Lesson _____

Transportation in Tokyo

Organizing Questions

- What are some characteristics of Tokyo's public transportation system?
- What transportation-related preparations are underway for the 2020 Summer Games?
- What are some of Tokyo's most popular landmarks and destinations?

Introduction

This lesson helps students gain an understanding of Tokyo's transportation system, as well as its geography and popular landmarks and destinations. Students read about transportation in Tokyo and about transportation-related preparations for the 2020 Olympic Games. Students imagine they are planning a trip to attend the 2020 Olympic Games and work in pairs to develop a sightseeing plan of Tokyo, selecting eight attractions to visit and creating a travel plan to and from their selected destinations using public transportation. Then student pairs conduct online research and virtual tours by visiting the official websites of each attraction as well as travel-related and other informational websites. They use the information they learned and their own creativity to write mock travel journals of their "tour" of Tokyo and share their journals with other students.

Objectives

In this lesson, students will

- gain a broad understanding of the public transportation system in Tokyo;
- learn about transportation-related preparations for the 2020 Summer Games;
- use maps and guides to navigate the Tokyo Metro system to travel around the city; and
- become familiar with Tokyo's landmarks and attractions through a virtual tour.

Connections to Curriculum Standards

This lesson has been designed to meet certain national history, social studies, geography, and common core standards as defined by the National Center for History in the Schools, the National Council for the Social Studies, the National Council for Geographic Education, and the Common Core State Standards Initiative. The standards for the lesson are listed here.

National History Standards (from the National Center for History in the Schools)

World History

Era 9, Standard 2A: The student understands how population explosion and environmental change have altered conditions of life around the world.

- Grades 5–12: Analyze how population growth, urbanization, industrialization, warfare, and the global market economy have contributed to environmental alterations. [Analyze cause-and-effect relationships]

Era 9, Standard 3A: The student understands major global trends since World War II.

- Grades 9–12: Analyze connections between globalizing trends in economy, technology, and culture in the late 20th century and dynamic assertions of traditional cultural identity and distinctiveness. [Analyze cause-and-effect relationships]

World History Across the Eras, Standard 1: Long-term changes and recurring patterns in world history

- Grades 5–12: Analyze ways in which human action has contributed to long-term changes in the natural environment in particular regions or worldwide.

National Social Studies Standards (from the National Council for the Social Studies)

- Culture; Thematic Strand I: Social studies programs should include experiences that provide for the study of culture and cultural diversity.
- Time, Continuity, and Change; Thematic Strand II: Social studies programs should include experiences that provide for the study of the past and its legacy.
- People, Places, and Environments; Thematic Strand III: Social studies programs should include experiences that provide for the study of people, places, and environments.
- Individuals, Groups, and Institutions; Thematic Strand V: Social studies programs should include experiences that provide for the study of interactions among individuals, groups, and institutions.
- Production, Distribution, and Consumption; Thematic Strand VII: Social studies programs should include experiences that provide for the study of how people organize for the production, distribution, and consumption of goods and services.
- Science, Technology, and Society; Thematic Strand VIII: Social studies programs should include experiences that provide for the study of relationships among science, technology, and society.

National Geography Standards (from the National Council for Geographic Education)

- Standard 1: How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information [Essential Element I: The World in Spatial Terms]
- Standard 4: The physical and human characteristics of places [Essential Element II: Places and Regions]
- Standard 10: The characteristics, distribution, and complexity of Earth's cultural mosaics [Essential Element IV: Human Systems]
- Standard 14: How human actions modify the physical environment [Essential Element V: Environment and Society]

Reading Standards for Literacy in History/Social Studies (from the Common Core State Standards Initiative)

- Standard 1, Grades 9–10: Cite specific textual evidence to support analysis of primary and secondary sources, attending to such features as the date and origin of the information.
- Standard 4, Grades 9–10: Determine the meaning of words and phrases as they are used in a text, including vocabulary describing political, social, or economic aspects of history/social science.
- Standard 7, Grades 11–12: Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem.
- Standard 9, Grades 11–12: Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.

Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects (from the Common Core State Standards Initiative)

- Standard 4, Grades 6–12: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
- Standard 6, Grades 9–10: Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.
- Standard 7, Grades 9–12: Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
- Standard 9, Grades 6–12: Draw evidence from informational texts to support analysis, reflection, and research.

Materials

Handout 1, *Developments in Transportation for the 2020 Games*, 30 copies
Handout 2, *Using the Tokyo Metro*, 15 copies
Handout 3, *Sightseeing Plan*, 15 copies
Handout 4, *Virtual Tour of Tokyo*, 15 copies
Projection, *Tokyo Transportation Facts*
Answer Key 1, *Developments in Transportation for the 2020 Games*
Answer Key 2, *Using the Tokyo Metro*

Equipment

Computer, projector, and screen
15 computers with Internet access, for student use

Teacher Preparation

Instructions and materials are based on a class size of 30 students. Adjust accordingly for different class sizes.

1. Make the appropriate number of copies of handouts.
2. Become familiar with the content of the handouts, projection, and answer keys.
3. Become familiar with the information, maps, and guide provided on the Tokyo Metro website at http://www.tokyometro.jp/en/.
4. Set up and test computers, projector, and Internet connection.

Time

At least two 50-minute class periods

Procedures Day One

1. Ask students to share personal experiences they have had using public transportation, either in their own communities or in other parts of the world. Inform students that they will learn more about Tokyo's public transportation system and the developments in progress for the 2020 Olympics. Inform them that later in this lesson they will imagine they are attending the 2020 Olympic Games in Tokyo and must learn how to use the Tokyo Metro (subway) and plan their own virtual sightseeing tour of Tokyo.
2. Display Projection, *Tokyo Transportation Facts*, and ask volunteers to read the facts aloud to provide students with some basic background knowledge.
3. Distribute one copy of Handout 1, *Developments in Transportation for the 2020 Games*, to each student. Instruct students to read the handout and answer the questions on a separate sheet of paper. Then collect student written responses for assessment. Discuss the questions and student responses as a class.
4. Divide the class into pairs. Each pair will need access to a computer with Internet access.
5. Instruct students to visit the Tokyo Metro homepage at http://www.tokyometro.jp/en/ and spend several minutes becoming familiar with

the site and its contents. Then instruct students to download the PDF document of the Tokyo Metro Guide at http://www.tokyometro.jp/en/tips/guide/pdf/tokyo_metro_guide.pdf. Allow a few moments for students to also become familiar with the guide.

6. Distribute one copy of Handout 2, *Using the Tokyo Metro*, to each pair. Instruct students to answer the questions on the handout using the Tokyo Metro Guide. Collect Handout 2 for assessment.
7. Explain that each pair will work together to create a Tokyo sightseeing plan and a mock travel journal. Instruct pairs to read about the tourist destinations under the "Popular Attractions" tab on the Tokyo Metro homepage and choose eight destinations they would like to visit on a virtual tour of the city. Next, students should locate their chosen destinations on the map.
8. Distribute one copy of Handout 3, *Sightseeing Plan*, to each pair, and instruct students to create their plan for a two-day tour of Tokyo. Review the instructions on the handout and ensure that students understand the task and how to make an efficient plan. Students may also use a smartphone app to help them determine the best subway stops for traveling to and from their destinations.
9. When pairs have completed their sightseeing plans, ask for volunteers to share them with the class.
10. Lead a class discussion, using the following questions as a guide.
    - What factors did you consider when developing your sightseeing plan?
    - Did you have to modify your plan to make it more efficient?
    - If you could choose to tour more destinations, what additional sites would you like to visit?
    - What kinds of destinations would be most interesting to you when traveling? Why?
    - How does Tokyo compare to and contrast with the city where you live?
11. Distribute one copy of Handout 4, *Virtual Tour of Tokyo*, to each pair. As homework, student pairs need to visit the official websites for their chosen destinations as well as other travel sites to read travelers' reviews and record at least three interesting facts about each attraction. Then they should write a mock travel journal about their sightseeing tour of the city. Inform students that they will present their sightseeing plan and mock travel journal to another student pair during the following class period. Alternatively, each pair can present to the whole class.
12. Optional: Students can keep track of the money they would spend on transportation and entrance fees and then use the currency exchange rate to determine what the costs would be in their own country's currency.
13. Optional: Students can create a map of Tokyo showing their travel route around the city and the destinations they "visited."

Day Two

1. Instruct pairs to assemble and briefly prepare to share their information from Handout 4 and mock journal. When students are ready, instruct them to begin their presentations, either in small groups (two pairs, i.e., four students) or to the whole class. If pairs are presenting to the entire class, you may wish to have them share just one (either Handout 4 or their mock travel journal) to save time.
2. When all pairs have shared, collect Handout 4 for assessment.
3. Conclude the lesson with a debriefing discussion, using the following questions as a guide.
   - What did you learn about Tokyo, its transportation system, urban landscape, and destinations?
   - What information about Tokyo was most interesting to you?
   - What are some advantages of living in a city like Tokyo, where public transportation is easily accessible?
   - If you were a teenager living in Tokyo, where do you think you and your friends would spend your free time? Why? Would you enjoy using public transportation? Why or why not?
   - Would you like to visit Tokyo as a tourist? If you have already been to Tokyo, share your thoughts, impressions, and experiences.
   - If you were to attend the 2020 Olympic Games, what new developments in transportation would you be most interested in experiencing?

Assessment

The following are suggestions for assessing student work in this lesson:

1. Assess student responses to the questions on Handout 1, *Developments in Transportation for the 2020 Games*, based on Answer Key 1, *Developments in Transportation for the 2020 Games*.
2. Evaluate student responses to Handout 2, *Using the Tokyo Metro*, based on Answer Key 2, *Using the Tokyo Metro*.
3. Assess student group work on Handout 3, *Sightseeing Plan*, based on completion, quality, and thought demonstrated in their development of a logical plan.
4. Evaluate student responses on Handout 4, *Virtual Tour of Tokyo*, based on completion, quality, and thought demonstrated in notes and mock travel journal.
5. Assess student presentations describing their tour of Tokyo and how they traveled around the city.
6. Assess student participation in group and class discussions evaluating students' ability to
   - clearly state their opinions, questions, and/or answers;
   - provide thoughtful answers;
   - exhibit sensitivity toward different cultures and ideas;
   - respect and acknowledge other students' comments; and
   - ask relevant and insightful questions.

Developments in Transportation for the 2020 Games

by Grace MyHyun Bang

Debuting Innovations

magnetic levitation—a process by which a magnet moving over a piece of metal causes electric currents to flow in the metal that, in turn, produce forces that push the magnet upward. If the force is large enough, the moving magnet can float (be levitated).

outpace—to move or develop faster than someone or something else

Fukushima nuclear power plant disaster—one of a series of calamities that began with a 9.0-magnitude earthquake that struck off the coast of Tohoku, Japan on March 11, 2011 (with the epicenter approximately 200 miles from Tokyo). The earthquake was the strongest ever recorded in Japan. It triggered an even more destructive tsunami with waves reaching as high as 133 feet, which destroyed coastal towns along Japan's northern islands. The tsunami also caused the meltdown of three nuclear reactors at the Fukushima Daiichi Nuclear Power Plant and the expulsion of radioactive material into the ocean and surrounding environment. This nuclear disaster is one of the worst the world has ever seen, on par with the Chernobyl nuclear disaster of 1986, and continues to be a crisis.

fuel-cell vehicle—a type of hybrid vehicle which uses a fuel cell, instead of an engine, in combination with a storage device, such as a battery, to power its on-board electric motor

Hosting the Olympics is an opportunity for a nation to announce its innovations to the rest of the world. In doing so, it can demonstrate competitiveness with other countries' technological advancements, including advancements to their transportation systems. The last time Tokyo hosted the Summer Olympics in 1964, Tokyo debuted its now-famous bullet train, the *shinkansen*. The shinkansen was the first high-speed train in the world. Along with the bullet train, other major transportation developments leading up to the 1964 Games included elevated highways and a monorail connecting Tokyo with Haneda Airport. The Tokyo Metropolitan Expressway was also built in anticipation of the 1964 Tokyo Olympics.

Tokyo has now become famous for its highly efficient transportation systems. For the 2020 Olympics, a much-anticipated technological advance to Tokyo's transportation systems is magnetic levitation, or what is commonly referred to as maglev. JR Central, a Japanese railroad company, aims to have maglev trains to Tokyo by 2020, although some have doubted the possibility of running the service by then.[1]

Tokyo may also introduce the use of robots for helping visitors navigate their Olympics experience. Among the robots' many services, such as helping with language translations and carrying luggage, they will offer visitors assistance with directions and call for transportation. Another robotic innovation that visitors may experience during these Olympics is self-driving taxis. Two Japanese companies, ZMP and DeNA, have collaborated on a plan to get "robot taxis" on Tokyo roads in time for the Olympics. If this ambitious plan succeeds, Tokyo's transportation innovations may outpace the technologies of other developers, such as Google.[2] In 2016, experiments with this technology include taking residents of Fujisawa, a coastal town near Tokyo, in the driverless taxis along the city's main roads.[3]

Environmental Consciousness

The 2020 Olympics is an opportunity for Tokyo to showcase its research efforts in alternate energy sources, such as hydrogen and algae. Since the March 2011 Fukushima nuclear power plant disaster, Japan has emphasized environmental concerns and is pursuing non-nuclear energy sources. Yoichi Masuzoe, the former governor of Tokyo, explained, "I want to leave a hydrogen society as a legacy for the next Tokyo Olympics."[4] Plans include powering buses, housing for athletes, and the entire Olympic Village by hydrogen as well as increasing the number of fuel-cell vehicles. The Tokyo Metropolitan government set up a fund of approximately 40 billion yen (approximately 350 million U.S. dollars) to promote hydrogen energy use and other environmentally-conscious

technologies.[5] Although there is still some debate over hydrogen's overall benefits to the environment, Tokyo hopes that a greater reliance on it at the Olympics will promote long-term environmental sustainability.[6]

Visitors to the 2020 Olympics may even be able to fly to Tokyo on algae-fueled planes. Over 40 Japanese and non-Japanese organizations and institutions, including the Japanese government, All Nippon Airlines, Japan Airlines, Boeing, and the University of Tokyo, have been working together to make algae-fueled international flights a possibility by 2020.[7]

Encouraging people to ride bicycles has also been a goal. Tokyo aims to almost double the length of the city's bicycle lanes. This goal may be difficult to realize, however, as different authorities regulate roads through which bicycle lanes run. Still, the hope is that with increased bicycle usage spurred by the Olympics, Tokyo lifestyles will become less dependent on automobiles in the long term.

Ambitious plans proposed for the 2020 Olympics face limited time for completion and budgetary concerns. The shinkansen was completed less than ten days before the 1964 Olympics began, and only two of the proposed eight main expressways had been completed, with two others partially constructed. Between 1960 and 2012, all Olympics Games have exceeded their budgets by an average of 179 percent.[8] The potential economic impact of the Olympics includes weighing the costs of improving Tokyo's transportation systems and growing Japan's economy in the long term.[9]

Getting Around the Olympics: Accessibility and Security

A host country must make plans for athletes, visitors, and residents to get around with ease and security. Development plans for the 2020 Olympics include completion of three new major roads in time for the Olympics. During the Games, highways and main roads will include "Olympic lanes" to connect stadiums and athletes' quarters, as well as "Olympic priority routes" where official Olympics vehicles will have priority.[10] Other building projects in anticipation of the Games include a new subway line and subway station to improve access from the Haneda and Narita airports to downtown Tokyo, southeast Tokyo, and two major locations for Olympics events.[11] Renovations to three stations on Tokyo's rail line—Harajuku, Sendagaya, and Shinanomachi stations—include expanding their concourses and ticket gates and making them barrier-free for wheelchairs.[12] Changes such as these made in preparation for an Olympics can raise important questions about a city's modernizing efforts. For example, plans are still uncertain about if and how to retain the character of Harajuku Station's wooden building, which was built in 1924.

Security is a major concern at any international event, especially one as important as the Olympics. Japan has sought advice about security measures from the 2012 host of the Summer Olympics, Great Britain. The 2012 Olympics involved extra law enforcement on London's streets

and underground rail system, road closures at times to support safe passage of foreign dignitaries to Olympics sites, security staff guarding athletes' lodging sites, surface-to-air missile installations on tower blocks, and naval ship deployment on London's main river, the Thames. Tokyo government officials and Olympics organizers have consulted with Britain's security ministers in preparation for hosting the 2020 Games.[13]

The 2020 Olympics may also be an opportunity for Tokyo to present Japan's social progress. Tokyo is not known to be a city with easy wheelchair access.[14] Seiichi Eto, an Upper House lawmaker and special adviser to Prime Minister Shinzo Abe, has actively supported disability rights and says the 2020 Olympic and Paralympic Games can showcase Japan's progress in dealing with access issues. Gihei Takahashi, an architect and professor at Toyo University, has explained Japan's greater accessibility since the time of the 1964 Olympics. Pathways were uneven and full of potholes, and buses and bathrooms did not have wheelchair access. Takahashi believes that barrier-free facilities and universal design "are looking to create an environment where everyone—children, the elderly, and people with disabilities—can live in the same way. We hope to eliminate discrimination by changing the environment."[15] Recent legislation that aims to prohibit discrimination has been enacted. Masuzoe also proposed legislation that includes the construction of barrier-free hosting venues, press centers, athletes' quarters, and surrounding areas. Accessibility is an important concern for Tokyo, especially as 2020 will be the first time that a city will host the Paralympics for a second time. At the February 2, 2015 meeting of the Task Force on Science, Technology, and Innovation for the 2020 Tokyo Olympics and Paralympics, discussions included how Japan might not only showcase its innovations at the Summer Games, but also how those innovations might continue to advance Japanese society after the Games have ended.[16]

Paralympics—a multi-sport competition for athletes with various physical disabilities. Since 1988, it has almost immediately followed the Olympics.

Questions

Answer the following questions on a separate sheet of paper.

1. What are three technological innovations in progress for the 2020 Games?
2. The shinkansen bullet train is the greatest legacy from the 1964 Olympic Games in terms of transportation infrastructure. What development in progress for the 2020 Olympic Games do you think will leave the greatest legacy? Explain your answer.
3. Why is it important for Japan to find non-nuclear energy sources?
4. What obstacles does Tokyo face in achieving its ambitious plans for the 2020 Games? Are these obstacles unique to Tokyo? Why or why not?

Using the Tokyo Metro

Visit the Tokyo Metro website at http://www.tokyometro.jp/en/. Download the "Tokyo Metro Guide" at http://www.tokyometro.jp/en/tips/guide/pdf/tokyo_metro_guide.pdf. Look carefully at the map and read the information provided. Zoom in and out as necessary. Then answer the questions below using the map and guide.

Questions

1. Have you seen or ridden on a subway system like this before? If so, where?

2. What do the thick colored lines on the Tokyo Subway Route Map indicate?

3. What do the black boxes on the map indicate?

4. What do the letters and numbers inside the colored boxes indicate?

5. How many stations does the Mita line have?

6. What would be the most efficient route from Roppongi (Station E23) to Asakusa (Station A18)?

7. What would be the most efficient route from Ueno (Station G16) to Ikebukuro (Station M25)?

8. What is the quickest and easiest way to find a station, such as Akihabara Station, on the map?

9. If you were traveling around Tokyo using the Tokyo Metro lines, what type of ticket(s) would you purchase? Why?

10. If you lived in Tokyo and rode the Metro often, what type of ticket or pass would you purchase? Why?

Sightseeing Plan

With your partner, choose eight destinations you would like to visit in Tokyo. You may choose from those listed under the "Popular Attractions" tab on the Tokyo Metro homepage at http://www.tokyometro.jp/en/ or from other sources. Then, create your own sightseeing plan for a two-day trip to Tokyo. Your sightseeing plan must be different than the "Recommended Sightseeing Plans" provided on the guide. Using the Tokyo Metro Guide and map (at http://www.tokyometro.jp/en/tips/guide/pdf/tokyo_metro_guide.pdf), determine how you will travel to and from each destination.

Day One

Name of starting point	Name of destination	Metro line(s)	Explanation of route
*Tokyo Station			
	*Takeshita Street, Shibuya		

*You will begin your tour of Tokyo at the iconic Tokyo Station, and end your day enjoying a meal on Takeshita Street in Shibuya.

Day Two

Name of starting point	Name of destination	Metro line(s)	Explanation of route
**Tsukiji Fish Market			
	**Tokyo Tower		

**You will begin your second day in Tokyo at an early morning tour of Tokyo's famous fish wholesaler, Tsukiji Fish Market, and end your day at the Tokyo Tower.

When you are done, prepare to discuss the following questions with the class.

- What factors did you consider when developing your sightseeing plan?
- Did you have to modify your plan to make it more efficient?
- If you could choose to tour more destinations, what additional sites would you like to visit?
- What kinds of destinations would be most interesting to you when traveling? Why?
- How does Tokyo compare to and contrast with the city where you live?

Virtual Tour of Tokyo

Take a virtual tour of Tokyo by visiting the official websites of your chosen destinations and any other relevant travel-related sites. In the space provided below, write the name of each destination, the area of Tokyo where it is located, and at least three interesting facts about it.

Destination Name & Location:
Interesting Facts:
Destination Name & Location:
Interesting Facts:
Destination Name & Location:
Interesting Facts:
Destination Name & Location:
Interesting Facts:

Destination Name & Location:
Interesting Facts:
Destination Name & Location:
Interesting Facts:

Write a mock travel journal describing your two-day tour of Tokyo. Use your imagination to write the journal as if it were an actual (rather than virtual) tour of Tokyo. You can also write your journal as social media posts. Be creative and be sure to write something about each of your destinations. You can also write about your experiences using public transportation to travel around the city.

Tokyo Transportation Facts

- Tokyo has one of the most sophisticated and extensive systems of public transportation in the world; the city is covered by a network of train, subway, and bus lines, operated by many different companies.

- Tokyo's public transportation network is known for its punctuality, cleanliness, and efficiency.

- The fastest and most common way to travel around Tokyo is by above-ground trains or underground subways. The rail systems typically run trains from 5 a.m. until midnight or 1 a.m., and are closed in the early morning hours for cleaning and maintenance.

- Tokyo has the largest passenger railway company in the world, East Japan Railway Company, "JR East," which operates the *shinkansen* (long-distance bullet trains that link most major cities in Japan) and the largest rail network for commuters. The shinkansen was a legacy from the 1964 Summer Olympic Games in Tokyo, opening just 10 days before the Opening Ceremonies. Today the company operates nearly 250 bullet trains daily.

- Forty million passengers use Tokyo's extensive rail system every day, with 882 interconnected rail stations in the Tokyo metro area.

- Shinjuku Station in central Tokyo is the busiest train station in the world, with 3.64 million passengers daily.

- Japan's first railway was constructed in 1872, connecting Tokyo and Yokohama.

- The subway system is made up of 13 lines (operated by two companies, Tokyo Metro and Toei Subway), and each line has a designated color and letter. Each station on the line also has a corresponding number. The coding is used on signs in the station and on the route maps. Although the system can be confusing to a visitor, the color, letter, and number coding system makes the extensive network more user-friendly.

- In Tokyo's train stations, Japanese and English are used for announcements.

- During rush hour, trains are so crowded that station staff called *oshiya* ("pushers") push riders into the trains to fit more people inside and allow the doors to close.

- Many train lines offer women-only cars during rush hour. When train cars are designated as “women only,” only females, boys under 6th grade, and disabled people with an attendant (if one is female) are allowed in those cars—for the safety and comfort of passengers.

- The trains are typically fairly quiet, as talking loudly and talking on cell phones is prohibited.

- While waiting to board a train, people wait in orderly lines.

- For convenience, commuters typically buy prepaid cards that allow the rider to scan the card at an automatic ticket gate at train stations, rather than purchasing a ticket every time. Two types of prepaid cards are the Suica pass and Pasmo, which can also be used on buses, some taxis, and in convenience stores and vending machines in or near train stations. Day passes that allow unlimited rides for one day are also available.

- Buses and trams are also integral, although secondary, to the transportation network and are mostly used for getting people to and from train stations. Riding buses can be difficult for foreign visitors, as drivers typically speak Japanese only.

- Riding in a taxi is very expensive in Tokyo, and like on buses, the drivers often speak Japanese only.

- Water bus ferries provide transportation along the Sumida River and Tokyo Bay and are mostly used for entertainment and sightseeing.

- People walk and ride bicycles as a mode of transportation in Tokyo more than in many other big cities around the world.

- Tokyo has two major airports: Tokyo International Airport (also called Haneda; serves domestic and some international flights and is a hub for Japanese airlines) and Narita International Airport (serves most international flights).

- Tokyo's transportation system is currently undergoing new developments in anticipation of the 2020 Summer Games to accommodate the influx of athletes and spectators from around the world.

Developments in Transportation for the 2020 Games

Questions

1. What are three technological innovations in progress for the 2020 Games?

   Three technological innovations in progress are magnetic levitation, robots to assist travelers, and self-driving taxis.

2. The shinkansen bullet train is the greatest legacy from the 1964 Olympic Games in terms of transportation infrastructure. What development in progress for the 2020 Olympic Games do you think will leave the greatest legacy? Explain your answer.

   Student responses will vary.

3. Why is it important for Japan to find non-nuclear energy sources?

   Japan is still working to clean up and stabilize the Fukushima nuclear power plants from the 2011 disaster and is concerned with finding new energy sources that are better for the environment.

4. What obstacles does Tokyo face in achieving its ambitious plans for the 2020 Games? Are these obstacles unique to Tokyo? Why or why not?

   Tokyo faces time constraints and budgetary constraints. These obstacles are not unique to Tokyo; in fact they are typical for host cities, and since 1960 all Olympic Games have exceeded their budgets.

Using the Tokyo Metro

1. Have you seen or ridden on a subway system like this before? If so, where?
   Student responses will vary.
2. What do the thick colored lines on the Tokyo Subway Route Map indicate?
   Each colored line indicates the route of a subway line.
3. What do the black boxes on the map indicate?
   The black boxes show where junctions are located.
4. What do the letters and numbers inside the colored boxes indicate?
   The letter represents the subway line, and the number represents the station number.
5. How many stations does the Mita line have?
   The Mita line has 27 stations.
6. What would be the most efficient route from Roppongi (Station E23) to Asakusa (Station A18)?
   The most efficient route would be to ride the Oedo line to Station E11, then transfer to the Asakusa line at Station A17 and ride one stop to Station A18.
7. What would be the most efficient route from Ueno (Station G16) to Ikebukuro (Station M25)?
   The most efficient route would be to ride the Ginza line one stop to Station G15, transfer to the Oedo line at Station E15 and ride it to Station E07, then transfer to the Marunouchi line and ride it to Station M25.
8. What is the quickest and easiest way to find a station, such as Akihabara Station, on the map?
   The quickest and easiest way to find a station, such as Akihabara Station, is to look it up on the alphabetized station index, which indicates the section on the map where it is located. Akihabara Station (H15) is located in the C2 section of the map.
9. If you were traveling around Tokyo using the Tokyo Metro lines, what type of ticket(s) would you purchase? Why?
   For two days of travel around Tokyo, it would be most efficient to either purchase two Tokyo Metro One-Day Open Tickets or a prepaid card if planning to ride the Metro many times.
10. If you lived in Tokyo and rode the Metro often, what type of ticket or pass would you purchase? Why?
    For Tokyo residents, it is most efficient to purchase a prepaid IC card because it allows users to add more value to the card at kiosks and to purchase items at vending machines and certain stores in or near the stations.

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