

1-2**Reading to Learn Mathematics*****Divisibility Patterns***

Pre-Activity Complete the Mini Lab at the top of page 10 in your textbook.
Write your answers below.

Describe a pattern in each group of numbers listed.

1. the numbers that can be evenly divided by 2
2. the numbers that can be evenly divided by 5
3. the numbers that can be evenly divided by 10
4. the numbers that can be evenly divided by 3 (*Hint: Look at both digits.*)

Reading the Lesson

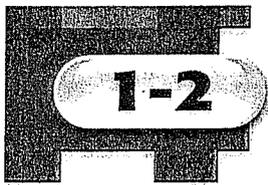
5. Complete the following table.

The number	is divisible by	because
12	2	
12	3	
12	4	
12	6	
20	5	
20	10	

6. The Pledge of Allegiance uses the term *indivisible*. How do the meanings of *divisible* and *indivisible* compare to each other?

Helping You Remember

7. Several commonplace items come in amounts that are divisible by smaller units. For example, a deck of playing cards has 4 suits of 13 cards, so 52 is divisible by 4 and 13. Name other everyday items that illustrate divisibility patterns.



Enrichment

Leap Years

You probably know that a **leap year** has 366 days, with the extra day being February 29. Did you know that divisibility can help you recognize a leap year? That is because the number of a leap year is always divisible by 4. A number is divisible by 4 if the number formed by its tens and ones digits is divisible by 4.

1936 is divisible by 4 because 36 is divisible by 4.
1938 is not divisible by 4 because 38 is not divisible by 4.
So 1936 was a leap year, and 1938 was not.

Be careful when you decide if a year is a leap year. A century year—like 1800, 1900, or 2000—is a leap year only if its number is divisible by 400.

Decide whether each year is a leap year. Write yes or no.

- | | | | |
|---------|----------|----------|----------|
| 1. 1928 | 2. 1930 | 3. 1960 | 4. 1902 |
| 5. 1492 | 6. 1776 | 7. 1812 | 8. 1900 |
| 9. 1994 | 10. 2000 | 11. 2001 | 12. 2100 |

13. How many leap years are there between 1901 and 2001?
14. How many leap years were there from the Declaration of Independence in 1776 to the bicentennial celebration in 1976? (Include 1776 and 1976 in your count.)
15. In 1896, the first modern Olympic games were held in Athens, Greece. After that, the officially recognized games were held every four years except for 1916, 1940, and 1944, when the world was at war. How many times were the games held from 1896 to 1992?
16. George Washington was first elected president in 1789. Since 1792, United States presidential elections have been held every four years. How many presidential elections will there have been up to and including the election in the year 2000?
17. **CHALLENGE** If a person lives to be exactly 100 years old, how many leap years or parts of leap years will that person see?