The Jefferson Performing Arts Society

Presents

TARZAN
THE MUSICAL

BASED ON THE DISNEY FILM

MUSIC AND LYRICS BY PHIL COLLINS
BOOK BY DAVID HENRY HWANG

ADAPTED FROM THE STORY TARZAN OF THE APES
BY EDGAR RICE BURROUGHS

1118 Clearview Parkway
Metairie, LA 70001
504-885-2000
www.jpas.org
# Table of Contents

**Teacher’s Notes**.................................3

**Standards and Benchmarks**..........................5

**Background**........................................6

**Tarzan in the Jungle: Plants and Biomes** .............36

**Comparing the Past and the Present,**
**Tarzan in the Jungle** ................................56

**The Geometry of Flight,**
**Tarzan and Leonardo da Vinci** ......................81

**Tarzan Jungle Parkour:**
**Guiding Tarzan Through the Jungle** ................115

**Additional Resources**............................142
Washed up on the shores of West Africa, an infant boy is taken in and raised by gorillas who name him Tarzan. Apart from striving for acceptance from his ape father, Tarzan’s life is mostly monkey business until a human expedition treks into his tribe’s territory and he encounters creatures like himself for the first time. Tarzan struggles to navigate a jungle, thick with emotion as he discovers his animal upbringing clashing with his human instincts.

Tarzan first swung onto the scene in 1912. Edgar Rice Burroughs initially published *Tarzan of the Apes* as a series of chapters in several issues of *All-Story Magazine*. The chapters were so popular they were assembled and published as a book in 1914. Following the publication of the book *Tarzan's* popularity grew so much, it led to numerous sequels. The original story and the sequels were further adapted for film and television. In 1999, Walt Disney Studios released *Tarzan*, an animated adaptation. *Tarzan the Musical* is adapted from that Disney film.
This Study Companion provides opportunities to reflect on the story of 
**Tarzan** from many different angles. **Tarzan in the Jungle:**

*Plants and Biomes* begins with a discussion of *Waiting for This Moment* (the 
song that introduces the character of Jane in *Tarzan the Musical*) and 
guides students as they learn the names of the plants in the song, review 
where these plants come from, learn about biomes in different parts of the 
world, review longitude and latitude in map-reading and then create a map 
that includes plants they have studied. **Comparing the Past and the 
Present: Tarzan in the Jungle** investigates a writer’s point of view: how 
stories change over time and how stories reflect the opinions, views, 
expectations and truths that are woven into the fabric of the culture the 
story comes from. **The Geometry of Flight, Tarzan and Leonardo da 
Vinci** explores the lines and angels of flight trajectory. The JPAS 
production of *Tarzan* involves lots of flying, sometimes, flying 8 performers 
at a time. Flight entails lift and drag, friction and flow—all three of Newton’s 
Laws of Motion. What is less commonly understood is that flight also 
involves shapes (geometry.) In preschool, students learn about shapes. 
They learn how to identify them by appearance. As an example, a shape 
made of straight lines with four equal sides is a square, □ a shape made 
of three straight lines is a triangle, △ a shape made of curved lines is a 
circle ○ and so forth. In this lesson, students will expand on their 
understanding of shapes by exploring them through the lens of actors’ 
movement on stage (theatrical flying.) Students will have opportunities to 
consider the way an actor moves on stage when they are flying (the actor’s 
flight trajectory) by describing a series of angles and by using straight 
angles, reflex angles, angles around a point. **Tarzan Jungle Parkour: 
Guiding Tarzan Through the Jungle** investigates another way the story 
of *Tarzan* has been adapted, action figures and games. Students will 
review game board designs from the 1950’s that were inspired by the story of 
*Tarzan*, look at imagery from a modern day *Minecraft Tarzan Parkour*, 
an on-line game that is a randomly generated parkour course that can be 
played with friends or alone, and will work to develop their own *Tarzan* 
parkour. To do this, they will explore math concepts (Cartesian 
Coordinates, perimeter and area) as they design the safest route for 
Tarzan to navigate the jungle.

*Onward to the Jungle!*
The arts facilitate interconnection. They provide tangible, concrete opportunities for students and teachers to explore academic concepts. Academic concepts are strengthened when learning integrates academic subjects like English language arts with arts. A system of Grade Level Expectations and Standards and Benchmarks is replacing the Common Core standards used since 2010 to measure student achievement. Here is some background information on Louisiana Common Core:

**LOUISIANA STATE STANDARDS**
In March, 2016 The Louisiana Board of Elementary and Secondary Education (BESE) approved the Louisiana State Student Standards in English language arts and mathematics. This action by BESE replaces the Common Core State Standards with unique state standards developed through a collaborative statewide process which included extensive public input and the work of Louisiana educator-led committees. Academic standards define the knowledge and skills that students are expected to learn in a subject in each grade. Please visit these sites for more information:
http://bese.louisiana.gov/documents-resources/newsroom/2016/03/04/bese-approves-louisiana-student-standards-adopts-2016-17-education-funding-formula

http://www.louisianabelieves.com/academics/louisiana-student-standards-review

All Louisiana State Standards were retrieved from:
https://www.louisianabelieves.com/docs/default-source/teacher-toolbox-resources/k-12-ela-standards.pdf?sfvrsn=34
Background

Based on the Disney film

Music and lyrics by Phil Collins

Book by David Henry Hwang

Adapted from the story Tarzan of the Apes by Edgar Rice Burroughs
Tarzan of the Apes is one of the best known characters in all of fiction. The lord of the jungle was the subject of 24 novels by Edgar Rice Burroughs, as well as authorized sequels by Fritz Leiber, Joe Lansdale, Philip Jose Farmer, Robin Maxwell, and Will Murray. He’s also been the main character of a radio program, newspaper comic strips, numerous comic books, multiple TV shows, and countless movies. Despite all this, there are many things people don’t know about this near-mythic character. The original novels are full of interesting and bizarre details that have seldom made it to other media. So with the new *The Legend of Tarzan* releasing in July 2016, we thought it would be a good time to look back at Tarzan as he appeared in the original novels.

Photo credit: Warner Bros. Pictures via The Nerdist
In the world of Edgar Rice Burroughs (pictured above), the great apes have their own unique language. And according to this primate dialect, “tar” means “white,” and “zan” means “skin.” Put these two together, and voila, you get “Tarzan.” In the novels, Tarzan’s adoptive ape-mother, Kala, gives him this name when she sees his pale, hairless skin.

But Burroughs didn’t come up with that name out of nowhere. In 1910, while he was living in Chicago, Burroughs fell in love with the southern California community of Tarzana. He even purchased some land there. Several years later, when he needed a name for the human boy raised by apes, he thought of Tarzana. He dropped that final vowel from the end, and a legend was born.

Interestingly, the community wasn’t officially named Tarzana—or anything else, for that matter—until it incorporated and got a post office in 1930. This has led to the urban myth that the town was named for the ape-man, but the truth is actually the other way around.
Everybody knows Tarzan was raised by gorillas. It’s part of the established Tarzan lore . . . right? Well, this is a common misconception. In fact, it’s so common that a number of movies have gotten it wrong.

Tarzan was actually raised by a species of ape unknown to science. These creatures resemble gorillas in size and strength, but they differ in other ways. These great apes often walk upright, hunt animals, eat meat, and have a spoken language. They call themselves the “mangani,” and Burroughs describes them as “huge,” “fierce,” and “terrible.” He adds that they’re “a species closely allied to the gorilla, yet more intelligent.” Thanks to their smarts and strength, the mangani are “the most fearsome of these awe-inspiring progenitors of man.”

As for gorillas, the mangani refer to them as the “bolgani.” And believe it or not, Tarzan actually does battle with these massive primates. In *Tarzan of the Apes*, Burroughs describes a young Tarzan’s first encounter with a massive gorilla:

“He had taken scarce a dozen steps toward the jungle when a great form rose up before him from the shadows of the low brush. At first he thought it was one of his own people but in another instant he realized it was Bolgani, the huge gorilla.
So close was he that there was no chance for flight and little Tarzan knew that he must stand and fight for his life; for these great beasts were the deadly enemies of his tribe, and neither one nor the other ever asked or gave quarter.

The Lost Civilizations

There were other writers who wrote fantasy stories about Africa before Edgar Rice Burroughs, and they undoubtedly influenced him. The most important of these writers was H. Rider Haggard, an author who specialized in vivid descriptions of lost cities in novels like *She* and *King Solomon’s Mines*.

Burroughs started writing four decades after Haggard, but there were still huge sections of Africa that hadn’t been mapped or explored. It was easy to think that there were undiscovered civilizations on the so-called “dark continent,” and Burroughs let his imagination run wild. He created over a dozen of these realms for Tarzan’s adventures.

For example, Opar is the last remains of an ancient Atlantean outpost. It’s populated by ape-like men and gorgeous women. Opar also contains a fabulous fortune in gold ingots and precious stones, all hidden within the city. Tarzan raids this treasure to replenish his personal fortune. As for the name, it’s possible that Opar was inspired by the wealthy, biblical city of Ophir. Then there’s the City of God, one of Burroughs’s most unusual creations. The ruler of this community is a British scientist who’s dubbed himself “God,” and he uses his knowledge of genetics to place his mind into the body of a gorilla.
He also has imbued a tribe of gorillas with human intelligence and the personalities of Henry VIII and the members of his royal court. It’s quite possible that this all-powerful ape was the inspiration for the DC Comics supervillain Gorilla Grodd.

Of course, we’re just scratching the surface here. In *Tarzan and the Ant-Men*, our hero finds two rival cities populated with 46-centimeter-tall (18 in) humans. In *Tarzan, Lord of the Jungle*, there’s a valley inhabited by crusaders, stranded there since the 12th century. And in *Tarzan Triumphant*, we find a city of epileptic religious fanatics who view their seizures as a gift from God.

Then there’s Pal-ul-don, a city inhabited by dinosaurs, and let’s not forget Xuja, a town of lost madmen who raise lions for food and worship parrots and monkeys. There’s also Kaji and Zuli, cities ruled by a wizard who uses an occult gem to control both populations. And then there’s the Portuguese-style castle run by the descendants of conquistadores and local Africans. It’s the only lost city in all of Tarzan’s Africa that is not run by white-skinned people.

7 Tarzan Is A British Lord

![Tarzan Is A British Lord Image](image-url)
While he spends most of his time swinging through the jungle, Tarzan is really a British lord. If you’ve seen the 1984 film *Greystoke: The Legend of Tarzan, Lord of the Apes*, then you might already know about his aristocratic background. But Tarzan’s birthright is actually established in the first novel. In the book, Tarzan’s parents, John and Alice Clayton, are also Lord and Lady Greystoke. They die in the first novel, and it’s not until the end of *The Return of Tarzan* that the ape-man claims his proper inheritance.

“Lord” isn’t exactly a title, though. In England, it’s the form of address used when speaking to a duke, marquess, earl, viscount, or baron. So what was Tarzan’s proper title? Burroughs reveals this when one of the Knights of Nimmr meets the ape-man in chapter 19 of *Tarzan, Lord of the Jungle*:

“‘I am called Tarzan,’ said the ape-man.

‘And thy rank?’ inquired Sir Bertram.

*Tarzan* was mystified by the strange manners and garb of his seemingly friendly inquisitor, but he sensed that whatever the man might be he took himself quite seriously and would be more impressed if he knew Tarzan was a man of position, and so he answered him truthfully, in his quiet way.

‘A viscount,’ he said.”

This would mean that Tarzan, who was named after his father, is actually John Clayton, Viscount Greystoke. Then again, in *Tarzan Alive*, the unauthorized “biography” of the lord of the jungle, Philip Jose Farmer points out that the title of viscount was not used in England until the 15th century. In other words, the Knights of Nimmr wouldn’t have recognized it. Farmer then suggests that Tarzan also held the older title of Earl of Greystoke. While that’s not official, the movie *Greystoke* actually supports this theory.
Beginning with the Johnny Weissmuller movies of the 1930s, Tarzan and Jane were often shown living in a primitive but elaborate tree house, deep in the jungle. Surprisingly, this was not the case in the novels. Tarzan’s English-style house is first described in *The Eternal Lover*, a Burroughs novel where Tarzan has a minor role:

“South of Uziri, the country of the Waziri, lies a chain of rugged mountains at the foot of which stretches a broad plain where antelope, zebra, giraffe, rhinos and elephant abound, and here are lion and leopard and hyena preying, each after his own fashion, upon the sleek, fat herds of antelope, zebra, and giraffe. Here, too, are buffalo—irritable, savage beasts, more formidable than the lion himself Clayton says. It is indeed a hunter’s paradise, and scarce a day passed that did not find a party absent from the low, rambling bungalow of the Greystokes in search of game and adventure . . .”

We get a slightly more detailed picture of the house in *The Son of Tarzan* when our hero offers to let a girl named Meriem stay there. According to Burroughs, Tarzan lives in a “flower-covered bungalow behind which lay the barns and outhouses of a well-ordered African farm.”

When he’s not off fighting wild animals or discovering lost cities, Tarzan is surprisingly domestic.
Edgar Rice Burroughs Killed Jane

The first actress to play Jane Porter was Enid Markey in *Tarzan of the Apes*. Unfortunately, Ms. Markey was a brunette, which went against Burroughs’s image of Jane. In the novels, Jane is actually a blonde. (She isn’t British, either. She’s actually from Maryland.) It didn’t help that Burroughs hated Markey’s performance. In fact, he supposedly hated it so much that he killed off Jane in his next story.

In the first chapter of *Tarzan the Untamed*, Tarzan is away from home when World War I breaks out. When he returns, he finds that German soldiers have looted and burned his home, killing many of his servants and friends in the process. And shockingly, they’ve murdered Jane.

As Burroughs puts it:

“For a long time [Tarzan] stood there just looking down upon the dead body, charred beyond recognition, and then he stooped and lifted it in his arms. As he turned the body over and saw how horribly death had been meted he plumbed, in that instant, the uttermost depths of grief and horror and hatred.

Nor did he require the evidence of the broken German rifle in the outer room, or the torn and blood-stained service cap upon the floor, to tell him who had been the perpetrators of this horrid and useless crime. For a moment he had hoped against hope that the blackened corpse was not that of his mate, but when his eyes discovered and recognized the rings upon her fingers the last faint ray of hope forsook him.”
It's a tragic scene, and it launches Tarzan on a brutal quest for vengeance. The ape-man hunts down and kills every German soldier he can find, whether they were involved or not. It’s a departure for Tarzan, whose actions are usually very noble.

Of course, Jane wasn’t really dead. She wasn’t even mostly dead. Since the story was published as a serial, Burroughs changed Jane’s fate before the final chapter, although no one is sure why. At the end of the story, Tarzan discovers that Jane was abducted, not killed. The body he discovered was that of a maid, burned beyond recognition so the ape-man would think it was his wife. The reason for this elaborate hoax is never revealed, and it leaves a pretty big hole in the plot, but fans didn’t care.

Jane was back.

---

**4 Tarzan Auditioned For A Tarzan Movie**

Edgar Rice Burroughs had a love/hate relationship with Hollywood. He loved the exposure and extra income, but he hated the way movies changed his character. He particularly disliked Elmo Lincoln, the first movie Tarzan, who...
was afraid of heights. Lincoln was also a beefy man with a 132-centimeter (52 in) chest in contrast to the lean, athletic Tarzan of the books.

Nor was Burroughs happy with Johnny Weissmuller (pictured above), the most famous movie Tarzan. He wanted Tarzan to be articulate, but Weissmuller’s version could barely speak English. The author took out his frustration in *Tarzan and the Lion Man*. In this novel, our hero rescues a movie crew filming in the African jungle. Along the way, Burroughs mocks the actors, directors, and moviemaking in general. But the coup de grace comes in the last chapter. After his adventure, Tarzan visits Hollywood, and he’s taken to meet a casting director:

“The casting director sized Clayton up. ‘You look all right to me; I’ll take you up to Mr. Goldeen; he’s production manager. Had any experience?’

‘As Tarzan?’

The casting director laughed. ‘I mean in pictures.’

‘No.’

‘Well, you might be all right at that. You don’t have to be a Barrymore to play Tarzan. Come on, we’ll go up to Mr. Goldeen’s office.’

They had to wait a few minutes in the outer office, and then a secretary ushered them in.

‘Hello, Ben!’ the casting director greeted Goldeen. ‘I think I’ve got just the man for you. This is Mr. Clayton, Mr. Goldeen.’

‘For what?’

‘For Tarzan.’

‘Oh, m-m-m.’

Goldeen’s eyes surveyed Clayton critically for an instant; then the production manager made a gesture with his palm as though waving them away. He shook his head. ‘Not the type,’ he snapped. ‘Not the type, at all.’
Tarzan Knows Martial Arts

A man who is strong and agile enough to wrestle great apes probably doesn’t need more of an edge, but he has one anyway. According to Joe Lansdale’s authorized novel, *Tarzan, the Lost Adventure*, the ape-man once visited the Shaolin Temple to study kung fu. For this list, though, we’re going to limit ourselves to the Burroughs novels. So did Edgar Rice give Tarzan martial arts skills? Well, in *The Beasts of Tarzan*, Burroughs talks about this in a general way:

“With a low snarl the beast now hurled himself at Tarzan, but the ape-man had found, among other things in the haunts of civilized man, certain methods of scientific warfare that are unknown to the jungle folk. Whereas, a few years since, he would have met the brute rush with brute force, he now sidestepped his antagonist’s headlong charge, and as the brute hurtled past him swung a mighty right to the pit of the ape’s stomach.”

It looks like Tarzan has learned to box, and it’s safe to assume that he studied wrestling, too. It’s even possible that he’s studied *savate*, the French form of kickboxing, since the European who introduced him to civilization was a Frenchman named Paul d’Arnot. But the one martial art we know for certain he studied is *jujitsu*. In *Tarzan the Untamed*, Burroughs writes:

“The ape-man, as the girl watched him, seemed entirely unprepared for the charge and she looked to see him borne down and slain at the first rush. The great bull [ape] was almost upon him with huge hands outstretched to seize him before Tarzan made a
move, but when he did move his quickness would have put Ara, the lightning, to shame. As darts forward the head of Histah, the snake, so darted forward the left hand of the man-beast as he seized the left wrist of his antagonist. A quick turn and the bull’s right arm was locked beneath the right arm of his foe in a jujutsu hold that Tarzan had learned among civilized men—a hold with which he might easily break the great bones, a hold that left the ape helpless.”

2 Tarzan And Jane Are Immortal

In *Tarzan’s Quest*, the ape-man comes into conflict with the Kavuru, a hostile tribe that’s terrorizing the jungle and stealing women. They even kidnap Jane. It also turns out that the Kavuru are immortal, having developed a pill that grants them eternal youth. In chapter 28, the Kavuru high priest explains to Jane:

“‘You can serve the only purpose for which women are fit. Man may only attain godliness alone. Woman weakens and destroys him. Look at me! Look at my priests! You think we are all young men. We are not. A hundred rains have come and gone since the latest neophyte joined our holy order. And how have we attained this deathlessness? Through women. We are all celibates. Our vows of celibacy were sealed in the blood of women; in our own blood will we be punished if we break them. It would be death for a Kavuru priest to succumb to the wiles of a woman.’

Jane shook her head. ‘I still do not understand,’ she said.
‘But you will. Long ago I learned the secret of deathless youth. It lies in an elixir brewed of many things—the pollen of certain plants, the roots of others, the spinal fluid of leopards, and, principally, the glands and blood of women—young women. Now do you understand? ’

After Tarzan rescues Jane, they return home with a box of the immortality pills and divide them among their allies. They even let Tarzan's monkey companion, Nkima, have some of their immortal medicine. With that in mind, it’s odd that Tarzan and Jane didn’t think to get a few pills for their son, Korak, and his wife, Meriem. But they weren’t in this particular book, so the heck with them.

1 Tarzan Flew To The Center Of The Earth

In addition to the Tarzan books, Burroughs wrote several other series, including the Pellucidar novels. In these stories, adventurers David Innis and Abner Perry build an experimental drilling machine and discover the Earth is hollow. In fact, it’s even lit by an interior sun. This world is inhabited by dinosaurs, primitive humans, and a large variety of intelligent, non-human races.

In Tarzan at the Earth’s Core, the ape-man and a small group of companions go in search of Innis and Perry. Tarzan uses his wealth to finance the construction of a special dirigible called the O-220. Using this huge flying machine, they travel through a gigantic hole at the North Pole, and by passing through the tunnel, they end up in the center of the world.
The idea of a **Hollow Earth** is an actual pseudoscientific idea that’s been around since the 18th century. It’s not clear if Burroughs took this idea seriously, but he certainly found it useful in his fiction. In fact, this concept wasn’t just limited to the Earth. In his novels *The Moon Maid* and *The Moon Men*, the Moon is also hollow and contains several ancient civilizations.

Matthew Baugh is the author of more than 40 published short stories and three novels: *The Vampire Count of Monte Cristo*, *A Girl and Her C.A.T.* (with Win Scott Eckert), and *The Avenger: The Sun King*. He is a longtime comic book and pop culture nerd as well as an ordained pastor.

**RETRIEVED FROM:** [http://listverse.com/2016/03/31/10-facts-about-tarzan-that-will-surprise-you/](http://listverse.com/2016/03/31/10-facts-about-tarzan-that-will-surprise-you/)
Tarzan
The king of the apes and his lady love swing to the stage in this adaptation of the Disney film.

Based on Disney's epic animated musical adventure and Edgar Rice Burrough's *Tarzan of the Apes*, *Tarzan* features heart-pumping music by rock legend, Phil Collins, and a book by Tony Award-winning playwright, David Henry Hwang. High-flying excitement and hits, like the Academy Award winning "You'll Be in My Heart," as well as "Son of Man" and "Two Worlds," make *Tarzan* an unforgettable theatrical experience.

A title that is recognizable the world over, *Tarzan* is a powerhouse of a musical that offers endless opportunities for creative staging, costuming and set design.

**Song List**

- Two Worlds
- You'll Be In My Heart
- Ten Years Pass
- Who Better Than Me
- No Other Way
- I Need to Know
- Son of Man
- Sure as the Sun Turn to Moon
- Human Invasion
- Waiting for This Moment
- Different
- Entr'acte
- Trashin' the Camp
- Like No Man I've Ever Seen
- Strangers Like Me
- For the First Time
- Who Better Than Me (Reprise)
- Everything That I Am
- You'll Be In My Heart (Reprise)
- Sure as the Sun Turn to Moon (Reprise)
- Two Worlds (Reprise)
- Bows

RETRIEVED FROM: [http://www.mtishows.com/tarzan](http://www.mtishows.com/tarzan)
Directed by David Yates and starring Alexander Skarsgård as the ape-man, The Legend of Tarzan (Warner Brothers) is a movie meant for the Summer of 2016 but it is also one more incarnation of a timeless and familiar story. Jerry Griswold considers the Tarzan Myth in his Audacious Kids: The Classic American Children’s Story, from which the following remarks are excerpted:

First appearing in All Story Magazine and then published as a book in 1914, Tarzan of the Apes immediately jumped on to the bestseller lists and has remained an enduring favorite. Among those who have singled it out for special praise have been Ronald Reagan, Ray Bradbury, Gore Vidal, and Arthur C. Clarke. In the years which followed, readers would demand some twenty-five sequels from Burroughs. The statistics are staggering: by 1970, for example, there were more than thirty-six million Tarzan books in print in thirty-one languages; in addition, there have been more than fifty Tarzan films (from the countless Saturday matinees where Johnny Weissmuller let out his famous Tarzan yell to the more recent incarnations like “Greystoke” and “George of the Jungle”). Surveying all of American culture, scholar Russel Nye concluded, "Tarzan remains the greatest popular creation of all time."

Burroughs’ private dream spoke to millions of readers and became a shared dream, a public dream, a myth. Burroughs offered to take us Back, to the fierce Origin, to the "wild" and "hairy." That means loincloth nakedness! Strip away the accretions of civilization. And that means apocalyptic truth!

Frank admission of the fact that, at bottom, we are basically animals--fiercely competitive, concerned only with our own survival. Beneath politics and good manners lies sex and the wish for dominance. Rationality is only a fragile lid covering a more potent and fundamental stew of drives, impulses, and passions. And that means freedom! From restrictions, rules, and concern for others. From the pettiness of office politics and civilized bureaucracies. Here is unchecked and untrammeled egotism. Here, only the fittest survive. Finally, what are we at the bottom? After the Bomb has fallen, after we
have been stranded on an island, in extremis? What would we really be like? Burroughs finds his answer-at-the-bottom in the realms of Darwin and Freud.

As much as Burroughs borrowed from legends about the Wild Child and from Kipling's Mowgli stories, he made an important departure from tradition when he had Tarzan raised by apes instead of wolves. Seeking his own set of origins, Burroughs followed Darwin's lead in *Origin of Species*. Burroughs' Darwinism is hardly sophisticated. Instead, he seems to have got many of his ideas from loose talk and popularizations of the naturalist's ideas that appeared in newspapers and magazines (which bandied such terms as "survival of the fittest" and "evolution" and "lower orders"); from the propositions advocated by Social Darwinians and others keen on eugenics; and from discussions evoked by the Scopes Monkey Trial, on which Burroughs himself commented.

On the appeal of Tarzan, Burroughs said: “We wish to escape the narrow confines of the city streets [the restrictions of man-made laws and the inhibitions that society has placed upon us] for the freedom of the wilderness,” Burroughs called himself a "subconscious" writer and added, "Psychologists tell me that, as the subconscious does not reason, too close a scrutiny might prove anything but flattering." Indeed, when Burroughs opens his Pandora's box, what spills out in his books are a number of sordid things: hostility to anything "other," manifested in blatant racism and sexism; voyeuristic and sadomasochistic erotics, where white women often seem to be in danger of "the fate worse than death" at the hands of hairy brutes while the hero looks on from concealment with his knife or sword in hand; and, most conspicuously, the wish for dominance, evident in the anti-social behavior of this solitaire and self-made man who is pictured in retrograde fantasies of self-importance which sometimes make Tarzan seem kin to comic-book characters like Superman and the Hulk. Here, then, is no repression or embarrassment. Here comes spilling out all the violent and erotic fantasies of the white male. Here, unchecked, is naked id.

Following Rider Haggard, Burroughs made Africa the locale for this physical and psychological nakedness. It is, of course, an "Africa" that has no objective correlative. At one point, for example, Tarzan pelts a tiger (an animal found only on the Indian subcontinent) with a pineapple (a fruit found in the Caribbean and now grown in Hawaii). Still, it is worth noting that, though the movies based on the books took even greater liberties with facts, Hailie Selassie made one request of America when he became the Emperor of Ethiopia: that Hollywood send him all of the Tarzan films. Burroughs' books, to say this differently, while not true to facts, are true to the Dream of Africa. This is the Africa of Freud, the "Absolute Elsewhere," the Dark Continent.

In the second half of the novel, the civilizing of Tarzan begins when he develops an interest in Jane Porter, an American woman stranded in the jungle. Tarzan rescues her from his ape stepbrother who...
abducted the maiden and planned to rape her. When Tarzan carries Jane off, his motives are no different. Then suddenly and unbelievably, something else happens. Tarzan's English DNA begins to crackle with communiques about "acting like a gentleman." Here Burroughs makes a stretch, suggesting that Tarzan's evolution continues more or less seamlessly into his becoming civilized--as if the rise of morality is coextensive with natural selection; as if the ultimate victor in "the survival of the fittest" would not only be the strongest, but the most ethical; as if, say, every professional football player would also perforce be a paragon of deportment. When Burroughs suddenly has Tarzan's DNA send him messages about ethics and fair play--and hastily explains Tarzan's innate knowledge of Moses' Ten Commandments and Emily Post's *Book of Etiquette* as a genetic bequest coming from generations of fine breeding among English aristocracy--Darwin meets Rousseau in fantasyland, and natural selection suddenly becomes equated with natural nobility.

One of the books in Burroughs' library was his copy of Darwin's *Descent of Man*, first purchased when he was twenty-three and on the flyleaf of which he doodled a picture of an ape and captioned it "Grandpa." In that work Burroughs would have read Darwin saying, "The wonderful progress of the United States and the character of its people are the results of natural selection; for the more energetic, restless and courageous men from all parts of Europe have emigrated during the last ten or twelve generations to that great country and have succeeded there best." It’s significant that Tarzan ends in the United States--in other words, as far as progress has taken human beings by the early part of the twentieth century. In this book, the word "natural" (natural nobility, natural selection) seems about to being slurred to sound like the word "national" (viz. national nobility, national selection).

*Jerry Griswold is professor emeritus of literature at San Diego State University and former director of the National Center for the Study of Children’s Literature. He is the author of seven books, including* Audacious Kids: The Classic American Children’s Story and Feeling Like a Kid: Childhood and Children’s Literature, *both published by Johns Hopkins University Press.*

RETRIEVED FROM: https://www.press.jhu.edu/news/blog/legend-and-literature-tarzan
Edgar Rice Burroughs Biography

Author (1875–1950)

Author Edgar Rice Burroughs created Tarzan of the Apes in 1911, eventually writing 25 novels featuring the jungle man and his wife, Jane.

Synopsis
Born September 1, 1875, Edgar Rice Burroughs was a ranch hand, a salesman and an advertising copywriter before trying fiction in 1911. He found success writing serialized stories for pulp magazines. His jungle adventure novel Tarzan of the Apes (1912) became the first of 25 books featuring Tarzan, the son of an English nobleman abandoned in Africa and raised by apes. He wrote 43 other novels.

Citation Information

Article Title
Edgar Rice Burroughs Biography

Author
Biography.com Editors

Website Name
The Biography.com website

URL
http://www.biography.com/people/edgar-rice-burroughs-9232321
Burroughs, Edgar Rice (1 Sept. 1875-19 Mar. 1950), author, was born in Chicago, the fifth of six sons of businessman George Tyler Burroughs and Mary Evaline Zieger. He was the creator of Tarzan, a unique icon of twentieth-century literature whose name is recognized around the world. Burroughs's early struggles against poverty and failure and his ultimate celebrity have been cited as the quintessential American success story.

Burroughs received his primary education in Chicago, where he studied Greek and Latin before learning English composition. Early in 1891, when an epidemic of influenza broke out in Chicago, his parents sent him to Idaho where his two older brothers, Harry and George, with a Yale University classmate named Lew Sweetser, owned a ranch in Cassia County. For a fifteen-year-old city boy, the change was dramatic and exciting. Burroughs's lifelong love of horses and cowboys dates from this period. He became an expert broncobuster and met such characters as "Texas Pete," whom he wrote into his western novel The Bandit of Hell's Bend (1925).

In fall 1891 he was sent to Phillips Academy in Andover, Massachusetts, where he was elected class president, but he rebelled against the formal curriculum and was expelled after one semester. His father, a Union cavalry officer during the Civil War, was convinced that his son needed the discipline of military training and sent him to the Michigan Military Academy at Orchard Lake (near Pontiac) in autumn 1892. The commandant was Captain Charles King, whom Burroughs greatly admired as a stern but fair disciplinarian as well as "the writer of the best army stories that ever were written." It is no accident that four fictional characters in Burroughs's later works were named "King."
After graduation from the academy in 1896, Burroughs remained briefly as assistant commandant with the rank of professor of geology, cavalry, and Gatling gun. He had set his sights on West Point but failed the entrance examinations (14 of 118 applicants were accepted), so he enlisted in the regular army, requesting the most difficult assignment possible. He soon was at Fort Grant, Arizona, attached to "B" Troop of the Seventh U.S. Cavalry. He described his duties as "digging boulevards in the desert where no boulevards were needed" and riding after Indian outlaws such as the "Apache Kid" without strategy or success. He developed a powerful sympathy for Geronimo and his band of renegade Apaches, whose history he later wrote in two acclaimed novels: The War Chief (1927) and Apache Devil (1933).

To allay the drudgery of camp life, he and a few close friends formed "The May Have Seen Better Days Club," one of whose members was a former British army officer, Carson Napier, who became the model for the hero of Burroughs's popular Venus stories, written between 1931 and 1941. Burroughs suffered severe dysentery and was sent to the post infirmary where, to his dismay, it was discovered that he had a heart murmur that would disqualify him for an army commission. He obtained an honorable discharge and returned to his brothers' cattle ranch in Idaho.

Always restless and eager to start his own business, Burroughs bought a stationery store in Pocatello in early 1898, but by the end of the year he was glad to sell it back to its original owner and rejoin his brothers at the Snake River ranch. By 1899 he had decided that the cattle business was not for him either, so he returned to Chicago to work for his father, who owned and operated the American Battery Company. At the World's Columbian Exposition in Chicago in 1893, Burroughs created a sensation by driving the world's first electric car through the fairgrounds as an advertisement for his father's company. His preoccupation with cars probably stemmed from this experience.

Encouraged by a regular salary of $15 per week, he married his childhood sweetheart, Emma Centennia Hulbert, in 1900. After three years of hand-to-mouth living, the couple yielded to the lure of gold and joined brother George in Idaho where they operated a gold dredge in the heart of the Sawtooth Mountains, a region that Burroughs later recalled as "the most beautiful spot on earth." But the gold business soon failed, and he and Emma moved to Salt Lake City, where he took a job as a railroad policeman. When this work palled, the couple returned to Chicago.

From 1904 to 1910 Burroughs held a succession of temporary jobs: he was a timekeeper for a construction company, sold light bulbs to janitors and candy to drugstores, peddled Stoddard's lectures from door to door, and worked as an accountant for the E. S. Winslow Company. Finally, at a low point, he offered his services as a commissioned officer in the Chinese army, a venture mercifully aborted.
Early in 1908 he landed an excellent job as manager of the clerical department at Sears, Roebuck & Company, but he felt that his destiny lay elsewhere and resigned in August, determined to go into business for himself.

An even bleaker period followed, during which he pawned his wife's jewelry to buy food, lunching daily on three cents' worth of ginger snaps. The couple were living in Oak Park, a suburb, when their first child was born in 1908. In 1909 a second child was born, by which time Burroughs was working as an office manager for Physicians Co-Operative Association, which sold a nostrum called "Alcola," advertising it as a cure for alcoholism. The Food and Drug Administration closed down the business within a year, after which Burroughs and his Alcola partner formed the Stace-Burroughs Company, which sold booklets (written by Burroughs) on expert salesmanship. This experience was amusingly parodied in Burroughs's *The Efficiency Expert*, written in 1919 but not published in book form until 1966.

When this company sank without a trace, Burroughs formed a business that sold pencil sharpeners. Checking through various pulp fiction magazines to see if his ads were correct, he began reading some of the stories and decided, "If people are paid for writing such rot, I can write something just as rotten."

Thus, early in 1911 he began to write his first story, influenced by the currently popular theories of astronomer Percival Lowell regarding the canals of Mars. It was a Martian romance, replete with dried riverbeds, the atmosphere plant, incredible flora and fauna, a beautiful princess, and a swashbuckling hero from Virginia named Captain John Carter. It ended in a cliffhanger that promised an exciting sequel (a Burroughs trademark). He sent it to Thomas Newell Metcalf, editor of *All-Story*, a pulp fiction magazine owned by the Frank A. Munsey Company. Metcalf accepted the story immediately, changed its title to "Under the Moons of Mars," and published it in six installments from February to July 1912. Burroughs received $400 for the story, a staggering sum for him at that time.

Metcalf suggested that Burroughs write a second story along the lines of Arthurian legend. Burroughs obliged with a carefully researched Gothic romance of the Plantagenet kings of England, entitled "The Outlaw of Torn." The manuscript was rejected by *All-Story*, but Burroughs eventually sold it to Street & Smith's *New Story Magazine* where it was published in five installments in 1914. In the meantime, he had begun writing his third story, "Tarzan of the Apes," in December 1911, finishing it the following May. It was a compelling study of the interplay between heredity and environment, which had occupied him for some time. Metcalf liked it so well that he published it complete in one issue of *All-Story* in October 1912. It was immediately popular. Burroughs received $700 and decided to devote full time to writing.
The floodgates were down: during the next twelve years he wrote eight novels and sold all of them. In true business fashion, he kept a daily ledger of the number of words written and the dates on which he began and ended each story. Although he protested that writing was a business like any other, merely to keep food on the table, he found himself expressing pent-up ideals in a way that captivated his reading public.

J. H. Tennant, editor of the *New York Evening News*, published "Tarzan of the Apes" as a serial, and other newspapers followed suit, so that a demand was created for the story in book form. After many rejection slips from major publishing houses, Burroughs received an offer from A. C. McClurg & Company, Chicago, which had previously rejected it. A contract was signed, and *Tarzan and the Apes* was published on 17 June 1914. It became a national bestseller. McClurg went on to publish twenty-nine of Burroughs's books between 1914 and 1929, subcontracting with the A. L. Burt Company for reprints of the first five Tarzan novels and with Grosset & Dunlap for reprints of all other titles. The majority of them were illustrated by J. Allen St. John, a Chicago artist who became identified with Burroughs.

For the rest of his writing career, Burroughs adopted the practice of selling first serial rights to the pulp magazines while retaining reprint and book rights for himself. Thus, with few exceptions, his works were serialized in magazines before appearing in book form. His first story, retitled *A Princess of Mars*, was published as a novel by McClurg in 1917. It was dedicated to his third child, John Coleman Burroughs, who eventually illustrated the first editions of twelve of his father's books.

*Tarzan of the Apes* was adapted for the silent screen in 1916 with Elmo Lincoln in the title role and Enid Markey as Jane. A huge success when it premiered two years later, it was one of the first six films ever made that grossed more than $1 million. Two more Elmo Lincoln films followed, as well as five additional silent films featuring, in succession, Gene Pollar, P. Dempsey Tabler, James H. Pierce (who married Burroughs's daughter), and Frank Merrill, a professional gymnast. In 1932 Olympic swimming champion *Johnny Weissmuller* made his debut as Tarzan with Irish actress *Maureen O'Sullivan* as Jane. The musclebound Weissmuller was advertised as "the world's most perfect man." He made twelve Tarzan movies from 1932 through 1948, during which time three other Olympic champions were given their chance at the role: *Buster Crabbe* (1933), Herman Brix (1935 and 1938), and *Glenn Morris* (1937). The film characterizations of Tarzan, which included both full-length features and serials, were entirely unlike the literary Tarzan, much to the disappointment of his creator.

After Weissmuller's retirement in 1948, and continuing through 1991, the successive actors to play Tarzan were Lex Barker, Gordon Scott, Denny Miller, Jock Mahoney,
Mike Henry, Ron Ely, Miles O'Keeffe, Christopher Lambert, Joe Lara, and Wolf Larson.

In 1919 Burroughs purchased a 540-acre ranch in the San Fernando Valley of California. Here, he played at being a gentleman farmer while solidifying his multimillion-dollar industry. He named the ranch "Tarzana," and the city that inevitably sprang up around him was so named on 11 December 1930 with the official installation of the Tarzana Post Office.

Burroughs incorporated himself on 26 March 1923 and by 1931 decided to publish his own books without the intervention of a "middle man." One of the most enduring enterprises initiated by Edgar Rice Burroughs, Inc., was the syndication of Tarzan in daily and Sunday newspapers, beginning in 1931 with Rex Maxon as artist; later artists included Hal Foster and Burne Hogarth. The first Tarzan radio shows were produced in 1932 featuring Burroughs's daughter, Joan, and her husband James H. Pierce (star of Tarzan and the Golden Lion, 1927). These shows were the first to be prerecorded for shipment to foreign markets. In 1934, when the Pierces left the show, Carlton Kadell assumed the title role, playing two 39-episode serials until 1935. In 1951 a new series started with Lamont Johnson as Tarzan. These half-hour features aired every Saturday night for a year. A Tarzan television series began in 1966, featuring Ron Ely, and ran for four years. A second series with Wolf Larson began in 1991 but was discontinued after two years. Meanwhile, Tarzan had become a staple for the comic book industry worldwide, while the novels were translated into thirty-four languages, including Russian, Esperanto, and Hebrew.

In 1934 Burroughs and his wife divorced. Four months later he married Florence Gilbert Dearholt, a former actress and divorcée with two small children. They divorced in 1942.

During World War II Burroughs, who in 1919 had held the rank of major in the Illinois State Militia, became the country's oldest war correspondent, serving until 1945. His "Laugh It Off" column was published regularly in the Honolulu Advertiser. He visited Australia and several Pacific atolls as a reporter, and he went on several bombing missions.

After the war, Burroughs retired to a modest home in Encino, California, where he died. His ashes were buried beneath a black walnut tree in the front yard of his corporation headquarters on Ventura Boulevard. In the last year of his life he reread all of his books "to see what I had said and how I'd said it." His published legacy was enormous, with a total of twenty-six Tarzan books, eleven Martian stories, seven Pellucidar ("Earth's Core") books, five Venus stories, and eighteen miscellaneous novels including four westerns, four social satires, a moon saga, and an incomparable
prehistoric trilogy, *The Land That Time Forgot*. He was planning a new series of stories on Jupiter at his death. An unpublished novel written in 1941, *I Am a Barbarian*, was found in his safe in 1965. It was a historical romance of imperial Rome during the reign of Caligula and was the last book to be published by Edgar Rice Burroughs, Inc.

Burroughs did not write for children. His style was lucid and poetic; his words chosen intuitively to stimulate emotion and intellect simultaneously, resulting in a basic appeal to readers of all ages. For this reason he cannot be compared with other writers, nor did he seek or desire comparisons. He rarely read fiction, preferring documentary accounts and biographies. His favorite poets were Robert Service, Henry Herbert Knibbs, and Rudyard Kipling. He greatly admired Jack London and once offered to write his biography, but he gave it up when he learned that a London biography was already in progress. Burroughs predicted the invention of radar, sonar, television, teletype, radio compass, the automatic pilot, homing devices on bombs and torpedoes, genetic cloning, living organ transplants, antigravity propulsion, and many other concepts deemed totally fantastic in his time. His soaring imagination, coupled with the sure instinct of a master storyteller, assures him a position of honor among American writers of the twentieth century.

Bibliography


George T. McWhorter

RETRIEVED FROM: [http://www.anb.org/articles/16/16-00230.html](http://www.anb.org/articles/16/16-00230.html)
Lessons

TARZAN

THE MUSICAL

BASED ON THE DISNEY FILM

MUSIC AND LYRICS BY PHIL COLLINS

BOOK BY DAVID HENRY HWANG

ADAPTED FROM THE STORY TARZAN OF THE APES BY EDGAR RICE BURROUGHS
Tarzan in the Jungle: Plants and Biomes

By Karel Sloane-Boekbinder

The story of Tarzan has been adapted many times—in books, films, television shows and stage plays, as well as serving as the inspiration for products, such as action figures and games.

This lesson begins with an exploration of the lyrics from Tarzan the Musical by David Henry Hwang with music and lyrics by Phil Collins. The lyrics are from Waiting for This Moment, a song that introduces the character of Jane and is sung at the closing of Act One. The lyrics of Waiting for This Moment include a list of plant species Jane is investigating in the jungle. Students will learn the names of the plants in the song, review where these plants come from, learn about biomes in different parts of the world including Louisiana, review longitude and latitude in map-reading and then create a map that includes plants they have studied.

Begin the lesson by explaining there are many versions or adaptations of the Tarzan and that this lesson is inspired by one, Tarzan the Musical. Ask students if they are familiar with the story of Tarzan. As a class, discuss the character Jane and how she appears in different versions/adaptations of Tarzan students may already be familiar with, such as the 1999 Disney movie. Ask students to share what they know. Write down student responses on a dry erase board or Promethean Board where they can be visible to the whole class.

Next, explain that in Tarzan the Musical Jane studies botany (the study of plants.) Display the lyrics from Waiting for This Moment where they can be seen by the whole class, such as on an ELMO or SMART board. Explain that this is the song Jane sings when we first see her character in Tarzan the Musical. Read and discuss the lyrics. Ask students if they are familiar with any of the plants.

Display the Botany of "Waiting for the Moment" sheets where they can be seen by the whole class, such as on an ELMO or SMART board. Continue to discuss the plants and whether students are familiar with any of them (some students may have one or more of these plants growing in their backyard.)

Follow this with a discussion of biomes. Display the eshootoday info sheet on biomes where it can be seen by the whole class, such as on an ELMO or SMART board. As a class, discuss the terminology. Display the Biomes of the World and Biomes of Tarzan’s Jungle information sheets where they can be seen by the whole class. Discuss the different biomes.
Follow this with a discussion of map reading. Ask students if they are familiar with reading a map. Explain maps are designed like a graph, latitude is the X axis and longitude is the Y axis. Using the **Biomes of Tarzan’s Jungle** information sheet, discuss the X,Y coordinates for the various biomes listed; as a class, consider the following questions: 1) where are the deserts? 2) Where are the tropical and subtropical grasslands? 3) Where are the tropical and subtropical moist broadleafed forests? As students discuss these biomes, ask them to use X,Y coordinates to describe each location.

As a class, review the latitude and longitude information sheets. Refer back to the **eSchoolToday** info sheet on biomes. Discuss where these biomes are located using X,Y coordinates.

Distribute a **World Longitude and Latitude (cylindrical projection)** sheet, pencils, pens and markers to each student. Refer back to the **Botany of "Waiting for the Moment"** sheets—display them where *can be seen by the whole class*, such as on an ELMO or SMART board. Ask students to find the location for each plant on their **World Longitude and Latitude (cylindrical projection)** sheet; using pencils and markers, draw the plant on the sheet. At the bottom of the sheet, ask students to use their pens to write the name of the plant, and using X,Y coordinates, write the longitude and latitude of the location where the plant is originally from.
Waiting for This Moment lyrics

Jane:
Carila papaya
Bixa orellana
Callistemon linearis
Campanula incurva
I know you all
Oh, I've been waiting for this moment
Oh, it seems like all my life
Here I am - my head is spinning
Because I'm finally living the life that I dreamed
It seems I've been waiting forever
Mimulus aurantiacus
Pedicularis attollens
Boehmeria tricuspis
I always knew you'd be this beautiful
Here and now nothing matters
Everything I wanted's here
I feel at home, I've found my place
All this beauty before me was out of my reach
I never imagined such wonder
All these friends, I feel like I know them oh so well
And though it's strange I feel they know me too
There's something strangely intoxicating
And it's going to my head
That makes me feel oh so alive
I could stay here forever and never need more
Embracing these wonders of nature
Calliandra hustoniana
Campanula barbata
Babiana rubrocyanea
Campanula fragilis
Calycanthus occidentalis
Gentiana saxosa
Oh these friends, it seems like I know them oh so well
And I can see that, ooh, they want to know me too
It's such a liberating feeling
And it's happening to me
I've never felt this glow inside
New, exciting, inviting, wanting to play
I cannot resist this temptation, temptation
Botany of "Waiting for the Moment"

Carila Papaya- Actual Name Carica Papaya. It is exactly what you think, it is a papaya plant! This plant originated in Central America and The Gulf of Guinea, and was not introduced to other parts of the world until the "Triangle Trade" when seeds were taken over to the new world and beyond. NOW it actually grows in tropical places all over the world because of it. Here is a map! Make sure to look for Pre and not after 1900!

Bixa Orellana- Also originated in Central America, also called the Annato tree. are the source of annatto dye, which contains the soluble reddish-orange carotenoid pigment known as bixin, one of the most widely used natural colorants in the world (second only to saffron in economic importance). Annatto has major uses in the food and cosmetics industries and annual world consumption exceeds 10,000 metric tons. Here is a map where they are located.

Callistemon Linearis- Also known as the Narrow leaf Bottle brush, I will update with more information as I find it out. As of now it only grows in Australia ONLY. See a Map!

Campanula Incurva- Also known as an Evia Bellflower, Enormous inflated ice blue flowers - resembling flared ended wine glasses, in bloom during the summer. Native to Greece.
**Mimulus Aurantiacus**- The sticky monkey flower, or the orange bush monkey flower. This flower can grow in any sort of dirt and is a traditional Native American Flower that is used to heal burns and cuts. It also grows all over the world!

**Pedicularis Attolens**- Also known as the Little Elephants Head. Grows in Meadows and Mountains of the West coast of America. See it's Map!

**Boehmeria Tricuspis**- Grows from June to August in the Hill of Asia. up to 1400 meters up! It likes to grow next to rivers and stream and grows well in sandier places.

**Calliandra Hustoniana**- a fast growing small tree or large shrub with fine feathery foliage and bright red fine structured powderpuff flowers. It is found mostly in Central America, but can also be found in the tropical parts of Asia, Africa, and Australia.

**Campanula Barbata**- also know as the Bearded Bellflower, very similar in look to the Campanula Incurva, but grow in the opposite direction. Grows in Norway, France, Italy and Central Europe during the months June-August.
**Babiana Rubrocyanea** - grows in the sands of the West Cape. Only in Australia, has been known to also survive in the temperatures of California.

**Campanula Fragilis** - Native to only small parts of Spain, Italy and Germany, this plant enjoys autumn weather, before the snow to bloom in.

**Calycanthus Occidentalis** - also known as the Western Sweetshrub, grows in the northern Coast Range, the southern Cascades Range, and the western Sierra Nevada. Some American Indians used scraped bark medicinally in treating severe colds. See a Map of where it grows here!

**Gentiana Saxsosa** - a low-growing, evergreen perennial with basal rosettes of spoon-shaped to linear, fleshy, dark green leaves, often flushed purple-brown and, in summer, short leafy stems bear upright, bell-shaped, white flowers with pale green or purple-brown veining. Grows in South and Stewart Islands, New Zealand, on sand dunes and coastal rocks.

RETRIEVED FROM: [http://tarzan-lses-nh.blogspot.com/](http://tarzan-lses-nh.blogspot.com/)

What is a biome?

Biomes are very large ecological areas on the earth’s surface, with fauna and flora (animals and plants) adapting to their environment. Biomes are often defined by abiotic factors such as climate, relief, geology, soils and vegetation. A biome is NOT an ecosystem, although in a way it can look like a massive ecosystem. If you take a closer look, you will notice that plants or animals in any of the biomes have special adaptations that make it possible for them to exist in that area. You may find many units of ecosystems within one biome.

There are five major categories of biomes on earth. In these five, there are many sub-biomes, under which are many more well defined ecosystems.

**The Desert Biomes:** They are the Hot and Dry Deserts, Semi Arid Deserts, Coastal Deserts and Cold Deserts.

**The Aquatic Biomes:** Aquatic biomes are grouped into two, Freshwater Biomes (lakes and ponds, rivers and streams, wetlands) and Marine Biomes (oceans, coral reefs and estuaries).

**The Forest Biomes:** There are three main biomes that make up Forest Biomes. These are the Tropical Rainforest, Temperate and Boreal Forests (also called the Taiga).

**The Grassland Biomes:** There are two main types of grassland biomes: the Savanna Grasslands and the Temperate Grasslands.

**The Tundra Biomes:** There are two major tundra biomes—The Artic Tundra and the Alpine Tundra.

Biomes play a crucial role in sustaining life on earth. For example, the Aquatic biome is home to millions of fish species and the source of the water cycle. It also plays a very important role in climate formation. The terrestrial biomes provide foods, enrich the air with oxygen and absorb carbon dioxide and other bad gases from the air. They also help regulate climate and so on.

RETRIEVED FROM: [http://eschooltoday.com/ecosystems/what-is-a-biome.html](http://eschooltoday.com/ecosystems/what-is-a-biome.html)
Biomes of Tarzan’s Jungle
Latitude and Longitude

Latitude - The lines on a map or globe that measure the distance north or south of the earth's equator.
Longitude - The distance on the earth’s surface, measured east or west from the prime meridian at Greenwich, England, to the meridian passing through a position, expressed in degrees (or hours), minutes, and seconds.
Biomes of the world

RETRIEVED FROM:
https://www.tes.com/lessons/zUnRpdFUzIV6w/environments-ecosystems-and-biomes-flipped-geography

Wetlands Biomes

RETRIEVED FROM:
http://slideplayer.com/slide/7054742/

Information on Longitude and Latitude RETRIEVED FROM:
http://mrkash.com/activities/latitudelongitude.html

Biomes of West Africa:
English Language Arts Standards » Literacy Standards » Grade 4

Integration of Knowledge and Ideas

RL.4.3: Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character’s thoughts, words, or actions).

RL.4.7: Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text.

Research to Build and Present Knowledge

W.4.7: Conduct short research projects that build knowledge through investigation of different aspects of a topic.

English Language Arts Standards » Literacy Standards » Grade 7

Key Ideas and Details

RL.7.1: Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

RL.7.3: Analyze how particular elements of a story or drama interact (e.g., how setting shapes the characters or plot).

Integration of Knowledge and Ideas

RL.7.9: Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history.

English Language Arts Standards » Literacy Standards » Grades 9-10

Research to Build and Present Knowledge
W.9-10.7: 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.

W.9-10.1: Draw evidence from literary or informational texts to support analysis, reflection, and research.

Mathematics Standards » Literacy Standards »
Grade 1

Operations and Algebraic Thinking 1.OA

A. Represent and solve problems involving addition and subtraction.

1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Measurement and Data 1.MD

A. Measure lengths indirectly and by iterating length units.

Mathematics Standards » Literacy Standards »
Grade 4

Operations and Algebraic Thinking 4.OA

A. Use the four operations with whole numbers to solve problems.

2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the
unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

Measurement and Data 4.MD

A. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. **Represent measurement quantities using diagrams** such as number line diagrams that feature a measurement scale.

Mathematics » Grade 7

Expressions and Equations 7.EE

B. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

Geometry 7.G

A. Draw, construct, and describe geometrical figures and describe the relationships between them.

1. Solve problems involving scale drawings of geometric figures, such as computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

B. Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

Mathematics Standards » Algebra II

Linear, Quadratic, and Exponential Models★ F-LE
A. Construct and compare linear, quadratic, and exponential models and solve problems.

2. Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

B. Interpret expressions for functions in terms of the situation they model.
IMAGE OF TARZAN AND JANE with plants RETRIEVED FROM: https://buckingtrends.me/2015/08/04/a-real-swingin-musical-sure-as-sun-turns-to-moon-3-d-theatricals-tarzan-is-a-regional-premiere-worthy-waiting-for/
Comparing the Past and the Present, Tarzan in the Jungle

By Karel Sloane-Boekbinder

Stories reflect the culture of the time when they are written. The norms and values of a culture (how people interact, how they speak, personal and public rituals, what they believe about people that are NOT part of their culture) are found in the way that culture tells its stories. Cultural norms and values appear in the characters—how the characters are described (what they wear, what they say, how and where they live.) What does the “good guy” look like? How does the “good guy” speak? Is the “good guy” male or female? What does the “bad guy” look like? How does the “bad guy” speak? Is the “bad guy” male or female? Stories often include symbols that communicate culture. Symbols are reminders to the reader of the opinions, views, expectations and truths that are woven into the fabric of the culture the story comes from.

Edgar Rice Burroughs first published chapters of *Tarzan of the Apes* in *All-Story Magazine* in 1912. Edgar Rice Burroughs’ *Tarzan of the Apes* reflected the cultural norms and values of the United States in 1912. The chapters were assembled and published as a book in 1914. *Tarzan of the Apes* was so popular, it led to numerous sequels. The original story and the sequels were then further adapted for film and television. In 1999, Walt Disney Studios released *Tarzan*, an animated adaptation. *Tarzan the Musical* is adapted from that Disney film.

The norms and values of a culture are evidenced in the language of its stories. Cultural norms and values change over time. These changes are evidenced in the ways stories are retold. The retelling reflects the changes of the cultural norms and values. What is important today in our modern culture (how people interact, how they speak, personal and public rituals, what they believe about people that are NOT part of their culture) may be very different 100 years from now. Changes in culture—changes in opinions, views, expectations and truths are very evident in *Tarzan* and the many adaptations that have appeared over the last 100 years.

This lesson guides students as they reflect on what they already know about *Tarzan* and then introduces two versions: the original 1912 *Tarzan of the Apes*, written by Edgar Rice Burroughs and the 2006/2017 *Tarzan the Musical* by David Henry Hwang with music and lyrics by Phil Collins. This lesson will involve reading two versions of the *Tarzan* story, a synopsis of the original by Edgar Rice Burroughs and a synopsis of the modern adaptation by David Henry Hwang with music and lyrics by Phil Collins. Student will read both versions twice, the first time, to review language the author uses that indicate the author's opinion about
something; the second, to identify similarities and difference between the telling of each version of the story. Discovering the language that each writer uses as well as the similarities and differences between the two versions will give students opportunities to reflect on language and how language can be used as an expression of cultural norms, an expression of the opinions, views, expectations and truths that are woven into the fabric of the culture the story comes from.

After reading the synopsis of *Tarzan of the Apes* by Edgar Rice Burroughs and the synopsis of *Tarzan the Musical*, students will compare the differences and similarities between the original story first published in 1912 and the adaptation being performed in 2017 by the Jefferson Performing Arts Society. What do they have in common? What has changed? After exploring the differences and similarities between the telling of the same story, students will have the opportunity to develop an essay that reflects on the authors’ use of language, shifts in U.S. opinions, views, expectations and truths and how U.S. culture has changed over time.

Begin the lesson by asking students if they are familiar with the story of *Tarzan*. Tell students that in just a moment they will have a chance to share what they know about the story. Also tell students that they will be looking at two versions, or adaptations, of *Tarzan* and exploring how this story has developed over time: the original version, *Tarzan of the Apes* by Edgar Rice Burroughs, written in 1912 and *Tarzan the Musical*, written in 2006, and, both versions reflect the culture of the time when they are written. Explain the norms and values of a culture, the culture’s beliefs and opinions (how people interact, how they speak, personal and public rituals, what they believe about people that are NOT part of their culture) are found in the way that authors in that culture tell their stories.

Define opinion by writing down a definition on a dry erase board or Promethean Board where it can be visible to the whole class. As a suggestion, here is a definition that comes from Merriam-Webster on-line:

1a : a view, judgment, or appraisal formed in the mind about a particular matter <We asked them for their opinions about the new stadium.>  
b : APPROVAL, ESTEEM <I have no great opinion of his work.>

2a : belief stronger than impression and less strong than positive knowledge <a person of rigid opinions>  
b : a generally held view <news programs that shape public opinion>

Discuss the definition of opinion with the class.

Explain an author’s opinions appear in the language they choose for their writing. An author’s opinion can be clearly seen, such as in an essay written to persuade someone toward a particular viewpoint or an information essay that is filled with facts that support the writer’s argument. An author’s opinion can be less formally stated, too, which can make it more difficult to see. An example of a less formally stated opinion can be in the language an author uses to describe characters or settings.

As an example, an author could write, “*The jungle was resplendent, lush and green and sunlight streamed through the leaves.*” OR, an author could write, “*The jungle was immense, full of shadows, big leaves and towering trees.*” Compare these two sentences. As a class reflect on the authors’ choices of words. Ask students to identify the descriptive words in both
sentences. Write down student responses on a dry erase board or Promethean Board where they can be visible to the whole class.

As a class, expand the discussion by considering the following questions: What does the first sentence indicate about the author’s thoughts, opinions and beliefs about jungles? What does the second sentence indicate about the author’s thoughts, opinions and beliefs about jungles? Write down student responses on a dry erase board or Promethean Board where they can be visible to the whole class.

Explain that the author’s word choices, the language they use, reveals the author’s thoughts, opinions and beliefs about what they are writing about. An author’s word choices reveal the cultural norms of the person telling the story. The author’s thoughts, opinions and beliefs indicate their cultural norms. Cultural norms and values appear in the characters—how the characters are described (what they wear, what they say, how and where they live.) As a class, consider characters students may already be familiar with, such as Superman, Batman or Wonder Woman. As a class, consider the following questions: What does the “good guy” look like? How does the “good guy” speak? Is the “good guy” male or female? What does the “bad guy” look like? How does the “bad guy” speak? Is the “bad guy” male or female? Write down student responses on a dry erase board or Promethean Board where they can be visible to the whole class. Explain that how people and setting are depicted by the author in a story reveals the cultural perspective of the person writing the story. Revisit that stories reflect the culture of the time when they are written. The norms and values of a culture (what people believe, their opinions about other people or things, how people interact, how they speak, personal and public rituals, what they believe about people that are NOT part of their culture) are found in the way that culture tells its stories.

Next, define adaptation by writing down a definition on a dry erase board or Promethean Board where it can be visible to the whole class. As a suggestion, here is a definition that comes from Merriam-Webster on-line:

**something that is adapted; specifically: a composition rewritten into a new form**

This definition from Merriam-Webster also comes with some suggested examples:

**Examples of ADAPTATION**

1. His stage adaptation of the novel was a success.
2. The film is an adaptation of a book of the same title.

Discuss the definition of a literary adaptation with the class.

Next, distribute the KWL handouts. As a class, have students discuss the What I Know and What I Want to Know sections. Ask students to write down the responses. It may be possible that some students are already familiar with versions of *Tarzan*, such as the 1999 Disney movie. If so, ask them to share what they know. Include what they share about these other versions in the What I Know section.

Distribute copies of the synopsis of *Tarzan of the Apes* by Edgar Rice Burroughs and the synopsis of *Tarzan the Musical*, by David Henry Hwang with music and lyrics by Phil Collins to each student. Explain *Tarzan of the Apes* was written in 1912 and the Jefferson Performing
Arts Society performance of Tarzan the Musical was written in 2006. As a class, read each synopsis; identify the descriptive words that indicate the author’s opinion. Ask students to circle each descriptive word that indicates the author’s opinion.

Next, distribute a copy of the Comparing the Past and the Present, Tarzan in the Jungle Venn diagram graphic organizers to each student. Explain that students are now going to re-read Tarzan of the Apes and Tarzan the Musical on their own to compare the original and the adaptation. Once students have completed their Comparing the Past and the Present, Tarzan in the Jungle Venn diagrams (characters, setting, plot,) ask students to write responses in the “What I Learned” section of their KWL graphic organizers.

Next, distribute a copy of the Changes in Culture graphic organizers to each student. Ask students to reflect on the responses they wrote in their KWL graphic organizers and their Comparing the Past and the Present, Tarzan in the Jungle Venn diagrams. Ask students to use their responses to help them complete their Changes in Culture graphic organizers. Also ask students to reflect on the authors’ choices of words in the original story and the adaptation. Ask them to use specific examples of authors’ language by identifying the descriptive words each author uses to describe characters (people and animals) and settings (plants/the jungle.)

Next, distribute a copy of the Comparing the Past and the Present, Tarzan in the Jungle essay organizer to each student. Ask students to reflect on the responses they wrote in their Changes in Culture graphic organizers. Also ask students to continue reflecting on the authors’ choices of words in the original story and the adaptation. Ask them to use specific examples of authors’ language by identifying the descriptive words each author uses to describe characters (people and animals) and settings (plants/the jungle.) Once students have completed their Comparing the Past and the Present, Tarzan in the Jungle essay organizers ask them to write an essay.

As an extension of this lesson, ask students to read their Comparing the Past and the Present, Tarzan in the Jungle essays to the class.
Comparing the Past and the Present, Tarzan in the Jungle

Name__________________________

<table>
<thead>
<tr>
<th>K</th>
<th>W</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>What I Know</td>
<td>What I Want to Know</td>
<td>What I Learned</td>
</tr>
</tbody>
</table>
By early 1912, the John Carter stories were appearing in a regular serialized format in *All-Story* (they would later be collected and reprinted in novel form), bringing Burroughs some much needed cash. It was enough to encourage him to write about his next idea: a wild man living among apes. The first chapters of *Tarzan of the Apes* started to appear in *All-Story Magazine* in a serialized format in October 1912. They were an immediate hit.

*Tarzan of the Apes* starts off with a disclaimer from its narrator admitting that its story may not be “credible,” which is a bit of an understatement. Moving on. John Clayton, Lord Greystoke—a strong, virile man, the narrator hurriedly assures us—has been sent with his wife Alice to a British West African colony to investigate claims that black slaves there have been or are being abused. This is not the implausible part of the story, but it doesn’t matter that much, since the two of them NEVER ARRIVE, thanks to a mutiny aboard their ship that leaves them stranded on a nice shore with, on the bright side, all their luggage. Within two years, both of them are dead, mostly killed by apes, leaving behind only “the piteous wails of a tiny man-child.”
Fortunately, the toddler is picked up by one of the killer apes, Kala, who immediately starts nursing him, since her own little baby ape was tragically and somewhat conveniently killed, making her long for a replacement baby. This allows Tarzan to grow up with apes, and develop super strength. This is also about when Burroughs starts referring to Tarzan as a superior being, especially compared to an ape, thanks to his intelligence. Although since he’s grown up with apes, the poor kid doesn’t think so—he’s constantly feeling terrible about his lack of fur and his ugly face. (It’s ok, Tarzan: generations of Hollywood stars will be working to improve your self-esteem on this one.)

Tarzan also manages to teach himself to read, thanks to a suspiciously convenient trove of picture books left behind by his parents. And, despite living with a tribe of largely vegetarian apes, he slowly learns to hunt, using his father’s knife and weapons stolen from a nearby village of black warriors. (Burroughs more or less explains this away by saying that Tarzan is descended from a group of “meat-eaters” and then having Tarzan pound his chest. Burroughs, as we’ll see, was very into ideas of evolution and the power of heredity, which in his mind included a desire to eat meat.) The stealing is mostly ok because, well, he’s Tarzan, and also because the villagers killed his ape mother.

Eventually superior intelligence allows Tarzan to become the King of the Apes. Not that he’s very fond of this, since “kingship meant the curtailment of his liberty.” Responsibility is hard for us all, Tarzan.

Fortunately, before he can suffer too much from his responsibilities, a number of people—not ape people, human people—start randomly arriving, including, in no particular order: two easily distracted scholars; Tarzan’s cousin Clayton, under the understandable impression that he is the real Lord Greystoke; various evil sailors (Tarzan doesn’t like them); a black woman named Esmerelda, who, after seeing the various
skeletons, wild apes, and so on, really wants to return to Baltimore (she has a point); various Frenchmen; and oh, yes, Jane. She’s the daughter of one of the two scholars. Esmeralda appears to have come along as her chaperone, although a remarkably ineffective one. Various encounters and near-encounters occur, then lions appear, all eventually leading to this:

He took his woman in his arms and carried her into the jungle.

I have more than a few things to say about this—notably, uh, Tarzan. I get the whole raised by apes thing, but just a few seconds ago, Jane was striking Tarzan’s giant breast with her tiny hands (it’s that sort of book) protesting Tarzan’s burning kisses (as said, it’s that sort of book) and repulsing him, so what is this “his woman” stuff? Anyway, off to the jungle they go, where, after a night of gift giving including fruit and a golden locket Jane falls headlong in love with him. (Did I mention it’s that sort of book?) Incidentally, I was rather crushed to discover that the famous—or infamous—”Me, Tarzan, you, Jane,” is nowhere in the book—in their first meeting, they just kiss, protest, grunt and use sign language, without any introductions or “me” business. By the time they meet again, Tarzan can speak perfectly fluent, grammatical English and French, thus skipping the whole “Me Tarzan, you Jane,” stuff. But I anticipate.

Anyway, since Jane has been carried off to the jungle, Clayton, the professor and the French guys all charge in after her, which leads to their discovery of the black village. The French then slaughter all the male warriors of the village, though at the very last minute they kindly decide not to burn the village to the ground and leave the women and children alive. Also, Tarzan saves one of the French guys, who agrees to teach Tarzan how to speak, and turns him into a gentleman.

QUOTES FROM BOOKS

“Being raised away from society makes you stronger,” and “If there is something great in your ancestors, there will also be something great in you,” and best of all, “Even if you’re raised in the darkest depths of the wilderness, whether it’s a jungle or the
backwoods, there’s no reason you can’t grow up to be a globe-trotting, sophisticated polyglot who can also kill predators with your bare hands.”

At this point, many of you might be thinking that this is quite enough plot, what with mutinies, fighting apes, lion attacks, abductions, massacres, French lessons, and kissing and so on. You guys are not Burroughs, who, far from ending there, threw in fingerprinting, evil suitors, ocean journeys, more lions, a forest fire in Wisconsin, pirate gold, blackmail and of course the revelation that the OTHER HEIR TO THE EARLDOM OF GREYSTONE is also Tarzan’s RIVAL IN LOVE because if there’s one thing this novel can’t get enough of, besides burning kisses, lions, and fight scenes, it’s coincidence.

It all ends on a terrific cliffhanger, and I’m not ashamed to admit that I did plunge right ahead to the next book, *The Return of Tarzan*, which manages to dial the suspension of disbelief needed for the first book well past 11 all the way up to, say, 21. I won’t spoil it, except to say that if you are searching for a book that combines cheating at poker, duels in Paris, belly dancers, sacrifices to ancient sun gods, lost cities, more dead lions, more abductions, ape men, and overwrought romantic dialogue, *The Return of Tarzan* is definitely your sort of thing.

So much is going on, in fact, that even the characters often forget what’s going on, saying things like “I had almost forgotten the treasure!”—something, incidentally, that I was grateful for, since by that point I, too, had pretty much forgotten the treasure. In my defense, the chest of pirate gold in question does not, unlike the apes, the lions, and the French, attack a single person, so it’s remarkably easy to forget.

It’s probably best not to subject any of this to thoughtful scrutiny or questions, mostly because if you do, this happens:

With Tantor, the elephant, he [Tarzan] made friends. How? Ask not.
Seriously, *that’s a direct quote from the book*. But as an Official Tor.com Blogger concerned with other things beyond implausible elephant friendships, I shall give thoughtful scrutiny a try anyway. *Tarzan of the Apes* was hardly, of course, the first book—or even the first book in this readwatch—to feature a human child raised by wild animals, or to have the child gain superhuman strength and speed (and in this book, a surprising gift for foreign languages) as a result. The concept goes back to ancient times, and functions as part of the origin story for many mythological heroes and, later, a few comic book characters. *Tarzan* is also not unique in having that child come from noble birth—most of these raised by animals mythological heroes are of either divine or royal birth, or both. *The Jungle Book*, with its lower class protagonist, is the outlier here. But where *Tarzan of the Apes* does stand out is in its insistence that men, or at least, MANLY AND VIRILE MEN, do have the power to train themselves past their apparent limitations. Heredity is key, and more important than environment—but environment can improve on heredity. Again and again, *Tarzan* compares Tarzan to his cousin, Clayton, even before they meet. Clayton, like Tarzan, is noble, intelligent and strong—but never pushed past his limitations. Clayton is, therefore, for a lack of a better word, “normal.” Tarzan, with the identical heredity, was forced to keep up with young apes and fight lions, and thus becomes superhuman. Later, when Tarzan absolutely positively has to learn French, he does, and he is able to train himself to fit into European and American society within just a few months.

Realistic? No, and in that respect, *The Jungle Book* is a superior and more thoughtful take on the mythological concept of a child raised by animals. But as pure wish fulfillment, and in its insistence that humans can push past their limitations, *Tarzan* is both more hopeful and more satisfactory. And for all of its focus on strength, brawn and skill, *Tarzan* continually emphasizes that what allows Tarzan to defeat his enemies—both humans and lions—is intelligence, intuition, and—eventually—weapons. Tarzan, and, later, the French, win because they can strategize and use weapons. Strength and a lack of fear are important, but as all of those dead lions indicate, they aren’t enough.
It’s a hopeful message straight from the pre-war years of the 20th century, when Burroughs and others did believe that education and technology could and would solve everything. But it’s also a tangled message, since Tarzan draws much of his strength from his training in the jungle, which makes him superior physically to virtually everyone he meets who isn’t an ape or a lion. This is a book that wants us to believe in the superior power of the intellect, training, technology, and the United States, and yet has Tarzan’s superior power come from something else entirely.

Mari Ness lives in central Florida.

Full Synopsis

Act One

Off of the coast of Africa, a small British ship is thrown about the sea. A Victorian Father, Mother and baby wash up on a tropical beach. As the father begins to construct a shelter, a family of apes enters. The apes, Kala and Kerchak, play with their own baby. The apes and humans are of separate worlds but they share a common love of family. A leopard enters and steals the apes' baby, devastating Kala. The leopard proceeds to kill Father and Mother, but not before Mother puts her baby in a trunk for protection. Kala finds the human baby in the trunk, alone and crying. She takes him in ("Two Worlds"), and, when Kerchak finds Kala with the human baby, he is not pleased; this human baby cannot replace their son. Kala knows this but she also knows that the baby needs a family. She names the baby Tarzan. Kala comforts a crying Tarzan, promising that she will always be here for him ("You'll Be in My Heart").

Ten years pass. Tarzan is the odd man out amongst the other ape children. A group of apes are picking on him when Terk comes to his rescue. Tarzan says that he can take care of himself, but Terk points out that they both have special skills and can help each other – Terk can save Tarzan from the bullies, and Tarzan can help Terk pick fruit from a high tree. Tarzan isn't sure how he benefits in this deal, but Terk claims that he has a lot to teach Tarzan ("Who Better than Me?")

Tarzan is quite pleased with himself that he fashions a fruit picker from a stick and a stone. Kerchak sees Tarzan threaten the apes with this "weapon" and leads him deep into the jungle. Kerchak believes that the only way to protect his true ape family is to abandon Tarzan in the jungle ("No Other Way"). Kala is very distraught by Kerchak's decision, but he insists thatTarzan will hurt them when he becomes a man.

Alone in the jungle, Tarzan is confused and hurt by the rejection from his father ("I Need to Know"). Kala finds him trying to put mud on his skin to be more like an ape. She insists that he is no different from her, but he protests. She points out that they both have two hands and a heart – they are the same. However, they have to live away from the group for awhile. Tarzan vows to be the best ape ever. As Tarzan and Terk grow, Tarzan gains strength and ingenuity. Kala watches as they grow from boys to adults ("Son of Man"). Kala goes to visit Kerchak, who is not doing well without her. She tells him that Tarzan is working hard to please him, but Kerchak is still very worried for Kala, alone in the jungle, and for the threat to his family of a nearby human. Kala reassures Kerchak that she loves him despite his stubbornness, and he asks her to come home... but she insists that she can't come home alone ("Sure as Sun Turns to Moon").

In the jungle, Tarzan and Terk try to build a leopard trap; Tarzan's ability to tie knots allows him to build the trap and he tries to teach Terk to tie knots, but it doesn't work. As Terk and Tarzan bicker about Tarzan's new skill set, Terk gets caught in the trap. Just then, the leopard arrives.
Tarzan manages to spear and kill the leopard, which he presents to Kerchak. Satisfied that Tarzan is not a threat to his family, Kerchak welcomes him back home. At that moment, a gunshot is heard. Kerchak knows what this means and ushers the family back home and away from the gunshot, but Tarzan disobedies and goes in the direction of the noise.

Jane, a young Victorian woman, enters. She excitedly writes down the names of the new and enchanting flora before her eyes ("Waiting for This Moment"). In her ecstatic daze, Jane doesn't notice that she has become trapped in a plant web and that a giant creature is approaching her. Luckily, Tarzan has been watching and he rescues her. They are each shocked by the other but slowly start to get acclimated. Jane teaches Tarzan a few words, including one another's names. Tarzan is enchanted by this creature that is so different from him... and yet so similar ("Different").

Act Two

Led by Terk, the apes are trashing the human camp ("Trashin' the Camp"). Tarzan and Jane enter just in time to see the destruction. Jane is awestruck by the apes and then realizes that Tarzan is one of them. There is another gunshot, and Kerchak leads the apes – including Tarzan – off. Clayton, the expedition guide, and Porter, Jane's father, arrive. Clayton is angry that Jane has gone off on her own. She points out that she has managed to do just fine and has made an amazing discovery: apes do live in family groups as her father has always suspected. Jane also tells them about Tarzan, but Clayton dismisses the idea of an ape-man. While Jane and Porter revel over the discovery of the gorillas, Clayton schemes with his henchman about catching a few of them to take back to England to sell.

Back in the depths of the jungle, Kerchak leads the family further from the humans. Tarzan assures him that Jane means no harm, but Kerchak knows better. He tells Kala that she must tell Tarzan the truth about his origins. She is worried, but Kerchak is also worried that he'll lead the humans right to them.

Meanwhile, Jane is sketching Tarzan as they learn more about each other. Jane returns to her father, and he realizes that there is more going on with Jane and Tarzan than even she realizes ("Like No Man I've Ever Seen"). Porter goes off to do more exploring as Clayton enters. He is very critical of Jane's enthusiasm and compassion for the apes. As they are arguing, Tarzan enters. Porter returns and is pleased to meet him, but Clayton sees the potential for money. Jane asks Tarzan to take them to the apes, but he refuses because of Kerchak. Clayton is not happy about Tarzan's resistance.

Jane takes over Tarzan's education and shows him pictures of the human world. Tarzan is fascinated to learn about all of these creatures that are just like him ("Strangers Like Me"). Tarzan introduces Jane to his mother, Kala, and Jane realizes how much the apes really are Tarzan's family.
Later, Kala asks Terk to help her find Tarzan. Kerchak wants to move the family; it's time for Tarzan to come. Terk is bitter that Tarzan has been spending so much time with Jane. Jane and Tarzan muse about how much they mean to each other (“For the First Time”).

The ship arrives to take Jane and Porter home. Jane wants to bring Tarzan back to England, but he is conflicted about leaving his family and home forever. Clayton lies to Tarzan: if he shows him to the gorillas, Jane can stay with him. Tarzan convinces Terk to help him win Jane by leading the humans to the gorillas; Terk agrees against his better judgment (“Who Better than Me – Reprise”). When Tarzan takes the humans to meet the gorillas, Jane explains that there has been a misunderstanding. Kerchak enters angrily and yells at Tarzan for endangering the family by bringing the humans. He tells Tarzan that he must decide whether he is a human or an ape. Kala takes Tarzan to his family’s old house and shows him the truth of his parentage. Tarzan is stunned (“Everything That I Am”). Tarzan decides that he is a man, which means he is leaving. Kala is heartbroken, but says that she will always be with him (“You'll Be in My Heart – Reprise”).

Back at the human camp, Tarzan shows up, dressed in his father’s suit. Jane goes off to pack, and the apes enter to study Tarzan’s garments. Clayton emerges with a rifle; he starts to shoot them. Kerchak is struck. Tarzan takes Clayton’s gun, but he doesn't shoot him – he forces Clayton into the cage that Clayton had prepared for Tarzan. As Kerchak lays dying, he finally accepts that Tarzan is his son and passes along advice for how to lead the family (“Sure as Sun Turns to Moon – Reprise”).

As the crew prepares to board the ship, Porter points out that, while Jane was trying to teach Tarzan, he was actually the one teaching her. They say their goodbyes. Moments later, Jane reappears – she is staying with Tarzan... because she is home (“Two Worlds – Finale”).

RETRIEVED FROM: http://www.mtishows.com/tarzan
Comparing the Past and the Present, Tarzan in the Jungle

NAME__________________________________

After reading the synopsis of *Tarzan of the Apes* by Edgar Rice Burroughs and the synopsis of *Tarzan the Musical*, compare the differences and similarities between the original story first published in 1912 and the adaptation being performed in 2017 by the Jefferson Performing Arts Society. What do they have in common? What has changed?

**WHY DOES TARZAN’S FAMILY TRAVEL TO WEST AFRICA?**

<table>
<thead>
<tr>
<th>Tarzan of the Apes</th>
<th>Tarzan the Musical</th>
</tr>
</thead>
<tbody>
<tr>
<td>by Edgar Rice Burroughs, 1912</td>
<td>Book by David Henry Hwang</td>
</tr>
<tr>
<td></td>
<td>Music and Lyrics by Phil Collins, 2006/2017</td>
</tr>
</tbody>
</table>

**WHAT HAPPENS TO THE SHIP TARZAN’S FAMILY IS SAILING ON?**

<table>
<thead>
<tr>
<th>Tarzan of the Apes</th>
<th>Tarzan the Musical</th>
</tr>
</thead>
<tbody>
<tr>
<td>by Edgar Rice Burroughs, 1912</td>
<td>Book by David Henry Hwang</td>
</tr>
<tr>
<td></td>
<td>Music and Lyrics by Phil Collins, 2006/2017</td>
</tr>
</tbody>
</table>
Comparing the Past and the Present, Tarzan in the Jungle

**WHAT HAPPENS TO KALA’S BABY?**

<table>
<thead>
<tr>
<th>Tarzan of the Apes</th>
<th>Book by David Henry Hwang</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>by Edgar Rice Burroughs, 1912</em></td>
<td><em>Music and Lyrics by Phil Collins, 2006/2017</em></td>
</tr>
</tbody>
</table>

**WHAT HAPPENS TO TARZAN’S PARENTS?**

<table>
<thead>
<tr>
<th>Tarzan of the Apes</th>
<th>Book by David Henry Hwang</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>by Edgar Rice Burroughs, 1912</em></td>
<td><em>Music and Lyrics by Phil Collins, 2006/2017</em></td>
</tr>
</tbody>
</table>
Comparing the Past and the Present, Tarzan in the Jungle

NAME__________________________________

WHAT HAPPENS TO TARZAN?

Tarzan of the Apes
by Edgar Rice Burroughs, 1912

Tarzan the Musical
Book by David Henry Hwang
Music and Lyrics by Phil Collins, 2006/2017

HOW DOES TARZAN MEET JANE?

Tarzan of the Apes
by Edgar Rice Burroughs, 1912

Tarzan the Musical
Book by David Henry Hwang
Music and Lyrics by Phil Collins, 2006/2017
Comparing the Past and the Present, Tarzan in the Jungle

NAME__________________________________

VILLAGE OR CAMP?

Tarzan of the Apes
by Edgar Rice Burroughs, 1912

Tarzan the Musical
Book by David Henry Hwang
Music and Lyrics by Phil Collins, 2006/2017

WHO IS CLAYTON?

Tarzan of the Apes
by Edgar Rice Burroughs, 1912

Tarzan the Musical
Book by David Henry Hwang
Music and Lyrics by Phil Collins, 2006/2017
Comparing the Past and the Present, Tarzan in the Jungle

NAME__________________________

WHAT HAPPENS AT THE CONCLUSION?

Tarzan the Musical

Tarzan of the Apes
by Edgar Rice Burroughs, 1912

Book by David Henry Hwang
Music and Lyrics by Phil Collins, 2006/2017
## Comparing the Past and the Present, Tarzan in the Jungle

### Changes in Culture

<table>
<thead>
<tr>
<th>Author</th>
<th>1912: Opinions, beliefs and expectations</th>
<th><em>Tarzan the Musical</em> by David Henry Hwang with music and lyrics by Phil Collins</th>
<th>2006/2017: Opinions, beliefs and expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edgar Rice Burroughs</td>
<td><em>Tarzan of the Apes</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How does the author describe plants?:</td>
<td>Plants:</td>
<td>Plants:</td>
<td>How do the writers describe plants?:</td>
</tr>
<tr>
<td>How does the author describe animals?:</td>
<td>Animals:</td>
<td>Animals:</td>
<td>How do the writers describe animals?:</td>
</tr>
<tr>
<td>How does the author describe people?:</td>
<td>People:</td>
<td>People:</td>
<td>How do the writers describe people?:</td>
</tr>
</tbody>
</table>
Comparing the Past and the Present, Tarzan in the Jungle

Essay Organizer

Paragraph 1: How do the word choices of authors reveal the cultural norms of the time period their stories are written?
1. 
2. 
3. 

Paragraph 2: What kind of language does Edgar Rice Burroughs use in Tarzan of the Apes to describe plants, animals and people?
1. 
2. 
3. 

Paragraph 3: How do the descriptions Edgar Rice Burroughs chooses reveal the opinions and beliefs of 1912 about plants, animals and people?
1. 
2. 
3. 

Paragraph 4: What kind of language do David Henry Hwang and Phil Collins use in Tarzan the Musical to describe plants, animals and people?
1. 
2. 
3. 

Paragraph 5: How do the descriptions David Henry Hwang and Phil Collins choose reveal the opinions and beliefs of 2006/2017 about plants, animals and people?
1. 
2. 
3. 

Paragraph 6: How do the word choices of Edgar Rice Burroughs, David Henry Hwang and Phil Collins reveal how cultural norms have changed over the last 100 years?
1. 
2. 
3.
Student Standards for English Language Arts: Grade 4

Reading Standards for Literature

The following standards offer a focus for instruction each year and help ensure that students gain adequate exposure to a range of texts and tasks. Rigor is also infused through the requirement that students read increasingly complex texts through the grades. Students advancing through the grades are expected to meet each year’s grade-specific standards and retain or further develop skills and understandings mastered in preceding grades.

Key Ideas and Details

1. Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

2. Determine a theme of a story, drama, or poem from details in the text; summarize the text.

3. Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character’s thoughts, words, or actions).

Integration of Knowledge and Ideas

7. Make connections between the text of a story or drama and a visual or oral presentation of the text.

9. **Compare and contrast** the treatment of similar themes and topics (e.g., opposition of good and evil) and patterns of events (e.g., the quest) in stories, myths, and traditional literature from different cultures.

Key Ideas and Details

1. Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

2. Determine the main idea of a text and explain how it is supported by key details; summarize the text.

Craft and Structure

5. Describe the overall structure (e.g., chronology, **comparison**, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.
Integration of Knowledge and Ideas

8. Explain how an author uses reasons and evidence to support particular points in a text.

9. Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.

Writing Standards

The following standards offer a focus for instruction each year to help ensure that students gain adequate mastery of a range of skills and applications. Each year in their writing, students should demonstrate increasing sophistication in all aspects of language use, from vocabulary and syntax to the development and organization of ideas, and they should address increasingly demanding content and sources. Students advancing through the grades are expected to meet each year’s grade-specific standards and retain or further develop skills and understandings mastered in preceding grades.

Text Types and Purposes

1. Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
   a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer’s purpose.
   b. Provide reasons that are supported by facts and details.
   c. Link opinion and reasons using words and phrases (e.g., for instance, in order to, in addition).
   d. Provide a concluding statement or section related to the opinion presented.

2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly. Text Types and Purposes
   a. Introduce a topic clearly and group related information in paragraphs and sections; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.
   b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
   c. Link ideas within categories of information using words and phrases (e.g., another, for example, also, because).
d. Use precise language and domain-specific vocabulary to inform about or explain the topic.

e. Provide a concluding statement or section related to the information or explanation presented.

3. Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.

a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally.

b. Use dialogue and description to develop experiences and events or show the responses of characters to situations.

c. Use a variety of transitional words and phrases to manage the sequence of events.

d. Use concrete words and phrases and sensory details to convey experiences and events precisely.

e. Provide a conclusion that follows from the narrated experiences or events.

**Production and Distribution of Writing**

4. Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience.

5. With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.

6. With some guidance and support from adults, produce and publish grade-appropriate writing using technology, either independently or in collaboration with others.

**Research to Build and Present Knowledge**

7. Conduct short research projects that build knowledge through investigation of different aspects of a topic.

8. Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.

9. Draw relevant evidence from grade-appropriate literary or informational texts to support analysis, reflection, and research.
a. Apply grade 4 Reading standards to literature (e.g., “Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text [e.g., a character’s thoughts, words, or actions].”).
In preschool, students learn about shapes. They learn how to identify them by appearance. As an example, a shape made of straight lines with four equal sides is a square, a shape made of three straight lines is a triangle, a shape made of curved lines is a circle and so forth. In this lesson, we will expand on students’ understanding of shapes by exploring them through the lens of actors’ movement on stage (theatrical flying.)

The JPAS production of Tarzan involves lots of flying. Flight involves lift and drag, friction and flow—all three of Newton’s Laws of Motion. What is less commonly understood is that flight also involves shapes (geometry.) In the JPAS production of Tarzan, knowing the math and science of flight are very important. The way an actor moves on stage when they are flying (the actor’s flight trajectory) can be described as a series of shapes and angles.

The production involves putting over 10 actors in flight; sometimes, flying 8 performers at a time. When a performer flies in a production, they wear a flying harness. To fly these performers, JPAS is working with the professionals at ZFX. ZFX is a complete service provider for all flying effects. The performers that fly in the JPAS production of Tarzan wear something called a Tarzan Harness – These harnesses were designed specifically by ZFX for Tarzan--a harness for swinging across the stage! The performer’s harness is connected to a cable that is connected to a track; the operation involves a system of pulleys. To learn more about this company and how they connect math and science to the arts, visit: http://www.zfxflying.com/

In order to successfully make performers fly in a theatrical performance, ZFX must understand how weights and balances affect flight, how air/draft can impact the performer (aerodynamics), how the shape and weight of the performer affect flight and how degrees of turning change depending on the direction the performer is flying. Speed, altitude and distance from the stage are factors XFX has to take into account in order to develop the equipment each performer uses (harness, cable, track) when flying. Geometry is used to calculate angles for lifting off the stage and landing; there
are recommended angles for takeoff and landing (angles that determine the angle of
descent and the angle of climb—straight angles, reflex angles and angles around a
point) as well as the trajectory of the performer’s flight (the path the performer flies.)

This lesson explores the connections between math, art and flying. Students will learn
about the first artist fully fascinated by flight, explore his early designs for flying
machines, learn about the geometry involved with these designs and use Cartesian
geometry to plot an actor’s flight path across the stage, similar to how an actors’
potential trajectory is plotted in the JPAS production of Tarzan when characters fly
through the jungle.

Humans have been fascinated by flight for centuries. The first person to pursue an in
depth study of flight was a mathematician, engineer and artist—Leonardo da Vinci. Da
Vinci developed his artistic renderings of flying machines as a way to illustrate principles
in science and math. Many consider Leonardo da Vinci the father of aerodynamics. A
simple definition of aerodynamics is the study of how things are able to fly.
Aerodynamics didn’t become a science that people studied until the Wright brothers
began researching it, around 1899—400 years AFTER Leonardo da Vinci had first
thought about and explored the concept.

Flight was a fascination for Leonardo da Vinci. He studied birds, both how they moved,
and the structure of their wings. He used these studies to design flying machines. His
machines resembled modern-day hang gliders and helicopters. He was so excited by
flight, he wrote an entire book dedicated to his observations of birds and his analysis of
how they move through air; the book, or dissertation, was called the Codex on the Flight
of Birds. The Codex on the Flight of Birds was written between 1505 and 1506 and
included 500 sketches of Leonardo da Vinci’s designs.

Throughout his career, Leonardo da Vinci consistently and effectively combined
scientific theories, mathematical concepts and artistic principals into designs that were
in many cases so advanced they were hundreds of years ahead of the technology
available during the times in which he lived. His studies also encompassed anatomy,
geometry, architecture, construction and mechanics.

Da Vinci originally conceived of humans flying the way birds fly: with wings. Da Vinci’s
designs were based on the shape of the skeletal structure of a bird’s wing. His original
designs include an elaborate flying harness that would be worn and operated by the
person flying. The design was modeled after the wing bones of a bird he observed and
is very similar to a modern hang glider.

This lesson will begin with a review of an adaptation of the Tarzan story, Tarzan the
Musical, written in 2006, by David Henry Hwang with music and lyrics by Phil Collins.
The review will focus only on the first four scenes of Tarzan the Musical and will segue
into a discussion of flight. From the moment the light come up on the JPAS production of *Tarzan the Musical*, the audience sees actors “flying.” As a class, students will discuss how the actors move when they fly during these opening scenes. This discussion will include a brief investigation of Leonardo da Vinci’s *Codex on the Flight of Birds*, a deeper discussion about the shapes that appear in da Vinci’s flight illustrations (Equilateral, Isosceles and Scalene triangles) and how actors have a range of motion when they fly on stage.

Students will then have opportunities to imagine the performer from two different perspectives: the audience view from the stage and an overhead view (as if they are looking at the performer from above and the performer is in a flying harness hanging below them.) Students will have opportunities to consider the way an actor moves on stage when they are flying (the actor’s flight trajectory) by describing a series of angles and by using straight angles, reflex angles, angles around a point.

Begin the lesson by explaining there are many versions or adaptations of the *Tarzan* story and that this lesson will be focusing on one, *Tarzan the Musical*. Ask students if they are familiar with the story of *Tarzan*. Tell students that in just a moment they will have a chance to share what they know about the story.

Next, define adaptation by writing down a definition on a dry erase board or Promethean Board where it can be visible to the whole class. As a suggestion, here is a definition that comes from Merriam-Webster on-line:

**something that is adapted; specifically: a composition rewritten into a new form**

This definition from Merriam-Webster also comes with some suggested examples:

**Examples of ADAPTATION**

3. His stage *adaptation* of the novel was a success.
4. The film is an *adaptation* of a book of the same title.

Discuss the definition of a literary adaptation with the class.

As a class, discuss versions/adaptations of *Tarzan* students may already be familiar with, such as the 1999 Disney movie. Ask students to share what they know, specifically, if they can remember any characters that fly. Write down student responses on a dry erase board or Promethean Board where they can be visible to the whole class.

Explain that the adaptation they will be focusing on, *Tarzan the Musical*, has many characters that fly. From the moment the light come up on the JPAS production of *Tarzan the Musical*, the audience sees actors “flying.” Display the brief synopsis of *Tarzan the Musical*, by David Henry Hwang with music and lyrics by Phil Collins where it can be seen by the whole class, such as on an ELMO or SMART board. As a class, read the synopsis; identify the characters that are introduced (Victorian Father, Mother and baby, the apes, Kala and Kerchak and their baby, a leopard, other ape children and Terk.) Explain that most of these characters fly, beginning with the Victorian Father and...
Mother. View the images of actors in flight from previous productions of *Tarzan the Musical*.

Explain the way the actors move through the air (aerodynamics) and the path their movements take (trajectory) relate to same rules of flight that apply to other things that fly, like birds, rockets or airplanes. Explain that the way an actor moves on stage when they are flying (the actor’s flight trajectory) can be described as a series of shapes and angles. Tell students they will have opportunities to illustrate two possible flight paths actors in *Tarzan the Musical* could take as they fly across the stage.

Define the terms aerodynamics and trajectory. Display the definitions where they can be seen by the whole class, such as on an ELMO or SMART board. Discuss the definitions of aerodynamics and trajectory with the class.

Next, introduce information about the first person to pursue an in depth study of flight, the mathematician, engineer and artist Leonardo da Vinci. Explain Da Vinci used his skills as an artist to create images of flying machines and that many consider Leonardo da Vinci the father of aerodynamics. Aerodynamics didn’t become a science that people studied until the Wright brothers began researching it, around 1899—400 years AFTER Leonardo da Vinci had first thought about and explored the concept.

Flight was a fascination for Leonardo da Vinci. He studied birds, both how they moved, and the structure of their wings. He used these studies to design flying machines. His machines resembled modern-day hang gliders and helicopters. He was so excited by flight, he wrote an entire book dedicated to his observations of birds and his analysis of how they move through air; the book, or dissertation, was called the Codex on the Flight of Birds. The Codex on the Flight of Birds was written between 1505 and 1506 and included 500 sketches of Leonardo da Vinci’s designs. Da Vinci originally conceived of humans flying the way birds fly: with wings. Da Vinci’s designs were based on the shape of the skeletal structure of a bird’s wing. His original designs include an elaborate flying harness that would be worn and operated by the person flying. The design was modeled after the wing bones of a bird he observed and is very similar to a modern hang glider. *Display the images of Leonardo da Vinci’s Codex on the Flight of Birds where they can be seen by the whole class, such as on an ELMO or SMART board. Discuss the images as a class; ask students to identify the shapes in Da Vinci’s sketches (a shape made of straight lines with four equal sides is a square, □ a shape made of three straight lines is a triangle, △ a shape made of curved lines is a circle 〇 and so forth.)*

Expand on students’ understanding of shapes that appear in da Vinci’s flight illustrations by reviewing the information on triangles (*Equilateral, Isosceles and Scalene*) and angles (straight angles, reflex angles and angles around a point.) *Display the*
information where it can be seen by the whole class, such as on an ELMO or SMART board. Refer back to Image 2, from Leonardo da Vinci’s Codex on the Flight of Birds. Ask students to identify triangles (Equilateral, Isosceles and Scalene) and angles (straight angles, reflex angles and angles around a point) in da Vinici’s illustration.

Students will now have opportunities to consider the way an actor moves on stage when they are flying (the actor’s flight trajectory) by describing a series of angles and by using straight angles, reflex angles, angles around a point. Distribute a copy of The Geometry of Flight_1 to each student. Ask students to develop their own trajectory for an actor’s flight path from the audiences’ view of the actor as they fly across the stage by imagining the actor’s flying harness is attached by a cable and can slide along the track.

Once students have completed all four steps of The Geometry of Flight_1, distribute a copy of The Geometry of Flight_2 to each student. Ask students to imagine the actor’s flying harness is attached by a cable to a fixed point of the track and they are looking at the performer from above and the performer is in a flying harness hanging below them. Ask students to complete all four steps of The Geometry of Flight_2.
Synopsis Tarzan the Musical

Act One

Off of the coast of Africa, a small British ship is thrown about the sea. A Victorian Father, Mother and baby wash up on a tropical beach. As the father begins to construct a shelter, a family of apes enters. The apes, Kala and Kerchak, play with their own baby. The apes and humans are of separate worlds but they share a common love of family. A leopard enters and steals the apes' baby, devastating Kala. The leopard proceeds to kill Father and Mother, but not before Mother puts her baby in a trunk for protection. Kala finds the human baby in the trunk, alone and crying. She takes him in ("Two Worlds"), and, when Kerchak finds Kala with the human baby, he is not pleased; this human baby cannot replace their son. Kala knows this but she also knows that the baby needs a family. She names the baby Tarzan. Kala comforts a crying Tarzan, promising that she will always be here for him ("You'll Be in My Heart").

Ten years pass. Tarzan is the odd man out amongst the other ape children. A group of apes are picking on him when Terk comes to his rescue. Tarzan says that he can take care of himself, but Terk points out that they both have special skills and can help each other – Terk can save Tarzan from the bullies, and Tarzan can help Terk pick fruit from a high tree. Tarzan isn't sure how he benefits in this deal, but Terk claims that he has a lot to teach Tarzan ("Who Better than Me?")
Victorian Mother, Father and Baby, IMAGE RETRIEVED FROM:
https://www.pinterest.com/pin/230035493437072734/
Tarzan the Musical' flies into Coliseum

Arick Brooks as young Tarzan and CJ Banda as young Terk get in some practice Monday using the flying rigging that will be used in this weekend's production. From the San Angelo Broadway Academy production of *Tarzan the Musical*
Young Tarzan and the Apes, IMAGE RETRIEVED FROM:
http://www.nytimes.com/2006/05/11/theater/reviews/11tarz.html
Plotting the Course: Rehearsal Images of *Tarzan the Musical*

IMAGE RETRIEVED FROM: http://www.jamesrobertwatson.com/shows.html

IMAGE RETRIEVED FROM:
http://www.laughingplace.com/w/legacy/Lotion-View-375-2.asp/
What Is Aerodynamics?

Aerodynamics is the way air moves around things. The rules of aerodynamics explain how an airplane is able to fly. Anything that moves through air reacts to aerodynamics. A rocket blasting off the launch pad and a kite in the sky react to aerodynamics. Aerodynamics even acts on cars, since air flows around cars.

RETRIEVED FROM: https://www.nasa.gov/audience/forstudents/k-4/stories/nasa-knows/what-is-aerodynamics-k4.html

trajectory

noun  tra·jec·to·ry \\trə-ˈjek-t(ə)ri\n
Definition of TRAJECTORY

plural

trajectories

1. 1: the curve that a body (as a planet or comet in its orbit or a rocket) describes in space
2. 2: a path, progression, or line of development resembling a physical trajectory <an upward career trajectory>

RETRIEVED FROM: https://www.merriam-webster.com/dictionary/trajectory
Image 1, from Leonardo da Vinci’s Codex on the Flight of Birds

IMAGE RETRIEVED FROM: https://www.pinterest.com/pin/376472850076176627/
Image 2, from

Leonardo da Vinci’s Codex on the Flight of Birds

RETRIEVED FROM: https://www.flickr.com/photos/57440551@N03/9881350494
Image 4, from
Leonardo da Vinci’s Codex on the Flight of Birds

Modern Prototype Model

RETRIEVED FROM: https://www.youtube.com/watch?v=KiB8C4OQlIM
Triangles

A triangle has three sides and three angles

The three angles always add to 180°

Equilateral, Isosceles and Scalene

There are three special names given to triangles that tell how many sides (or angles) are equal.

There can be 3, 2 or no equal sides/angles:

<table>
<thead>
<tr>
<th>Triangle</th>
<th>Description</th>
</tr>
</thead>
</table>
| Equilateral Triangle | Three equal sides  
                        | Three equal angles, always 60°                  |
| Isosceles Triangle | Two equal sides                                   |
What Type of Angle?

Triangles can also have names that tell you what *type of angle* is inside:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Two equal angles</strong></td>
<td>Scalene Triangle</td>
</tr>
<tr>
<td><strong>No equal sides</strong></td>
<td><strong>No equal angles</strong></td>
</tr>
</tbody>
</table>

- **Acute Triangle**
  - All angles are less than 90°

- **Right Triangle**
  - Has a right angle (90°)

- **Obtuse Triangle**
  - Has an angle more than 90°
Combining the Names

Sometimes a triangle will have two names, for example:

Right Isosceles Triangle

Has a right angle (90°), and also two equal angles

Can you guess what the equal angles are?

RETRIEVED FROM: https://www.mathsisfun.com/triangle.html
A straight angle is 180 degrees.

A straight angle changes the direction to point the opposite way.

Sometimes people say "You did a complete 180 on that!" ... meaning you completely changed your mind, idea or direction.

All the angles below are straight angles:

RETRIEVED FROM: http://www.mathsisfun.com/geometry/straight-angle.html
Reflex Angles

Different Angles have different names:

A Reflex Angle is more than $180^\circ$ but less than $360^\circ$

This is a reflex angle

All the angles below are reflex angles:
Which Angle?

Remember to look carefully at which angle you are being asked to name.

The reflex angle is the larger angle.
It is more than 180° but less than 360°

If you choose the smaller angle you might have an Acute Angle, or an Obtuse Angle instead:

The larger angle is a Reflex Angle, but the smaller angle is an Acute Angle
The larger angle is a **Reflex Angle**, but the smaller angle is an **Obtuse Angle**.

RETRIEVED FROM: [http://www.mathsisfun.com/reflex.html](http://www.mathsisfun.com/reflex.html)
Angles Around a Point

Angles around a point will always add up to 360 degrees.

The angles above all add to 360°

$$53° + 80° + 140° + 87° = 360°$$

Because of this, we can find an unknown angle.
Example: What is angle "c"?

To find angle $c$ we take the sum of the known angles and take that from 360°

Sum of known angles = $110^\circ + 75^\circ + 50^\circ + 63^\circ$

= $298^\circ$

Angle $c = 360^\circ - 298^\circ$

= $62^\circ$

RETRIEVED FROM: [http://www.mathsisfun.com/angle360.html](http://www.mathsisfun.com/angle360.html)

For Younger students
Using the graph paper develop your own trajectory for an actor’s flight path from the audiences’ view of the actor as they fly across the stage. Imagine the actor’s flying harness is attached by a cable and can slide along the track. Step 1: Draw the actor’s flight as an acute angle; Step 2: Draw the actor’s flight as a right angle; Step 3: Draw the actor’s flight as an obtuse angle; and Step 4: Create and label Equilateral, Isosceles and Scalene triangles from the angles you have drawn.
Using the graph paper develop your own trajectory for an actor’s flight path as an angle around a point. Imagine the actor’s flying harness is attached by a cable to a fixed point of the track and you are looking at the performer from above and the performer is in a flying harness hanging below you. Step 1: Draw the actor’s flight with an angle under 50 degrees; Step 2: Add to the actor’s flight path two different reflex angles: acute and obtuse; Step 3: add a fourth angle; and Step 4: check your math to make sure all the angles equal 360 degrees.
The Geometry of Flight, Tarzan and Leonardo da Vinci

Sample Answer Sheets
Using the graph paper develop your own trajectory for an actor’s flight path from the audiences’ view of the actor as they fly across the stage. Imagine the actor’s flying harness is attached by a cable and can slide along the track. Step 1: Draw the actor’s flight as an acute angle; Step 2: Draw the actor’s flight as a right angle; Step 3: Draw the actor’s flight as an obtuse angle; and Step 4: Create and label Equilateral, Isosceles and Scalene triangles from the angles you have drawn.
Sample

Using the graph paper develop your own trajectory for an actor’s flight path as an angle around a point. Imagine the actor’s flying harness is attached by a cable to a fixed point of the track and you are looking at the performer from above and the performer is in a flying harness hanging below you. Step 1: Draw the actor’s flight with an angle under 50 degrees; Step 2: Add to the actor’s flight path two different reflex angles: acute and obtuse; Step 3: add a fourth angle; and Step 4: check you math to make sure all the angles equal 360 degrees.

\[25^\circ + 39^\circ + 197^\circ + 99^\circ = 360^\circ\]
English Language Arts Standards » Literacy Standards » Grade 3

Research to Build and Present Knowledge

W.3.7: Conduct short research projects that build knowledge about a topic.

W.3.8: Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.

English Language Arts Standards » Literacy Standards » Grade 4

Key Ideas and Details

RL.4.1: Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

RL.4.3: Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character’s thoughts, words, or actions).

Integration of Knowledge and Ideas

RL.4.7: Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text.

English Language Arts Standards » Literacy Standards » Grade 7

Key Ideas and Details

RL.7.1: Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
English Language Arts Standards » Literacy Standards » Grades 9-10

Research to Build and Present Knowledge

W.9-10.7: 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.

W.9-10.1: Draw evidence from literary or informational texts to support analysis, reflection, and research.

Mathematics Standards » Literacy Standards » Grade 1

Operations and Algebraic Thinking 1.OA

A. Represent and solve problems involving addition and subtraction.

1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.2

2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Measurement and Data 1.MD

A. Measure lengths indirectly and by iterating length units.

1. Order three objects by length; compare the lengths of two objects indirectly by using a third object.
Mathematics Standards » Literacy Standards » Grade 4

Operations and Algebraic Thinking 4.OA

A. Use the four operations with whole numbers to solve problems.

Measurement and Data 4.MD

A. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. **Represent measurement quantities using diagrams** such as number line diagrams that feature a measurement scale.

C. Geometric measurement: understand concepts of angle and measure angles.

5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint...

Geometry 4.G

A. Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines.

Identify these in two-dimensional figures.

Mathematics » Grade 7

The Number System 7.NS

d. Apply properties of operations as strategies to add and subtract rational numbers.

Expressions and Equations 7.EE
B. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

Geometry 7.G

A. Draw, construct, and describe geometrical figures and describe the relationships between them.

1. Solve problems involving scale drawings of geometric figures, such as computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

2. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.

B. Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

Mathematics Standards » Algebra II

Linear, Quadratic, and Exponential Models★ F-LE

A. Construct and compare linear, quadratic, and exponential models and solve problems.

2. Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).
Tarzan Jungle Parkour: Guiding Tarzan Through the Jungle

By Karel Sloane Boekbinder

The story of Tarzan has been adapted many times. In addition to books, films, television shows and stage plays, Tarzan has been the inspiration for products, such as action figures and games.

This lesson begins with an exploration of game board designs from the 1950’s that were inspired by the story of Tarzan. Students then look at imagery from a modern day Minecraft Tarzan Parkour, an on-line game that is a randomly generated parkour course that can be played with friends or alone. Components in the game map are randomly generated, so that each time a person plays the parkour will be different. Following this exploration, students will work to develop their own Tarzan parkour. To do this, they explore math concepts (Cartesian Coordinates, perimeter and area) as they design the safest route for Tarzan to navigate the jungle.

Begin the lesson by explaining there are many versions or adaptations of the Tarzan and that this lesson is inspired by one, Tarzan the Musical. Ask students if they are familiar with the story of Tarzan. As a class, discuss versions/adaptations of Tarzan students may already be familiar with, such as the 1999 Disney movie. Ask students to share what they know, specifically, what they can remember about the setting of the story. Write down student responses on a dry erase board or Promethean Board where they can be visible to the whole class.

Next, explain the story of Tarzan has been adapted many times. In addition to books, films, television shows and stage plays, Tarzan has been the inspiration for products, such as action figures and games. Display imagery from a board game designed in the 1950’s that was inspired by the story of Tarzan. Display the imagery where it can be seen by the whole class, such as on an ELMO or SMART board. As a class, discuss versions/adaptations of Tarzan students may already be familiar with, such as the 1999 Disney movie. Ask students to share what they know, specifically, what they can remember about the setting of the story. Write down student responses on a dry erase board or Promethean Board where they can be visible to the whole class.

Next, define parkour. Display the definition where it can be seen by the whole class, such as on an ELMO or SMART board. Ask if any students have played games with a parkour (either outdoors or on-line;) ask students to discuss parkour they have played.

Follow this by displaying information about Minecraft Tarzan Parkour. Display the definition where it can be seen by the whole class, such as on an ELMO or SMART board. Ask if any students have played this game; if they have, as them to describe how the game changes each time they play. If no one in the class has played, explain Minecraft Tarzan Parkour is an on-line game that is a randomly generated parkour
course that can be played with friends or alone. Components in the game map are randomly generated, so that each time a person plays the parkour will be different.

Next, explain students will be developing their own *Tarzan* parkour. Space and distance will factor in determining how they design the obstacles of the parkour. They will be creating the layout and design of both the parkour (obstacles) and a plan for *Tarzan* to successfully complete it. Their parkour will include tree traps, leopard dens, bodies of water and mountain ranges.

Distribute copies of *Tarzan Jungle Parkour* graph paper, the *Tarzan Jungle Parkour_1* and _2* calculation sheets (Cartesian Coordinates, perimeter and area,) pencils and markers to each student. Display information about Cartesian Coordinates, perimeter and area *where it can be seen by the whole class*, such as on an ELMO or SMART board. Discuss Cartesian Coordinates, perimeter and area. Explain students will be using this information to help them design both the obstacles in their parkour and a route for Tarzan to successfully cross their obstacle course.

As a class, guide students through the creation of one obstacle in their parkour, a tree trap. Explain that a tree trap is inspired by designs *Minecraft* in and includes both the tree and blocks that surround the tree (the trap.) The trap around the tree is disguised (either with grass, branches or some other element.) To design the tree trap, students will sketch a rectangle for the tree top, a rectangle for the tree trunk and a rectangle around the bottom of the tree trunk (the trap.) Explain that the tree trap can be sketched anywhere on their *Tarzan Jungle Parkour* graph paper. Once students have sketched their tree trap, ask students use their *Tarzan Jungle Parkour_1* calculation sheet (Cartesian Coordinates, perimeter and area) to record the coordinates, perimeter and area of their tree trap.

Once the group activity is complete, ask students to continue designing their parkour by including: 1) at least one more tree trap; 2) at least one leopard den; 3) at least one body of water (river or lake;) and 4) at least one mountain range. Ask students to continue recording Cartesian Coordinates, perimeter and area for each obstacle.

Once students have completed their *Tarzan Jungle Parkour* designs on graph paper, the *Tarzan Jungle Parkour_1* and _2* calculation sheets, ask them to write down the coordinates of the best route for Tarzan to cross the parkour.

As an extension of this lesson, students can trade their *Tarzan Jungle Parkour* graph paper designs with a partner. The partner can look at the parkour and write down a way to cross it (using Cartesian Coordinates.) Once they create a route, both students can share what they have come up with. Are the routes the same? Are they different? Students can discuss their routes to discover the similarities and differences.
This Tarzan Gameboard/map was issued by Weston's English Quality Biscuits. The game pieces include character head markers of Tarzan, Akut, Numa and Sheeta.
About these ads

RETRIEVED FROM:
https://dmichaelmay.wordpress.com/2013/04/17/tarzan-a-to-z-opar/
parkour

[pahr-ˈkoo ɹ, -ˈkawɹ, -ˈkohɹ]
noun
1. the sport of moving along a route, typically in a city, trying to get around or through various obstacles in the quickest and most efficient manner possible, as by jumping, climbing, or running:
   his amazing parkour skills.

RETRIEVED FROM: http://www.dictionary.com/browse/parkour
Tarzan Parkour Map 1.8.7/1.8

Updated: February 26, 2015

This map is a randomly generated parkour course that can be played with friends or alone. The entire tree in the map is randomly generated, and each time you play it will be different. This feature is made possible due to invisible bats placing blocks. Ghasts will try to shoot you down, and you must use your items strategically in order to reach the top!

Tarzan Parkour Map Screenshots:
Let’s Play:

Tarzan Parkour Map Installation:
• Go to Start Menu > Type %appdata%/.minecraft/saves folder
• Download the map from the link provided below and extract file
• Drag the downloaded file into the “saves” folder
• Close tabs, run Minecraft and be ready to enjoy new map

**Download Links:**

**For 1.8**


[http://www.mediafire.com/download/7h4m99pt93377h9/Tarzan+v2.0+%286%29.zip](http://www.mediafire.com/download/7h4m99pt93377h9/Tarzan+v2.0+%286%29.zip)

**Credits: GroverBurger**

Help Tarzan navigate his way through the jungle. Using the graph paper develop a parkour for Tarzan so that he can avoid danger. Include the following: 1) at least two tree traps; 2) at least one leopard den; 3) at least one body of water (river or lake;) and 4) at least one mountain range. Step 1: Draw each of the obstacles in the parkour; Step 2: calculate the perimeter and area of each obstacle; Step 3: give Tarzan the coordinates of the best route for crossing the parkour.
Now write your answers here

1) Coordinates of tree trap(s):
   Top of tree
   \[ X, Y = ( \ ) ( \ ) ( \ ) ( \ ) \]
   Trunk of tree
   \[ X, Y = ( \ ) ( \ ) ( \ ) ( \ ) \]
   Trap around tree
   \[ X, Y = ( \ ) ( \ ) ( \ ) ( \ ) \]

2) Coordinates of tree trap(s):
   Top of tree
   \[ X, Y = ( \ ) ( \ ) ( \ ) ( \ ) \]
   Trunk of tree
   \[ X, Y = ( \ ) ( \ ) ( \ ) ( \ ) \]
   Trap around tree
   \[ X, Y = ( \ ) ( \ ) ( \ ) ( \ ) \]

**Perimeter of each tree trap:**
- Top of tree
- Trunk of tree
- Trap around tree

**Area of each tree trap:**
- Top of tree
- Trunk of tree
- Trap around tree

3) Coordinates of each leopard den:
   \[ X, Y = ( \ ) ( \ ) ( \ ) ( \ ) \]
   \[ X, Y = ( \ ) ( \ ) ( \ ) ( \ ) \]

**Perimeter of each leopard den:**

**Area of each leopard den:**
Write your answers here

4) Coordinates of body of water:
   X, Y = (   ,   ) (   ,   ) (   ,   ) (   ,   )
   X, Y = (   ,   ) (   ,   ) (   ,   ) (   ,   )

   Perimeter of each body of water:

   Area of each body of water:

5) Coordinates of each mountain range:
   X, Y = (   ,   ) (   ,   ) (   ,   ) (   ,   )
   X, Y = (   ,   ) (   ,   ) (   ,   ) (   ,   )

   Perimeter of each mountain range:

   Area of each mountain range:

On the back, describe the best way for Tarzan to cross your parkour. Use Cartesian Coordinates to guide Tarzan through the jungle.
Cartesian Coordinates

Cartesian coordinates can be used to pinpoint where you are on a map or graph.

Using Cartesian Coordinates we mark a point on a graph by how far along and how far up it is:

The point \((12,5)\) is 12 units along, and 5 units up.

X and Y Axis

The left-right (horizontal) direction is commonly called X.
The up-down (vertical) direction is commonly called Y.

Put them together on a graph ...

... and you are ready to go

Where they cross over is the "0" point, you measure everything from there.

- The X Axis runs horizontally through zero
- The Y Axis runs vertically through zero

**Axis**: The reference line from which distances are measured.

The plural of Axis is **Axes**, and is pronounced *ax-eez*

**Example:**

Point (6,4) is
6 units across (in the x direction), and

4 units up (in the y direction)

So \((6,4)\) means:

Go along 6 and then go up 4 then "plot the dot".

And you can remember which axis is which by:

\(x\) is A CROSS, so x is ACROSS the page.

Like 2 Number Lines Put Together

It is like we put two Number Lines together, one going left-right, and the other going up-down.
Direction

As $x$ increases, the point moves further **right**. When $x$ decreases, the point moves further to the left.

As $y$ increases, the point moves further **up**. When $y$ decreases, the point moves further down.

Writing Coordinates

The coordinates are always written in a certain order:

- the horizontal distance first,
- then the vertical distance.

This is called an "**ordered pair**" (a **pair** of numbers in a special **order**)

And usually the numbers are separated by a comma, and parentheses are put around the whole thing like this:

$$(3,2)$$

**Example:** $(3,2)$ means 3 units to the right, and 2 units up.

**Example:** $(0,5)$ means 0 units to the right, and 5 units up.

In other words, only 5 units up.
The Origin

The point (0,0) is given the special name "The Origin", and is sometimes given the letter "O".

Abscissa and Ordinate

You may hear the words "Abscissa" and "Ordinate" ... they are just the $x$ and $y$ values:

- **Abscissa**: the horizontal ("$x$") value in a pair of coordinates: how far **along** the point is
- **Ordinate**: the vertical ("$y$") value in a pair of coordinates: how far **up or down** the point is

"Cartesian" ... ?

They are called *Cartesian* because the idea was developed by the mathematician and philosopher **Rene Descartes** who was also known as **Cartesius**.

He is also famous for saying "*I think, therefore I am*".

What About Negative Values of X and Y?

Just like with the Number Line, you can also have negative values.

**Negative**: start at zero and **head in the opposite direction**:

- Negative $x$ goes **to the left**
- Negative $y$ goes **down**
A **Parallelogram** is a 4-sided flat shape with straight sides where **opposite sides are parallel**.

Also:
- opposite sides are equal in length, and
- opposite angles are equal (angles "a" are the same, and angles "b" are the same)

RETREIVED FROM: [http://www.mathsisfun.com/data/cartesian-coordinates.html](http://www.mathsisfun.com/data/cartesian-coordinates.html)
NOTE: Squares, Rectangles and Rhombuses are all Parallelograms!

**Perimeter** is the distance around a two-dimensional shape.

Example: the perimeter of this rectangle is $3+7+3+7 = 20$

The perimeter of a circle is called the circumference.

**Area** is the size of a surface.

A rectangle is a four-sided flat shape where every angle is a **right angle** (90°).

Each internal angle is 90°

Opposite sides are **parallel** and of equal length (so it is a **Parallelogram**).

**Area** = $w \times h$

$w = \text{width}$
A Square is a flat shape with 4 equal sides and every angle is a right angle (90°)

All sides are equal in length
Each internal angle is 90°
Area = $a^2$
\[ a = \text{length of side} \]
Opposite sides are parallel (so it is a Parallelogram).

Definition of parallelogram RETRIEVED FROM:
https://www.mathsisfun.com/definitions/parallelogram.html
Tarzan Jungle Parkour

Sample Answer Sheets
Help Tarzan navigate his way through the jungle. Using the graph paper develop a parkour for Tarzan so that he can avoid danger. Include the following: 1) at least 1 tree trap; 2) at least 1 leopard den; 3) at least 1 body of water (river or lake); and 4) at least 1 mountain range. Step 1: Draw each of the obstacles in the parkour; Step 2: calculate the perimeter and area of each obstacle; Step 3: give Tarzan the coordinates of the best route for crossing the parkour.
Now write your answers here

1) Coordinates of tree trap(s):
   Top of tree
   \[ X, Y = (13, 15) (13, 18) (17, 15) (17, 18) \]
   Trunk of tree
   \[ X, Y = (-10, 3) (-9, 3) (-10, 15) (-9, 15) \]
   Trap around tree
   \[ X, Y = (-11, 4) (-7, 4) (-11, 14) (-7, 14) \]

2) Coordinates of tree trap(s):
   Top of tree
   \[ X, Y = (7, 15) (7, 19) (14, 19) (14, 15) \]
   Trunk of tree
   \[ X, Y = (10, 8) (12, 8) (10, 15) (12, 15) \]
   Trap around tree
   \[ X, Y = (8, -4) (14, -4) (14, 10) \]

   **Perimeter of each tree trap:**
   
   Top of tree
   \[ 3 + 7 + 3 + 7 = 20 \]
   Trunk of tree
   \[ 6 + 1 + 6 + 1 = 14 \]
   Trap around tree
   \[ 9 + 9 + 9 + 9 = 36 \]

   **Area of each tree trap:**
   
   Top of tree
   \[ 7 \times 3 = 21 \]
   Trunk of tree
   \[ 1 \times 6 = 6 \]
   Trap around tree
   \[ 4 \times 9 = 36 \]

3) Coordinates of each leopard den:
   \[ X, Y = (-13, -19) (-13, -4) (13, -4) (13, -19) \]
   \[ X, Y = (-4, 3) (-4, 4) (-1, 4) (-1, 3) \]

   **Perimeter of each leopard den:**
   \[ 5 + 4 + 5 + 4 = 18 \]
   \[ 6 + 3 + 6 + 3 = 18 \]

   **Area of each leopard den:**
   \[ 4 \times 5 = 20 \]
   \[ 3 \times 6 = 18 \]
4) Coordinates of body of water:

Lake: \( X, Y = (-2, -11), (-12, -3), (-5, -3), (-5, -11) \)

River: \( X, Y = (2, 6), (14, 6), (7, 19), (9, 19) \)

Perimeter of each body of water:

Lake: \( 8 + 7 + 8 + 7 = 30 \)

River: \( 2 + 13 + 2 + 13 = 32 \)

Area of each body of water:

Lake: \( 7 \times 8 = 56 \)

River: \( 2 \times 13 = 26 \)

5) Coordinates of each mountain range:

\( X, Y = \{7, 1\}, \{6, 1\}, \{6, -2\} \)

Perimeter of each mountain range:

\( 3 + 13 + 3 + 13 = 39 \)

Area of each mountain range:

\( 13 \times 3 = 39 \)

On the back, describe the best way for Tarzan to cross your parkour. Use Cartesian Coordinates to guide Tarzan through the jungle.
The easiest way for Tarzan to cross the parkour is to follow a straight course across coordinates \((-14, 2)\) from west to east (left to right).

One way Tarzan can start the parkour at coordinates \((-5, -19)\) and head north until \((-5, -13)\). He can turn west and follow \((-5, -13)\) until he reaches coordinates \((-13, -13)\) then head north until \((-13, 2)\).

At coordinates \((-13, 2)\) he can head east and continue on a straight course from west to east, passing a tree trap, a leopard den, and a mountain range, until he reaches coordinates \((14, 2)\).

Sample
Mathematics Standards » Literacy Standards » Grade 1

Operations and Algebraic Thinking 1.OA

A. Represent and solve problems involving addition and subtraction.

1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.2

2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Mathematics Standards » Literacy Standards » Grade 4

Operations and Algebraic Thinking 4.OA

A. Use the four operations with whole numbers to solve problems.

2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

Measurement and Data 4.MD

2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room
given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.

C. Geometric measurement: understand concepts of angle and measure angles.

5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint...

Geometry 4.G

A. Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines.

Identify these in two-dimensional figures.

Mathematics » Grade 7

The Number System 7.NS
d. Apply properties of operations as strategies to add and subtract rational numbers.

Expressions and Equations 7.EE

B. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

Geometry 7.G

A. Draw, construct, and describe geometrical figures and describe the relationships between them.
1. Solve problems involving scale drawings of geometric figures, such as computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

2. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.

B. Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

6. Solve real-world and mathematical problems involving area, volume and surface area of two- and three dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

Mathematics Standards » Algebra II

Linear, Quadratic, and Exponential Models★ F-LE

A. Construct and compare linear, quadratic, and exponential models and solve problems.

2. Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).

B. Interpret expressions for functions in terms of the situation they model.

5. Interpret the parameters in a linear, quadratic, or exponential function in terms of a context.
ADDITIONAL RESOURCES

http://www.tarzan.org/

https://www.edgarriceburroughs.com/?page_id=16

http://www.openlettersmonthly.com/he-had-become-my-tarzan/

http://thetarzanfiles.com/

https://www.brusselsjournal.com/node/4066


https://books.google.com/books?isbn=0230347541

https://learninglab.si.edu/collections/geometry-of-flight/yzmYBLC1C8dfiNAh

http://work.chron.com/pilot-use-geometry-his-job-28640.html

http://www.langleyflyingschool.com/Pages/Aerodynamics%20and%20Theory%20of%20Flight.html


http://www ohio.edu/people/fowlerb1/training/sm/ITPG_Chapter_3_Rigging.pdf

http://math.stackexchange.com/questions/142224/analytic-geometry-in-space

http://www.aljazeera.com/programmes/2011/05/20115811409577464.html

https://books.google.com/books?isbn=0878301496

http://lemelson.mit.edu/resources/leonardo-da-vinci

https://airandspace.si.edu/exhibitions/codex/codex.cfm?page-1

https://www.pinterest.com/pin/174584923025829111/


http://www.vam.ac.uk/content/articles/l/leonardo-da-vinci-experience-experiment-design/

https://www.scholastic.com/teachers/blog-posts/genia-connell/graphic-organizers-opinion-writing/