Their Past, Our Futures: Climate Change, Climate Migration and Indigenous Resilience in the World Languages Classroom

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This curriculum unit is recommended for:
High School Spanish II

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Teaching Standards: See Appendix 1 for teaching standards addressed in this unit.

Synopsis: The dystopian futures we envision most, consume most and fear the most are the very real past and present experiences of colonized peoples. The tropes we see in dystopian and apocalyptic film and media reflect the actual experiences of colonized Indigenous peoples: invasion, disease, environmental collapse and subjugation. In this unit, we will look at climate change and environmental degradation in Latin America, especially with regard to impact on Indigenous populations. As we do so, we will take care to reference students' prior exposure, through popular media, to core concepts related to climate change, environmental degradation, and the experiences of Indigenous people.

I plan to teach this unit during the coming year to 120 students in Spanish II.

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Introduction: Their Past, Our Futures

In this unit, we will look at climate change and environmental degradation in Latin America, especially regarding impact on Indigenous populations. As we do so, we will take care to reference students' prior exposure, through popular media, to core concepts related to climate change, environmental degradation, and the experiences of Indigenous people.

Our students have little formal education about geography, ethnography, and the environment. In terms of explicit instruction, they do not know a lot about the urban Maya, for example, or the role of large-scale industrial agriculture in deforestation. They do receive a vast amount of informal instruction on other cultures and the world around them through the media they consume. An overwhelming amount of the narrative media they consume is science fiction, superhero adventure and other speculative genre fiction. This is relevant, because the most important tropes of science fiction have real world referents. Not surprisingly, the most important Western science fiction adventure tropes have to do with the pressing issues of the late Victorian era up through World War II: the fear of colonial decline and reversal, the fears raised by the specter of race and racial conflict, the fear of losing humanity's war on nature.

Nowhere is the fear of colonial reversal more immediately evident than in dystopian and apocalyptic fiction. The dystopian futures we envision most, consume most, and fear the most are the very real past and present experiences of colonized peoples. Why is this important? It is important because when we wish to talk to our students about, for example, the environment, or the progress of Indigenous peoples, we need to recognize, engage with, and sometimes counter the countless hours of indoctrination students have received on these topics under the guise of entertainment.

Rationale and Unit Goals:

Look at any list of top-grossing films by year, by decade, or of all time, and you will see a clear trend. The most popular films are in the field of genre fiction, specifically science fiction, superhero, fantasy, and animation. As we saw, the most enduring tropes in the most popular fictional media have their foundation in colonial experience. The landscapes of alien worlds are drawn from the landscapes we have waged literal war on other humans or figurative war on the natural world. Our monsters on the screen reflect real people and events. (Tobing 1996; King 2013)

The tropes we see in dystopian and apocalyptic film and media reflect the actual experiences of colonized Indigenous peoples: invasion, disease, environmental collapse and

subjugation. While the classic monster narrative was about Nature turning human violence against the natural world back on humanity, the classic dystopian, apocalyptic or invasion story is one of a reversal of colonial fortunes in which we experience the ravages we have inflicted on other societies. Science fiction and superhero movies do not simply reflect the influence of politics; they are how we communicate our political values. When we are teaching children about the environment, and about less represented cultures, we would do well to encourage them to cross-reference and evaluate the extensive informal education they have received through popular media.

In this unit, we will encourage students to think critically about the social and political messages promoted by the media they consume. We will counter stereotypes about Indigenous people of the Americas and talk about the growing urban Indigenous populations of Latin America. Students will learn about the role of climate change and environmental degradation in the internal migration of Indigenous peoples, especially in population transfer to urban areas.

Students will learn about how human activity contributed to climate catastrophes in two civilizations of the Americas, the Maya and the Nazca, leading to the collapse of advanced urbanized societies. We will learn about forms of Indigenous resilience and resistance, both cultural and technological. We will learn how climate change is bringing back a devastating agricultural blight from our history. Along the way, we will make some monsters.

School/Student Demographics:

I teach at Independence High School in Charlotte, Mecklenburg County, North Carolina. The school is on the border of Charlotte and the much smaller town of Mint Hill in Mecklenburg County. The school's zoning draws students from both urban and rural parts of the county.

Hispanic students now constitute the single largest group of students at the school, but no one group constitutes a majority. The school has 2,146 students assigned, of whom 24.7% are White, 31.9% are Black and 33.5% are Hispanic. 6.1% of students are Asian, mostly representing recently arrived refugee populations from Southeast Asia and Nepal. 3.1% of students identify with two or more races. 50.4% of students qualify for free or reduced lunch (Schooldigger.com 2021).

Content Research:

The Pygmy and the Whale: how Victorian colonial angst drives our children's imaginations

The basis and inspiration for King Kong was a historical person, a person you have probably read or heard of (Tobing 1996). If you have not seen the 1933 original or the 1976 and 2005 remakes, King Kong is the story of a gigantic man-eating (or, more specifically, woman-eating) jungle ape captured on a mysterious tropical island and brought back to America in shackles. Placed on exhibition in New York, his captors subject the mighty ape

to harassment and provocation from leering crowds and photographers. Kong breaks free and runs amok in a world not made for him. He defies his former captors and meets a tragic end.

The story comes to the screen directly from the life of Mye Otabenga, later known as Ota Benga and finally Otto Bingo. Have you heard of the time the Bronx Zoo put an African pygmy on display in the Monkey House? His name was Mye Otabenga. In 1904, an American missionary brought him from the Congo. He and his backers put Otabenga on exhibit in St. Louis with several other Africans. Otabenga was four feet ten inches tall, and his smile displayed teeth filed into pointed fangs; his exhibitors billed him as a cannibal (Tobing 1996).

On returning to Africa, he opted to return to the United States when his second wife died. Exhibitors put Mye Otabenga on display in the Bronx Zoo until protest led to his release from his cage. For a time, he had license to roam the grounds of the zoo. He got into some trouble. In St. Louis, he once attacked a photographer. Finally, in 1910 in New York he was said to have brandished a knife at a zookeeper, bringing his time at the zoo to a close. He moved to Lynchburg, Virginia, where, despairing of return to Africa, he committed suicide in 1916 (Kubota 2021).

The name of Gojira (who you may know as Godzilla) is a mash-up of the Japanese words *gorira* ("gorilla") and *kujira* ("whale"). (Irina Pelea 2020) Why a gorilla, when the reptilian sea beast is not simian at all? It is a nod, I suggest, to King Kong. Why a whale? Giant monsters who rise from the sea to attack puny humans are very real; ask a nineteenth century whaler. The spiritual grandfather of Godzilla is Moby Dick, whose real name was Mocha Dick. Mocha Dick was a real sperm whale who attacked whalers with a holy fury. In 1820, the great whale sank the whaling ship Essex in the Pacific and consigned the surviving sailors to a harrowing ordeal of starvation at sea ending in cannibalism (King 2013).

We draw not just our monsters, but also the very landscapes of science fiction from real landscapes experienced by whalers. Picture a barren and windswept rocky alien landscape where a ship's crew approaches a cyclopean monument not made by human hands. The twenty-four-minute mark of Galaxy of Terror is a perfect example, as our doomed crew approaches a mysterious pyramid (Clark 1981). This specific landscape is a rocket age reimagining of the whaling outpost of Grand Terre in the sub-Antarctic Kerguelen Islands, which has actual mountains shaped like pyramids (Gonçalves 2013). The island had an eerie thousand-foot-tall natural arch that looked disquietingly like a human monument (Port-Christmas 1893). The arch collapsed at some point after 1908; it is now two eerie monoliths (Letourmy 2008).

The whaling and sealing industry were a horror. Hunters slaughtered millions of sea mammals to the point of extermination solely for their blubber or their pelts (Tuck 1960). It was a veritable war on nature. Whalers spared not even penguins (Christmas Harbor 1784). Death by shipwreck and cannibalism at sea were a constant threat (King 2013). It is not

surprising that this war on nature would become the locus for fears of a reversal of our dominance over the natural world.

Authors base the landscapes of our fantastic realms of fiction on real places and create the monsters who populate them from recognizable living characters. Science fiction, superhero yarns and monster movies are how we communicate to young people the adult fears of a reversal of modernity, of colonial power, of Whiteness: the reversal of European domination in both the natural and political realms. We need to take the media our students consume seriously and be aware of the real-world referents. It is through genre fiction--fantasy, horror, and science fiction, in different media--that students receive their true education about the world, especially ethnography and the environment.

The Nazca: the lost world that was never lost

One enduring trope straight out of Victorian anxiety is the Lost World, the vanished civilization known only from magnificent, ruined cities as marvelous as our own. The Lost World raises the specter of civilizational collapse, the fear that our dominance, too, could erode and vanish. The Nazca culture in popular imagination fits this bill nicely. In the popular imagination, the Nazca earned fame through a series of enormous geoglyphs (earth drawings) in Peru's Nazca desert. Some are straight lines, or geometric figures; others represent fauna and marine life of the region, and others represent fauna of rainforest locales a great distance away. The Nazca people made the drawings over a thousand years from 500 BCE to 500 CE (Bernstein 2005). There is a widespread belief the signs are only discernible from the air, but this is not true. People on foot can readily view the Nazca geoglyphs from surrounding hilltops (Travel and Discover 2018). The legend that the signs are only visible from aircraft has fueled fruitless speculation about the origin and purpose of these lines.

The "mysterious" Nazca are much less mysterious now. For a long time, researchers sought astronomical referents for geoglyphs, believing them to constitute some kind of calendar. Most archaeologists now believe that the Nazca people created the vast designs in the deserts as pathways for ceremonial processions and dances during annual festivals (Bernstein 2005). In recent years, more attention has turned from the lines to the expansive urban landscape buried under the sands nearby. More than sixty pyramids await excavation (Travel and Discover 2018).

We understand the collapse of the urban centers as well. The valley where the Nazca civilization thrived was home to the *huarango* tree, a tree with one of the deepest known root systems. These trees anchored the earth in place and created a barrier against flooding and erosion. As the urban centers grew, we see more and more maize pollen in the layers of soil and less and less *huarango* pollen. The Nazca were cutting down trees to plant more crops to feed a growing population (Beresford-Jones 2009).

This path to growth was not sustainable. As the Nazca cut down more and more trees, the landscape changed. The river deepened and the flood plain narrowed, cutting off irrigation systems. The now-dry lands were also vulnerable to devastating floods that

ultimately destroyed the large settlements. The Nazca created their own apocalypse, turning a fertile valley into a salty desert (Ibid).

The people were ingenious and incredibly resilient, though. They constructed an amazing series of subterranean aqueducts accessible through spiral ramps carved into the earth. The local Indigenous people have meticulously maintained the system of tunnels and kept them in constant use for two thousand years, allowing green oases of cultivated land to flourish in the arid environment (Bernstein 2005). The Nazca hydraulic system was not unique. Elsewhere in Peru, Indigenous peoples are reviving pre-Columbian irrigation networks over a thousand years old to restore lands damaged by climate change (Cantú 2019).

War of the Worlds: Civilizational Collapse and the Mayan Dystopia

The Mayan civilization is poorly understood in the popular imagination. Generations of students in the United States learned the Mayan civilization "vanished" or "disappeared" in antiquity. The Maya abandoned their great cities of the Classical Era by around 900 CE but continued to build and inhabit cities to rival anything in Europe (Stromberg 2012). The Mayan civilization declined but by no means vanished. The last Mayan city-state, Nojpetén, in Guatemala, fell to the Spanish in 1697 (Nix 2018). In 1697, Harvard College was sixty-one years old (Harvard University 2021). Cotton Mather was thirty-four years old (Biography: Cotton Mather 2011). Benjamin Franklin would be born nine years later in 1706 (History.com 2009). The period of an independent, urban Mayan polity extends well into our own colonial era. Indeed, the conquest of Nojpetén by no means ended Mayan resistance to Spanish rule; following independence, Mayan armed struggle continued against WhiteWhite and ladino (Spanish-speaking mestizo) hegemony. Significant armed Maya resistance would not subside until the end of the Caste War in the Yucatán, 1847-1901 (Canadian Museum 2021).

However, what of the great cities of the so-called Classical Maya period? The great abandoned city of Tikal came to European attention through a priest, Andrés de Avedaño, who stumbled across the ruin with some companions while lost in the forest. The year was 1695; the ruins of the ancient Maya lay in mystery even before the fall of the last Mayan stronghold at nearby Nojpetén (Canadian Museum 2021). A sanctioned mission to explore the site would not come until 1848 (Roberts 2005).

The ruin, now a national park and UNESCO World Heritage site, is certainly impressive. If you have seen Star Wars Episode IV: A New Hope (1977), you have seen Tikal. Buildings reach more than 140 feet above the jungle floor. The urban center of Tikal covered roughly six square miles, but the greater metropolitan area covered as much as 47 square miles (about half the area of Athens, Georgia). At its height, the city was home to at least 60,000 people, bigger, in its day, than London or Paris (Roberts 2005). What happened?

The decline of Tikal and the other great cities came from a confluence of pressures. War was a constant reality of Mayan life (Roberts 2005). Moreover, we know that Mayan cities had a voracious appetite for forest. As populations grew, naturally, the May of Tikal cleared more land for cultivation of maize and other crops. What has surprised present day researchers is that industry drove much of the forest loss. The Maya burned vast quantities of limestone to make plaster for construction; each square meter of urban space consumed the equivalent of 20 trees for plaster manufacture (Stromberg 2012).

Denuded land absorbs less energy from sunlight and thereby produces less evaporation—in turn, reducing rainfall. When a century-long drought struck the region, deforestation reduced rainfall by a further 15%, accounting for 60 percent of the total drying in the period when the Classical Maya urban centers declined (Stromberg 2012). In other words, the Maya took an awful drought and managed to make it worse. Not only did deforested land produce less rainfall, but also the land was now vulnerable to soil loss and erosion (Ibid.).

There is another factor: water quality. Tikal was located far from natural lakes or rivers, and the water table sat far too low for well access using even the Mayan technology at the time. Instead, the Maya built their cities with vast paved plazas to channel water into reservoirs (Lentz et al 2020). These reservoirs had an ingenious filtration system that dates back 2,000 years. Using limestone, plant fiber filters, and a zeolite and quartz matrix to filter the runoff water, the Maya could keep their reservoirs clear of toxic heavy metals and harmful bacteria (TopoNews 2020).

The problem was that not everyone in charge was on top of hydraulic engineering like the ones who designed the system. In addition, while the Maya were well on top of their water management systems, they were much less careful about refuse. Trash middens were directly adjacent to kitchens and enormous amounts of urban food waste washed directly into the reservoir system, providing food for microorganisms to thrive. Studying the sediment from Mayan urban reservoirs, researchers have found that many of Tikal's reservoirs contained imminently harmful levels of toxic cyanobacteria. The bacteria is resistant to boiling and people using the water would have had absolutely no way of rendering it safe (Miller 2020).

Worse yet, the Maya really loved the color red. They painted everything—walls, ceramics, themselves—with red dye made from the mercury-rich mineral cinnabar. The water runoff from red-painted buildings and even from people bathing led to toxic levels of mercury in many of the urban reservoirs tested by researchers. In fact, anecdotal evidence from murals suggests that Maya people may have suffered from obesity-inducing metabolic syndrome caused by heavy metal poisoning (Miller 2020).

Under colonial Spanish and later ladino hegemony, the Maya have suffered terribly. Sadly, the modern Guatemalans, mostly of mixed Spanish and Indigenous heritage, have persecuted the Maya with a fury to rival the Spanish. The Ríos Montt dictatorship killed over 100,000 Maya in the early 1980s alone (Roberts 2005). The Maya hold fast to their

culture, however, and even in urban settings Mayan women will still wear traditional garb as daily attire (Revilla 2014).

From environmental collapse to invasion to repressive dictatorship, the Maya have endured virtually every dystopian scenario. Indeed, I posit that our own dystopian scenarios are simply the work of European imaginations trying to envision modern (mostly White) people experiencing what the Maya and other peoples of this hemisphere endured. Later in the unit, we will get a sunnier and more colorful look at contemporary Mayan cultural resistance.

Instructional Implementation

Teaching Strategies

The name of the game in this unit is connecting with students' prior knowledge, regardless of where that knowledge comes from and whether indeed it is correct. I will especially seek to link activities to students' lived experiences and their prior exposure to media. Hence, we will start learning about a topic with a check-in to see what students already know. We may start with an internet image search to see what kind of images feature most prominently as a way of exploring stereotypes, for example. We may connect the experiences of Indigenous people in Latin America with media images and history the students have already encountered.

Another important guiding principle is to avoid emotionally triggering social and political issues that will divide the classroom and generate conflict. For example, my focus in talking about climate migration has been on internal displacement and the pressure towards urbanization, especially as it relates to Indigenous populations. International migration gets extensive coverage in national media and the issue is a polarizing one. Internal migration is typically the trigger or stepping-stone to international migration and this phenomenon receives little attention in the United States (Altamirano 2011). Displacement due to climate change, environmental degradation and land appropriation does not trigger the same fearful or belligerent emotional response when it happens within, rather than across, national borders.

A third strategy will be to focus on positive outcomes rather than negative ones, and, especially when talking about Indigenous communities, to focus on resilience, resistance, and continuity rather than destruction, devastation, and disappearance. The Indigenous people of Nazca did not disappear; there is a technological continuity in the two-thousand-year maintenance of the hydraulic system there (Bernstein, 2005). The Maya did not disappear. They maintain their visibility and assert their presence by their distinctive dress in urban centers across Mexico and Guatemala (Revilla 2014).

Finally, I am taking a soft sell approach. Every activity will touch on climate change, environmental degradation, or Indigenous resilience (or all three) but will not oblige students to expound on a topic that may be sacrilege in their own homes on penalty of

receiving a bad grade. Like other settled science (evolution and the germ theory of disease come to mind) climate change driven by carbon emissions is a controversial issue in some of the communities my school serves. We can engage with these topics without overstepping boundaries.

Classroom Lessons/Activities

Crear un monstruo: Create a Monster

In our preliminary chapter of Spanish I at my school, students learn parts of the body, numbers, and basic adjectives for physical description. A typical assignment to teach parts of the body is to allow students to design a monster. There are variations of this activity. Students may be given a prompt with spaces for eyes, arms, legs, head, fingers, etc. and roll a die to fill in the number of each part of the body accordingly. They then draw the monster and label the parts of the body. They write a brief description in paragraph form to caption the picture, e.g.:

> *"Mi monstruo tiene seis pies y siete manos. Mi monstruo tiene tres dedos en las manos. Tiene cuatro cabezas con tres ojos. Tiene las bocas grandes."*

My monster has six feet and seven hands. My monster has three fingers on his hands. He has four heads with three eyes. He has big mouths.

In the preliminary chapter of Spanish II, we recap this material. Many students will be familiar with the monster assignment. Here, in Spanish II we will do the assignment with an important variation. Instead of designing a monster at random, students will design a monster for a comic book, cartoon, or other media to represent a specific social problem in the Americas. The monster may be friendly, mischievous, or scary, depending on how they wish to approach the viewer. They will draw the monster, label the monster, and write two paragraphs about the monster, one describing the monster's appearance and one describing what the monster represents. They will also choose an appropriate name for their monster.

During the days prior to the assignment, prepare the students to engage with social issues and contemporary problems by sharing short news broadcasts or informative documentaries in Spanish. Show a video per day on Monday, Tuesday, and Wednesday. Allow the students to interpret what they see and infer meaning using prior knowledge. See the appendices Student Resources and Teacher Resources for suggested sample broadcasts to share.

On Thursday, ask students what their favorite monsters from movies and television were growing up. Ask them to use their Spanish vocabulary to describe these monsters. Introduce some famous monsters from pop culture and discuss the social issues they represent. For example:

En 1818, el monstruo de Frankenstein representó el miedo que sentía la gente a las rápidas avances de la tecnología y el conocimiento científico.

En 1954, Gojira/Godzilla representó el miedo que sentía la gente a la amenaza de la tecnología nuclear.

En 2002, Stitch representó los desafíos que experimentan las familias creadas por la adopción.

In 1818, Frankenstein's monster represented the fear people felt towards rapid advances in technology and scientific discoveries.

In 1954, Gojira/Godzilla represented the fear people felt towards the threat of nuclear technology.

In 2002, Stitch represented the challenges faced by families formed through adoption.

Prompt students to create their own monster to represent a social or environmental challenge. They are to use target vocabulary for personality traits, colors and parts of the body to describe their monster. Sample exemplars of student text:

Termitron es una termita cibernética gigante. Termitron representa la deforestación. Termitron come los bosques para que las grandes empresas puedan sembrar aguacate.

Es un robot enorme. Tiene seis patas de acero y un cuerpo blanco de plástico flexible. Tiene nueve ojos rojos y una boca enorme de metal. No tiene emociones y solo existe para comer los bosques. Sus enemigos son Xixi La Duendecilla del Bosque y su mapache "Xico" Xicotencatl.

Termitron is a gigantic cybernetic termite. Termitron represents deforestation. Termitron eats the forests so big companies can cultivate avocados.

It's an enormous robot. It has six steel legs and a WhiteWhite body of flexible plastic. It has nine red eyes and an enormous metal mouth. It doesn't have emotions and only exists to eat the forests. Its enemies are Xixi the Forest Sprite and her raccoon "Xico" Xiconatl.

Almirante Visigorgo en un militar del planeta Flun. Es de color morado. Tiene la cabeza enorme de pez martillo. Tiene dieciséis ojos amarillos del lagarto. Tiene la boca de tiburón con cien dientes. Tiene dos brazos enormes con tres garras fuertes y dos brazos normales con tres dedos normales. Tiene dos piernas cortas con patas de tres dedos del pie. A menudo camina en los puños como gorila.

Tiene aspecto temible, pero es un ser de buen corazón. Vive exiliado en la Tierra con su hija adoptiva, Amanda. La niña Amanda es un ser humano. Almirante Visigorgo tiene dieciséis ojos porque representa a los padres super vigilantes y ansiosos. Tiene que aprender a confiar más en la madurez de su hija.

Admiral Visigorgo is a soldier from the planet Flun. He's purple. He has an enormous head like a hammerhead shark. He has sixteen yellow lizard eyes. He has the mouth of a shark with a hundred teeth. He has two enormous arms with three strong claws and two normal arms with three normal fingers. He has two short legs with three toes. He often walks on his fists like a gorilla.

He has a fearsome appearance, but he is a being with a good heart. He lives exiled on Earth with his adopted daughter Amanda. The girl Amanda is a human being. Admiral Visigorgo has sixteen eyes because he represents hypervigilant, anxious parents. He has to learn to trust more in the maturity of his daughter.

Students will create their work in paper-and-pencil format or may share digital presentations. As a variation on the assignment, students may record all or a component of their work as an oral presentation. For assessment, I will score spoken and written elements of the final product using the appropriate PALS Rubric (see appendices Student Resources and Teacher Resources.)

La ropa indígena/Indigenous dress

The chapter dealing with reflexive verbs and daily routine deals thematically with preparing for a special event. We will use this chapter to highlight the role of Indigenous dress in Latin America as a form of resistance.

On Monday (or the first day of the unit), ask students to do a Google image search for "Native American." Have them share the kinds of images that feature prominently. Ask them what positive or negative stereotypes these images convey and ask where they picture Native Americans living.

Tell students that nearly half the Indigenous people in Latin America now live in urban areas (The World Bank 2016). In Mexico, more than half of the Indigenous population lives in cities. Some Indigenous people move to the city voluntarily seeking economic improvement, but others have moved under pressure from environmental degradation, land dispossession, and climate change (Minority Rights Group International, 2013; Global Americans 2017; Steffens 2018). Show the students the video "*Un solo latido.*" The video represents urban Indigenous people of Mexico through distinctive styles of traditional dress (Jóvenes Indígenas Urbanos, 2018).

On Tuesday, ask students if they know anyone with an Irish last name. Ask why they think there are so many people of Irish descent in the United States. Show students the video in Spanish about the cause of the Irish Potato Famine (Grunge Español, 2020). Later

share how the same blight that caused the potato famine in the 19th century is now spreading across the Andes due to climate change, increasing the pressure on Indigenous people to migrate to cities (Silberner 2008).

On Wednesday, share the article from Marissa Revilla on women's preservation of Indigenous dress in Mexico as a form of cultural resistance (Revilla 2014). This article has colorful photos and carries a positive tone. Ask students to perform image searches for urban Indigenous people in other countries: Bolivia, Ecuador, Guatemala, and Peru. Ask them to describe in Spanish what they see. For a performance assessment on these themes, see the Assessment section below. I would recommend spreading the assessment activity over Thursday and Friday.

Los Nazca y sus geoglifos/The Nazca and their geoglyphs

The unit in which students learn to distinguish between use of preterite and imperfect past tenses covers holidays and special events thematically. The chapter also covers reciprocal verbs. The chapter as presented in the text covers such holidays as Carnaval and the Days of the Dead.

On Monday, ask students if any of them have seen or read the Hunger Games series. Ask students if there are other post-apocalyptic or dystopian movies or programs they have seen or know of. Ask students if any of them have seen *Dune*, which deals with an artificially desertified world, or *Mad Max Fury Road*, which takes place in a devastated desert landscape. Tell students that the post-apocalyptic future scenarios we fear most (epidemic, ecological collapse, repressive government) are the very scenarios Indigenous peoples of the Americas have lived through in the past and live in today. In this segment, we will teach students about one advanced Indigenous group whose once-fertile valley and great cities faced ecological collapse and devastation (Bernesford-Jones 2009).

Over three days (for example, Monday through Wednesday,) students will watch short video segments presenting the nature of the Nazca geoglyphs and the reconstructed use of the geoglyphs in large ceremonial processions. Students will also learn about the amazing subterranean aqueduct system the Nazca built that the local Indigenous population has maintained to the present day over 2,000 years (Bernstein 2005). Share furthermore a National Public Radio segment on the Indigenous people of the Andes revitalizing pre-Columbian hydraulic systems to preserve pasturage in the face of climate change (Cantú 2019). Be sure to share a video of the Nazca pyramids and urban centers as well. Find suggested videos in the Student Resources and Teacher Resources appendices.

On Thursday, assign students to design their own geoglyph. In a paper and pencil or digital document, students will create a design for a geoglyph for a modern landscape. They will write a description of the geoglyph in Spanish and will write a paragraph about how people will use or experience the geoglyph. In their paragraph, students will use at least two and preferably three reciprocal verbs.

Sample instructions: design a geoglyph for use in a modern community. What will it represent? How will people use it? Create a drawing to show what your modern geoglyph will look like. Then, describe the geoglyph in Spanish. Is the design abstract, or does it represent something specific? How will people use it? Where is it located? Is it in an urban area or a rural space? Is it on a plain, on a hilltop or on a mountainside? Will people walk on it? Picnic on it? Climb on it? In your description, use at least three reciprocal verbs. See this lesson for notes on reciprocal verbs and a list of helpful verbs you can use. In your presentation, highlight your reciprocal verbs. Score writing samples using the PALS Level 2 Writing Tasks Analytic Rubric.

Sample exemplar text:

Mi geoglifo representa una gata dormida. Ella es mi gata. El geoglifo está construido en la ladera de un cerro grande en una zona en las afueras de una ciudad. Las líneas que forman el diseño son senderos en la ladera. Vegetación de color oscuro cubre el cerro y los senderos son de color blanco, así que todo el mundo puede ver la forma de la gata.

Aquí la gente puede pasar el rato en tranquilidad. Es un buen lugar para reunirse en familia. Los vecinos se miran y se saludan aquí. Es un sitio especial para los adultos que viven solos con un gato. Aquí se conocen los aficionados de los gatos para hacerse amigos.

My geoglyph represents a sleeping cat. She is my cat. The geoglyph is built on the side of a big hill in an area on the outskirts of a city. The lines that make up the design are paths on the hillside. Dark vegetation covers the hill, and the paths are white in color, so everyone can see the shape of the cat.

Here people can spend time peacefully. It's a good place to get together as a family. Neighbors see each other and greet each other here. It's a special place for adults who live alone with a cat. Here people who love cats can get to know each other and make friends.

On Friday, review with students what they have learned about the Indigenous people of Nazca and their achievements. Then, give students a prompt asking them to write about the Nazca lines and the Nazca aqueduct system. Sample prompt:

Create a Google Slides presentation to answer the following questions:
Slide 1: What is a geoglyph and where can we find them?
Slide 2: What are the Nazca geoglyphs and where are they located?
Slide 3: Who were the Nazca people and how did they use the geoglyphs? Why did their civilization decline?
Slide 4: What other achievements of the Nazca are still visible today? How did the Nazca meet the challenges facing them in their difficult environment?

All text should be in Spanish. Use preterite and imperfect tenses. Score writing using the PALS Level 2 Writing Tasks Analytic Rubric.

Alternately, you may offer a more standard essay instead of a slide presentation. Pose more advanced students the following question:

Compare and contrast the decline of the great Mayan cities with the decline of the Nazca civilization. What similarities are there? How did the Nazca confront their challenges differently from the Maya? Write in complete sentences in Spanish.

Score writing using the PALS Level 2 Writing Tasks Analytic Rubric. (If you assign this as a presentation speaking assignment, use the Speaking rubric.)

Assessment

As performance assessment for a chapter on clothing and preparing for a special event:

Using Mimi Panda or another online resource, you will prepare a coloring page highlighting present-day Indigenous dress in North America, Central America, or South America. You may submit your work as a paper document or as a digital document. For your image, you will provide:

El país (country): where is the image from? (Ex. Mexico, Guatemala, Peru, etc.)
La cultura (culture): what culture does the image represent? (Ex. Amuzgo, Tzotzil, Quechua, etc.)
La cita (citation): Where did you find the image?
La descripción (description): Describe the outfit. What is the person wearing?
Uso (use): How is this outfit used? Is this everyday clothing or is it traditional dress for holidays, folk dance, or cultural celebrations?

In addition, you will answer the following in an attached paragraph in Spanish:

In the country you chose, what percentage of the population is of Indigenous descent? What percentage of the Indigenous population lives in rural areas and what percentage lives in urban areas?
What are some of the challenges that Indigenous people face in rural areas and in the cities?
Is it common to see people in Indigenous dress? Why do many people persist in wearing Indigenous clothing?
Why are Indigenous people leaving rural areas and migrating to the cities?

Banco de palabras (word bank):

La ropa típica: traditional dress
El campo: the country

El agua: water
Migrar: to migrate
Por ciento: percent
La sequía: drought
La ciudad: the city
La falta: lack
La discriminación: discrimination
El desafío: challenge
Buscar: to seek
El empleo: work
El cambio climático: climate change
La deforestación: deforestation
El cultivo: cultivation

The teacher will score work using the Level 2 Writing Tasks Analytic Rubric.

Conclusion: Not Better Films, but Better Eyes

Over the course of this unit, we have checked in with students to explore their prior knowledge about world events and the cultures sharing the Americas with us. We have tried to encourage students to explore the stereotypes and the media tropes that color and inform their prior knowledge. I conclude by asking that we, as teachers, do the same. It is a wonderful thing for our students and for ourselves.

If you do not remember, or willfully forgot, the 2004 film *Alien vs. Predator*, you are not alone. The film follows an archaeological expedition hunted by rival alien species in the cavernous ruins of a Mayan pyramid next to an abandoned whaling base on Bouvet Island in the Antarctic. The director Paul W.S. Anderson built his career making film adaptations of video games. *Twelve Years a Slave* this is not ("Alien vs. Predator (2004) - IMDb" 2021).

The locale Anderson and his writers chose is a real one, but it is not Bouvet Island. The Kerguelen Islands of the sub-Antarctic Indian Ocean have both an abandoned whaling station *and* a looming frozen pyramid, one of a number of natural pyramidal mountains and rock formations on the isles (Gonçalves 2013). The Kerguelen Islands are a French overseas department and populated year-round, so the writers and director had to move the setting to the desolate Bouvet Island. The question is, why include a whaling station at all? It is not necessary from a narrative perspective. The answer is that it fits the trope of reversal of Nature. Here the human explorers find themselves hunted mercilessly just as humans a century before hunted the great sea mammals. The *real place* Anderson chose as the setting for this less than serious film has a serious purpose behind it.

Creators of film, television, video games, comic books and novels make good and bad creative choices. They do not make *random* choices. There is a reason Anderson set *Alien vs. Predator* on Bouvet Island standing in for the Kerguelen Islands, and there is a reason his pyramid is Mayan. There is a reason Jabba the Hutt lives in a desert, smokes a hookah

and keeps a harem ("Return of the Jedi (1983) – IMDb" 2021). When Disney dresses CGI alien marauders in loincloths, there is a reason they wear loincloths instead of flight suits or an off-the-shoulder chiffon number, and there is a reason they ride "space whales" instead of dinosaurs or monster trucks ("The Avengers (2012) – IMDb" 2021). There is a message there, every time. I am not suggesting that we, as teachers, need to better curate our own media consumption. Watch whatever you want. We do not need better films, or better television, per se; we need to watch with more discerning eyes. We need to be aware of the messages we absorb. That is how we will challenge our own misconceptions about the world.

Appendix 1: Teaching Standards

NH.COD.2.2 Analyze simple texts containing familiar vocabulary from other disciplines in terms of the main ideas and supporting details.

NM.COD.3.3 Use readily available technology tools and digital literacy skills to present academic information in the target language.

NH.COD.3.1 Use the target language to give short spoken or written presentations about familiar academic topics.

NH.COD.3.3 Use readily available technology tools and digital literacy skills to present academic information in the target language.

Materials List

Level 2 Writing Tasks Analytic Rubric. (2013). In PALS Rubrics. Foreign Language
    Program of Studies, Fairfax County Public Schools.
    https://kristinkmorris.weebly.com/uploads/2/3/6/6/23669642/level_2_analytic_writing.pdf

Level 2 Speaking Tasks Analytic Rubric. (2013). In PALS Rubrics. Foreign Language
    Program of Studies, Fairfax County Public Schools.
    https://www.pwcs.edu/common/pages/DisplayFile.aspx?itemId=2208108

    The PALS rubrics created by Fairfax County Public Schools are used nationally across languages and grade levels to evaluate student language proficiency. These rubrics are simple to use and students can readily learn to use them to self-assess and identify specific language learning challenges and strengths.

Student Resources

The Nazca and the Maya: Disappearance or Resilience?

Mayan City Had Sophisticated Water Purification System. (2020, October 29). TomoNews
    US. https://www.youtube.com/watch?v=BkifzBt2_70

This is a short video to highlight some of the engineering feats of builders of Classical
Maya civilization.

Cantú, E. (2019, January 2). Climate Change Has Shrunk Pastures In The Andes Of Peru.
    Could Ancient Waterways Offer A Fix?: Goats and Soda : NPR. National Public Radio.
    https://www.npr.org/sections/goatsandsoda/2019/01/02/600833370/climate-change-is-ba
    d-for-perus-pastures-but-theres-a-1-200-year-old-solution

This piece from NPR's Goats and Soda series outlines how Indigenous Peruvians in the
Andes face shrinking grazing lands due to climate change. Some Indigenous people are
reviving centuries-dormant pre-Columbian hydraulic systems to restore their lands
sustainably.

Bernstein, J. (2005, March 21). Digging for the Truth: Secrets of the Nazca Lines. The
    History Channel. https://www.youtube.com/watch?v=J0Tl0iUoJsM&t=1563s

Teachers must approach anything from The History Channel with a great deal of
caution. Since they ventured into outright pseudohistory and pseudo archaeology with the
2009 debut of Ancient Aliens, it is crucial to use their content selectively. Nonetheless, they
do publish a lot of accurate and accessible content. This documentary is older and provides
a refreshing look at the civilization that created the Nazca lines, putting greater emphasis on
their engineering accomplishments in the centuries-old subterranean aqueduct system still in
use today. This program is in English so while I recommend the whole broadcast as
background material for teachers, I would be very selective about using short segments to
stay in the target language as much as possible. The segment that takes the viewer inside the
ancient aqueduct system (22:39 and following) is one I would definitely share.

Crear un monstruo/Create a monster: links to videos to introduce social and environmental
problems in the target language

Desertificación: mitad de México se erosiona por deforestación. (2016, May 23). Azteca
    Noticias. https://www.youtube.com/watch?v=pHcHjpcM-48

When we think of deforestation in Latin America, we often think first of Brazil. This
news broadcast highlights the problem of deforestation in Mexico.

Osorio, I. (2020, December 30). Estiman que 25% de los menores en EE.UU. pasarán
    hambre. Noticias Telemundo. https://www.youtube.com/watch?v=VXoFcbiN_yg

It is important to emphasize that the United States has social and environmental problems, too; otherwise, we perpetuate the image of Latin America as a locus of dysfunction that needs outside intervention to "fix" it. This news broadcast highlights child hunger in the United States.

Cambio climático en Latinoamérica: ¿cuáles serán sus efectos? (2021, October 31). In DW Español. DW Español. https://www.youtube.com/watch?v=_PguOSdRcOg

This is an accessible and short broadcast presenting the projected effects of climate change specifically in Latin America.

Teacher Resources

Bernstein, J. (2005, March 21). Digging for the Truth: Secrets of the Nazca Lines. The History Channel. https://www.youtube.com/watch?v=J0Tl0iUoJsM&t=1563s

See above for caveats about using materials from The History Channel. This older documentary produced by The History Channel in better days and is a fine introduction to the culture that created Peru's Nazca lines. The whole documentary is in English and too long for classroom use but it is 52 minutes well spent for a teacher.

Simon, C. (2020, February 28). A great civilization brought low by climate change (and, no, it's not us). The Harvard Gazette. https://news.harvard.edu/gazette/story/2020/02/new-clues-about-how-and-why-the-maya-culture-collapsed/

This article, and the next one on the list, give a concise and accessible summary of the argument that human deforestation exacerbated the century-long drought that afflicted the Maya leading to the collapse of many great population centers.

Stromberg, J. (2012, August 23). Why Did the Mayan Civilization Collapse? A New Study Points to Deforestation and Climate Change. Smithsonian Magazine. https://www.smithsonianmag.com/science-nature/why-did-the-mayan-civilization-collapse-a-new-study-points-to-deforestation-and-climate-change-30863026/

This article, and the preceding one on the list, highlight how human activity exacerbated climate change and let to the fall of great Mayan cities.

Miller, M. (2020, June 6). Ancient Maya reservoirs contained toxic pollution: Mercury, algae made water undrinkable in heart of city. Science Daily. https://www.sciencedaily.com/releases/2020/06/200626161157.htm

This article gives a concise summary of the findings of a team from the University of Cincinnati. They discovered that urban water reservoirs of the Mayan city of Tikal were so heavily contaminated with toxic algae and mercury that they would have made anyone

drinking the water extremely ill. Pollution, therefore, may have played a role in the collapse of the great Mayan cities.

Nazca Tourism Guide. (2018, March 15). Travel and Discover. https://www.youtube.com/watch?v=3a_SNuEtfaE

   This video, too long for classroom use in its entirety, has good footage of the great pyramids and urban centers left by the Nazca civilization.

   The Pyramids of Cahuachi and Nazca Cemetery. (2016, December 16). Alegría Tours Perú. https://www.youtube.com/watch?v=Px-afLwDDwE

   This short video without voiceover shows the impressive Nazca pyramids and urban centers.

Morales, O. (2019). Deforestación: La fiebre por el Aguacate en México. https://www.youtube.com/watch?v=YZ28IgvdW_Y

   This documentary shows the connection between the explosion in the popularity of the avocado and deforestation in Latin America, specifically Mexico. This longer film provides good background information for teachers.

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