

## The Great Central Highway of Australia



The Great Central Highway is an unpaved road that runs from Laverton to Yulara in Australia. You do NOT need to memorize the names - we mention them only to help in case you want to look at the road on an internet mapping program.

This road is 700 miles long. It is not paved. About 10,000 vehicles are driven on it each year.

Circle about how many vehicles use this road every day: 7 30 70 300 700

(For comparison, the Verrazano Bridge in New York City carries 182,000 vehicles a day!)

Examine the photograph and answer each question with an X, number, or complete sentence.

1. Put an X by the most plausible explanation for the lack of pavement on this road:

The people who use it are mostly tough ranchers and cowboys with big trucks, and they like to see red dust flying up when they drive.

Very few people live near this road or use it, and they are unwilling to pay the amount of money that it would take to pave the road.

2. What can you see in this picture to help explain why few people live near this road?

3. If you can average 50 miles per hour on this unpaved road, how many hours will it take to go from one end to the other? \_\_\_\_\_ Explain how you got that answer.

4. Including the towns at each end, there are a total of seven gas stations on this road. About how many miles apart are these stations, on average? 100 117 140 Explain how you got your answer:

**Bonus.** Laverton (the town at one end of the road) has a hospital with a helicopter. Yulara (a smaller town at the other end of the road) has only an emergency clinic, but it has a helicopter to take critical cases to a hospital 200 miles farther. If you had an emergency on this road, what is the maximum time it might take to call a helicopter to fly you to a hospital at 160 miles per hour? \_\_\_\_\_ hours. Explain how you got that answer.

Teacher's Guide: **The Great Central Highway of Australia**

Overview: This lesson explores some of the consequences of great distance. The only east-west road through central Australia is 700 miles long and unpaved – the people in this region are simply spread out so far apart that they cannot afford to pay to have the road paved.

Grade: 4-8, review in higher
Related Discipline: Economics
CC Standard: math calculation
Time: ½ to 1 class period

**Setup:** Ask students what it would be like to drive on a road that is 700 miles long and has only 30 cars using it in an entire day (and they may not all go the entire length of the road).

**Procedure:** The activity can be run as a teacher-led read-aloud with younger children or as an individual or small group math activity.

**Answers:** 1. A tiny population cannot afford to pave a long road. It's easier to put up with the bother of having to drive on a dusty gravel road. The lack of pavement would be a bigger problem if the region were not a desert, but then it would have more people to help pay for the road!

2. The scrubby grass and bushes on both sides of the road tell you that this is a very dry desert. Except for a few mining towns, there are no farmers and very few ranchers out here.
3. 700 divided by 50 is about 14 hours. And remember, it is not a paved Interstate highway; the ride is likely to be rough and uncomfortable!
4. 117 – seven gas stations divide 700 miles into 6 parts (one at each end). 700 divided by six is about 117. You might ask a followup question about how much gas to carry in an emergency (like when a gas station runs out of fuel!)

**Bonus.** There are more sophisticated ways to attack this kind of question, but it will yield to careful guessing. Start by saying halfway – Laverton is then 350 miles out and back for a helicopter, but Yulara is 350 miles out and 550 back (350 plus the extra 200), for a total of 900. The worst place to have your heart attack is at mile 400 from Laverton. That would be 400 out and back from Laverton (800 total, or 5 hours by helicopter), and also 300 out and 300 plus 200 or 800 total from Yulara, the same 5 hours. Slow response in times of medical emergencies is one of the costs of distance.

**Debrief:** remember, this is about distance, not memorizing a lot of facts about Australia. Focus on the costs of distance: travel time, infrequent service, delays during emergencies, and not enough people to pay for paving the road.

**Vocabulary:** distance travel time med-evac helicopter outback

**Extension:** The western end of this road makes a good virtual field trip on an internet satellite-image program like Google Earth – the handful of metal mines are photogenic, and the staggering emptiness of most of the road is impressive. The activity can be simplified by using round numbers and putting the focus on simple math, like driving time between gas stations or number of vehicles per week.

Students should become aware that 30 vehicles per day are not enough to support even five gas stations between the two end towns – as a result, prices are likely to be high unless someone subsidizes them (or, in some cases, makes the stations completely self-serve – which works until they break!)