

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]