

How Does a Cell Phone Work?



Photo Credit: MO Stevens

Many people have cell phones. How do the phones work? They work by sending signals to special cell phone towers.

Let's say you want to call Sam. You dial his phone number. Your phone sends a message to a cell phone tower near you. The message travels by radio wave.

The tower receives the message with the code for Sam's phone. It sends a message to a tower near Sam. That tower then sends a message to Sam's phone.

His phone rings. Now you can talk to him. Hi, Sam!

Name: _____ Date: _____

Directions: For questions 1-4, circle the correct answer.

1. What technology is this passage about?

- a) computers
- b) cell phones
- c) radio towers

2. When you call a friend from a cell phone, what happens *right after* you dial your friend's phone number?

- a) Your phone sends a message to a cell phone tower near you.
- b) A cell phone tower near you sends a message to a tower near your friend.
- c) Your friend's cell phone rings.

3. Each phone has a special code. What part of the passage shows this is true?

- a) Messages sent by phones travel to cell phone towers by radio wave.
- b) The tower receives the message with the code for Sam's phone.
- c) Cell phones work by sending signals to special cell phone towers.

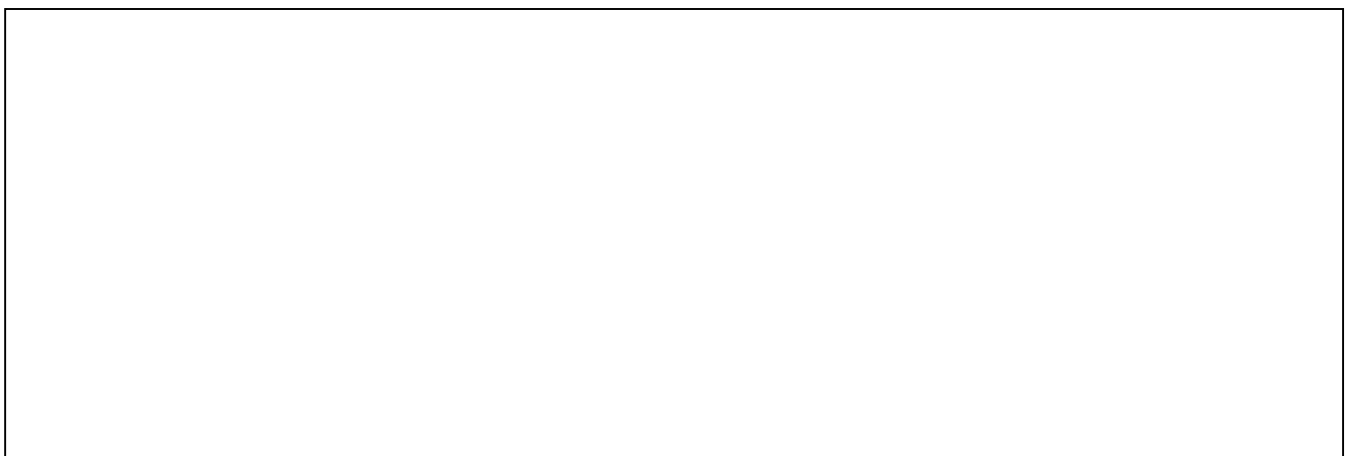
4. What is the main lesson in "How Does a Cell Phone Work?"

- a) You need a cell phone to call your friends.
- b) Cell phones work by sending messages to special towers.
- c) Cell phone towers send messages to cell phones.

5. A) How do messages from cell phones travel to cell phone towers?

Messages from cell phones travel to cell phone towers by

B) Draw cell phone towers receiving messages from cell phones near them.



6. What did you learn from "How Does a Cell Phone Work?"?

7. **Class Discussion Question:** Explain how cell phones work.

Teacher Guide & Answers

Note to Teacher: Read each question out loud to your students and have each student complete the worksheet independently. For questions 5 A) and 6, you can have students draw their answers, answer orally, or write their answers depending on your students' progress. If you have them write their answers, you may want to write the word(s) on the board for them to copy. Question 7 is a class discussion question.

Passage Reading Level: Lexile 400

Directions: For questions 1-4, circle the correct answer.

1. What technology is this passage about?

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- b) cell phones**
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2. When you call a friend from a cell phone, what happens *right after* you dial your friend's phone number?

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- b) A cell phone tower near you sends a message to a tower near your friend.
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3. Each phone has a special code. What part of the passage shows this is true?

- a) Messages sent by phones travel to cell phone towers by radio wave.
- b) The tower receives the message with the code for Sam's phone.**
- c) Cell phones work by sending signals to special cell phone towers.

4. What is the main lesson in "How Does a Cell Phone Work?"

- a) You need a cell phone to call your friends.
- b) Cell phones work by sending messages to special towers.**
- c) Cell phone towers send messages to cell phones.

5. A) *Note to Teacher: See note at the top of the first page.*

How do messages from cell phones travel to cell phone towers?

Suggested answer: Messages from cell phones travel to cell phone towers by *radio wave*.

- B) Draw cell phone towers receiving messages from cell phones near them.

Suggested answer: Students' pictures may vary but should include at least one cell phone tower sending a message to a phone or receiving a message from a phone. Students should somehow show the radio waves going from the cell phones to the towers (perhaps with a wiggly line).

6. *Note to Teacher: See note at the top of the first page.*

What did you learn from "How Does a Cell Phone Work?"

Suggested answer: Answers may vary and should be supported by the passage.

7. *Note to Teacher: See note at the top of the first page.*

Class Discussion Question: Explain how cell phones work.

Note to Teacher: Make the following question more challenging for your students by limiting the number of sentences they may use to respond. This summarization task (as opposed to rote repetition of what is stated in the passage) pushes them to evaluate what is most important and to think carefully about how they express themselves.

Suggested simple answer: Answers may vary but students should explain that cell phones work by sending signals to special cell phone towers. When you dial a phone number, your phone sends a message (by radio wave) to a cell phone tower near you. The tower receives the message and then sends a message to a tower near your friend. That tower sends a message to your friend's phone and your friend's phone rings.

Suggested advanced answer: Cell phones work by sending messages (by radio wave) to cell phone towers. Cell phone towers then send the messages to other towers and cell phones.