

Riding the Metro in Chile

Tami McInroy

Grade Level (Req.): 7th-12th grade	Content Area (Req.): World Geography or Spanish	Unit (Opt.):
Connections to Other Disciplines (Opt.):		
<ul style="list-style-type: none"> • • • 		
Time Frame (Req.): 2-3 days	Goal (Req.): Students will learn how to ride the metro and get from place to place.	
	Objective (Req.): Students will learn the history of the metro in Chile. Students will understand the advantages and disadvantages of riding the metro. Students will differentiate between the Spanish and English spelling of the names of different stations. Students will understand appropriate behavior on the metro. Students will understand how to get from place to place by taking the metro, including what direction to go, when and where to switch trains and what is needed to be able to get from place to place.	
Materials Needed (Req.):	New Vocabulary (Opt.):	
<ul style="list-style-type: none"> • Maps of Chile with important tourist landmarks marked (can be bought at a major bookstore in travel section) • Metro maps of Santiago (can be found on Internet – sites listed below) • Highlighters or markers • • • • 	<ul style="list-style-type: none"> • • • • • 	
Anticipatory Set/Introduction [Inquiry Question is required] (Req.): What is the fastest way to get from the soccer stadium to your hotel in Santiago by using the metro (and some walking)? (Recommended to use Chicago metro first as an example for practice)		
Instructional Sequence/Procedure (Req.):		
<ol style="list-style-type: none"> 1. Lecture: Discuss the history of the creation of the metro in Santiago, and its expansion. 2. Discuss advantages (cheap, fastest) vs. disadvantages (pickpockets, temperature, crowded) of riding the metro. 3. Observe metro maps – Show students how station stops are listed in Spanish. Pronounce the station names on one of the 5 lines for practice. (Recommended: Red line, since it's near more touristy areas of downtown). 4. Explain do's and don'ts of behavior on the metro. 5. Explain how to read a metro map – look at the end points of each line and the station name to tell the direction you want to go. Then look at stations that have more than one line (transfer stations). 6. Look at tourist map with landmarks and metro stops labeled. Practice having the class tell how 		

they would get to the stop, which line they are on, where they can transfer (if needed), and the most direct route to their destination.

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Formative Evaluation (Req.): Discussion and understanding

Assessment (Req.): Students will be shown 2 points of interest on the Santiago city map that are chosen by the teacher (other than the soccer stadium, which was already used as an example). Each student INDIVIDUALLY must identify the closest metro station to the starting point, show how many stops they go on each line, where he/she would switch train lines (if needed) and the station where he/she would end the trip (closest to the final destination). Students should demonstrate their route in front of the class. Grading can also include proper use of Spanish pronunciation.

Iowa Core Curriculum Standards Used (Req.):

- Geography, grade 9-12: Understand how human factors and the distribution of resources affect the development of society and the movement of populations.
- Geography, grade 9-12: Understand how physical and human processes shape the Earth's surface and major ecosystems.
- Geography, grade 9-12: Understand how human actions modify the environment and how the environment affects humans.
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Common Core Curriculum Standards Used (Opt.):

- Speaking and Listening, grade 6-12: Engage effectively in a range of collaborative discussions (one-on-one, in groups and teacher-led) with diverse partners on specific grade level topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
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NGS Standards Used (Req.):

- How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective
- How to analyze the spatial organization of people, places, and environments on Earth’s surface
- The characteristics, distribution, and migration of human populations on Earth’s surface
- How human actions modify the physical environment
- How to apply geography to interpret the present and plan for the future
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Five Themes of Geography Used (Req.):

- Place
- Human-Environmental Interaction
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School District Standards and Benchmarks (Opt.):

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21st Century Universal Constructs (Opt.):

Other Disciplinary Standards (Opt.):

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Other Essential Information (Opt.):

Other Resources (Opt.):

- For the websites to be in English, type “Santiago, Chile metro” in a Google search, then click “translate this page” on the main website (it should be the first one on the list)
- <http://www.metrosantiago.cl/> (Main website in Spanish – click on PLANIFICADOR DE VIAJE (trip planner) for trip planner that shows route time from selected starting point to end point); <http://www.metrosantiago.cl/guia-viajero/calculadora> (In Spanish - Transportation cost – Put it a certain # of kilometers (example, for commuters), click “calcular/calculate,” and it will figure your costs to take different types of transportation for a year for that amount of distance, plus the amount of CO2 & particulates being put into the atmosphere for each method); <http://www.metrosantiago.cl/guia-viajero/tarifas> (In Spanish - Fares based on time of day)
- http://en.wikipedia.org/wiki/File:Metro_de_Santiago.svg – MAP, showing lines under construction also (Most sites show new line 6 in purple, others show it in orange)
- http://en.wikipedia.org/wiki/Santiago_Metro – History of Santiago Metro system – In English

HISTORICAL INFORMATION ON THE METRO

Information about the new “Line #6”(In Spanish & English)
(From the Santiago Metro website - <http://www.metro.santiago.cl/>)

En diciembre de 2009, la Presidenta Michelle Bachelet dio a conocer el trazado y construcción de una nueva línea de Metro. In December 2009, President Michelle Bachelet unveiled the design and construction of a new subway line. Se trata de la Línea 6, que unirá comunas del Gran Santiago a lo largo de 14,8 kilómetros y 12 estaciones, y cuya construcción se decidió tras un acucioso proceso de análisis técnico en el que se compararon los beneficios sociales de diversas alternativas de trazados. This is the Line 6, linking communes of Greater Santiago over 14.8 km and 12 stations, whose construction was decided after a careful process of technical analysis in comparing the social benefits of various alternative paths.

Este proyecto implicará una inversión superior a los US\$957 millones (\$485 mil millones), lo que incluye tanto las obras civiles y los sistemas como la compra de material rodante para satisfacer las demandas que la nueva línea generará. This project will involve an investment of over U.S. \$ 957 million (\$ 485 billion), which includes both civil works and systems like the purchase of rolling stock to meet the demands that the new line will generate. La demanda proyectada es de 105 millones de viajes anuales que corresponden a incrementos de viajes en la red, y se espera alcanzar el primer año de operación. The projected demand is 105 million annual trips that correspond to increases in travel in the network, and is expected to reach the first year of operation.

Una de las características principales de esta futura línea de Metro es que va a constituirse en un gran articulador de la actual red de transporte público, pues se interconecta con cuatro corredores de buses, una línea de tren y tres líneas de Metro. One of the main characteristics of this future metro line is being set up in a great articulator of the current public transport network, for interconnects with four riders of buses, a train line and three Metro lines. Si bien aún restan aspectos de ingeniería de detalle, el nuevo trazado parte en su extremo sur en el corredor Pedro Aguirre Cerda, luego intersecta la línea del tren donde habrá una estación de combinación con MetroTren, se prolonga por Carlos Valdovinos hasta combinar con Línea 2 en Franklin, sigue por la antigua Línea de San Eugenio hasta combinar con la Línea 5 en Ñuble. While still remaining aspects of detailed engineering, the new route in its southern part in the corridor Pedro Aguirre Cerda, then intersects the railroad station where there will be a combination with Metrotrén, lasts for up to combine with Carlos Valdovinos Line 2 Franklin, runs along the former line to merge with San Eugenio Line 5 in Ñuble. Continúa hacia el oriente hasta Grecia, para seguir hacia el norte por Pedro de Valdivia hasta combinar en Providencia con la Línea 1, y termina rumbo al oriente en la avenida Vitacura, estación de combinación con Tobalaba. Continue east to Greece, to continue north on Pedro de Valdivia to combine in Providence with Line 1 and ends heading east on Avenida Vitacura, combined with Tobalaba station.

Este anuncio confirma la relevancia que Metro de Santiago tiene para el transporte público, la integración de los distintos sectores de la ciudad y la mejora de la calidad de vida de las

personas. This announcement confirms the relevance of Metro de Santiago is for public transport, integration of different sectors of the city and improving the quality of life of people.

La nueva Línea 6 beneficiará directamente a 1.2 millones de personas de las comunas de Cerrillos, Pedro Aguirre Cerda, Santiago, San Miguel, San Joaquín, Ñuñoa, Providencia y Las Condes. The new Line 6 will directly benefit 1.2 million people in the towns of Cerrillos, Pedro Aguirre Cerda, Santiago, San Miguel, San Joaquin, Ñuñoa, Providencia and Las Condes.

Dentro de los aspectos importantes que se tuvo en consideración al decidir la construcción de la nueva línea fue la disminución de la actual carga de la Línea 1, la más demandada de la red del tren subterráneo. Among the important aspects taken into consideration in deciding the construction of the new line was the decrease of the current burden of Line 1, the most demanded of the subway network. Además, al combinar con otras líneas de Metro (L2, L5 y L1), la Línea 6 se constituye en una alternativa a la Línea 1 para los viajes en sentido Oriente-Poniente y viceversa. In addition, combining with other metro lines (L2, L5, L1), Line 6 is constituted as an alternative to Line 1 for travel in East-West direction and vice versa.

En efecto, entre las alternativas evaluadas, la Línea 6 es la que logra una mayor reducción de la carga de la Línea 1 en su tramo más cargado. Indeed, among the alternatives evaluated, Line 6 is the one that achieves a greater reduction in the burden of Line 1 in its most loaded section. Se estima que cuando entre en operación, reducirá la carga máxima (horario punta) de la Línea 1 en el sentido Poniente-Oriente en más de 4.000 pasajeros por hora. It is estimated that when in operation, reduce the maximum load (peak times) for Line 1 in West-East direction in more than 4,000 passengers per hour.

Beneficios sociales Social benefits

El proyecto de Línea 6 tiene una rentabilidad social de 8%. The proposed line 6 has a social return of 8%. Este cálculo proviene principalmente de la evaluación de beneficios sociales tales como el ahorro de tiempo de las personas que realizan viajes en la ciudad. This estimate comes mainly from the evaluation of social benefits such as saving time for persons traveling in the city. Además, el proyecto genera ahorros en los costos operacionales de buses y automóviles, al inducir que más viajes se realicen en Metro en lugar de utilizar estos otros medios de transporte. In addition, the project generates savings in operating costs of buses and cars, to induce more trips are made in Metro instead of using these other modes of transportation.

Del mismo modo, esta nueva línea permitirá reducir de manera importante las emisiones contaminantes, tanto locales como de gases efecto invernadero. Similarly, this new line will significantly reduce pollutant emissions, both local and greenhouse gases. A esto se suma que el Metro es un medio de transporte que otorga mayor seguridad vial a sus usuarios. Added to this is that the Metro is a means of transport to improve road safety grants to users.