

Vocabulary

above



under, below, beneath



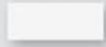
next to, beside



inside



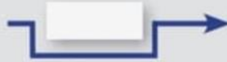
outside



go through



go around



go along



Reading 12.3

With geothermal heating, a circuit of pipes is installed below the ground, beside a home. This outside network next to the house is connected to the pipes and radiators inside the building. Water is pumped through the pipes. In winter, the temperature under the ground is warmer than it

is above the ground. Therefore, as the water travels around the circuit of pipes beneath the ground, it absorbs heat from the earth. This heat is then transferred, by the water, along the pipes to the radiators, which heat the home. ■

FROM GEOTHERMAL HEATING TO GEOTHERMAL COOLING



Because the temperature below the ground is constant, the earth can also provide cooling in summer. This system is used in homes in the desert town of Coober Pedy in South Australia, where summer temperatures can be over 50°C (122°F). There, most people live in underground "dugout" homes. There are no windows to look through, but the temperature inside the dugout is about 24°C (75°F) – much cooler than it is outside.

A cool underground home in Coober Pedy, South Australia

Follow up 12.3

These sentences about homes in Coober Pedy (see Reading 12.3) are all incorrect. Change one word in each of the sentences to make them correct.

- 1 In Coober Pedy, a lot of homes are built above the ground.
- 2 In the summer, the temperature below the ground is higher than on the surface, which makes it too hot to live comfortably.
- 3 No natural daylight comes from outside the homes, as they have no windows.
- 4 There's no need to build walls below the homes, as these are provided naturally by the earth.
- 5 Sometimes, people in Coober Pedy buy the home next to theirs and make a tunnel around the earth to connect the two homes and make them into one.

Practice Exercise 1

Use the words below, for describing position and movement, to complete 1–8.

above along around beneath inside next to outside through

- 1 Cars drive _____ highways.
- 2 At bus stops, buses stop _____ the waiting passengers.
- 3 Trains go _____ tunnels.
- 4 The moon travels _____ the earth.
- 5 I found some money hidden _____ a rock.
- 6 Central heating makes the _____ of a house warmer.
- 7 It's always sunny _____ the clouds.
- 8 In winter, it usually feels colder when you go _____.

Practice Exercise 2

Part A Use six of the words below to complete the article.

above along around beneath beside inside outside through

WHY MOUNT CHIMBORAZO CAN CLAIM TO BE THE WORLD'S HIGHEST MOUNTAIN

Most people will tell you that Mount Everest, in the Himalayas, is the world's highest mountain. Its summit is 8,848 meters (29,029 feet) **1** _____ sea level. Many people also know that the world's tallest mountain is Mauna Kea, a volcano in Hawaii. Although Mauna Kea has a much lower summit than Everest – at just 4,205 meters (13,796 feet) – its base is deep **2** _____ the surface of the Pacific Ocean. This gives it a total height, from base to summit, of over 10,000 meters (roughly 33,000 feet).

HEIGHT FROM SEA LEVEL, OR FROM THE EARTH'S CENTER?

On the question of record-breaking peaks, few people have heard of Mount Chimborazo in the Andes, in Ecuador. At 6,268 meters (20,565 feet), its height may not seem exceptional compared with many peaks in the Himalayas. But its summit holds the record as the highest point from the earth's center – measured from **3** _____ the core of the planet. The reason behind this statistic is Chimborazo's location, very close to the Equator, compared with Mount Everest's position much farther north.

"SQUASHED" PLANET

Chimborazo's record is a result of the earth's "squashed" shape. The circumference of the planet, measured all the way **4** _____ the earth at the Equator, is 40,075 kilometers (24,901 miles). However, the circumference measured via the North and South Poles is shorter – just 40,008 kilometers (24,860 miles). In other words, the earth is not a perfect sphere. It looks like an orange that's been squashed slightly. As a result, a straight line from sea level at the Equator, **5** _____ the center of the earth, to sea level at the Equator on the opposite side, measures 12,756 kilometers (7,926 miles). A similar line from the North Pole, via the center, to the South Pole, measures just 12,714 kilometers (7,900 miles). This means that the surface of the planet **6** _____ the line of the Equator is farther from the earth's center than other points to the north or to the south. And that makes Chimborazo's summit farther from the center than Everest's.

Practice Exercise 3

Part B Match the pairs to complete the sentences. Use the article to help you.

Mount Everest has the world's highest ...	1	A	ocean.
Mauna Kea is a Hawaiian ...	2	B	range.
To see how tall a mountain is,	3	C	summit.
you measure up from its base in the ...			
Mauna Kea's base is at the bottom of the ...	4	D	valley.
Mount Chimborazo is in the Andes –	5	E	volcano.
a South American mountain ...			

ANSWERS

Follow up 12.3

These sentences about homes in Coober Pedy (see Reading 12.3) are all incorrect. Change one word in each of the sentences to make them correct.

- 1 In Coober Pedy, a lot of homes are built above the ground. Below
- 2 In the summer, the temperature below the ground is higher than on the surface, which makes it too hot to live comfortably. Lower
- 3 No natural daylight comes from outside the homes, as they have no windows. from inside
- 4 There's no need to build walls below the homes, as these are provided naturally by the earth. Around
- 5 Sometimes, people in Coober Pedy buy the home next to theirs and make a tunnel around the earth to connect the two homes and make them into one. Through

Practice Exercise 1

1. along
2. next to
3. through
4. around
5. beneath
6. inside
7. above
8. outside

Practice Exercise 2

1. above
2. beneath
3. inside
4. around
5. through
6. along

Practice Exercise 3

1. C
2. E
3. D
4. A
5. B