

Get ready!

- 1 Before you read the passage, talk about these questions.

- 1 What is the difference between an SI unit and a binary unit?
- 2 Between SI units and binary units, which do you think is more useful?

From: r.moore@hypedrives.com
To: f.dvorak@hypedrives.com
Subject: Consistent units



Dear Mr. Dvorak,

I am worried about the company's inconsistent use of units. Some of our products have **SI units** like **megabytes**. Meanwhile, others use the **IEC's binary** units, such as **mebibytes**.

Some **prefixes** sound similar, but the units are quite different. SI units increase by **factors** of ten. For instance, something with the prefix **kilo-** has 1,000 units. So a kilobyte equals 1,000 **bytes**. Binary units, on the other hand, increase by factors of two. A **kibibyte** actually contains 1,024 bytes. This may seem like a small difference. However, it increases at an **exponential** rate. The difference between a megabyte and mebibyte is 48,576 units. And a **terabyte** and **tebibyte** are separated by nearly 100 billion units!

That's why our labeling needs to be clear and consistent. I recommend listing SI units. The factors of ten are easier for customers to understand and remember.

Regards,
Rebecca Moore
Computer Engineer
Hype Drive Systems

Reading

- 2 Read the email. Then, mark the following statements as true (T) or false (F).

- 1 ☐ The company labels its products with both SI and binary units.
- 2 ☐ The difference between SI and binary units increases exponentially.
- 3 ☐ The email recommends switching to binary units only.

Vocabulary

- 3 Match the prefixes (1-6) with the definitions (A-F).

- | | |
|----------------------------------|----------------------------------|
| 1 <input type="checkbox"/> kilo- | 4 <input type="checkbox"/> mebi- |
| 2 <input type="checkbox"/> tebi- | 5 <input type="checkbox"/> mega- |
| 3 <input type="checkbox"/> kibi- | 6 <input type="checkbox"/> tera- |

- A a prefix equal to 1,000,000 units
B a prefix equal to 1,048,576 units
C a prefix equal to 1,024 units
D a prefix equal to 1,000 units
E a prefix equal to 1,000,000,000 units
F a prefix equal to 1,099,511,627,776 units

- 4 Read the sentence pairs. Choose which word or phrase best fits each blank.

1 **binary / exponential**

- A The amount increased at a(n) _____ rate.
B The _____ system measures amounts in factors of two.

2 **prefix / factor**

- A To scale the image, increase its dimensions by a _____ of two.
B The _____ of a unit indicates how large it is.

3 **IEC / SI units**

- A The device memory is listed in both binary and _____.
B The company follows guidelines that are established by the _____.

- 5 Listen and read the email again. What recommendation is made in the email?

Listening

- 6 Listen to a conversation between an engineer and a manager. Choose the correct answers.

- 1 What is the main idea of the conversation?
 - A which system of units the company should use
 - B why the company should use one set of units
 - C how to tell the difference between types of units
 - D why the company recently had to correct units on its labels
- 2 Why does the man prefer the current system?
 - A The units are easier to remember.
 - B The customers are more comfortable with it.
 - C The company requires a particular system.
 - D The product labels are already designed.

- 7 Listen again and complete the conversation.

Engineer: Why not? Customers are getting confused. They're buying products with 1 _____ than they need.

Manager: Perhaps. But we'd have to 2 _____. Besides, aren't the differences small?

Engineer: Not at all. The two sets of units convey very different numbers.

Manager: The difference between 3 _____ and a kibibyte is twenty-four bytes, right?

Engineer: Indeed it is. But the differences grow exponentially as 4 _____.

Manager: 5 _____. What do you mean?

Engineer: Well, the difference between a terabyte 6 _____ is over ninety-nine billion bytes.

Manager: Wow. That actually seems like a lot.

Speaking

- 8 With a partner, act out the roles below based on Task 7. Then, switch roles.

USE LANGUAGE SUCH AS:

Have you ...?

As I mentioned ...

I don't follow ...

Student A: You are an engineer. Talk to Student B about:

- the company's data measurement system
- why you think the company should change the system
- the consequences of keeping the current system

Student B: You are a manager. Talk to Student A about the company's data measurement system.

Writing

- 9 Use the conversation from Task 8 to fill out the email about changing the company's unit labeling practices.

Hi Janice,

I've been thinking about your suggestion. I'm not sure whether we should change the units on product labels. The idea has both pros and cons.

Pros:

- _____
- _____

Cons:

- _____
- _____

Let's schedule a meeting to talk about this further.

Lou