Micron Educator Hub downloads Copyright Guidelines

September 03, 2024

Copyright guidelines

By using any content provided by the Micron Educator Hub, you acknowledge that Micron Technology, Inc. ("Micron") is the sole owner of the content and agree that any use of the content provided by the Micron Educator Hub must comply with applicable laws and require strict compliance with these Guidelines:

1. Credit shall be expressly stated by you to Micron for use of the content, including any portion thereof, as follows:

    a. "© [year] Micron Technology, Inc. All Rights Reserved. Used with permission."

2. You may not use the content in any way or manner other than for educational purposes.

3. You may not modify the content without approval by Micron.

4. You may not use the content in a manner which disparages or is critical of Micron, its employees, or Micron's products/services.

5. Permission to use the content may be canceled/terminated by Micron at any time upon written notice from Micron to You if You fail to comply with the terms herein.

6. You acknowledge and agree that the content is provided by Micron to You on an "as is" basis without any representations or warranties whatsoever, and that Micron shall have no liability whatsoever arising from Your use of the content. Micron shall ensure that the content does not violate any statutory provisions and that no rights of third parties are infringed by the content or its publication. Otherwise, liability of the parties shall be limited to intent and gross negligence.

7. You acknowledge and agree that the content is the copyrighted material of Micron and that the granting of permission by Micron to You as provided for herein constitutes the granting by Micron to You of a non-exclusive license to use the content strictly as provided for herein, and shall in no way restrict or affect Micron's rights in and/or to the content, including without limitation any publication or use of the content by Micron or others authorized by Micron.

8. Except for the above permission, Micron reserves all rights not expressly granted, including without limitation any and all patent and trade secret rights. Except as expressly provided herein, nothing herein will be deemed to grant, by implication, estoppel, or otherwise, a license under any of Micron's other existing or future intellectual property rights.

How to cite sources from the Micron Educator Hub

- Micron is committed to collaborate with Educators to make semiconductor memory education resources available through the Micron Educator Hub.

- The content in the Micron Educator Hub has been identified by Micron as current and relevant to our company.

- Please refer to the table on the right for proper citation.

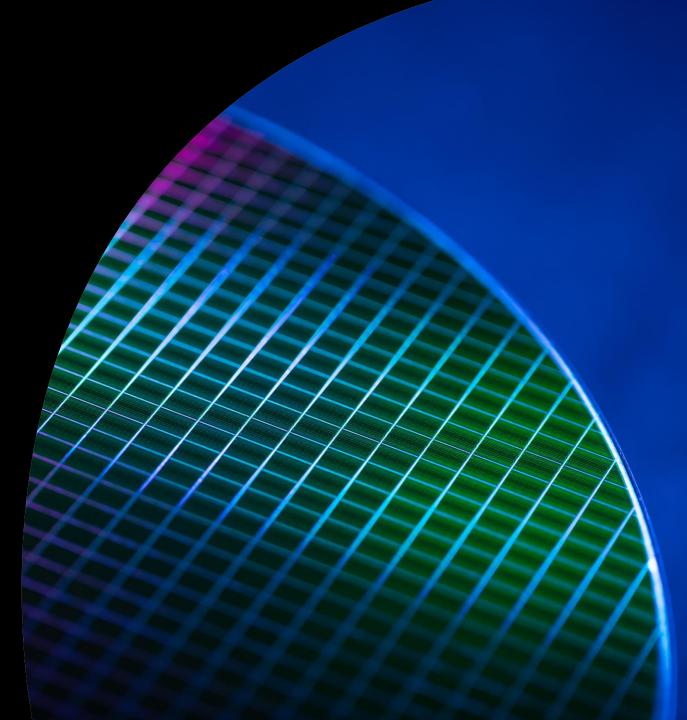| Use case	How to cite sources
a) Whole slide deck or whole document Description: User uses the whole slide deck or whole document AS IS, without any modification	No additional citation required.
b) Full slide or full page Description: User incorporates a full slide or a full page into their own slide deck or document.	"© [year] Micron Technology, Inc. All Rights Reserved. Used with permission."
c) Portion of a slide or portion of a page Description: User copies a portion of a slide or a portion of a page into a new slide or page	This is not allowed.

STEM

STEM

Binary

K-12 Semiconductor Topics

Reviewed 2024

Micron®

Binary Code

The Language of Computers

Micron®

Brief History Lesson: Meet Gottfried Wilhelm Leibniz

German philosopher and Mathematician – Born 1646

Leibniz developed mathematical numbering system using only ones and zeroes

developed in 1689 and still used over 300 years later

binary became widely used when first computers were made around 1940

early computer scientists used binary to represent on and off with ones and zeroes

STEM

There are only 10_2 type of people in the world

There are only 10_2 types of people in the world

01_2 - Those that understand binary
10_2 - Those that don't understand binary

STEM

Name the items in this photo

Name the items in this photo   **Bicycles**

STEM

This photo show bicycles

How many wheels does a bicycle have?

How many wheels does a tricycle have?

How many wheels does a unicycle have?

STEM

Counting – Humans & Computers

Humans

- Base 10

- 10 digits

Computers

- Base 2

- 2 digits
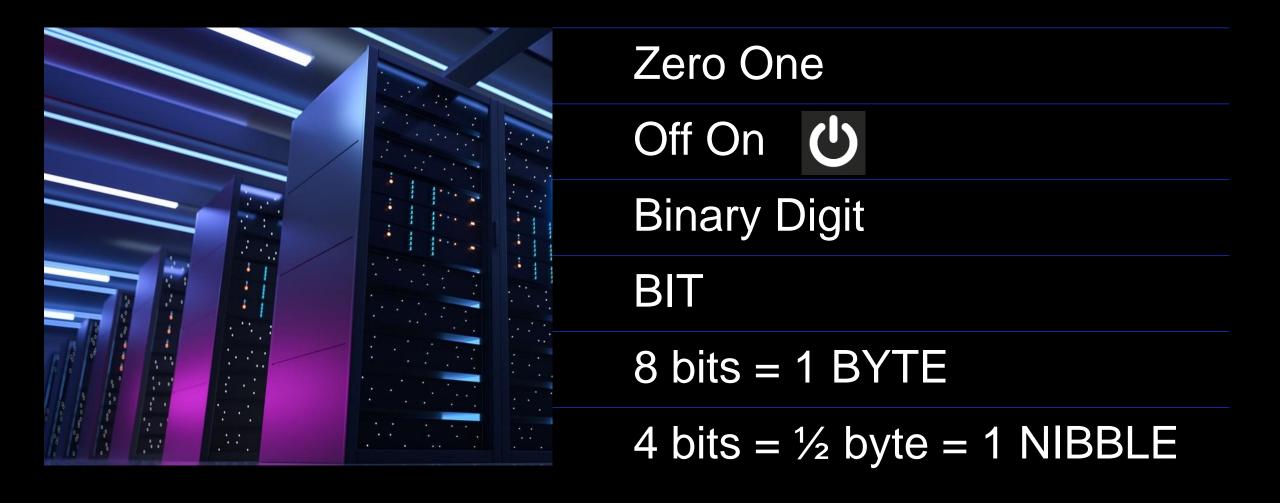
Humans Count in Base 10

0, 1, 2, 3, 4, 5, 6, 7, 8, 9

STEM

Computers Count in Base 2

——— , ———

Binary Code

Zero One

Off On ⏻

Binary Digit

BIT

8 bits = 1 BYTE

4 bits = ½ byte = 1 NIBBLE

Binary Activities

- Counting in Binary
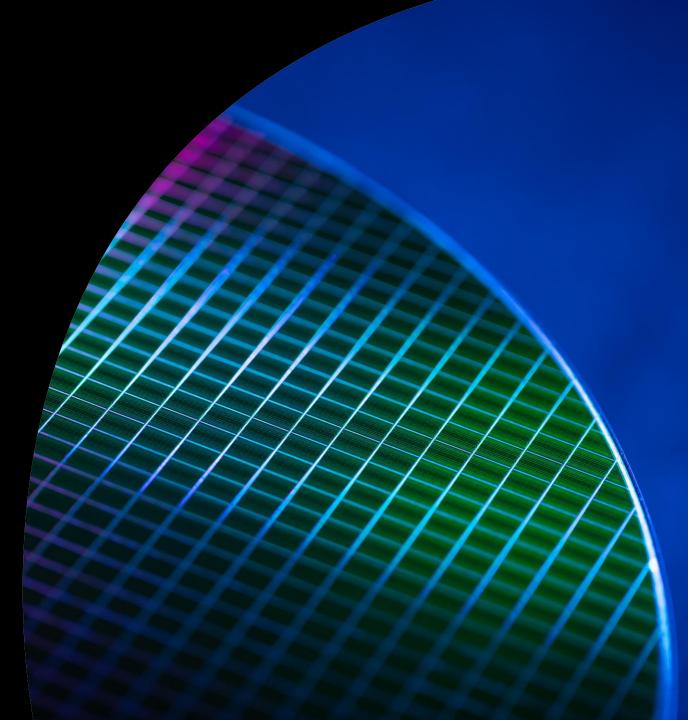- Binary Bracelet
- Write your Name in Binary
- Translate a Message

Micron®

Memory

Chips store data as binary

These are Micron memory chips

Memory Chips store data as binary

High-bandwidth graphics memory

- Fast memory for graphics and Artificial Intelligence

Low-power memory and storage

- Fast memory for smartphones and other mobile devices

Automobile and industrial-grade solutions

- Fast and reliable memory for sensor, autonomous driving technologies, infotainment (music system and built in video screens)

STEM

Memory sizes

- 1 kilobyte (KB) = 1,024 bytes

- 1 megabyte (MB) = 1,024 kilobytes

- 1 gigabyte (GB) = 1,024 megabytes

- 1 terabyte (TB) = 1,024 gigabytes

- 1 petabyte (PB) = 1,024 terabytes

- 1 exabyte (EB) = 1,024 petabytes

- 1 zettabyte (ZB) = 1,024 exabytes

- 1 yottabyte (YB) = 1,024 zettabytes

STEM

STEM

Binary Activity

- Write your Name in HEX

Micron®

STEM