

1 Hex and representing data – Part 2

Name: _____ Class: _____ Date: _____

Vocabulary 词汇

Write each word *three times*. 把每个单词抄写三遍。

English	中文	Write it 3 times (English)
Hexadecimal	十六进制	_____
ASCII	美国信息 交换标准 代码	_____

Recall

Long binary numbers are hard to read, so we also use hexadecimal. All data —text, sound, images—is stored as binary.

New ideas

Read these first, then do the Practice.

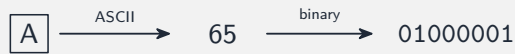
■ 1 Hexadecimal

Hexadecimal 十六进制 (hex) uses 16 digits: 0–9, then A–F. One hex digit equals four binary digits:

denary	binary	hex
10	1010	A
11	1011	B
15	1111	F

■ 2 Representing text

Each character has a number code (e.g. **ASCII** 美国信息交换标准代码), which is then stored in binary:



Watch out: one **hex digit** maps to exactly **four** binary digits, which is why hex is a short way to write long binary. Each character is stored as a *number code* (e.g. ASCII), then that number is stored in binary.

Practice

Try these in order.

1.6 How many digits does hexadecimal use? [1]

1.7 Which hex digit equals denary 15? [1]

1.8 How many binary digits does one hex digit represent? [1]

1.9 Why do we use hexadecimal instead of long binary numbers? [1]

1.10 The letter 'A' has ASCII code 65. What is actually stored for the letter 'A'? [1]

1.11 Challenge. Convert the binary number 1111 1010 to hexadecimal. [3]