Name: _____ Date: _____

The Hundredth Floor

Reading level 9 (5th grade) · 508 words

Nadia and her cousin Sami stood at the foot of the tallest building in the world today, bending their necks back as far as they could go. The Burj Khalifa rose over Dubai like a silver needle, so high that the top seemed to vanish into the haze. "It has more than a hundred and sixty floors," Sami read from his brochure. "It is eight hundred and twenty-eight meters tall." Nadia felt dizzy just looking at it.

Inside, a guide in a crisp white shirt led them to the elevators. "This building has more than fifty elevators," she said, "and some of them are double-decker cars that rush up and down at up to ten meters every second." Nadia counted the buttons on the panel and gave up when she reached the hundreds. The doors slid shut with a soft sigh, and the floor seemed to lift under her feet.

Sami grinned as the numbers on the display ticked past so quickly that they blurred together. Thirty, sixty, ninety, and then the hundredth floor. "How can a building be this tall and not fall over?" Nadia asked. The guide smiled. "A tall building has a strong frame, like a skeleton," she said. "Steel columns and beams hold up the weight. The outside walls are only a skin that keeps out the weather."

At the viewing deck, the cousins pressed their foreheads to the glass. The city lay far below, small and quiet, and the clouds drifted at the same height as their eyes. A thin wind whistled somewhere in the building. "The taller a building gets, the more the wind matters," said the guide. "Wind pushes on it, and up here there is plenty of wind to push."

"So how do engineers keep it steady?" asked Sami, who liked a good question. The guide pointed to a model of the tower. "Look at its shape. It gets narrower as it rises, in a spiral of steps called setbacks. Engineers tested those setbacks in a wind tunnel to cut down the wind's pull on the building." Nadia stared at the model. The tower looked like a spiral staircase turned to stone.

"And this part is my favorite," the guide went on. "From above, the building is shaped like the letter Y, with three wings. They lean on each other and on a six-sided center, and that keeps the whole tower stiff." Sami looked down at the floor plan and traced the Y with his finger. "It is like a person standing with their feet apart," he said. "That is a good way to think about it," said the guide.

On the way down, Nadia was quiet. She had thought a skyscraper was just a big, heavy block. Now she saw it as a thing of careful shapes, drawn by people who had thought about the wind. "It took about six years to build," Sami read from the brochure, "and it opened in 2010." "Six years," said Nadia. "I can wait six years for my own big idea to grow."

Questions

1. In which city is the Burj Khalifa?

A. Paris
B. Dubai
C. Chicago

2. How tall is the Burj Khalifa in the story?

A. 102 meters
B. 555 meters
C. 828 meters

3. What holds up a skyscraper, according to the guide?

A. A steel frame, like a skeleton
B. Thick stone walls
C. The wind

4. Why does wind matter more for a taller building?

A. Tall buildings are heavy
B. Wind is warmer up high
C. The taller the building, the more wind pushes on it

5. Why did engineers test the setbacks in a wind tunnel?

A. To make it look like a Y
B. To cut down the wind's pull on the building
C. To measure the elevators

6. What does "stiff" mean in the story?

A. Hard to bend
B. Very old
C. Quiet

Words to know

skyscraper: a very tall building
setbacks: steps that narrow a tower
brochure: a small printed booklet
engineers: people who design structures
elevators: lifts that carry people
stiff: hard to bend

Answer key: The Hundredth Floor

1. B. Dubai
2. C. 828 meters
3. A. A steel frame, like a skeleton
4. C. The taller the building, the more wind pushes on it
5. B. To cut down the wind's pull on the building
6. A. Hard to bend