

因數與倍數 1

Factors and Multiples 1

Class: _____ Name: _____

1. 複習因數與倍數

$6 = 2 \times 3 \Rightarrow 2$ is a factor of 6.
 $\Rightarrow 6$ is a multiple of 2.

2. Sentence Pattern:

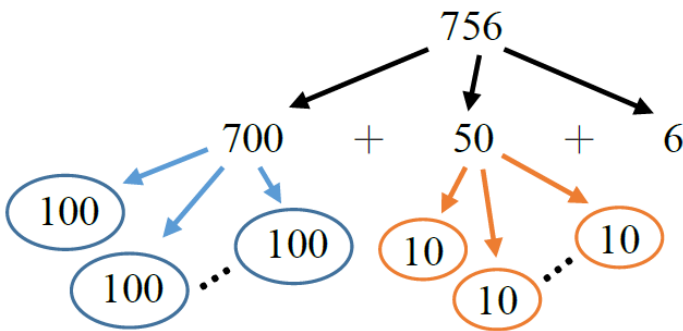
_____ is divisible by _____.

<p>Example. Find all factors of 24.</p>	<p>Exercise. Find all factors of 36.</p>
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3. 2 的倍數判別法

odd(奇數) : Numbers that are NOT multiples of 2.

even(偶數) : Numbers that are multiples of 2



10 and 100 are divisible by 2.

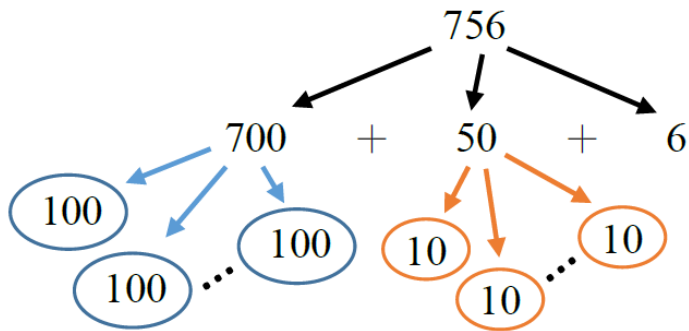
When we want to check whether 756 is a multiple of 2, we only need to check whether the last digit is a multiple of 2.

A number with the last digit being 0, 2, 4, 6 or 8 is a multiple of 2.

Which number is a multiple of 2? Circle it!

373 254 671 8832 7210

4. 5 的倍數判別法



10 and 100 are divisible by 5.

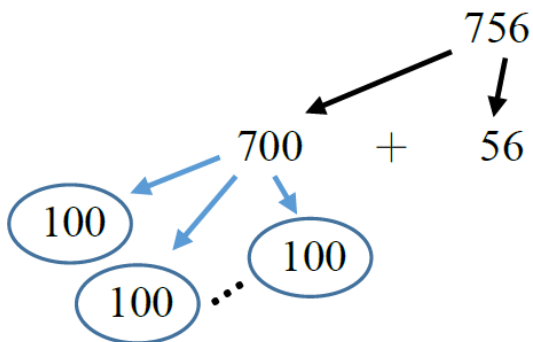
If we want to check whether 756 is a multiple of 5, we only need to check whether the last digit is a multiple of 5.

A number with the last digit being 0 or 5 is a multiple of 5.

Which number is a multiple of 5? Circle it!

451	226	275	4573	6720
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5. 4 的倍數判別法



100 is divisible by 4.

If we want to check whether 756 is a multiple of 4, we only need to check whether the last two digits is a multiple of 4.

A number with the last two digits being a multiple of 4 is a multiple of 4.

Which number is a multiple of 4? Circle it!

128	576	253	8726	3152
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一、設計理念：

1. 學生在國小階段已經學過因數、倍數的概念，並學過 2 的倍數及 5 的倍數判別法。本章節開頭先複習過因數與倍數。後續參考《數學新世界》教材，藉由拆解整數和學生解釋 2 的倍數、5 的倍數及 4 的倍數判別法。
2. 由於此份學習單多數內容均已在國小習得，但此處英文單詞彙量較大，故須多花一點時間讓學生將原本已經會的知識轉化為可用英文理解。
3. 因數與倍數 2 將介紹 9 的倍數、3 的倍數及 11 的倍數的判別法，將一貫使用拆解整數的方式帶學生理解其原因。
4. 說明的過程中需要適時搭配板書，讓學生更容易理解目前所講述的內容。

二、英文詞彙：

中文	英文
因數	factor
倍數	multiple
位數	digit
可整除	divisible
奇數	odd
偶數	even

三、數學英文用法：

數學表示法	英文
6 是 3 的倍數	Six is a multiple of three.
3 是 6 的因數	Three is a factor of three.
6 被 3 整除	Six is divisible by three.

四、教學參考範例：

1	<p>這個章節我們要教因數與倍數，因數的英文是 factor，倍數的英文是 multiple.</p> <p>What is factor? What is multiple? We know that 6 equals 2 times 3. We say 2 is a factor of 6, and on the other hand, 6 is a multiple of 2.</p>
2	<p>Lets look at some examples such as 3, 6, 9, 12, ... How many numbers are multiple of 3? There are infinite numbers.因為只要將 3 乘以任意一個整數，那個數就會是 3 的倍數，所以我們知道 3 的倍數有無限多個。It is easy to find the multiple of a number, we just need to multiply any positive integer by the number.</p>
3	<p>Then, how do we find the factor of a number? For example, how do we find the factor of 6? 6 equals 2 times 3, and also equals 1 times 6, so the factors of 6 are 1, 2, 3 and 6. And how do we check 4 is not a factor of 6? We can use division. Because 6 divided by 4 equals 1 remainder 2, 4 is not a factor of 6.我們利用除法來看數字能不能被整除，也就是最後有沒有餘數，所以整除就會是判斷因數的關鍵，之後我們檢查因數會一直用到整除，所以我們先來學習整除的句型。The sentence pattern is “___ is divisible by ___”. For example, 6 divided by 2 equals 3 and there is no remainder, so 6 is divisible by 3. Therefore, 3 is a factor of 6. On the other hand, 6 divided by 4 equals 1 remainder 2, so 6 is not divisible by 4, and 4 is not a factor of 6.</p>
4	<p>Let's try to find all factors of 24. First, 24 is divisible by 1, so 1 is a factor of 24. 24 equals 1 times 24, so 24 is also a factor of 24.記得我們國小時找因數的時候，都會這樣兩兩一組配對尋找，這樣最後才能比較快把所有因數找完。Next, is 2 a factor of 24? 24 divided by 2 equals 12, so 24 is divisible by 2. Thus, 2 is a factor of 24, and 12 is also a factor of 24. 24 divided by 3 equals 8, so 3 and 8 are factors of 24. 24 divided by 4 equals 6, so 4 and 6 are factors of 24. 24 divided by 5 equals 4 remainder 4, so 5 is not a factor of 24. Next number is 6, but do we need to check whether 6 is a factor of 24?我們前面已經知道 6 是 24 的因數，所以不需要再重做一次，24 會被拆成兩個數字相乘，一定會一個數字大一個數字小，所以如果我們再去找比 6 大的數，應該也會有一個比 6 小的因數，但比 6 小的因數我們都已經找到了，所以可以確認所有因數已經找完。All factors of 24 are 1, 2, 3, 4, 6, 12 and 24.</p>

五、引入語言使用建議：

第 1 段	前面先用中文提醒學生今天要教因數與倍數的概念，再複習因數與倍數的中文，後續再用英文複習因數與倍數。
第 2 段	找倍數的過程因為搭配實際數字，故使用英文，而後續再用中文補充說明，最後利用英文做簡單總結。
第 3 段	前面找因數及確認是否為因數的過程因為搭配實際數字，所以利用英文，接下來用中文介紹找因數與整除間的關聯，並導出本單元的英文句型。
第 4 段	計算的部分使用英文，並反覆使用前面所學的句型。說明要兩兩配對及已經找完的過程由於較複雜，故使用中文說明。