \times 1$, $2 \times 3 = 3 \times 2$ and so on, I will rewrite your answers as follows:

Given Number	6	8	12	15
Students' Answers (rearranged)				
Factors				

“From the new table, write down the multiples for each number once?”

“These numbers are known as factors of each number.”

“Can you determine the factors for each number?”

Expected answer:

Factors	1, 2, 3, 6	1, 2, 4, 8	1, 2, 3, 4, 6, 12	1, 3, 5, 15
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Teacher arranges students into groups of 5. Each group is given 5 pieces of flash cards, containing numbers less than 30. The answer for each number is written at the back of the card.

Mathematics Teaching Scripts – Form 1

“For our next activity, I want you to form groups of 5. Can you move now.”

“Next, you have to choose a leader for the first round of the activity. The leader will show a number on the flash card and the other four students will compete against each other to list out all the factors of that number. The first person to give all the correct answers will get a point.”

“Okay class, we will play five rounds, each round with a different group leader and using different cards. The winner of each group will compete in the final round, which will be conducted by me; to determine the ‘Champion For The Day’”.

LO 2: Determine whether a number is a factor of another whole number

Teacher refers to the revised table to determine the relationship between factors and its given number.

Given Number	6	8	12	15
Students’ Answers (re-arranged)	1 x 6 2 x 3	1 x 8 2 x 4	1 x 12 2 x 6 3 x 4	1 x 15 3 x 5

“I want you to analyse the given number and its factors.”

“Is there any relation between number 6 and its factors: 1, 2, 3, and 6?”

Guided response: The given number can be divided completely by its factor.

“Can anyone tell me why 3 is not a factor of 8?”

Expected response: Because 8 cannot be divided completely by 3.

“Good! So now you can determine whether or not, a number is a factor of another whole number.”

“I would like you to complete these tasks on your own. After you have finished, you can check your answers at the ‘Self-Access Learning’ corner.”

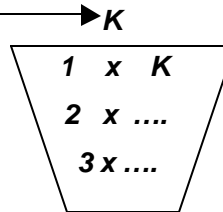
Teacher distributes ‘Self-Access Learning’ worksheet to each student and lets them work out the answers at their own pace. Better students can attempt higher order questions at the SAL corner.

CLOSURE

To summarise this sub-topic, teacher introduces a pictorial method.

“As a conclusion, I would like to introduce the ‘Factors Basket’

- i) Write down the given number here*
- ii) Start with 1 x the number itself*
- iii) Determine whether 2 is a factor*
- iv) Continue with 3 (Cancel off if it is not)*
- v) Carry on until the numbers repeat itself.*



The answer is all the numbers inside the basket.”

Learning Area

1. Number Patterns and Sequences

Learning Objective

Understand the characteristics and use the knowledge of prime factors of whole numbers.

Learning Outcome

- 2.
- i. **Identify prime factors from a list of factors**
- ii. **Find prime factor(s) of whole numbers.**
- iii. **Determine whether a number is a prime factor of another whole number**

Vocabulary

Factors, prime factors.

Resources

Table 1, Cards

Focus

Communication in Mathematics, Cooperative Learning, Multiple Intelligence, Thinking Skill.

INTRODUCTORY ACTIVITIES

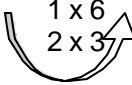
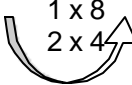
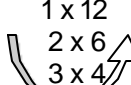
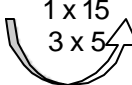
Teacher uses Table 1 to test students' prior knowledge.

“Class, as a revision, I want you to complete this table in 5 minutes.”

Table 1

Whole Number	6	8	12	15
Factors Basket				
Factors				

Expected result:

Whole Number	6	8	12	15
Factors Basket	1×6 2×3 	1×8 2×4 	1×12 2×6 3×4 	1×15 3×5 
Factors	1, 2, 3, 6	1, 2, 4, 8	1, 2, 3, 4, 6, 12	1, 3, 5, 15

PROCEDURE

LO 1: Identify prime factors from a list of factors

Teacher guides students to identify prime factors using answers given in table 1.

“Ali, write down all the factors for number 6.”

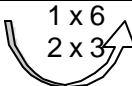

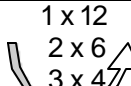
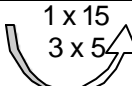
Expected answer: 1, 2, 3, 6

“Ah Chong, circle all the prime numbers on Ali’s answer.”

() () Expected answer: 1, 2, 3, 6

“Good! I believe Ali and Ah Chong have introduced to you the prime factors of number 6”.

Teacher repeats the question-and-answer session for number 8, 12 and 15. At the end of the activity, teacher adds another row to table 1 as follow:

Whole Number	6	8	12	15
Factors Basket				
Factors	1, 2, 3, 6	1, 2, 4, 8	1, 2, 3, 4, 6, 12	1, 3, 5, 15
Prime Factors	2, 3	2	2, 3	3

“Prime factors are factors of a number which are also prime numbers.”

LO 2: Find prime factor(s) of whole numbers.

Teacher organises a cooperative learning session to fill up a blank table:

Whole Number					
Factors Basket					
Factors					
Prime Factors					

“Class, for this activity, I want you to work in groups of five.”
“Label yourselves as A, B, C, D and E in each group. On the blank table ...”

1. Student A will write down a whole number between 1 and 30,
2. Student B will work out the factors basket,
3. Student C will list down all the factors based on the factors basket,
4. Student D will determine prime factor(s) from the factors list, and finally,
5. Student E will check the answer.

Mathematics Teaching Scripts – Form 1

Teacher explains the method of cooperative learning.

“After finishing one round, student A will become student B, student B becomes C and so on. Student E will become student A.”

“At the end of five rounds, everyone must have played all the five roles.”

LO 3: Determine whether a number is a prime factor of another whole number.

Teacher introduces a card game.

“Class, we are now going to play a card game. I will divide you into 5 groups.”

“Each group will be given 2 sets of cards as follows:”

SET 1 – MAIN CARDS	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
SET 2 – PLAYERS' CARDS	15 cards each of 2, 3, 5 and 7 5 cards each of 11, 13, 17 and 19

“Set 1 is the main card and will be placed at the centre of the group. Set 2 which consists of 80 cards of prime numbers. These cards are for the players. Each player will be given 10 cards.”

“Let me explain the rules of the game ...

- 1. Player No.1 draws a card from the ‘Main’ and displays it on the table. He will then throw out all his cards that are prime factors to the number on the main card. If he does not have any, then he misses his turn.***
- 2. The second player will then be given the opportunity to throw out his cards that are prime factors to the main card. This game continues until the last player gets his turn.***
- 3. The next round starts with player no. 2 drawing another card from the main set.***
- 4. The first student that finishes all his cards will be the winner.”***

Teacher summarises how to determine whether a number is a prime factor of another whole number.

“From the card game, we can deduce two criteria for a prime factor of a given number. Can you name them?”

Expected response: i) the number is a factor of the given number

ii) the factor is a prime number

CLOSURE

Teacher uses the winner of the card game to answer a very tricky question.

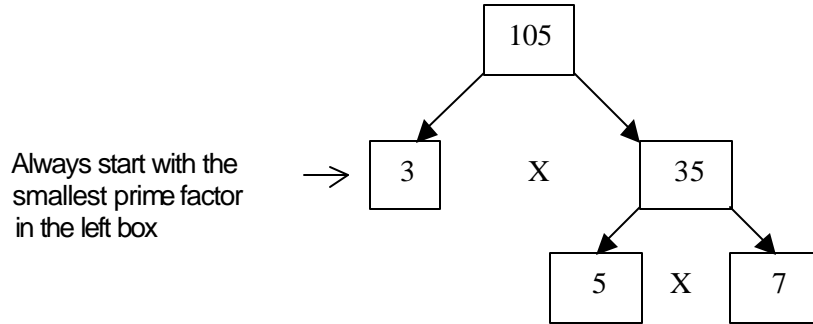
“Using suitable examples, explains the difference between:

- i) the factors of a prime number and***
- ii) the prime factors of a whole number.”***

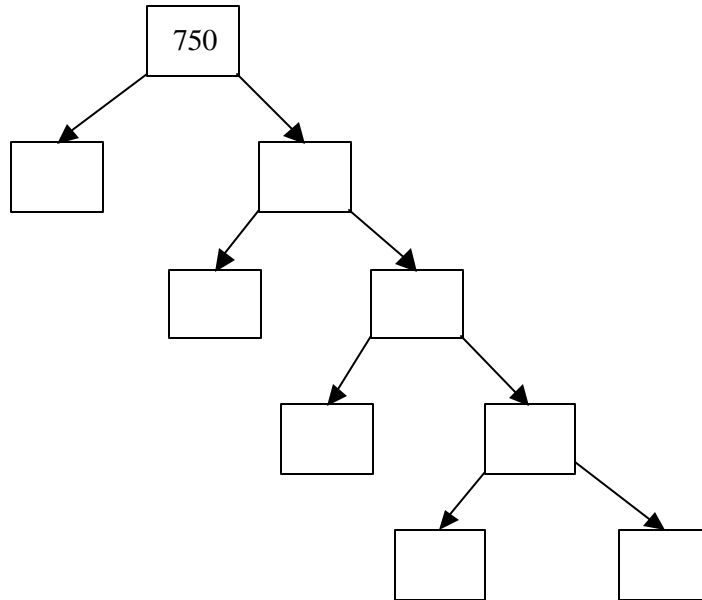
Expected response: Accept reasonable explanation.

ADDITIONAL ACTIVITIES

1. A factor tree can be used to find prime factors. For example the prime factors of 105 can be determined in this manner.



Find the prime factors of 750, using factor tree below:



Answer: The prime factors of 750 = _____, _____, _____

Learning Area **Number Patterns and Sequences**

Learning Objective Understand and use the knowledge of multiples of whole numbers.

Learning Outcomes viii. List the multiples of whole numbers.
ix. Determine whether a number is the multiple of another number.

Vocabulary Multiple, divisible, sequence.

Resources Multiplication table, dart game, score sheet, score table.

Focus Communication in Mathematics, Multiple Intelligence.

INTRODUCTORY ACTIVITIES

Teacher revises the concept of number sequence.

“Before I start, I would like to carry out a simple test. Do you still remember the number sequence?”

“Can you count on in 2s?”

Expected answer: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24,

“Now, compare your sequence with the multiplication table at the back of your exercise book. Do you see any similarity?”

Teacher shows comparison on board as follow:

Count on in 2s	Multiplication table for 2
2	$2 \times 1 = 2$
4	$2 \times 2 = 4$
6	$2 \times 3 = 6$
8	$2 \times 4 = 8$
10	$2 \times 5 = 10$
12	$2 \times 6 = 12$
14	$2 \times 7 = 14$
16	$2 \times 8 = 16$
18	$2 \times 9 = 18$
20	$2 \times 10 = 20$
22	$2 \times 11 = 22$
24	$2 \times 12 = 24$

Expected response: Same sequence

PROCEDURE

LO 1: List the multiples of whole numbers

Teacher introduces the term multiples and gives students further task.

“The above sequence also represents the multiples of 2. Thus we have two methods to list the multiples of a given whole number.”

“Now I want you to use the multiplication method to list out the multiples of the following numbers.”

Number	Multiples
3	
4	
5	

Expected result:

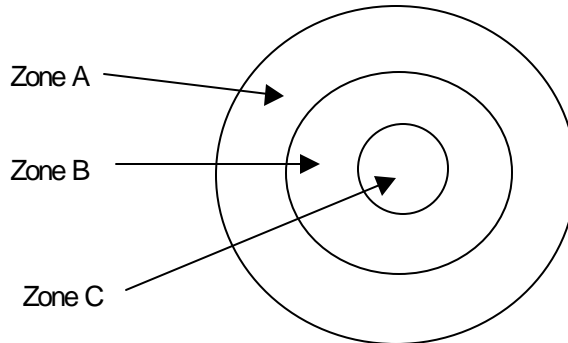
Number	Multiples
3	3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, ...
4	4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, ...
5	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, ...

Teacher continues with other numbers until he is satisfied with the students’ grasp of the learning objective.

LO 2: Determine whether a number is the multiple of another number.

Teacher introduces a modified dart game to help students achieve learning objective.

“Class, we are going to have a dart competition now. Can you group yourselves into 4 groups of 10. The dart board has 3 zones as follow:”



Number Patterns and Sequences

“If you hit zone A your marks will be multiplied by 2, zone B multiplied by 3 and for zone C multiplied by 5. If you miss the board, your score is 0”

“One player from each team will throw the dart in each round of the game.”

“The face value of the dart will differ in every round; 1 point in the first round, 2 points in the second round, 3 points in the third round and so on.”

“Your scores will be tabulated in this score sheet,”

Round	Face Value	Score			
		Team 1	Team 2	Team 3	Team 4
1	1				
2	2				
3	3				
4	4				
5	5				
6	6				
7	7				
8	8				
9	9				
10	10				
Total Score					

Teacher conducts the dart competition and tabulates the score.

After the game, teacher guides students to determine the possible points scored in each zone in each round of the game.

“After playing the game, I think you will be able to determine all the possible points scored in each round of the game, depending on which zone your dart hits. Now help me complete the following table.”

Expected result:

Round	Face Value	Score		
		Zone A ($\times 2$)	Zone B ($\times 3$)	Zone C ($\times 5$)
1	1	2	3	5
2	2	4	6	10
3	3	6	9	15
4	4	8	12	20
5	5	10	15	25
6	6	12	18	30
7	7	14	21	35
8	8	16	24	40
9	9	18	27	45
10	10	20	30	50

From the score table, teacher can generate as many questions as he likes to achieve the learning objective. Three sample questions are given as follow:

Mathematics Teaching Scripts – Form 1

“Look at the score table, is it possible to score 5 points in zone A? Why?”

Expected response: No, because 5 is not a multiple of 2

“If we continue the game into round 15 with a face value of 15 points, what is the score if you hit zone B? How do you get the answer?”

Expected response: 45, from 15×3

“You come across a score sheet which has a score of 20 points in the sixth round, can you explain why that score is not possible?”

Expected response: 20 is not in the multiples of 6.

CLOSURE

Using a simulated score sheet, students are asked to determine all the wrong scores.

“Class, this is part of the score sheet of a dart competition played by the other class. Circle all the wrong scores and tell me why they are wrong.”

Round	Face Value	Score			
		Team 1	Team 2	Team 3	Team 4
1	1	2	2	10	6
2	2	9	4	6	10
3	3	6	15	9	20
4	4	20	2	12	8
5	5	10	15	21	25

Expected answer:

Round	Face Value	Score			
		Team 1	Team 2	Team 3	Team 4
1	1				
2	2	9			
3	3				20
4	4		2		
5	5			21	

- i) 9 is not a multiple of 2
- ii) 20 is not a multiple of 3,
- iii) 2 is not a multiple of 4, and
- iv) 21 is not a multiple of 5"

ADDITIONAL ACTIVITIES

- For big numbers, we can determine whether it is a multiple of 2, 3, 4, 5, 6, 7, 8, 9 or 10, using the divisibility test.

Multiple	Divisibility Rules	
2	The last digit of the number is either 0, or an even number.	
	Yes	34, 458, 2020 and 10 532
	No	31, 457, 2019 and 10 001
3	The sum of all the digits is divisible by 3.	
	Yes	456 because $4 + 5 + 6 = 15$; $15 \div 3 = 5$
	No	457 because $4 + 5 + 7 = 16$
4	The number formed by the last two digits of the number is divisible by 4.	
	Yes	34 512 because $12 \div 4 = 3$
	No	34 521 because
5	The last digit of the number is either 0 or 5.	
	Yes	455, 390
	No	554, 391
6	The number is divisible by 2 and 3.	
	Yes	678 because $678 \div 2 = 339$ and $678 \div 3 = 226$
	No	68 because not divisible by 3
7	For numbers in hundred, k is divisible by 7 where $k = (1 \times \text{unit digit}) + (3 \times \text{tenth digit}) + (2 \times \text{hundredth digit})$	
	Yes	371 because $1 + 21 + 6 = 28$; $28 \div 7 = 4$

Mathematics Teaching Scripts – Form 1

Multiple	Divisibility Rules	
	No	173 because $3 + 31 + 2 = 36$ (not divisible by 7)
8	The number formed by the last three digits of the number is divisible by 8.	
	Yes	1 408 because $408 \div 8 = 51$
	No	1 804 because 804 is not divisible by 8
9	The sum of all the digits is divisible by 9	
	Yes	6 138 because $6+1+3+8 = 18$; $18 \div 9 = 2$
	No	138 because $1+3+8 = 12$, not divisible by 9
10	The last digit = 0	
	Yes	1010, 3 450,
	No	1001, 3 045

Task: Students are asked to check the divisibility of the last four digits of their IC numbers.

Learning Area

Number Patterns and Sequences

Learning Objective

Understand the characteristics and use the knowledge of common multiples and Lowest Common Multiple (LCM) of whole numbers

Learning Outcomes

- i. Find the common multiples of two or three whole numbers
- ii. Determine whether a number is the common multiple of two or three given numbers
- iii. Determine the LCM of two or three given numbers

Vocabulary

Multiple, common multiple, lowest common multiple (LCM)

Resources

Numbers grid

Focus

Communication in Mathematics, Constructive Learning, Contextual Learning

INTRODUCTORY ACTIVITIES

Based on the numbers grid, teacher guides students to the discovery of common multiples.

“Class, today I will take you on a journey of discovery.”

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

“On the numbers grid, circle all the multiples of 3.”

“Then cross all the multiples of 5.”

“What do you notice?”

Expected response: Number 15, 30 and 45 are both circled and crossed.

“Congratulations, you have discovered the common multiples of 3 and 5. The circled numbers are the multiples of 3, whereas the crossed numbers are the multiples of 5. So, the numbers which are both circled and crossed are the common multiples of 3 and 5.”

PROCEDURE

- LO 1: Find the common multiples of two or three whole numbers.
LO 2: Determine whether a number is the common multiple of two or three given numbers.

Teacher guides students to find the common multiples of two whole numbers and explore its characteristic.

“I am going to guide you through the steps in determining the common multiples of 2 and 3.”

“First, list out the multiples of 2.”

Expected answer: Multiples of 2 = 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, ...

“Good! Now list out the multiples of 3.”

Expected answer: Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, ...

“Next, identify all the numbers found in both sequence.”

Expected answer:

Multiples of 2 = 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, ...

Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, ...

“Write them down as common multiples of 2 and 3.”

Expected answer: Common multiples of 2 and 3 = 6, 12, 18, 24, ...

“What can you say about that sequence?”

Expected response: Multiples of 6

“Very good! Can you give me the next two common multiples of 2 and 3?”

Expected answer: 30, 36

“Can you explain how you got your answer?”

Guided response: Using multiples of 6 sequences.

“Look at the list of the common multiples of 2 and 3 again. Check the divisibility of those numbers against 2 and 3. What will you discover?”

Expected response: They are divisible by 2 and 3.

“Excellent! Finally, do you think 48 is a common multiple of 2 and 3? Why?”

Guided response: Yes, because it is divisible by 2 and 3.

Teacher repeats the listing method to find common multiples of three whole numbers. To determine whether a number is the common multiples of three given numbers, apply the divisibility rule.

LO 3: Determine the LCM of two or three given numbers.

Activity 1

Teacher uses listing method to determine LCM of two whole numbers.

“Class, look at the answers on the board again.”

Multiples of 2 = 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, ...

Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, ...

Common multiples of 2 and 3 = 6, 12, 18, 24, ...

“Can anybody tell me what the lowest common multiple of 2 and 3 is?”

Expected answer: 6

“How do you get your answer?”

Expected response: the lowest number of the common multiples is 6.

“Well done! The lowest common multiple is simply the lowest number from the list of the common multiples. From now on I will refer to it as LCM”

Applying the listing method to determine the LCM of three whole numbers.

“Class, I want you to show me step by step, how to find the common multiples of 2, 3 and 4. Please explain Clearly to me what you have done.”

Guided response:

Step 1: list down the multiples of 2 – 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, ...

Step 2: list down the multiples of 3 – 3, 6, 9, 12, 15, 18, 21, 24, ...

Step 3: list down the multiples of 4 – 4, 8, 12, 16, 20, 24, ...

Step 4: list down the common multiples – 12, 24, ...

Step 5: determine the lowest number – 12

Answer: LCM of 2, 3 and 4 = 12

Mathematics Teaching Scripts – Form 1

Activity 2

Teacher introduces another method to determine LCM, called the repeated division method.

“We will now look into another method to determine LCM.”

“If we want to find the LCM of 2, 3, and 4, here are the steps.”

“Arrange them in a line, so that they can be divided together.”

| 2 , 3 , 4

“The divisors used are the prime numbers, which are 2, 3, 5, 7, 11, ...”

“Start dividing with the smallest prime number. If the number is not divisible, then just carry the number down together with the others.”

2	2 , 3 , 4
	1 , 3 , 2

“Repeat the division until all the three numbers are brought down to 1.”

2	2 , 3 , 4
2	1 , 3 , 2
3	1 , 3 , 1
	1 , 1 , 1

“Thus the LCM = 2 × 2 × 3 = 12.”

Teacher guides students to try out the repeated division method.

“Let’s see how you use the repeated division method to find the LCM for 2, 9 and 12”

Guided response:

2	2 , 9 , 12
2	1 , 9 , 6
3	1 , 9 , 3
3	1 , 3 , 1
	1 , 1 , 1

$$\text{LCM} = 2 \times 2 \times 3 \times 3 = 36$$

Teacher organizes a speed calculating competition to highlight the difference between the two methods of calculating LCM.

“To see the difference between both methods of LCM calculation, I want you to work in pairs. One will use the listing method and the other will use repeated division”

“ I will write down the question on the board and the first one to find the answer will come out and state the answer.”

Teacher gives a few questions with two or three whole numbers. Each time, note down the method used by the winner.

Expected result: The majority of winners use the repeated division method.

CLOSURE

Teacher reviews the two methods used to find the LCM.

“Class, from the meaning of the term multiples, common, and lowest; we should be able to understand what a Lowest Common Multiples is.”

“We have also tried out two methods used to calculate LCM, namely the listing method and the repeated division method.”

“Which method will you use if you were to teach your friend who knows nothing about LCM? Why?”

Guided response: The listing method, because it is easier to understand.

“Which method will you use to answer a few LCM questions as quickly as possible?”

Expected response: The repeated division.

“That’s right. So now you know why we studied both methods. It’s not meant to burden you, but to actually help you,”

“I also hope you realized the best method to study Mathematic.”

“First you have to understand the concept behind LCM. Then only you focus on mastering the repeated division algorithm.”

“It will be pointless to only tackle the algorithm without understanding the concept. You will forget it in no time ... that is Mathematic.”

ADDITIONAL ACTIVITIES

Problem solving:

To celebrate *Hari Raya*, En. Ali decided to light-up his house. He bought 3 different types of twinkling lights.

Type A lights up at 2 seconds interval; type B every 4 seconds and type C every 6 seconds.

If they are switched on simultaneously, at what interval will the house be at its brightest.

Pointer: Find the LCM of 3, 4, and 6

Answer: 12 seconds

Learning Area

Number Patterns and Sequences

Learning Objective

Understand and use the knowledge of common factors and Highest Common Factor (HCF) of whole numbers

Learning Outcomes

- i. Find common factors of two or three whole numbers
- ii. Determine whether a number is a common factor of two or three given whole numbers
- iii. Determine the HCF of two or three given numbers

Vocabulary

Common Factor, Highest Common Factor (HCF), Algorithm.

Resources

Table 1, OHP

Focus

Communication in Mathematics, Constructive Learning, Mastery Learning.

Introductory Activities

Teacher revises students' skill in determining factors of whole number. Teacher shows Table 1 on the OHP and students work out the answer, using the 'factors basket' method.

Expected result:

Table 1

Whole number	6	8	12	15
Factors' basket	$\begin{array}{c} 1 \times 6 \\ 2 \times 3 \end{array}$	$\begin{array}{c} 1 \times 8 \\ 2 \times 4 \end{array}$	$\begin{array}{c} 1 \times 12 \\ 2 \times 6 \\ 3 \times 4 \end{array}$	$\begin{array}{c} 1 \times 15 \\ 3 \times 5 \end{array}$
Factors	1, 2, 3, 6	1, 2, 4, 8	1, 2, 3, 4, 6, 12	1, 3, 5, 15

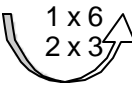
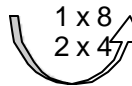
Procedure

LO 1: Find common factors of two or three whole numbers

LO 2: Determine whether a number is a common factor of two or three given numbers

Teacher combines listing method with 'factors basket'. Add another row to the table.

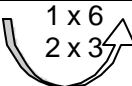
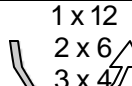
“Using the meaning of the term common, let’s complete the table below.”

Whole number	6	8
Factors' basket		
Factors	1, 2, 3, 6	1, 2, 4, 8
Common Factors	1, 2	

Teacher manipulates Table 1 to generate as many questions as possible.

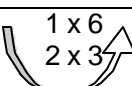
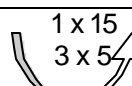
“Now, I want you to determine the common factor in each table.”

(i)

Whole number	6	12
Factors' basket		
Factors	1, 2, 3, 6	1, 2, 3, 4, 6, 12
Common factors		

Expected answer: 1, 2, 3, 6.

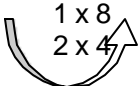
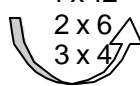
(ii)

Whole number	6	15
Factors' basket		
Factors	1, 2, 3, 6	1, 3, 5, 15
Common factors		

Expected answer: 1 and 3

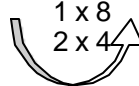
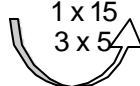
Number Patterns and Sequences

(iii)

Whole number	8	12
Factors' basket	1×8 2×4 	1×12 2×6 3×4 
Factors	1, 2, 4, 8	1, 2, 3, 4, 6, 12
Common factors		

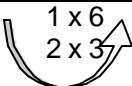
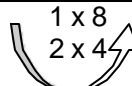
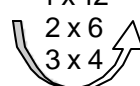
Expected answer: 1, 2 and 4

(iv)

Whole number	8	15
Factors' basket	1×8 2×4 	1×15 3×5 
Factors	1, 2, 4, 8	1, 3, 5, 15
Common factors		

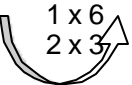


Expected answer: 1

(v)

Whole number	6	8	12
Factors basket	1×6 2×3 	1×8 2×4 	1×12 2×6 3×4 
Factors	1, 2, 3, 6	1, 2, 4, 8	1, 2, 3, 4, 6, 12
Common factors			

Expected answer: 1 and 2.

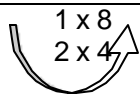
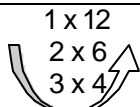
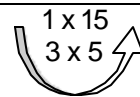
(vi)

Whole number	6	8	15
Factors basket	1×6 2×3 	1×8 2×4 	1×15 3×5 
Factors	1, 2, 3, 6	1, 2, 4, 8	1, 3, 5, 15
Common factors			

Expected answer: 1

Mathematics Teaching Scripts – Form 1

(vii)

Whole number	8	12	15
Factors basket			
Factors	1, 2, 4, 8	1, 2, 3, 4, 6, 12	1, 3, 5, 15
Common factors			

Expected answer: 1.

Teacher guides students to specify the characteristic of Common Factors, using the divisibility rules.

“Now class I want you to look back at your answers. Compare the common factors with the whole numbers at the top of the table. For example the common factors for 6 and 8 are 1 and 2, whereas the common factors for 6 and 12 are 1, 2, 3, and 6.”

“What is the most important relation between these numbers?”

Guided response: The whole numbers are divisible by all the common factors.

“Without working out the table, do you think 3 is the common factors for 6 and 10? Why do you say so?”

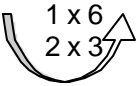
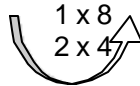
Guided response: No, because the whole number 10 is not divisible by 3.
In other words, 3 is a factor of 6 but it is not a factor of 10.

LO 3: Determine the HCF of two or three given numbers

Activity 1

Using the same tables used above, teacher adds another row, titled Highest Common Factor. Based on the common factors that have been derived, teacher simply points to the highest number.

“We have found the common factors for 6 and 8, which are 1 and 2. Thus the Highest Common Factor is the largest number in the common factors rows”

Whole number	6	8
Factors' basket		
Factors	1, 2, 3, 6	1, 2, 4, 8
Common Factors	1, 2	
Highest Common Factor	2	

Teacher adds another row for 'Highest Common Factor' in all the previous questions and asks students to fill in the blank.

“We will go back to our previous exercise, and carry on with determining the HCF. HCF is short for Highest Common Factor”

Expected answer:

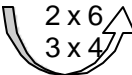
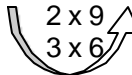
- (i) 6
- (ii) 3
- (iii) 4
- (iv) 1
- (v) 2
- (vi) 1
- (vii) 1

Teacher uses a blank table to work out the complete steps in determining the HCF.

“Let’s try again. This time we will start from the beginning.”

“Find the HCF of 12 and 18.”

Expected result:

Whole number	12	18
Factors' basket	1×12 2×6 3×4 	1×18 2×9 3×6 
Factors	1, 2, 3, 4, 6, 12	1, 2, 3, 6, 9, 18
Common Factors	1, 2, 3, 6	
Highest Common Factor	6	

Activity 2

Teacher explains how to use algorithm to find HCF.

“As with LCM, there is a quicker method to determine the HCF, using repeated division.”

“Anyway there are some differences in the algorithm, and I want you to follow me carefully.”

“Now, we will try to find the HCF for 12 and 18.”

“Start dividing with the smallest prime number.

$$\begin{array}{r|l} 2 & 12, \quad 18 \\ & \hline & 6 \quad 9 \end{array}$$

“ The next divisor is 3, not 2 because 9 is not divisible by 2. Both numbers must be divisible by the divisor.”

$$\begin{array}{r|l} 2 & 12, \quad 18 \\ 3 & \hline & 6 \quad 9 \\ & \hline & 2 \quad 3 \end{array}$$

“There is no more suitable divisor, so it is done and the HCF = $2 \times 3 = 6$.”

“Now I want you to work in pairs to find the HCF for 18 and 45.”

Expected answer:

3	18 ,	45
3	6	15
	2	5

$$\text{HCF} = 3 \times 3 = 9$$

Teacher gives some more questions until he is satisfied with the students' mastery.

Closure

To avoid confusion, teacher shows the algorithm for determining LCM and HCF side by side.

“To see clearly the difference between LCM and HCF, let's look at their algorithm side by side.”

(i) Determining LCM

2	6 ,	12
2	3 ,	6
3	3 ,	3
	1 ,	1

$$\text{LCM} = 2 \times 2 \times 3 = 12$$

(i) Determining HCF

2	6 ,	12
3	3 ,	6
	1	2

$$\text{HCF} = 2 \times 3 = 6$$