Reading 4

Skills:

- Details
- Vocabulary in context
- Author's purpose
- Understand negative facts

Getting started: What's the difference between Bluetooth and Wi-Fi?

BLUETOOTH AND WI-FI: WHAT´S THE DIFFERENCE?

The term "wireless" has been in use for more than a century. It first referred to communication without telegraph wires and was adopted as the term for what is more commonly known today as radio. Wireless means communication without the use of wires other than the aerial, just the way the radio works.

Today when we hear "wireless," we likely don't **picture** a radio. However, radio waves are still key to the way Bluetooth and Wi-Fi operate, **enabling** your devices to connect to each other or to the internet. An interesting thing about the name "Bluetooth" is that it is far older than wireless technology.

The company behind the name explained it was the nickname of King Harald "Bluetooth" Gormsson who united Denmark and Norway back in 958, who had a tooth in very bad conditions with a blueish tonality. In 1996 Jim Kardach from Intel suggested that name to reference the unification concept: "King Harald Bluetooth was famous for uniting Scandinavia just as we intended to unite the PC and cellular industries with a short-range wireless link." While it wasn't intended to be the final version of the name, it ended up sticking.

The distance between Bluetooth devices is often much smaller, as in the case of using a wireless keyboard within a couple of feet of your computer or a wireless headset near your phone. To put it in technical terms, Bluetooth operates in the 2400-2483.5 MHz range within the ISM 2.4 GHz frequency band. Data is split into packets and exchanged through one of 79 designated Bluetooth channels (each with 1 MHz in bandwidth)."

As with all technology, Bluetooth did not remain static. The original form that some may call Bluetooth classic was reinvented more than once, most significantly in 2011 when version 4.0 (Bluetooth Low Energy - BLE) was released, which leads some to refer to the other version as Bluetooth Classic (BC). The way BLE achieves a reduction in energy consumption is by staying in sleep mode until it reactivates through a connection. The amount of energy saved as a result is quite impressive. It can achieve as much as 100x lower power consumption than its classic counterpart. That's because where BC consumes a full watt, BLE only consumes 0.1-0.5 watts of energy.

Like Bluetooth, Wi-Fi works off a radio frequency. But it is not limited to the short distances since it works through LAN (local area network). In that network, Wi-Fi-enabled devices can connect so long as they are within range of the signal, which can extend to 300 feet. First introduced in 1994, Wi-Fi is used to allow access to the internet, so that a home, office, library, or hotel can have several devices pick up on the service without being plugged in.

That form of connection is what makes the Internet of Things (IoT) possible. Thus, people can use it to have smart homes, and operate devices and appliances that can be accessed over the internet from anywhere. The downside is that it also can create a point of vulnerability that leads to the phenomenon of being hacked.

The positive aspect of the current technologic advances is that the different forms of connectivity coexist in our offices, cars, homes, and libraries. They help provide the type of connection we need with the range and level of power required to use our computers, smartphones, tablets, and other smart devices.

**Adapted from https://www.techopedia.com/2/27881/networks/wireless/what-is-the-difference-between-bluetooth-and-wi-fi*

Answer the following questions:

1. The word **picture** in paragraph 2 is closest in meaning to
   a. photo
   b. imagine
   c. turn on
   d. draw

2. The word **enabling** in paragraph 2 can be replaced by
   a. allowing
   b. connecting
   c. activating
   d. preventing

3. Why does the author introduce information about King Harald in paragraph 3?
   a. To explain how Intel was established.
   b. To show how Denmark develops modern technology.
   c. To refute the fact that cell phones and PCs can be united.
   d. To clarify the origin of a term.

4. Which statement is true about Bluetooth?
   a. BC saves more energy than BLE.
   b. It operates in short ranges.
   c. BLE began functioning two decades ago.
   d. There are less than two dozen Bluetooth channels.
5. What is NOT true about Wi-FI?
   a. The signal can reach a device located 200 feet away.

b. It's key to implement smart technologies.
c. It was introduced after BLE.
d. It guarantees safety.

What do you think?

What are some common cases when you use Bluetooth connections?