

A close-up, high-angle photograph of a microchip or integrated circuit. The chip is dark with intricate, glowing blue and white circuit patterns. A central, rectangular, gold-colored component is visible, surrounded by a dense network of fine lines and pads. The lighting creates a sense of depth and complexity.

Using Technology to Teach Global Challenges Impacting Latin America

A Curriculum Guide for World Language Classrooms

*Center for Latin
American Studies*

VANDERBILT  UNIVERSITY

Zika Exploration via Gameplay with *Plague Inc.*

Target Audience: Novice language learners; Spanish learners in grades 7-12

RELATED CONTENT AREAS

Science, Global Health, Humanities, Geography

OVERVIEW

The purpose of this lesson is to expose novice language learners to vocabulary related to science, and world health concerns, principally the spread of the Zika virus. Additionally the activity is intended to help them to engage in critical thinking regarding language negotiation. Through engaging in this activity, learners will practice using context to discern and make predictions about the meaning of unknown words. They will also analyze unknown words through identification of cognates and linguistic patterns. This identification will allow for semantic mapping and the resulting development of complex language schemata.

STANDARDS

ACTFL World Readiness Standards

COMMUNICATION

Interpretive Communication Learners understand, interpret, and analyze what is heard, read, or viewed on a variety of topics.

CONNECTIONS

Making Connections Learners build, reinforce and expand their knowledge of other disciplines while using the language to develop critical thinking and to solve problems creatively.

OBJECTIVES

Learners will be able to...

- Use context to negotiate and make predictions about meaning.
- Apply learning strategies to negotiate meaning, recognize cognates, and discern linguistic patterns.
- Use context to discern meaning.

- Develop language schemata.

VOCABULARY

El código genético – Genetic code	La resistencia - Resistance
El mundo - World	El ADN - DNA
La enfermedad - Disease	Sano/a - Healthy
Infeccionado/a - Infected	Infectado/a- Infected
Muerto - Dead	Destruído/a - Destroyed
Modificar - Modify	El virus - Virus
Evolucionar - Evolve	Trasmitir - Transmit
La síntoma - Symptom	El mosquito - Mosquito
Los estudios médicos - Medical Research	La fiebre - Fever
La habilidad - Ability	El dolor de cabeza - Headache
El patógeno - Pathogen	Las erupciones - Rashes
Los medicamentos - Medicines	

TIME	90 minutes	MATERIALS	<ul style="list-style-type: none"> • <i>Plague, Inc.</i> mobile application (1 per 1-5 students) • Informational text (Appendix B) • Vocabulary Handout (Appendix C) • Short informational video about Zika in the target language. English example: www.youtube.com/watch?v=2BxdNA6uxeA Spanish example: www.youtube.com/watch?v=hdAVuYC1Fds
------	------------	-----------	---

PROCEDURE

1. Provide learners with a short informational text (an ad for medicine and/or pamphlet for a health clinic) in the target language that is related to the Zika virus (Appendix B). Ask the learners what they are able to discern about Zika by using context. In this discussion, pay close attention to pictures, format and linguistic cues such as cognates **in order to activate learners' schemata**. To concretize the learning a bit more as it relates to Latin America, provide learners with a short informational video about Zika in the target language. [Spanish example](#) | [English Example](#)

2. Ask the learners specific questions about the text and the videos related to overarching comprehension (How is Zika spread? Is Zika dangerous? Where is it prevalent?). As learners offer answers, make sure to direct them to continue thinking about linguistic patterns and cognates that emerge.
3. Next, allow learners to experience how a virus like Zika spreads on a global level. They will be able to engage in this experience by playing *Plague Inc.* in the target language on the easiest setting for 20-30 minutes (enough time to finish the game). As they play, they should complete the vocabulary handout (Appendix C) by providing guesses as to the meaning of the target vocabulary to aid any discussion regarding spread of disease. Their definitions can be in either the target language or their first language. If the learners struggle, remind them to click on and highlight the related icons in their gameplay to gain additional context.
4. After time has expired, provide some time to debrief the class regarding their understanding of the spread of Zika. Additionally, allow learners to provide guesses regarding the meaning of the targeted vocabulary. Encourage them to justify answers by explaining their thinking. This think-aloud process will help learners who are struggling learn how to process unknown vocabulary words while reading.
5. The next day in class, allow learners to return to *Plague Inc.* gameplay for an additional 20 minutes. During this phase of gameplay, learners are to search for additional words that they are able to discern. They will take note of these words on the vocabulary handout.
6. Once play has ended, have the learners offer the words that they discovered to the class in order to build a vocabulary list that learners will use in other activities related Zika and other global health concerns that are relevant to Latin America. As learners offer words, they should be encouraged again to explain their thinking in discerning the meaning of each word.
7. Once the list is created, either as a class or individually, have learners create semantic maps of the vocabulary to aid their rate of acquisition. So that learners create as many connections with words as possible, encourage them to create at least three separate maps with their lists. These can be shared with other learners via Google Drive or an online learning management system. Finally, allow learners to create their own infographics regarding Zika that incorporates their game.

EVALUATION

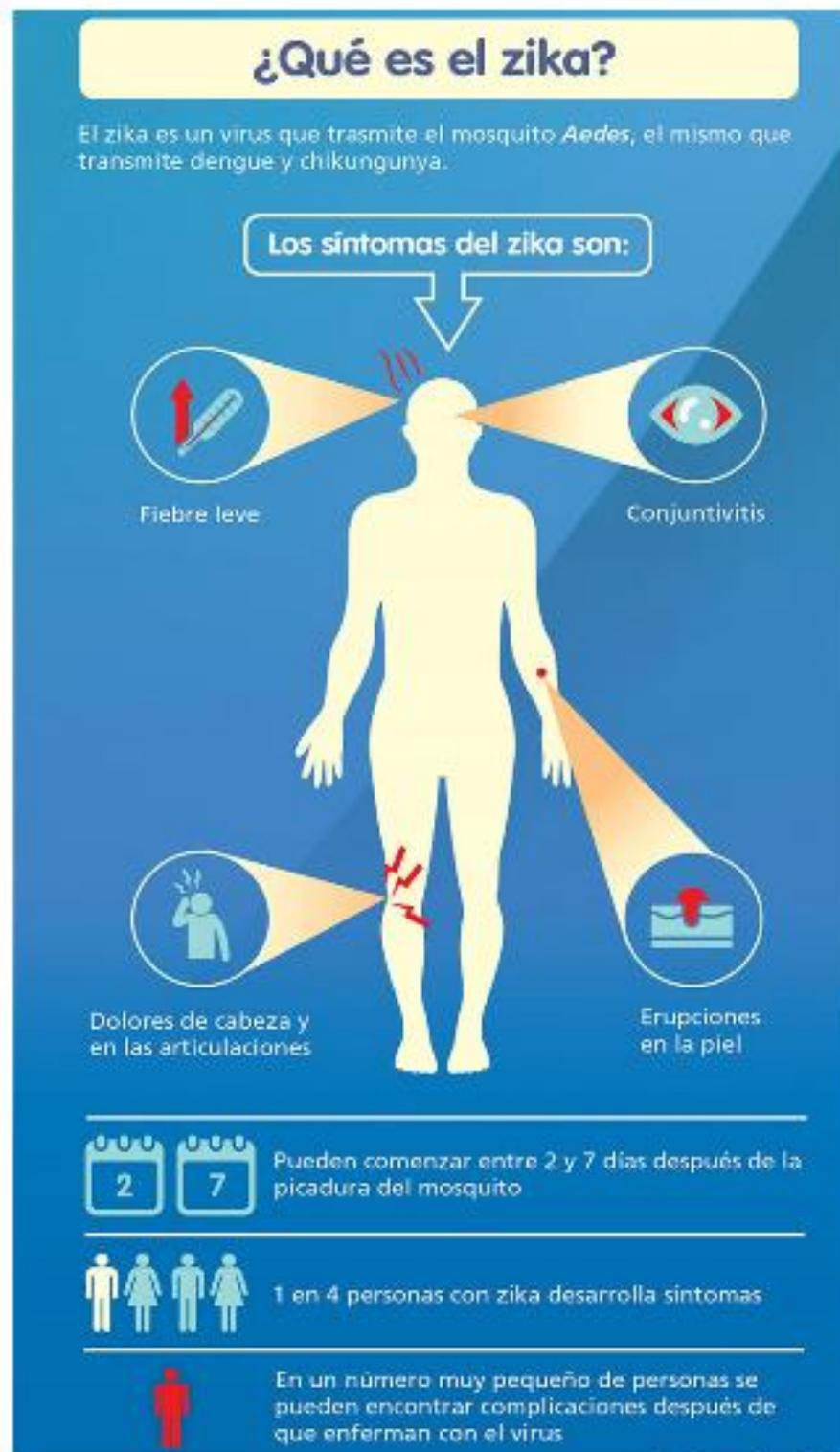
This activity is most adept for formative evaluation methods. Learners could be evaluated in such a way for their completion of the vocabulary handout (Steps 1-5) or creation of semantic maps (Step 7). This evaluation should provide a quick recommendation to learners regarding their continued development of skills to discern unknown language.

Additionally, learners could be provided with formative feedback regarding their participation in class discussion (Steps 4 and 6) using a discussion checklist. This checklist may be used by the teacher only or each member of the class.

EXTENSION ACTIVITIES

1. Learners reflect on how viruses spread throughout the world with a quick write and classroom discussion. In this reflection, ask them to consider the countries in *Plague Inc.* in which the virus spread the most quickly, focusing specifically on the populations in Latin America that became infected during gameplay. Use these observations to engage in a conversation regarding the geographical factors that impact the spread of illness and the role of international connectivity in furthering the spread.
2. Learners create their own infographics regarding the disease that they created during gameplay. These infographics should suggest steps for prevention.
3. Learners use gameplay to imagine what a clinic is like in a Latin American country dealing with a new virus. Using basic phrases and chunks in the target language, learners will roleplay clinic visits with the doctors in the target language. After this roleplay, they engage in a free write regarding how such visits would be different in one country versus another country.

Example Informational Text (Spanish)



Infografía: OMS

<http://www.larazon.net/2016/02/03/la-epidemia-de-zika-avanza-y-los-casos-de-guillain-barre-aumentan/>

Example Informational Text (English)

ZIKA VIRUS

What is Zika?

Zika is a virus transmitted by the *Aedes* mosquito, which also transmits dengue and chikungunya.

Zika can cause:

- Mild fever
- Conjunctivitis
- Headache and joint pain
- Skin rash

Onset is usually 2-7 days after the mosquito bite

1 in 4 people with Zika infection develops symptoms

A very small number of people can develop complications after becoming ill with the virus

Pan American Health Organization
 World Health Organization Americas
www.paho.org/zikavirus

#zika
 #FightAedes
 #ZikaVirus

<https://s-media-cache-ak0.pinimg.com/originals/4d/87/b9/4d87b9fe4b4c9c6b46037e33d2c25fcf.png>

Vocabulary Handout (Spanish)

Step 1

Play *Plague Inc.* for twenty to thirty minutes. Look at these screenshots of the game and identify the words indicated in the table below each image. Explain what clues (context, cognates, or linguistic patterns) let you guess the meaning of the unknown word(s). When making your meaning predictions, remember to find similar screens in the game. Doing so will help you to see text appear after you have highlighted or clicked icons. *Images: Plague Inc. by Ndemic Creations*

These words will form part of our class vocabulary list.



Significado de <i>código genético</i>	Justificación



Significado de <i>Mundo</i>	Justificación



Significado de <i>Muertos</i>	Justificación



Significado de <i>Síntomas</i>	Justificación



Significado de <i>Estudios médicos</i>	Justificación



Significado de <i>cura</i>	Justificación



Significado de <i>medicamentos</i>	Justificación



Significado de <i>Transmisión</i>	Justificación



Significado de <i>infectados y sanos</i>	Justificación

Vocabulary Handout (Spanish) Step 2

Continue to play the game *Plague Inc.* As you play, look for words that you think that you can understand given context and identification of cognates and linguistic patterns. Try to figure out as many words as you can, but commit to making predictions about meaning with a minimum of ten. Next to each word, explain how you were able to understand the meaning of the previously unknown word, just like you did in Step 1.

We will discuss these additional words as a class to add to our vocabulary list.

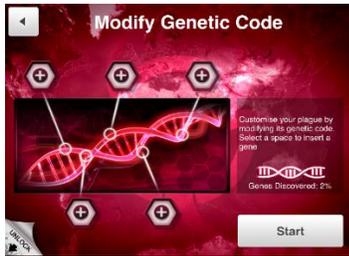
Palabra	Justificación
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	
16.	
17.	
18.	

Vocabulary Handout (English)

Step 1

Play *Plague Inc.* for twenty to thirty minutes. Look at these screenshots of the game and identify the words indicated in the table below each image. Explain what clues (context, cognates, or linguistic patterns) let you guess the meaning of the unknown word(s). When making your meaning predictions, remember to find similar screens in the game. Doing so will help you to see text appear after you have highlighted or clicked icons. *Images: Plague Inc. by Ndemic Creations*

These words will form part of our class vocabulary list.



Meaning of <i>Genetic Code</i>	Justification



Meaning of <i>World</i>	Justification



Meaning of <i>Dead</i>	Justification



Meaning of <i>Symptoms</i>	Justification



Meaning of <i>Medical Research</i>	Justification



Meaning of <i>Cure</i>	Justification



Meaning of <i>Drug</i>	Justification



Meaning of <i>Transmission</i>	Justification



Meaning of <i>Infected and Healthy</i>	Justification

Vocabulary Handout (English) Step 2

Continue to play the game *Plague Inc.* As you play, look for words that you think that you can understand given context and identification of cognates and linguistic patterns. Try to figure out as many words as you can, but commit to making predictions about meaning with a minimum of ten. Next to each word, explain how you were able to understand the meaning of the previously unknown word, just like you did in Step 1.

We will discuss these additional words as a class to add to our vocabulary list.

Word	Justification
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	
16.	
17.	
18.	
19.	

Acknowledgements

This curriculum guide was produced by the Center for Latin American Studies at Vanderbilt University with support from the U.S. Department of Education Title VI National Resource Center grant. The Center for Latin American Studies seeks to expand awareness and knowledge of Latin America in K-16 settings.

About the Authors

Andrea Beebe López is a Minneapolis native who moved to Nashville in 2007 to pursue her teaching career. She has taught various levels of Spanish for the Metro Nashville Public School district since January 2008. She has a B.A. in Spanish studies with a minor in Chicano studies from the University of Minnesota and is finishing her M.A. in Spanish Linguistics at New Mexico State University. She serves on the teacher advisory board for the Vanderbilt University Center for Latin American Studies. Andrea loves traveling and learning languages and sharing those passions with her students. She lives in Nashville with her husband and their mini dachshund named Salchicha.

Stephanie Knight is the Assistant Director at the Center for Applied Second Language Studies at the University of Oregon. She holds an M.A. in Latin American studies from the University of New Mexico and serves on the teacher advisory board for the Vanderbilt University Center for Latin American Studies. She has spent eleven years serving as a Spanish teacher in grades 5-16. During this time, she served as coordinator for an International Baccalaureate Middle Years Programme and an International Baccalaureate Diploma Programme in Nashville, Tennessee. Knight currently devotes much of her work to language curriculum development and pedagogical support for world language teachers, focusing largely on the integration of digital technologies in the world language classroom to positively impact second language acquisition.

Lisa Finelli is the Outreach Coordinator at the Center for Latin American Studies at Vanderbilt University. As Outreach Coordinator, Lisa leads all public engagement programs, organizes K-16 teacher workshops and summer institutes, coordinates the curriculum development and strengthens collaborations with community organizations and educational institutions.

Using Technology To Teach Global Challenges Impacting Latin America

A Curriculum Guide for World Language Classrooms

Center for Latin American Studies

Vanderbilt University

www.vanderbilt.edu/clas