

UNIT 4

Choose the correct word to complete each sentence.

1. The _____ industry is working on reducing its environmental impact through the development of more fuel-efficient aircraft.
 - a. disruption
 - b. aviation
 - c. conversion
2. Another terminal was built at the airport in order to have the _____ to handle an increase in the number of international flights.
 - a. capacity
 - b. dilemma
 - c. campaign
3. The city is considering imposing a tax on vehicles that emit _____ amounts of pollution.
 - a. excessive
 - b. elite
 - c. competitive
4. Natural disasters can cause significant _____ to transportation networks.
 - a. conversion
 - b. aviation
 - c. disruption
5. Environmental _____ have been calling on the government to ban diesel vehicles.
 - a. disruptions
 - b. advocates
 - c. dilemmas

Complete the sentences with the correct words.

alongside	campaign	catch on	dilemma	swap
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6. Electric vehicles are being promoted, _____ public transportation, as a more environmentally friendly way to travel around the city.

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7. The city launched a _____ to encourage more people to cycle instead of driving.
8. Commuters are being urged to _____ their cars for electric bicycles.
9. Our company faced a _____: should we cut international business trips to reduce our carbon footprint?
10. Electric scooters began to _____ in Asia because of the lower initial costs compared to buying a car.

Complete the sentences with the noun or adjective form of the verb.

act	compete	decide
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11. The transportation company took quick _____ to address the passengers' complaints.
12. The intense _____ in this market keeps commuting prices low.
13. You need to be a _____ person if you want to work as an air traffic controller.

Choose the correct word to complete each sentence.

14. Because of rising fuel prices, the _____ for low-cost public transportation is increasing.
a. demand
b. supply
15. The airline made some significant _____ last year in spite of the increased number of passengers.
a. profits
b. losses
16. The _____ of electric scooters in the market has brought down prices by more than a third.
a. surplus
b. shortage

Read the passage.**GREEN AIR TRAVEL (By Sam Howe Verhovek)**

Can the aviation industry re-invent itself to make flying less harmful to the environment?

- A** As someone who loves to fly and never tires of looking at landmarks below, clouds alongside, or stars above, I can't begrudge anyone the joy of flight. At the same time, any journey in the skies warms the planet. Some experts peg air travel as the source of up to 5 percent of the human contribution to global warming today.
- B** That figure will likely climb as passenger and freight air traffic grows, and as other activities like land transportation and construction become more energy efficient. All this has led to a movement urging people not to fly or at least to fly a lot less, a campaign with a name that has caught on in Europe and is becoming familiar elsewhere: *flygskam*, a Swedish term best translated as "flight shame."
- C** "Hour for hour, there is just about nothing you as an individual can do that's worse for the health of the planet than to sit on an airplane," says Peter Kalmus, an astrophysicist turned NASA climate scientist who hasn't flown since 2012. "The hard fact that most people haven't accepted yet is that we don't need to fly, and if you truly accept that we are in a climate emergency, you shouldn't fly."
- D** In July, France adopted a ban on all domestic air trips that can be made by train in less than two and a half hours. In the United Kingdom, the official Committee on Climate Change jolted the elite world of the most active fliers by proposing "a ban on air miles and frequent flyer loyalty schemes that incentivize excessive flying."
- E** However, aviation leaders contend that shaming flight is not the answer—greening it is.
- F** "Aviation is an essential part of the global economy, so our challenge is reducing emissions and decarbonizing aviation, not preventing people who want to travel from traveling," says Sean Newsum, the director of aviation sustainability strategy for Boeing. "That's really our foundational belief as an industry at this point."
- G** Among the potential paths to green salvation for air travel, the quickest might be down a gravel road deep in the woods of central Georgia, leading to a hulking complex called the Freedom Pines Biorefinery. There I meet Curt Studebaker, a lanky, friendly young chemical engineer who is in the business of turning waste—all kinds of waste—into sustainable aviation fuel (SAF).
- H** "The amazing thing is, once you get it right, it's really a better fuel even than Jet A," the standard kerosene fuel in U.S. aviation, Studebaker tells me. "It's actually cleaner."
- I** For now, SAFs are still blended with standard fuel. But they are cast as the giant first step toward shrinking aviation's carbon footprint. The challenges? First, it's very expensive. This alternative fuel costs two to six times more than kerosene, and although more flights are using SAFs, it all adds up to little more than a drop in the bucket—well under 0.1 percent of the 95 billion gallons of fuel the industry used in 2019. Second, the industry can't rely on the easiest, cheapest sources for conversion: crops. If fuel producers were to gobble up land and water more urgently needed for food, air travel would simply trade one environmental black eye for another.

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- J** Proponents contend that if SAF production were built to the scale needed to serve the bulk of aviation needs, the price would drop precipitously, becoming competitive with kerosene. But getting to scale is a classic chicken-or-egg dilemma. Unless there's demand, supply won't grow; but because the current supply is so small and costly, it's hard to stimulate demand. That's where the problem becomes political: the solution could be a carbon tax on kerosene or a requirement that SAFs account for a percentage of all aviation fuel.
- K** "Basically, there has to be a humongous ramp-up to SAFs," says Paul Stein, chief technology officer of Rolls-Royce, the British manufacturer whose next-generation UltraFan, the biggest and one of the most efficient jet engines ever, is designed to use the alternative fuel. "But industry is generally behind a SAF mandate. And certainly our position as a company is, yes! We need more SAFs. It would be a huge contribution to the planet."

Choose the correct answers.

17. How is the aviation industry trying to become less harmful to the environment?
- They have stopped offering air miles programs and frequent flyer loyalty schemes.
 - They are working on the development of a fuel made from recycled waste.
 - They are reducing the number of domestic flights they fly each day.
18. Which of the following best describes the term "*flygskam*" in paragraph **B**?
- a campaign demanding that flights become more energy efficient
 - an increase in airline passenger numbers and freight air traffic
 - a feeling of guilt over engaging in an environmentally destructive activity
19. In paragraph **E**, the word *contend* is closest in meaning to _____.
- assert
 - compete
 - struggle
20. What is one of the challenges surrounding the transition to sustainable aviation fuel?
- It is currently less environmentally friendly than kerosene.
 - Less than 0.1 percent of planes have engines that can use it.
 - It is much more expensive than kerosene.
21. According to Paul Stein, what is the position of the aviation industry?
- He is of the opinion that there should be a requirement that SAFs account for a percentage of all aviation fuel.
 - He thinks that the industry should focus on building more efficient kerosene engines.
 - He believes most people in the industry support a move to SAFs.

Read the passage.**Are Electric Cars Really Better than Internal Combustion Cars?**

- A** The global automotive landscape is currently undergoing a monumental transformation as electric cars gain popularity. This surge in interest has sparked a heated debate: are electric vehicles (EVs) truly superior to their internal combustion engine (ICE) counterparts? Do EVs truly live up to their hype, and do they possess the necessary qualities to outperform and outsell traditional combustion engine cars? To answer these questions, we need to look at three main areas: environmental impact, convenience, and cost.
- B** Proponents of EVs proudly assert that electric cars are the greener choice. This is supported by the fact that EVs produce zero emissions while being driven, giving them what appears to be a clear advantage in terms of environmental friendliness. The decision to replace your old gasoline-powered car with a new electric vehicle may therefore seem like a simple and logical choice. However, there are other factors to consider.
- C** Let's dig deeper into the environmental impact of electric cars. While EVs do not emit greenhouse gases directly, they aren't exactly carbon neutral as most of the electricity used to power EVs still comes from fossil fuels in most countries. The good news though is that this will change as countries continue to transition away from fossil fuels to greener sources of electricity, such as wind and solar. More concerning though is the impact battery manufacturing is having on the world. Battery manufacturing is a resource- and energy-intensive process. In addition, the mining of the materials needed to make batteries such as lithium and cobalt often leads to severe environmental damage.
- D** Another more pragmatic consideration when assessing the viability of EVs is convenience. While advertisements might portray EVs as hassle-free alternatives capable of effortlessly gliding along all sorts of terrains, the reality is that most people planning a long road trip in an EV would probably have to do a fair amount of planning before embarking on their journey. This is because there are still far fewer electric charging stations than there are gasoline stations—even in countries that are actively pushing to promote EVs. As such, range anxiety is a very real concern for EV drivers. This refers to the fear of running out of battery power before reaching a charging station—particularly during long journeys. This is not really a concern for drivers of ICE vehicles, since the refueling infrastructure for these vehicles is well established.
- E** While the number of charging stations will inevitably rise as EVs gain popularity, range anxiety and the lack of charging stations are only half the problem. The amount of time required to charge an EV is also an issue since charging is considerably slower than filling up at a gas station. While fast-charging stations have done an impressive job closing that gap, it still takes about 15 minutes for just a small partial charge. And there is a downside to fast charging, too, which has been shown to degrade batteries more quickly. Although most people will simply charge their EVs at home overnight while they sleep, the need to spontaneously charge up while on the move will always remain. Many doubt that charging a car in these situations will ever get much quicker than it currently is.
- F** The final factor to consider when comparing electric cars to ICE cars is cost. EV advocates will be quick to cite lower fuel and maintenance costs per mile. EVs are definitely much more energy efficient than ICE vehicles, and because they use simpler electric motors instead of complex internal combustion engines, they're also

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less prone to wear and tear and easier to maintain. However, EVs are also considerably more expensive to buy. Furthermore, replacing an EV's battery can also be extremely costly. This remains a significant barrier for many consumers, even with government incentives available in many countries. Additionally, while combustion engine cars have well-established repair and maintenance infrastructure, EVs currently lack the same level of customer support. This could drive up the cost of repairs for EV owners.

- G** So, are electric cars really better than traditional ICE vehicles? The answer for now remains uncertain. The comparison between EVs and ICE cars goes beyond emissions alone; it requires a comprehensive assessment of overall environmental impact, user convenience, and cost. While factors like convenience and cost may seem trivial in the face of a climate emergency, they do matter. If EVs are indeed the green alternative to ICE vehicles, they need to be practical and affordable to the masses. With time, EVs will no doubt continue to improve in all areas. However, at present, more needs to be done to elevate EV and battery technology to the required level.

Choose *True*, *False* or *Not Given*.

22. The amount of carbon pollution associated with the use of EV cars depends on where they are being driven.
- True
 - False
 - Not Given
23. Fast-charging options for EVs have eliminated the charging time disadvantage when compared to refueling at a gas station.
- True
 - False
 - Not Given
24. Some countries will help pay for the cost of changing from an ICE car to an EV.
- True
 - False
 - Not Given
25. Electric cars are generally faster than ICE cars.
- True
 - False
 - Not Given

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26. The author believes that it will take some time for EVs to be truly viable.
- a. True
 - b. False
 - c. Not Given

Read each paragraph. Decide if the author is for or against the use of electric vehicles. Choose the correct answer.

27. Electric vehicles (EVs) offer a possible solution to the environmental damage done by gas-fueled cars. By relying on electricity as their source of power, they can reduce air pollution and address the problem of urban air quality. Concerns about limited range and the lack of charging infrastructure are being eased by advancements in battery technology. The potential for integrating renewable energy into the charging process further enhances the appeal of EVs.
- a. For
 - b. Against
28. While the enthusiasm for electric vehicles (EVs) is undeniable, it is essential to carefully consider the full picture of this emerging technology. The environmental impact of EVs extends beyond gasoline emissions. The current reliance on electricity production from fossil fuels raises questions about whether the overall emissions reduction achieved by EVs is as substantial as often claimed. Additionally, the perceived convenience of EVs must be weighed against the challenges posed by inadequate charging infrastructure in many regions, which could lead to practical limitations for those without easy access to charging stations.
- a. For
 - b. Against

Choose the correct answer to complete each sentence.

29. _____ most hydrogen is made using fossil fuels, it isn't currently a greener option than kerosene.
- a. Why
 - b. Because
 - c. On account of

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30. _____ developed in the 1970s, solar powered flight has come a long way in terms of the distances that aircraft are able to travel.
 - a. First
 - b. It was first
 - c. One of the first

31. _____ investment from the government, the project to use drones to deliver medications wouldn't have been a success.
 - a. Unless
 - b. Despite
 - c. Without

32. _____ as "Old Bessie", the Lockheed Vega 5B was the plane used by Amelia Earhart during her famous solo flight across the Atlantic Ocean.
 - a. Known
 - b. Knowing it
 - c. It was known

33. _____ end of the 20th century, commercial aircraft were almost all equipped with digital flight controls.
 - a. The
 - b. When
 - c. By the

34. _____ they realized there was no taxi service in their location, they decided to take the train instead.
 - a. Why
 - b. When
 - c. Where

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Order the parts of a block method essay.

- | | | | | |
|-----|----|---|------|------------------------|
| 35. | 1 | ● | ● a. | Body paragraph 1 |
| 36. | 2 | ● | ● b. | Subject A: point 2 |
| 37. | 3 | ● | ● c. | Background information |
| 38. | 4 | ● | ● d. | Subject A: point 1 |
| 39. | 5 | ● | ● e. | Subject B: point 1 |
| 40. | 6 | ● | ● e. | Thesis statement |
| 41. | 7 | ● | ● e. | Subject A: point 3 |
| 42. | 8 | ● | ● e. | Body paragraph 2 |
| 43. | 9 | ● | ● e. | Subject B: point 3 |
| 44. | 10 | ● | ● e. | Conclusion |
| 45. | 11 | ● | ● e. | Subject B: point 2 |

Decide if each word shows similarities or differences. Choose *similarities* or *differences*.

46. Likewise
a. similarities
b. differences
47. Conversely
a. similarities
b. differences
48. Whereas
a. similarities
b. differences
49. Instead
a. similarities
b. differences

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50. Equally
- a. similarities
 - b. differences

You are going to write a comparative essay on one of the following topics.

51. **Write a comparative essay using the block method or the point-by-point method about one of the following topics.**

Topic 1: Compare two forms of transportation available where you live in terms of how useful they are to you personally.

Topic 2: Do some research on an innovation in transportation and compare it to the mode or method that is currently in use.

A. OUTLINE Plan an outline for your comparative essay.

Write your thesis statement and decide if you will use the block method or the point-by-point method to organize your essay.

Add a topic sentence and details for the first body paragraph.

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Add a topic sentence and details for the second body paragraph.

Write notes for the conclusion of your essay.

B. Think of some words and phrases you can use in your comparative essay. Write them in the box.

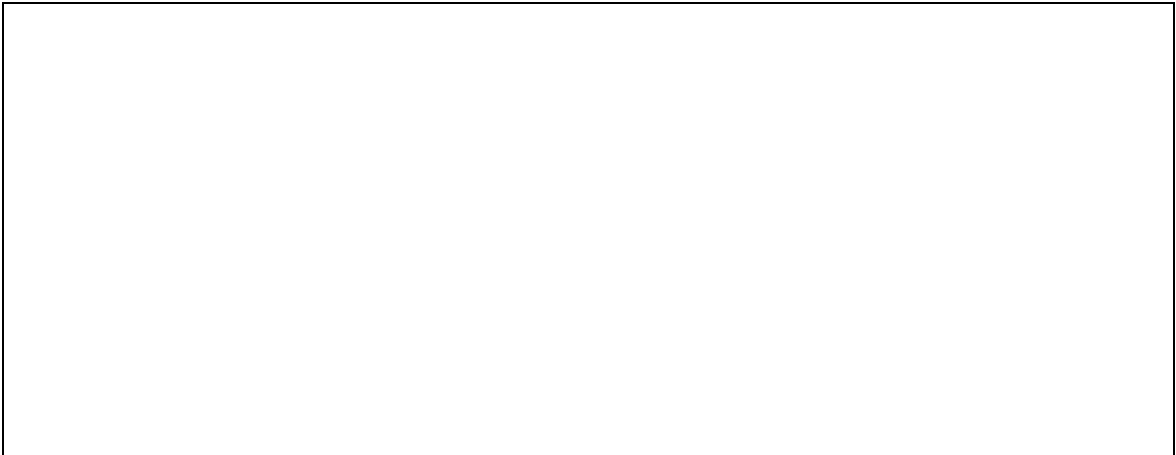
The words and phrases below can be useful when writing a comparative essay.

Similarities:

- *similarly*
- *likewise*
- *the same is true for*
- *in the same way (that)*
- *equally*

Differences:

- *although*
- *however*
- *conversely*
- *whereas*
- *instead (of)*
- *unlike*
- *on the other hand*



- C. Write your comparative essay based on your outline. Use the model to help you. Remember to use the vocabulary you wrote down.

Model:

Both maglev and conventional trains have unique advantages and drawbacks that impact our travel experience. From speed and safety to environmental impact, these trains shape the future of transportation. In this essay, I will explore and compare the strengths and weaknesses of maglev and conventional trains.

One of the biggest differences between maglev trains and conventional trains is their speed capabilities. Maglev, short for magnetic levitation, uses magnetic forces to suspend the train above the track, virtually eliminating friction. This allows maglev trains to achieve speeds of nearly 500 kilometers per hour, making them the fastest land-based mode of transportation. In contrast, conventional trains are capable of reaching top speeds of around 240 kilometers per hour.

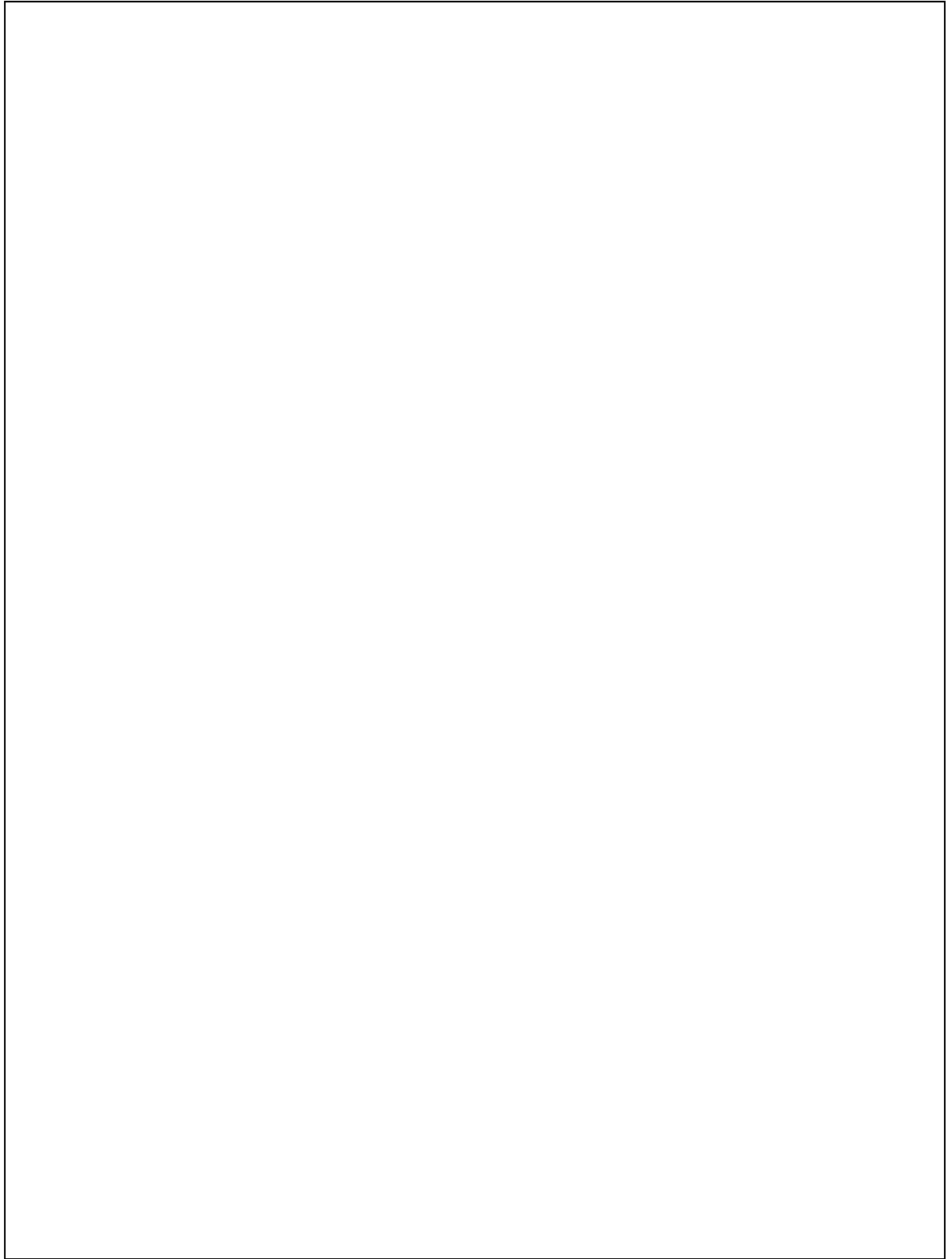
Safety is an important concern in transportation, and both maglev and conventional trains have made significant improvements in this area. Maglev trains, due to their levitation system, have fewer moving parts that can wear out or break, reducing the risk of mechanical failure. Additionally, the absence of physical contact between the train and the track minimizes wear and tear, enhancing overall safety. On the other hand, conventional trains have a well-established safety record, but they are susceptible to accidents, especially at high speeds because they use wheels and tracks. Safety measures, such as improved signaling systems and regular maintenance, are crucial for both systems to ensure the protection of passengers and the public.

How transportation impacts the planet is becoming an increasingly important issue. Maglev trains have an advantage in this aspect. Electromagnetism results in zero direct emissions, making them an environmentally friendly option for high-speed travel. Additionally, the energy efficiency of maglev trains is higher than that of conventional trains, as they require less power to overcome friction. In contrast, conventional trains, while relatively efficient compared to other modes of transport, still produce emissions, especially in regions where the electricity grid relies heavily on fossil fuels. The adoption of renewable energy sources can reduce this impact.

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Maglev trains and conventional trains represent two contrasting types of modern transportation. Maglev excels in speed and environmental impact, offering a future of high-speed, eco-friendly travel. Conventional trains, with their proven safety record and established infrastructure, remain crucial for shorter distances, especially in regions where introducing maglev trains may be challenging. As technology continues to evolve, finding a balance between these two systems could completely change the way we move people and goods, creating a more connected and sustainable world.

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(12 points)