

## Reading 2

### Skills:

- Details

**Getting started:** Apart from helicopters, what are other types of vehicles that can be suspended in the air?

### HOVERBOARD



A hoverboard (or hover board) was initially a fictional levitating board used for personal transportation, first described by author M. K. Joseph in a 1967 science fiction novel \_\_\_\_\_(1). Since the 2010s, "hoverboard" has become a common term for a self-balancing scooter, **though** such devices do not **hover**.

In 2015, however, in order to leave behind the idea that the hoverboard was just pure science fiction, \_\_\_\_\_(2) in a one-of-a-kind "hoverpark" in Barcelona, Spain. The Slide makes use of the **principle** of magnetic levitation, and it took 18 months of research and development to make it so that it was small and light enough to fit inside a skateboard.

The Lexus Slide hoverboard is a unique piece of equipment. The wheelless board can **flip** and make some other different movements like a normal skateboard, but it never touches the ground. The magnets in the base of the board are superconductors. To work, they have to be kept at  $-314^{\circ}\text{F}$  ( $-192^{\circ}\text{C}$ ) by using liquid nitrogen. \_\_\_\_\_(3), like a normal board, but it is locked to the magnetism of the hoverpark's hidden track, gliding wherever that leads—even over water.

#### How it works

\_\_\_\_\_(4). The magnetic forces from the track under the ground turn these conductors into powerful magnets, which push back with an equal force. The result is that the board and its rider are lifted off the ground. The board holds enough liquid nitrogen to levitate for 10 minutes before needing a **refill**.

#### Shanghai Maglev Train

The same principles of magnetic levitation used by the Slide are put to use in maglev trains, **such as** the Shanghai Maglev Train (SMT). As it floats frictionless above the ground, \_\_\_\_\_(5). The SMT is the world's fastest passenger train. It makes the 18.6-mile (30 km) journey from Shanghai's central station to the airport in 7.3 minutes. Its maximum speed of 268 mph (431 km/h) is faster than that of a Formula 1 race car.

\*Adapted from *How Super Cool Tech Works*. DK Publishing.

#### 1. Complete the gaps in the text with the sentences below.

- the Japanese car company Lexus unveiled the Lexus Slide
- The Slide is pushed forward by the rider's kicks
- the train is pushed along at high speeds by a wave of magnetic forces running through the track
- The Slide has a total of 32 supercooled superconductors hidden in its thick base
- and popularized by the *Back to the Future* film franchise

#### 2. Match the red words in the text with the words/phrases below.

- concept
- spin
- in spite of the fact that
- To fill something again
- levitate
- like

**What do you think?**

Do you think levitating boards should be developed and commercialized?