Waves of Migrations & Rhythms of Cycles

Article

In science, we will be doing an in depth study of migrations & natural cycles. Specific species of insects, birds, fish, & mammals move in giant circles over the land during the course of the year. For example, the grey whale travels from Alaska, up to Mexico in early winter, then returns around February.

Other animals run smaller circles over less time, these are smaller migrations. For example, you go to school in the morning, then return home in the late afternoon. Your pet cat may move through four-block circuit. A honey bee may roam up to 2 miles each day. However, none of us leave yearly to a new home.

Big circles and little circles. Larger amounts of time, and lesser amounts of time.

Life cycles also happen over any given year. An alligator lizard will mate in early spring, then lay eggs in June or July. Eggs hatch about 11 weeks later. The tiny baby lizards grow over the year and reach sexual maturity in about 18 months. Thousands of organisms live in San Diego. Which are your *favorites*?

There are many abiotic (nonliving) natural cycles as well. Consider the lunar cycle that flows every 27 days, from full moon to crescent, no moon and back again. Each day the sun rises and sets. Every year we know exactly what date and hour meteor showers will arrive. In the Winter, it gets cold and rains, in the Summer it becomes hot and days are long…every year.

Hurricanes happen in the south every summer, while more happen in the North each winter. This is due to the tilt of the sun collecting more sunlight as the Earth circles the Sun over the year. These hurricanes cause waves. The waves cause erosion. Waves of sand are removed from the beach and later in their absence, the sand accumulates again. While we see daily tides of ocean rise and fall, we also see yearly tides of sand rise and fall. Organisms also flow though all these cycles.

On a social level, there are holidays that happen over the year from numerous cultures. Human migrations happen in the form of Snow Birds, Spring Break, pilgrimages, & larger human migrations in the form of refugees fleeing war & famine or seeking a richer, more free life.

Populations of other organisms experience similar waves. A deer population will rise over a few years to a point where there are so many deer that they eat all the plants. When there aren’t enough plants to sustain the deer population, many die off and then the plants grow back again, continuing another wave, another cycle.

Many elements and vital molecules also cycle through the earth at different rates. We don’t know all their cycles, and yet they are happening without our knowledge. We know about the water cycle, and the nitrogen cycle. We are seeing the carbon cycle on a large scale, but there are many others that we are just beginning to comprehend such as the chlorine cycle.

Looking at human politics, it is easy to see through our own history. Greece ruled for a while, followed by Rome, as the Roman Empire fell Catholicism held a wave of power and it continues on into this very moment.

It even happens at the microscopic level as diseases wipe out populations, then regresses until their next opportunity, while others thrive, differentiate and cycle along with all living organisms, as does the Phage Virus.

However, there are even larger cycles. The life cycle of a San Diegian is about 80 years. Halley’s comet returns every 76 years, but other long period comets take over 200 years to circle the Sun…larger distances over larger time frames.

About every 100,000 years the Earth goes through a natural cycle in which it warms up, and then cools down. This cycle is called Global Warming and Ice Age.

It takes 226 million years for our sun to circle our galaxy the Milky Way. Life in general seems to go through waves as entire Earth populations rise, ending with an extinction period that gives rise to the next wave of organisms.

Even as you sleep tonight, during your 8 or so hours of human hibernation, you will experience waves of REM that are dream waves. Sleep well kids.

6th Grade

Waves of Migrations & Rhythms of Cycles

As we create our Walk-in-Painting, we will each research a set of topics to add into the installation.

You will research on three ideas from the list below. Some of these will be painted into the Walk in Painting.

#1. A Biotic Cycle

#2. A Abiotic Cycle

#3. A Cultural Cycle

Write a paragraph on each of the ideas, and add a picture for each paragraph.

**#1. Biotic means alive.** We are looking at systems of “life”.

Report on the life cycle of your favorite San Diego animal.

Such as: Grey Whale, Diamondback rattlesnake, Sea Gull, Raccoon, Blue belly lizard, Striped Skunk, Brown Pelican, Sea Lion, or any other animal that lives in San Diego. This could be an insect or arachnid: Black Widow, Ladybug, Scorpion, Honey Bee, Swallowtail Butterfly or any San Diego Insect.

Please include the migration cycles of this organism!

**#2. Abiotic means not alive.** We are looking at a natural cycle that happens in San Diego that is not alive.

A few ideas are: The tide, Storm seasons causing ocean waves, currents bringing warm or cold sea water, the weather, meteor showers, the seasons, day & night, the lunar cycle, the water cycle, the carbon cycle, a specific comet, earth’s orbit of the sun, Our Sun’s orbit within the Milky Way, the rock cycle, or any other abiotic cycle that happens in San Diego.

**#3 Cultural cycles** are through people. We are looking at the traditions and actions of humanity that happen repeatedly over time. Please pick one to research.

Human Migrations: seasonal migrations (like snowbirds), forced migrations (like the Atlantic Slave Trade), fleeing migrations (like Jews from Nazi Germany) or voluntary migrations for a better life (like the Gold Rush) OR pick a holiday that happens each year and research deeply about it or maybe you can come up with your own cultural cycle to research!

7th Grade

Waves of Migrations & Rhythms of Cycles

As we create our Walk-in-Painting, we will each research a set of topics to add into the installation.

You will research on three ideas from the list below. Some of these will be painted into the Walk in Painting.

#1. Compare & Contrast Two Biotic Cycles.

#2. An Abiotic Cycle That Works with a Biotic Cycle.

#3. Three Cultural Cycles Complexities.

Write a paragraph on each of the ideas, and add a picture for each idea.

**#1. Biotic means alive.** We are looking at systems of “life”.

Consider two San Diego organisms that interest you. Report on their life cycles, but also how their life cycles overlap.

Such as: Grey Whale, Gopher Snake, Sea Gull, Possum, Alligator lizard, Striped Skunk, Hummingbird, Sea Lion, or any other animal that lives in San Diego. This could be an insect or arachnid: Orb Weaver Spider, Grasshopper, Tarantula Hawk, Monarch Butterfly or any San Diego Insect.

Please include the migration cycles of this organism!

**#2. Abiotic means not alive.** We are looking at a natural cycle that happens in San Diego that is not alive…but also how some specific living organism interacts with it.

A few ideas are: The tides & grunion,… storm seasons causing ocean waves & tide pool organisms,… El Nino & fish migration, the weather vs specific agriculture,… the seasons & migrations, day & night vs life cycle of nocturnal organisms like sting ray or spiny lobster,… the lunar cycle & life, the water cycle & life, the carbon cycle & how Human’s are effecting it, a specific comet vs. the possibility that life on Earth came on a comet, earth’s orbit of the sun vs mustard flowers blooming in spring, Our Sun’s orbit within the Milky Way vs extinction events on Earth, the rock cycle vs primary succession, or any other abiotic cycle that happens in San Diego effecting any organisms in San Diego.

**#3 Cultural cycles are** through people. We are looking at the traditions and actions of humanity that happen repeatedly over time. You can do the cause and result of a human migration or 3 holidays celebrated at the same time by different cultures.

Human Migrations: seasonal migrations (like snowbirds), forced migrations (like the Atlantic Slave Trade), fleeing migrations (like Jews from Nazi Germany) or voluntary migrations for a better life (like the Gold Rush)

OR

Pick a holiday and compare 3 cultures, (like Christmas vs. Hanukkah vs. Kwanzaa). Tell specific ways that it is celebrated. How are these celebrations the same? And how are they different? Exactly what is each celebrating?

OR maybe you can come up with your own cultural cycle to research!

8th Grade

Waves of Migrations & Rhythms of Cycles

As we create our Walk-in-Painting, we will each research a set of topics to add into the installation.

You will research on three ideas from the list below. Some of these will be painted into the Walk in Painting.

#1. Compare & Contrast Three Biotic Cycles.

#2. An Abiotic Cycle That Works with a Biotic Cycle.

#3. Cultural Cycles Complexities.

Write a paragraph on each of the ideas, and add a picture for each idea.

**#1. Biotic means alive.** We are looking at systems of “life”.

Consider three San Diego organisms that interest you. Report on their life cycles, but also how their life cycles overlap.

Such as: Grey Whale, King Snake, Dove, Possum, Swift lizard, Striped Skunk, Osprey, Dolphin, or any other animal that lives in San Diego. This could be an insect or arachnid: Jumping Spider, Cricket, Paper Wasp, Cabbage White Butterfly or any San Diego Insect.

**#2. Abiotic means not alive.** We are looking at a natural cycle that happens in San Diego that is not alive…but also how some specific living organism interacts with it.

A few ideas are: The tides & grunion,… storm seasons causing ocean waves & tide pool organisms,… El Nino & fish migration, the weather vs specific agriculture,… the seasons & migrations, day & night vs life cycle of nocturnal organisms like sting ray or spiny lobster,… the lunar cycle & life, the water cycle & life, the carbon cycle & how Human’s are effecting it, a specific comet vs. the possibility that life on Earth came on a comet, earth’s orbit of the sun vs mustard flowers blooming in spring, Our Sun’s orbit within the Milky Way vs extinction events on Earth, the rock cycle vs primary succession, or any other abiotic cycle that happens in San Diego effecting any organisms in San Diego.

**#3 Cultural cycles are** through people. We are looking at the traditions and actions of humanity that happen repeatedly over time. You can do the cause and result of a human migration or 3 holidays celebrated at the same time by different cultures.

But also, compare this with a natural migration or cycle!

For example: Human Migrations: seasonal migrations (like snowbirds), compared with the migration of Grey Whales or forced migrations (like the Atlantic Slave Trade) compared with pet store sales, fleeing migrations (like Jews from Nazi Germany) compared with diamondback rattlesnakes fleeing a canyon that’s being developed into condos or voluntary migrations for a better life (like the Gold Rush) compared to roof rats infesting a house.

OR

Pick a holiday and compare 3 cultures, (like Christmas vs. Hanukkah vs. Kwanzaa). Tell specific ways that it is celebrated. How are these celebrations the same? And how are they different? Exactly what is each celebrating? But expand on this holiday by explaining a natural cycle that works exactly with this time. For example, during Christmas, we have the shortest day of the year & longest night, Winter Solstice. This causes cold weather, and more storms. The storms bring rainfall that the Matilija poppy flower loves and causes it to bloom in the winter.