

## Global Positioning System

Have you ever been lost? Have you ever felt clueless about how to find your way home? Science offers a tool that can prevent such a hardship so you will never be lost again. It's called a Global Positioning System receiver.

The Global Positioning System, or GPS, uses radio signals from satellites to show exactly where you are on Earth. It has three parts: satellites that circle the Earth, ground stations that track the satellites, and receivers that people carry with them.

The GPS includes 24 solar-powered satellites. They were first launched into space by the U.S. government in 1978. They circle the Earth twice each day at eleven thousand miles above us.

How does the GPS work? A satellite sends a radio signal to Earth. Your receiver connects with the signal and determines how far away the satellite is based on how long it takes for the signal to reach Earth. Then your receiver compares radio signals from at least three different satellites to calculate your location.

You may already have a GPS receiver in your car for convenience. Before leaving on your trip, you can type in the address of where you want to go. The GPS finds your car and the place where you're going. Then it figures out the most efficient way to get from one place to the other. The GPS device uses a voice to speak the directions aloud. It directs you where to turn and which roads to take. GPS has become a mainstay of transportation systems worldwide. It provides navigation for ground transportation and also for aviation and maritime operations.

108

268

Name/Date \_\_\_\_\_

Teacher/Grade \_\_\_\_\_

**1. MONITOR ORAL READING FLUENCY**

To monitor fluency and accuracy, use two copies of the passage, one for you and one for the student. On your copy of the passage, record the student's oral reading behaviors and the minutes and seconds required for the student to read the entire passage.

Note expression, phrasing, and miscues.

**INTRODUCE THE PASSAGE**

Say: *This passage is titled "Global Positioning System." Read aloud to learn how a global positioning system works. You may begin now.*

**RATE** Use the student's oral reading time to circle the Words Per Minute (WPM) range. After the assessment, determine and record the student's exact WPM.

268 (Total Words Read)  $\div$  \_\_\_\_\_ total seconds = \_\_\_\_\_  $\times$  60 = \_\_\_\_\_ WPM

Rate	1 INTERVENTION	2 INSTRUCTIONAL	3 INDEPENDENT	4 ADVANCED
Minutes:Seconds	3:11 or more	3:10–2:15	2:14–1:47	1:46 or less
WPM	84 or fewer	85–119	120–150	151 or more

**ACCURACY** Circle the number of miscues that are not self-corrected and record the percent of accuracy.

Accuracy	1 INTERVENTION	2 INSTRUCTIONAL	3 INDEPENDENT		4 ADVANCED	
Number of Miscues	13 or more	10–12	7–9	5–6	1–4	0
Percent of Accuracy	95 or less	96	97	98	99	100

If the student's percent of accuracy or rate is below the instructional range, reassess with a lower-level passage to determine an instructional reading level.

**Check one:** \_\_\_\_\_ Expression and phrasing are appropriate.

\_\_\_\_\_ Expression and phrasing need attention.

Name/Date \_\_\_\_\_ Teacher/Grade \_\_\_\_\_

**2. MONITOR COMPREHENSION**

Circle the descriptors that best reflect the student’s responses. Possible Independent responses for Sections 2 and 3 are provided. Accept other appropriate responses. The student may use the passage when responding.

**SUMMARIZE Main Ideas** Say: *What are two important, or main, ideas about the Global Positioning System?* (Possible responses: *The Global Positioning System, or GPS, provides directions to help people find their way when traveling in a car, in a plane, or on a ship. It uses radio signals from satellites to locate where people are on Earth.*)

Comprehension	1 INTERVENTION	2 INSTRUCTIONAL	3 INDEPENDENT	4 ADVANCED
Summarize: Main Ideas	Does not identify main ideas or does not respond	Gives a partially correct response, such as identifies 1 of 2 main ideas; may misinterpret information	Identifies 2 main ideas	Identifies 2 main ideas using including details and specific vocabulary from the text

**SUMMARIZE Details** Say: *What are two details about how the GPS works?* (Possible responses: *A radio signal is sent via satellite to Earth. A person uses a receiver to connect with the signal. The receiver locates the person by comparing radio signals from different satellites.*)

Comprehension	1 INTERVENTION	2 INSTRUCTIONAL	3 INDEPENDENT	4 ADVANCED
Summarize: Details	Does not identify details or does not respond	Gives a partially correct response, such as identifies 1 of 2 details; may misinterpret information	Identifies 2 details	Identifies 2 details using specific vocabulary from the text

Name/Date \_\_\_\_\_

Teacher/Grade \_\_\_\_\_

**3. IN-DEPTH PROGRESS MONITORING**

The items below provide more in-depth progress monitoring of specific skills. The student may use the passage when responding.

**COMPREHENSION Draw Conclusions**

- Say: **Why is a GPS receiver an important tool to have?** (Possible response: *It can help people find their way around the world in cars and on planes and ships.*)
- Say: **How is a GPS receiver safer to use than a map when driving in a car?** (Possible response: *The GPS device uses a recorded voice to speak the directions aloud so you don't have to read a map while you're driving.*)

Comprehension	1 INTERVENTION	2 INSTRUCTIONAL	3 INDEPENDENT	4 ADVANCED
Draw Conclusions	Does not draw a conclusion or does not respond	Gives a partially correct response, such as draws a conclusion but does not provide an explanation	Draws 2 reasonable conclusions using information from the text	Draws 2 reasonable conclusions using information and specific vocabulary from the text

**VOCABULARY Multiple-Meaning Words**

- Point to the word *address* in the fifth paragraph. Say: **What does the word address mean in this passage?** (*where a place is located*) **What is another meaning for the word address?** (Possible response: *to speak to someone*)
- Point to the word *figures* in the fifth paragraph. Say: **What does the word figures mean in this passage?** (*computes or calculates*) **What is another meaning for the word figures?** (Possible responses: *people or characters; numbers; geometric shapes; the shapes of people*)

Vocabulary	1 INTERVENTION	2 INSTRUCTIONAL	3 INDEPENDENT	4 ADVANCED
Multiple-Meaning Words	Gives inaccurate word meanings or does not respond	Gives a partially correct response, such as the intended meaning of 1 word	Gives the intended meaning of each word and an additional meaning for 1 word	Gives the intended meaning and an additional meaning for each word

- End the conference.

**WORD READING Suffixes -less, -ship, -ence** Return to the Record of Oral Reading to determine whether the student read these words correctly: *clueless, hardship, convenience*.

Word Reading	1 INTERVENTION	2 INSTRUCTIONAL	3 INDEPENDENT	4 ADVANCED
Suffixes <i>-less, -ship, -ence</i>	Does not read any words accurately or omits them	Reads 1–2 of 3 words accurately	Reads all 3 words accurately	Reads all 3 words accurately and automatically