MULTIPLES (KEY)

TEACHING TASK

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

Multiple Choice Questions

1. The multiples of 7 are numbers that can be expressed as 7×n, where n is an integer.
Let's check each option:
a) 25: 25÷7 is approximately 3.57, not an integer. So, 25 is not a multiple of 7.
b) 21: 21÷7=3, which is an integer. Thus, 21 is a multiple of 7.
c) 18: 18÷7 is approximately 2.57, not an integer. So, 18 is not a multiple of 7.
d) 14: 14÷7=2, which is also an integer. Therefore, 14 is a multiple of 7.
Conclusion: The correct answers are b) 21 and d) 14.

2. To determine if one number is a multiple of another, you should:
c) Divide one number by the other and check for a remainder.
Explanation: If you divide the first number by the second and the result is an integer with a remainder of 0, then the first number is a multiple of the second.
For example, to check if 21 is a multiple of 7: Divide: 21÷7=3 with a remainder of 0. Since there's no remainder, 21 is indeed a multiple of 7.
The other options (a, b, and d) do not accurately determine if one number is a multiple of another.

3. d) Common multiples are numbers that are multiples of two or more given numbers.
Explanation: Common multiples are numbers that can be evenly divided by each of the numbers in a given set. For example, for the numbers 4 and 6, the common multiples include 12, 24, 36, and so on, because these numbers can be evenly divided by both 4 and 6.
Here's why the other options are not true:
a) Common multiples are not unique to each pair of numbers; they can be shared among multiple pairs.
b) The smallest common multiple is known as the least common multiple (LCM), not all common multiples.
c) Common multiples are found by identifying numbers that are mul-

tiples of both numbers, not by dividing.

4. a) The number itself.
Explanation: The multiples of a number are obtained by multiplying that number by integers (0, 1, 2, 3, etc.). The first multiple, when using the smallest positive integer (1), is simply the number itself.
For example, for the number 5:
The first multiple is $5 \times 1 = 5$.
The next multiples would be $5 \times 2 = 10$, $5 \times 3 = 15$, and so on.

ADVANCED LEVEL

More than One Answer Type

5. a) Multiples are prime numbers.
Explanation: a) Multiples can be both prime and composite numbers. For example, the multiples of 4 are 4, 8, 12, etc., and only 4 is prime.
b) This is not true; multiples can be divided evenly by the original number. For example, $12 \div 3 = 4$ with no remainder.
c) This is true; multiples are numbers that can be divided by another number without leaving a remainder.
d) This is also not true; multiples can be equal to or greater than the original number. For instance, the first multiple of 5 is 5 itself.

6. b) Infinite.
However, if we consider the context of the question, we can evaluate other options as well:
a) Finite: This is not true; multiples are not finite as they go on indefinitely.
c) Variable: While the number of multiples is infinite, you might say that the actual values of the multiples can vary based on the number being multiplied (e.g., the multiples of 2 are different from the multiples of 3). However, this doesn't accurately reflect how many multiples there are.
d) Limited: This is also not true, as multiples are unlimited.
So, the only correct answer regarding how many multiples each number has is b) Infinite. The other options do not correctly describe the number of multiples.

Fill In the Blanks

7. Multiples of any number are *infinite*, as there is no last multiple of a number. You can continue to multiply the number by larger integers

indefinitely, producing an endless series of multiples.

8. Finding multiples involves identifying numbers that are the result of multiplying a given number by *integers*.

Matching Type

9.

1. 18 ---- E. Multiples of any number (Multiples include 18, 36, etc. when considering multiples of 6.)
2. 45 ----- B. Product of two numbers (45 can be expressed as 9×5.)
3. 20 ----- D. First multiple of a number (The first multiple of 20 is 20 itself.)
4. 15 ---- C. Determining if one number is a multiple of another (15 can be used to check if other numbers are multiples, e.g., 30 is a multiple of 15.)
5. 24 ----- A. Finding common multiples (Common multiples of 8 and 12 include 24.)

Answer the Following Questions

10. Here are the first five multiples for each number:

a. *4*: 1. 4, 2. 8, 3. 12, 4. 16, 5. 20

b. *3*: 1. 3, 2. 6, 3. 9, 4. 12, 5. 15

c. *7*: 1. 7, 2. 14, 3. 21, 4. 28, 5. 35

d. *9*: 1. 9, 2. 18, 3. 27, 4. 36, 5. 45

e. *12*: 1. 12, 2. 24, 3. 36, 4. 48, 5. 60

f. *15*: 1. 15, 2. 30, 3. 45, 4. 60, 5. 75

g. *20*: 1. 20, 2. 40, 3. 60, 4. 80, 5. 100

11. Let's evaluate each pair to see if the greater number is a multiple of the smaller number:

a. 108, 12: Yes, 108÷12=9 (108 is a multiple of 12).
b. 13, 109: No, 109÷13 does not yield an integer.
c. 14, 126: Yes, 126÷14=9 (126 is a multiple of 14).
d. 15, 225: Yes, 225÷15=15 (225 is a multiple of 15).
e. 16, 144: Yes, 144÷16=9 (144 is a multiple of 16).

Pairs where the greater number is a multiple of the smaller number: a.

108, 12, c. 14, 126, d. 15, 225, e. 16, 144
So, the circled pairs are a, c, d, and e.

LEARNERS TASK

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

Multiple Choice Questions

1. b) Numbers that can be divided by another number without leaving a remainder.
Explanation: Multiples of a number are the results of multiplying that number by integers (0, 1, 2, 3, etc.). For example, the multiples of 5 are 0, 5, 10, 15, 20, etc., all of which can be divided by 5 without leaving a remainder.
The other options are not accurate definitions of multiples: a) This is incorrect; multiples can be evenly divided.
c) This is incorrect; multiples can be prime or composite.
d) This is incorrect; multiples can be odd or even.
So, option b is the correct definition of multiples.

2. d) Every number is a multiple of 1.
Explanation:
a) This is false; every number is a multiple of itself (e.g., $n \times 1 = n$).
b) This is false; not every number is a multiple of 2 (only even numbers are).
c) This is false; multiples of any number are infinite.
d) This is true; every number can be expressed as $n \times 1$, making it a multiple of 1.
Thus, option d is the correct answer.

3. b) 15.
Explanation: Multiplication of 3 by 5 can be calculated as follows:
$3 \times 5 = 15$
So the correct answer is b) 15.

4. c) Multiplying the number by consecutive integers.
Explanation: To find the multiples of a number, you multiply that number by integers such as 0, 1, 2, 3, and so on. For example, the multiples of 4 would be: $4 \times 0 = 0$, $4 \times 1 = 4$, $4 \times 2 = 8$, $4 \times 3 = 12$, $4 \times 4 = 16$.

Thus, option c is the correct answer. The other options do not accurately describe how to find multiples.

ADVANCED LEVEL

More than One Answer Type

5. The first and second multiples of 7 are:
First multiple: b) 7 (since 7×1=7)
Second multiple: a) 14 (since 7×2=14)
Summary: First multiple of 7: b) 7, Second multiple of 7: a) 14
So the correct answers are b and a.

6. The numbers that are multiples of 9 from the given options are:
a) 18: 18÷9=2 (multiple of 9)
b) 27: 27÷9=3 (multiple of 9)
c) 36: 36÷9=4 (multiple of 9)
d) 41: 41÷9 does not yield an integer (not a multiple of 9)
Conclusion: The correct answers are a) 18, b) 27, and c) 36.

Fill In the Blanks

7. Every number is a multiple of 1.
Explanation: This is because any number n can be expressed as n×1, making 1 a universal multiple of all numbers.

8. Multiples refer to numbers that can be divided by another number without leaving a *remainder*.

Matching Type

9. Here's the correct matching of the multiples with their corresponding numbers:

1. 9 ---- A) 3 (since 3×3=9)
2. 15 ---- D) 5 (since 5×3=15)
3. 24 ---- B) 6 (since 6×4=24)
4. 36 ---- C) 4 (since 4×9=36)
5. 30 ---- E) 10 (since 10×3=30)

Answer the Following Questions

10. Here are the first five multiples for each number:

a. *6*: 1. 6, 2. 12, 3. 18, 4. 24, 5. 30

b. *10*: 1. 10, 2. 20, 3. 30, 4. 40, 5. 50

c. *11*: 1. 11, 2. 22, 3. 33, 4. 44, 5. 55

d. *20*: 1. 20, 2. 40, 3. 60, 4. 80, 5. 100

11. The numbers that are multiples of 20 from the given options are:
b. 140: 140÷20=7 (multiple of 20)
c. 200: 200÷20=10 (multiple of 20)
The other numbers are not multiples of 20:
a. 50: 50÷20 does not yield an integer.
d. 170: 170÷20 does not yield an integer.
e. 210: 210÷20 does not yield an integer.
f. 360: 360÷20=18 (multiple of 20)
g. 270: 270÷20 does not yield an integer.

Circling the multiples of 20: b. 140, c. 200, f. 360.
So the circled numbers are b, c, and f.

TETS OF DIVISIBILITY (KEY)

TEACHING TASK

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

Multiple Choice Questions

1. b) They end in 2, 4, 6, 8, or 0.
Explanation: Even numbers are defined as numbers that can be divided by 2 without leaving a remainder, and they always end in 0, 2, 4, 6, or 8. The other options do not accurately describe even numbers.

2. d) Checking if a number is odd.
Explanation: A number is even (and thus divisible by 2) if it can be divided by 2 without leaving a remainder. If a number is not divisible by 2, then it is odd. The other options do not specifically relate to the test of divisibility by 2:
a) Identifying prime numbers involves more than just checking divisibility by 2.
b) Simplifying fractions can involve any common factor, not just 2.
c) Finding common factors does not specifically pertain to the divisibility by 2.
Thus, the best answer is d).

3. c) Test of divisibility by 2 and 3.
Explanation: A number is divisible by 6 if it meets both of the following conditions:
It is even (divisible by 2).
The sum of its digits is divisible by 3.
So, both tests must be satisfied to confirm divisibility by 6. The other options do not pertain to this specific divisibility rule.

4. d) It must be 0 or 5.
Explanation: A number is divisible by 5 if its last digit is either 0 or 5. The other options do not accurately describe the characteristics of numbers divisible by 5.

ADVANCED LEVEL

More than One Answer Type

5. The numbers that are divisible by 2 from the given options are:
b) 556: Ends in 6, which is even.
c) 888: Ends in 8, which is even.
The other options are not divisible by 2:
a) 999: Ends in 9, which is odd.
d) 333: Ends in 3, which is odd.
Conclusion: The correct answers are b) 556 and c) 888.

6. The numbers that are not divisible by 2 from the given options are:
a) 111: Ends in 1, which is odd.
d) 999: Ends in 9, which is odd.
The other options are divisible by 2:
b) 720: Ends in 0, which is even.
c) 432: Ends in 2, which is even.
Conclusion: The correct answers are a) 111 and d) 999.

Fill In the Blanks

7. If the last digit of a number is *0* or *an even number (2, 4, 6, 8)*, then the number is divisible by 2.

8. Otherwise, if the last digit is *1* or *any odd number (3, 5, 7, 9)*, the number is not divisible by 2.

Matching Type

9. Here's the correct matching for each item:

1. Is 123 divisible by 2 ---- C. No (123 is not divisible by 2 because it ends in 3.)

2. Numbers divisible by 2 ---- D. 888, 666 (Both 888 and 666 are examples of numbers that are divisible by 2.)

3. Divisibility Test ---- A. The quotient is an integer when divided by another number. (This defines what it means for a number to be divisible by another number.)

4. Divisibility by 2 Test - B. The last digit is either 0, 2, 4, 6, or 8. (This explains the condition for a number to be divisible by 2.)

Summary of Matches:

1. Is 123 divisible by 2 - C

2. Numbers divisible by 2 - D

3. Divisibility Test - A

4. Divisibility by 2 Test - B

Answer the Following Questions

10. No, 9999 is not divisible by 2.
Explanation:
To determine if a number is divisible by 2, you check its last digit. The last digit of 9999 is 9, which is odd. Since it does not end in 0, 2, 4, 6, or 8, 9999 is not divisible by 2.

11. Yes, 1002 is divisible by 2.
Explanation:
To determine if a number is divisible by 2, you check its last digit. The last digit of 1002 is 2, which is even. Since it ends in 0, 2, 4, 6, or 8, 1002 is divisible by 2.
In fact: $1002 \div 2 = 501$
So the quotient is an integer, confirming that 1002 is indeed divisible by 2.

LEARNERS TASK

CONCEPTUAL UNDERSTANDING QUESTIONS (CUQ's)

Multiple Choice Questions

1. c) Sum of digits test.
Explanation: To check if a number is divisible by 3, you can add up all its digits. If the sum is divisible by 3, then the original number is also divisible by 3. For example, for the number 123:
1. Sum the digits: 1+2+3=6
2. Since 6 is divisible by 3, the original number (123) is also divisible by 3.
The other options do not pertain to the divisibility by 3.

2. d) 0 or 4.
Explanation: To determine if a number is divisible by 4, you look at the last two digits of the number. However, more specifically for single-digit endings, a number can also end in 0, and if the last two digits are 00, 04, 24, etc., it is divisible by 4.
In terms of single-digit endings for quick checks, if the last digit is 0, it could be divisible by 4. The option 4 is specifically noted since any number ending in 4 is also a candidate for being divisible by 4 (e.g., 12, 24, 34, etc.).
Thus, while the complete divisibility check involves the last two digits, for the sake of the provided options, d) 0 or 4 is the best choice.

3. b) Its last digit is even.
Explanation: A number is divisible by 2 if its last digit is one of the even digits: 0, 2, 4, 6, or 8. If the last digit is even, then the number can be evenly divided by 2 without leaving a remainder. The other options do not correctly describe the divisibility rule for 2.

4. b) 44.
Explanation: a) 27: Ends in 7 (odd), not divisible by 2.
b) 44: Ends in 4 (even), divisible by 2.
c) 35: Ends in 5 (odd), not divisible by 2.
d) 59: Ends in 9 (odd), not divisible by 2.
So, the only number divisible by 2 is b) 44.

ADVANCED LEVEL

More than One Answer Type

5. The numbers that are divisible by 2 from the given options are:
b) 48: Ends in 8 (even), so it is divisible by 2.
d) 502: Ends in 2 (even), so it is divisible by 2.
The other options are not divisible by 2:
a) 37: Ends in 7 (odd), not divisible by 2.
c) 91: Ends in 1 (odd), not divisible by 2.
Conclusion: The correct answers are b) 48 and d) 502.

6. The numbers that are not divisible by 2 from the given options are:
b) 315: Ends in 5 (odd), not divisible by 2.
d) 533: Ends in 3 (odd), not divisible by 2.
The other options are divisible by 2:
a) 206: Ends in 6 (even), so it is divisible by 2.
c) 420: Ends in 0 (even), so it is divisible by 2.
Conclusion: The correct answers are b) 315 and d) 533.

Fill In the Blanks

7. 889 is *not* divisible by 2 because its last digit is *9* (an odd number).

8. 1000 is divisible by 2 because its last digit is *0* (an even number).

Matching Type

9. Here's the matching for each number indicating whether it is divisible by 2:

1. 63 --- No (last digit is 3, which is odd)

2. 120 --- Yes (last digit is 0, which is even)

3. 555 --- No (last digit is 5, which is odd)

4. 888 --- Yes (last digit is 8, which is even)

Summary:

1. 63 - No, 2. 120 - Yes, 3. 555 - No, 4. 888 - Yes.

Answer the Following Questions

10. Yes, 422 is divisible by 2.
Explanation: To determine if a number is divisible by 2, you check its last digit. The last digit of 422 is 2, which is even. Since it ends in 0, 2,

4, 6, or 8, 422 is divisible by 2.
In fact: 422÷2=211
So the quotient is an integer, confirming that 422 is indeed divisible by 2.

11. No, 2019 is not divisible by 2.
Explanation: To determine if a number is divisible by 2, you check its last digit. The last digit of 2019 is 9, which is odd. Since it does not end in 0, 2, 4, 6, or 8, 2019 is not divisible by 2.