

## READING COMPREHENSION: Travelling by train.

Think of the last time you travelled by train. Why did you take it? Do many people choose to travel by train in Buenos Aires? Why/ not?

You are going to read about two different types of trains: bullet trains and Maglev trains.

### Bullet trains



The Japanese Shinkansen network of high-speed railway lines extends for several thousand kilometres. The system was based on existing rail technology, but designers tested model trains in a wind tunnel to make them aerodynamic in design and so reduce air resistance. Because of the shape, the trains have been called “bullet trains”. Electric or diesel engines power the trains which travel up to 300 km/h on standard gauge, purpose-built track. Certain constrictions had to be eliminated, such as level crossings, frequent stops, and some curves. Similar high-speed rail networks exist in other countries, for example the TGV in France. They allow travel from city centre to city centre, rapid boarding time, and comfort. They are considered environmentally efficient and are seldom affected by poor weather.



### Maglev trains

Shanghai has the first commercial Maglev line in the world. Trains can reach 350 km/h in two minutes and have a maximum speed of 431 km/h in normal operation. Maglev (magnetic levitation) trains use a combination of magnetic attraction and magnetic repulsion to provide lift and forward movement and can operate on 10° gradients. They travel on raised guideways above the city which are very expensive to build, but track maintenance costs are significantly lower than with conventional rail transport. There is no engine and there are no wheels or rails as with conventional trains, so no friction. Maglev runs on electricity, producing no pollution from the vehicle. The speed and the distance between trains are automatically controlled and maintained by the frequency of the electric power fed to the guideway. Bad weather or congestion have little effect on the running of these vehicles.

Complete the following table with information from both texts.

	MAGLEV TRAIN	BULLET TRAIN
Country		
Max speed		
Technology		
Fuel		
Track		
Efficiency		

China

431 km/h

electricity for the magnets

Japan and France

300 km/h

electricity for the diesel engine

magnetic levitation

existing rail technology

more efficient than conventional  
rail transport

environmentally friendly

purpose-built track

elevated guideways