

2. Data

Starter Quiz · 课前小测

AP Computer Science Principles

Name: _____ Score: _____

1. A single 0 or 1, the smallest piece of data, is called a _____.

2. Compression means storing the same data using:
 - ☐ fewer bits
 - ☐ more bits
 - ☐ a faster computer
 - ☐ more colors
3. Turning raw data into something that answers a real question produces:
 - ☐ information
 - ☐ more raw data
 - ☐ a bug
 - ☐ a byte
4. A program that takes scores in and gives back the average is doing:
 - ☐ processing — steps that turn data into new information
 - ☐ compression
 - ☐ sampling
 - ☐ nothing
5. What is the binary number 1011 in decimal?

6. Which data type must use lossless compression?
 - ☐ a program file (text/code)
 - ☐ a music track for casual listening
 - ☐ a small web thumbnail
 - ☐ a streamed video
7. Removing duplicate rows and filling missing values is part of cleaning data.
 - ☐ True ☐ False

8. Repeating the same steps for each item of a list is called _____.

9. What is decimal 13 in binary?

- ☐ 1101
- ☐ 1011
- ☐ 1110
- ☐ 1001

10. Lossy compression trades data quality for smaller file size.

- ☐ True ☐ False

AP Computer Science Principles

1. **bit**

Eight bits group into a byte.

2. **fewer bits**

Fewer bits means smaller files that store and send faster.

3. **information**

Information is data made useful — patterns and trends answering a question.

4. **processing — steps that turn data into new information**

Input $\rightarrow$ processing $\rightarrow$ output produces a new fact, the average.

5. **11**

Place values 8,4,2,1 with 1-bits at 8,2,1: $8+2+1 = 11$.

6. **a program file (text/code)**

One changed byte could break a program, so it must be lossless.

7. **True**

Cleaning fixes problems so the analysis can be trusted.

8. **iteration**

A loop visits each element in turn.

9. **1101**

$8 + 4 + 1 = 13$, so bits 8,4,1 are on: 1101.

10. **True**

Smaller size usually means losing some detail.