

“What If...?”

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“Time travel is against reason,” said Filby.
“What reason?” said the Time Traveler
H.G. Wells

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Overview

In our crowded literacy curriculum, science fiction is considered a lesser literary light. In the text provided for us by the district to use with our students, there are two science fiction entries and both are completely vacuous and, frankly not worth the expenditure in precious instructional time. Yet when I observe my students with their independent reading books, many are engaged with some sort of fantasy book or science fiction novel. This unit is for these fifth graders and the many others like them, as well as for those who are not yet hooked on science fiction. This unit is not intended as a comprehensive genre study, rather through this two week unit, students will read stories and watch videos as they explore some of the important features and themes of the genre. They will simulate landing on a distant planet by conducting a mini ethnographic study. As a culminating activity, they will engage in the tantalizing exercise of speculating “What if...?” as they create their own science fiction stories that have them travel back in time to change some aspect of history.

Objectives

Throughout this unit students will:

- Understand how science fiction is often a vehicle to help us gain insights into our own society by allowing us to look at it from a distance, from the position of outsider.
- Read, analyze, and discuss good science fiction writing.
- Read and understand informational texts upon which the science fiction is based.
- Observe an “alien” society by conducting a mini ethnographic study
- Research
- Write across a variety of genres.

- Integrate information from several texts and genres on the same topic to demonstrate understanding
- Understand the implications of time travel – both scientific and ethical
- Craft a piece of science fiction in which the student, as time traveler, journeys back in time to change something in history and then reflects on the effect of the choices made

Rationale

Bruno Bettelheim posited that a society's cultural heritage was transmitted to successive generations through its literature – specifically fairy tales. In order for that to happen, the story must hold a child's attention, must entertain and arouse his or her curiosity. To enrich the child's life as well, it must stimulate his imagination, help develop his intellect, acknowledge his fears, while at the same time suggesting solutions. Fairy tales, he felt, provided children with a lens through which to view the world in all its fearsome imperfections and gave them strategies with which to cope with the turmoil produced by the unknown.⁽⁵⁾ Parents try to make the world a good and kind place for their children – a place where everybody is basically good. This, though, is an overly optimistic and unreal version of the world they will have to navigate. This view does not confront the child with the basic human predicaments and doesn't offer him an opportunity to learn that these can be grappled with and overcome. "A struggle against severe difficulties in life is unavoidable, is an intrinsic part of life. If you master all the obstacles, then in the end you emerge victorious." (Bettelheim 8) The fairy tale allows the child to face the dilemma by simplifying it and presenting it in its most essential state, thereby allowing the child to successfully overcome the problem.

I think a case can be made for science fiction continuing the work with older children begun by fairy tales with the youngest- of preparing children to deal with an uncertain, ever changing world. It's fun to read, exciting, and mind-blowing – just the type of literature to captivate young readers, especially reluctant boy readers. As students read science fiction, they may be envisioning new worlds, but they are simultaneously juxtaposing its values, as they understand them, alongside the values of their own time and place. This interface allows them to understand their world, enabling them to think more deeply about what's good and what should be changed. Science fiction is a powerful vehicle for facilitating this type of active thinking about a culture's moral, intellectual, and social values. The choices children make influence the choices they make as adults – "the child as father of the man", so it is important for our students to have opportunities to simulate choices and examine what they would do in certain situations and to examine the possibilities, distanced – without the emotional weight or being in harm's way. We live in a scary world where there are real monsters and, most ominous of all, great uncertainty. We have to be ready and able to deal with it all. Greenlaw, in discussing the importance of science fiction in the development of youngsters, notes, "The best of science fiction is moral literature. It seeks to challenge without being didactic, to exemplify the values that are held important in our society. The literature can blend with informational materials to provide a body of writing to excite the imagination and to explore the inner reaches of the mind."⁽¹⁶⁵⁾

Background

Ask a class of fifth graders, “Who here reads science fiction?” and just about every hand in the room will shoot up and wave wildly as each student calls out the title to a cherished book that has ignited his or her imagination. So what are they reading? Well, there are the books of The Hunger Games series, Riordan’s Percy Jackson, Harry Potter, The Magic Tree House books, The Giver, A Wrinkle in Time, The Time Machine, and Japanese anime. This sampling includes titles that seem to include elements of both science fiction and fantasy. How then do we define science fiction?

It is not easy to strictly define or categorize science fiction, and as Gunn suggests, perhaps it’s best to stay away from defining it – it’s too restrictive. In general, however, it deals with the future. The action played out is within the realm of the possible, extrapolating as it does, current science and technology and building on ideas that have not yet come to fruition, but seem tantalizingly near. Science fiction takes place in our universe with all its laws of science and behavior intact...Science fiction absorbs what it needs and breaks the rules necessary to convey the message.(Gunn 130)

Fantasy, on the other hand, is imaginary and not possible. It takes place in an alternate universe, a place where the laws are completely different and most things do not exist in real life, such as immortals, talking animals, the supernatural, and magic. It adds a gloss or layer of reality to events that are unlikely, if not clearly impossible, to occur. Fantasy fiction has the greatest freedom because it is completely independent of the real world.

It’s easy to see that there can be overlaps in the genres and no rigid line demarcating one from the other. It is no surprise then that a broader literary genre that would accommodate these two categories would, of necessity, evolve. It has become known as speculative fiction. This term is attributed to science fiction writer Robert Heinlein who used the phrase in an essay written in the 1940s. He used it though, as a term for science fiction and was quite adamant that it did not apply to fantasy. Nevertheless, the term speculative fiction as it is applied today refers to a big tent of a genre that includes science fiction, fantasy, horror and many like sub- genre. In speculative fiction the author does indeed speculate upon the results of changing what’s real or possible in our world and then poses the question, “What if?...” In general, it is any fiction in which the laws of that world, explicit or implicit, are different from ours. For example: if you drop a guy into a nest of snakes, that’s not speculative fiction. If you drop him into a nest of mutant snakes...ah well, that’s a little different. That’s in the realm of speculative fiction.(Neugebauer)

Despite the wide appeal of the genre, it has been a sort of stepchild in the literary family. There is little, if any room for science fiction at the already crowded curricular table and it is rarely, if ever, studied seriously as a genre in most classrooms. Science fiction is, as Gunn notes in a humorous, but pointed observation, “the disturber of the literary peace.”(129) It is often thought of as inferior literature even though it has antecedents in the respectable oft taught American masters – Twain, Melville, Poe as well as the always popular Europeans, Verne and Wells. He suggests the disdain for the genre is a result of its inability to shake its pulp magazine roots.

My students are, it seems, not alone in their appreciation of science fiction. It is fascinating to lots of people. Physicist Michio Kaku says that many scientists trace their interest in their fields back to an early interest in science fiction. Walter Mosley unashamedly admits to reading and loving science fiction. "I've been reading science fiction since I was a child. Any book that offers an alternate account for the way things are catches my attention... This is because I believe that the world we live in is so much larger, has so many more possibilities that our simple science describes." Perhaps fifth grader Stephen W. summed it up most succinctly when he noted, "It's fun."

What is it about science fiction that draws so many readers? Aside from the fact that much of it provides a 'ripping good yarn', it is a literature of ideas- it gives us knotty problems to think about. It allows authors to raise, for our consideration, thorny issues such as racism, racial and sexual identity, the nature of difference. It challenges us to think about all the things that make us who we are and urges us to rebuild human nature despite the bad DNA. "We can't", Octavia Butler notes," afford to go someplace else and make the same mistakes we made here."

Even though it seems really out there, science fiction is essentially about the here and now. Through its lens we can look at our society and perceive who and what we value and examine the consequences of our choices. Contemplating science fiction and its great appeal not only to youngsters, dreamers, and escapist, but to many African American readers, Walter Mosley noted that "the power of science fiction is that it can tear down the walls and windows, the artifice and laws by changing the logic, empowering the disenfranchised... By isolating issues from their contemporary context, those issues can be considered outside the complexities of everyday existence, traditions and prejudices that make ordinary discussions so inconclusive... Black people have been cut off from their African ancestry by the scythe of slavery and from American heritage by being excluded from history. For us, science fiction offers an alternative... promises a future full of possibilities... It allows history to be rewritten, or ignored." (33)

Science fiction is especially significant in the lives of black children, offering as it does an alternative way of dealing with legacy, tradition, and memory. (Ojetade) Reading literature is a sort of rehearsal for life, wherein we try on different personas based on the characters we encounter as we work to figure out just who we are and who we want to be. Children use what they see and read to reimagine themselves as well. Ojetade notes that if students don't see themselves as persons who are bold and courageous, who have integrity and goodness, or worse yet, don't see themselves at all, this lack of self- images can have a negative effect on a child's social and emotional growth. They will see themselves as villains. Speaking to the harmful effects of a group's vision of their own inferiority and the need to remedy the situation, Dr. Beavers commented in seminar that, "Imagination is required and should be bequeathed." Consequently, if black students see themselves in science fiction, especially as characters who are heroes, they will act this way too.

Until recently, there had been few black protagonists and almost no secondary characters in science fiction. During one of our seminar sessions, Dr. Beavers remarked that if you look at a Star Trek episode where a landing party encounters trouble, it is invariably the black crew member who will not be returning to the ship. “Black is not the color of the future.” Speculative fiction novelist Octavia Butler remembers that “...When I began reading, heck, I wasn’t in any of this stuff I read. I certainly wasn’t in the science fiction. The only black people you found were occasional characters or characters who were so feeble witted that they couldn’t manage anything anyway.”

Where were the black characters in mainstream science fiction? Mark Bould offers one possible theory to explain this major omission. From the 1950s on, science fiction writers believed the issues of race would be resolved in the future. Having emerged from an unhappy past of racial unrest, the future would be color-blind. There would be only one race, and that would be the human race. Why such optimism? The presence of unhuman races, aliens, and clever robots as well as computers with aspirations to world domination made the differences between the human races seem downright trivial.(177) Additionally, the lack of black characters also had a great deal to do with African Americans being marginalized by society. If you don’t really see blacks around you, literally, nor see them represented in the media, then it would not be likely to see them represented in that society’s literature.

One might also ask the corollary question: Where then, were the black writers? For a long time, being black and writing science fiction was not considered the norm. Most black writers, according to Mosley, were relegated to writing about being black as prescribed by the white literary establishment. At the beginning of the 21st century, however, science fiction saw a great many African American writers come in to their own, following, it would seem Octavia Butler’s rationale. Butler, not seeing herself represented in what she was reading, decided, “...When I began writing science fiction, I wrote myself in...I can write my own stories and I can write myself in.”

As more and more black writers join the ranks of such masters as Mosley, Delaney, Butler, and Due, it seems likely that they may no longer feel the need to have issues of race front and center, treading, instead, the fine line along which race is neither driving the narrative, nor is it completely ignored. It may be possible to focus more on what Butler termed “the essential human character” – thereby forcing us to think more deeply and clearly about all the things, good and bad, that make us human, helping us, as the best fiction so often does, to understand ourselves and our lives.

Note: Though more and more science fiction is currently being written by African American authors, it is still very difficult to find such texts that are appropriate in terms of reading level or subject matter for use with elementary school students. The unit will use other texts, however, to

explore the issues raised in seminar as they relate to the near absence of people of color in the genre as well as the concept of “the other”, and science fiction as a vehicle to transmit and comment on our culture and society.

Strategies

Throughout this unit students will use a variety of strategies to strengthen their literacy skills as well as their analytical and critical thinking abilities. Science fiction texts will be paired with short informational texts that explain or describe the science upon which the fiction is based or that raise ethical questions related to the story. Students will use these pairings to make connections among ideas and between texts to gain deeper understanding of what they are reading. Students will complete close readings of both types of texts and will annotate each as they read. Students will engage in whole class discussions, and work collaboratively in small groups as well as individually. They will do field research as well as print research. The work they do throughout the unit will engage them in writing across a variety of genres that include constructed responses related to their close reading, an analysis and report on their field research findings, a science fiction story of their own, and a final reflection piece.

Classroom Activities

Session 1

Introduction

Introduce the unit by asking the class, “Who here reads science fiction?”

Have students tell what books they’ve read and what they like about them.

As they’re speaking, write student responses on the white board

Student responses will likely include books that can be considered science fiction and books that seem to be fantasy. Seeing this diverse list of books will spark conversation about just what is science fiction.

Introduce the term: *speculative fiction* and explain that this is a fairly recent term that includes science fiction, fantasy, and horror.

Since most of the books mentioned will be familiar to students ask for their ideas about what constitutes a piece of science fiction – what characteristics would a reader expect?

List these on the board and save for the conclusion of the unit at which time students can revisit their first observations of science fiction and what they now know and understand.

An important point to be made at the outset of the unit, and one that students might not have perceived themselves is the idea of being “the other”.

Put up the quote by Octavia Butler:

“Even in a society where there are no religious or racial differences – people find other reasons to set aside one certain group of people and spit in their direction. It delights people to find a reason to be able to kick other people.”

Ask students to explain what they think she meant. Deconstruct it with the class.

Use it throughout the unit as a touchstone “text” – a referent for thinking about what we see in the stories and what that tells us about the past, the present, and the future of our society.

Session 2

Landing party/ethnographic study

Materials:

For this activity, provide students with clipboards and preprinted sheets with the behaviors they will need to observe and comment upon

Begin the session by discussing the idea of being a “stranger in a strange land”.

Ask students: “If you were a space traveler and found yourself on a different planet (or for the purposes of this unit – in a strange time) what would you have to know to survive? How would you go about figuring out this new world? What should you do to fit in?”

Define the word: *ethnography* and discuss the work *ethnographers* do

Provide students with an overview of this activity. Explain that they will take on this role by studying the alien world of the middle school lunch and recess. They will go to the cafeteria in groups of 3 or 4, observe the students from a designated vantage point, and take notes on what they see, compare with other members of the “landing party” and write a report of their findings.

Specifically:

They will not interact with the middle school students, nor will they talk to each other.

They will be looking for and recording data on the following:

- A description of the place
- What activity is the group engaged in?
- What behaviors do you see?
- What seem to be the rules here?
- How are they being followed?
- Who is in charge?
- Who has the most power? Who has the least?
- Are there groups within the group – are the members segregated in any way? If so, how?
- Is there one culture or many?
- What other observations can you make about what you see?

Upon returning, student groups will meet to discuss their findings and write a report about the beings on this “planet.” Each group will present its findings and the class will try to determine what we understand about how this culture works.

Students will “debrief” about their experience in a whole class discussion.

Note: If administration will not permit the younger students to come to the MS lunch for whatever reason, students may conduct the same observation outside school – at the playground, the library, pool, supermarket, etc.

Session 3

Reading: *All Summer in a Day*, by Ray Bradbury

Materials:

A copy of the story for each student that can be annotated

Copy of teacher created questions to which students will respond in their journals and as part of the class discussion

Notebooks or unit journal

Preface the reading of the story by providing students with a bit of biographical information about Ray Bradbury and his stature among the writers of science fiction. Reference some of the author's other works so that students can pursue these on their own.

Because students will be writing their own science fiction stories, explain that they should be reading with the eye of a writer.

Some things to consider: How does the writer play with words to get his ideas across?

How does the author construct this world to make it seem real?

How does the author create believable characters?

Prior to reading, determine the meaning of grade level words and phrases including their figurative and connotative meanings.

Have students complete a close reading and annotation of the story and respond to questions that get at what the author is saying (comprehension) and how he accomplishes this (craft and structure).

Some possible questions to check students understand what the text says explicitly:

The genre of this story is...

Knowing the genre is helping me to understand more about these pages because...

The main character is...

Some things I know about the character so far are...

The setting of the story is...

In my mind I am envisioning...

The biggest issue so far is...

What led to my thinking about this was...

Some possible questions for students to consider as they read for deeper meaning:

Describe how the plot unfolds in a series of episodes.

How do the characters respond or change as the plot moves towards resolution?

What is it that the author wants us to understand?

What do you predict might happen next?

Students should answer questions on their own and then meet in small groups to share their responses.

In a whole class setting discuss the questions.

Other considerations for discussion:

This is science fiction, so the setting is especially important to the story. But the essential conflict could possibly have occurred elsewhere. How then does the setting heighten the conflict?

Consider the “otherness” of the main character, especially in light of Butler’s observation.

Students will view a video of the story.

Students will compare and contrast the experience of reading to watching.

Session 4

Living in Space

(Informational text)

Materials:

Access to the internet

Prepared chart of Astronaut Characteristics (optional)

Preface the lesson by asking students to recount the background of *All Summer in a Day* – A long established working colony on Venus inhabited by men, women, and children from Earth.

Ask students:

Do you think this type of interplanetary colony will be possible in your lifetime?

Do you think this is something that you might want to do? Why? Why not?

In small groups, have students brain-storm a list of character and personality traits that a person might need in order to travel to and live on a distant planet and why those traits would be important. Have groups share their ideas and record the list and reasons on chart paper or on the smart board.

Students will do a mini-research project about Mars for background.

This will be a short piece of informational writing consisting of approximately one page.

At the conclusion, have them speculate about two aspects associated with life on Mars:

What challenges would humans who wanted to live on Mars face?

Based on what you’ve read about the planet, do you think there might have been life on Mars at one time? What happened to these beings? Could this be Earth’s fate if we continue to disregard our fragile planet’s needs?

Tell students that there are organized and funded plans to colonize Mars within the decade.

Allow them to explore the Mars-One website www.mars-one.com where they will find information about the mission.

Students will read about the mission – its goal, the technology, mission feasibility, risks and challenges, the astronauts and complete the following assignments:

- Take the Test

Who would qualify to become a prospective astronaut for this project?

On the website there is a chart of five key characteristics and what they would look like in real life.

Create a chart of these attributes

Assign a point value of 1- 5 for each category (1 being “Not so much”, 5 being “Yes that’s definitely me!”)

Have students rate themselves, trying to be as honest as possible.

Those scoring 21-25 would be eligible

Compare the attributes required by this mission with those students brainstormed.

- Choose one aspect of the mission to explore in depth.

Write a short informational piece on that topic. What is the central idea and explain how it is supported by details. Students whose reports covered the same topic will meet to synthesize their findings and report together to the class.

- Have students determine the authors’ purpose in this material. What is their point of view and how is it conveyed in the text?

At the conclusion of the presentations, talk about the Mars One mission with students. What do they think about it? Is it science fiction? Is it real? Is it somewhere in between – an example of how science fiction becomes reality? Do these volunteers really understand that they will never be back?

If time permits, choose a selection from Bradbury’s *Martian Chronicles* to use as a read-aloud.

Session 5

Reading: *Zoo*, by Edward Hoch

Materials: A copy of the story for each student that can be annotated

Teacher created text dependent questions

Poster board

Drawing materials (crayons, markers, etc.)

Prior to reading, convene a class discussion about zoos – their origin, purpose, ethical aspects in today’s world.

Have students do a close reading, annotating as they read.

Consider using the possible questions from Session 3 to have students write about the text and prepare for a class discussion.

Linger over the conclusion of the story, discussing the question: Who then, are the “others” in this story?

Students will create a poster advertising the next interplanetary zoo trip – to be used for the beings of the planet Kaan.

Poster should be visually attractive and contain all pertinent information a Kaanan would need to know in order to buy a ticket.

Session 6

Time Travel

Materials:

Copies for each student of the activity sheets:

Measuring Time and How long is a Minute? (see appendix)

Note taking sheet for video viewing

Copy of *Thief*, by Malorie Blackman to be used as a read-aloud

(Begin in this session and continue throughout the unit.)

Time travel is one of the most popular themes in science fiction. The scientific underpinnings, however, can be very hard to grasp. Since it is difficult to find informational texts explaining the science for students of this age, it might be best to introduce students to the science through a series of short videos that can be discussed afterwards.

Daily Mail article by Stephen Hawking (referenced below) is accessible to students as a shared reading text.

Begin the session by asking students what they know or think they know about time travel.

Can you travel forward in time?

Can you travel backward in time?

Why might you want to be a time traveler?

Where in time might you go and why?

What is time Anyway?

Does time mean the same for everyone?

Do the two months of summer vacation really pass by faster than two months of school?

How long is a minute? Could it depend on the person you ask?

Complete the two time activities with students and discuss the results.

View the videos with students and have them take notes.

Read the Hawking article to help come to a basic understanding of the science.

Professor Michio Kaku explains the physics of Back to the Future and Einstein's concept of time as a river www.sciencekids.co.nz/videos/physics/timetravel.html
www.howcast.com/videos/309891-How-to-Understand-Time-Travel/
Minute physics (science explained on a white board)
<https://m.youtube.com/watch?v=Ff1cA852cOM>
<https://m.youtube.com/watch?v=s5S-hA9uKEM>
<https://m.youtube.com/watch?v=Wp20Sc8qPeo>
laughingsquid.com/kids- explaining-time-travel (This video was created based on the information in an article Stephen Hawking wrote for the British Newspaper, Daily Mail
www.dailymail.co.uk/home/moslive/article-1269288/STEPHEN-HAWKING-How-build-time-machine.html

Session 7

The Butterfly Effect

Materials:

Copy of article *What is the Butterfly Effect?* for each student

www.wisageek.org/what-is-the-butterfly-effect-htm

When you discuss time travel, you also have to consider the “butterfly effect” –the concept that a small, seemingly insignificant, unnoticed action can have huge consequences.

Before reading the article and to demonstrate the theory, play a game of “Whispering Down the Lane.”

Line students up.

Whisper a phrase into the ear of the first student. (Be sure you have written it down.)

That student in turn whispers it to the next student, and so on and so on

The final student reveals the message.

The teacher then reveals the original message.

Have students describe what happened; theorize why it happened.

Explain that this is an example of the “butterfly effect” a concept that the article they are to read will explain.

Have students do a close reading and annotation of the text.

Write a summary of the text – main idea and supporting details

As a class, discuss the ideas presented in the article.

Ask students to think about how this might be connected to time travel. What are the implications for the past, present, and future of a change to anything in a particular time?

Session 8

Reading: The Sound of Thunder, by Ray Bradbury

Materials: A copy of the story for each student that can be annotated
Copy of teacher created text dependent questions
(Optional) White board on which to project a copy of the story with accompanying comic book illustrations

Prior to reading, preview vocabulary that students might struggle with- the hard and/or important words

Have students do a close reading and annotation of the story.

Possible questions may include those used for session 3

Additionally, consider the following:

Consider the literary elements of narrative; the uses of figurative language; tone and voice; word choice; sentence structure

Compare and contrast the most significant settings.

How does the author foreshadow the ending?

Why is it so important to keep to the path?

What is the central theme /central idea in this story? Other themes?

What connection can the reader make between the concept of the “butterfly effect” and this story?

What questions do you have for the author?

Did you find any discrepancies in the logic? If so, how did it affect your response to the story?

Have students discuss the questions in small groups and write their responses individually.

Convene the class for a whole group discussion.

Note: There is an episode from the original Star Trek series that deals with going back in time- “City on the Edge of Forever”. Kirk and his fellow Enterprise officers travel back to Earth’s Great Depression era and must make a decision about changing an event.

www.startrek.com/database_article/city-on-the-edge of forever-the

Time permitting, or at a later date, this would provide an interesting corollary to the dilemma raised in the Bradbury story and provide a good opportunity for students to compare/contrast the different forms or genres in terms of their approaches to similar themes and topics.

Session 9

Culminating Activity

Explain to students that they will now be able to write their own science fiction story based on a theme of time travel.

The Premise:

Students are to pick a period in American history where they might want to change something and travel back to that time. The story is to be centered in that time period and the main character’s attempt to effect change.

Having entered the world of science fiction, we have already “willingly suspended our disbelief”, so there should be few limitations on the concepts of how and where and what happens in these stories. The following requirements, however, still exist in this time as well as in any time:

- Students must include an explanation of why they chose the time period. (This could be included as a separate author’s note or as prologue.)
- Students will need to conduct research on the period- learning about the issues, the physical setting, clothes, manners – all to contribute to the authenticity
- Story should adhere to the narrative format:
 - Characters should be strong and clearly drawn.
 - Dialogue should be effective and move the action along.
 - Setting should convey a strong sense of the time.
 - Plot should be well developed.
- The time traveler should return to the present and, in epilogue form, reflect on the effects of his/her actions. Did things change? How? For the better? Did things get worse?

Note:

Throughout the year, all these skills have been taught and practiced in students’ own writing and analyzed in the course of their reading. Writing fiction though is hard work and it may be necessary to provide refresher mini-lessons on these topics.

Most of this work would be done at home, but there should be opportunities provided during writing workshop time for students to meet with peer editors and others to run ideas.

The time allotted for writing stories will vary.

At the conclusion, students will share their stories with the class. All stories will be collected, bound as a book and made part of the permanent collection in the classroom library.

Session 10 - Epilogue

Exploring the Ethics of Time Travel

Put this question on the board:

If time travel is possible, do we have a duty to go back and change some of the worst crimes against humanity?

Ask students to think about this question and do a quick write.

Additional considerations: What things do they think should be changed and why.

What might be the result of having made these changes?

After students have had time to think and write, gather again for a class discussion.

Annotated Bibliography/Resources

Bettelheim, Bruno. *The Uses of Enchantment: The Meaning and Importance of Fairy Tales*. New York: Knopf, 1976. Print.

Classic work that explains how simple fairy tales provide education and guidance.

Bould, Mark. "The Ships Landed Long Ago: Afrofuturism and Black Science Fiction." *Science Fiction Studies* 34.2 (2007): 177-186 Web. 8 May 2015.

This article explores some of the reasons for the absence of black characters in mainstream sf.

Butler, Octavia. "VISIONS:Identity. 'We Tend to Do the Right Thing When We Get Scared.'" *nytimes*. N.p., 01 Jan. 2000. Web. 15 Mar. 2015.

This is a very revealing and interesting interview with one of the best black speculative fiction authors.

Dizikes, Paul. "The Meaning of the Butterfly; Why Pop Culture Loves the 'Butterfly Effect,' and Gets it Totally Wrong." *The Boston Globe*. 6 Aug. 2008. Web. 8 May 2015.

This is an explanation of what we refer to as the "butterfly effect", its origins and application.

Dorminey, Bruce. "Should Time Travel Be a Moral Imperative?" *Forbes.com*. 8 Aug. 2013. Web. 15 Mar. 2015.

The author questions whether going back in time to right a societal wrong would be effective or would it create a greater disaster.

Flam, Faye. "The Physics of Ray Bradbury's, *A Sound of Thunder*." *Philly.com*. 5 July 2014. Web. 19 May 2015.

A Drexel professor explains what is scientifically happening in the story.

Greenlaw, M. Jean. "Science Fiction as Moral Literature." *Educational Horizons* 65.4(1987):165-167. Jstor Web. 10 May 2015.

Even in the future and in a distant galaxy, the basic core values of society will still be important.

Gunn, Jane E. "Science Fiction: Disturber of the Literary Peace." *Library Journal* 113.3 (1988): 129-133. Jstor. Web. 8 May 2015.

Discusses the reasons science fiction is not considered as 'literary' as other fiction and why it really is.

Hawking, Stephen. "How to Build A Time Machine." *Daily Mail [London]* 27 April 2010. Web. 7 May 2015.

Hawking explains how it might be possible to travel through time.

Heinlein, Robert. "Science Fiction: Its Nature, Faults, and Virtues." *Library of America* www.loa.org/sciencefiction/biographies/heinlein Web. 5 May 2015.

Essay by Heinlein on the importance of science fiction – it's more than escapist literature.

Kaku, Michio. *Physics of the Impossible*. New York: Doubleday, 2008. Print.

Well written, easy to understand explanation of the science upon which the fiction is based.

Merali Zeeya. "Tomorrow Never Was." *Discover* June 2015: 38-45. Print.
South African cosmologist challenges Einstein's theory of time as linear.

Mosley, Walter. "Black to the Future." *NYtimes*. 32-36. 01 Nov. 1998. Web. 7 May 2015.
Mosely discusses the importance of science fiction in his life and for African Americans.

Neugebauer, Annie. "What is Speculative Fiction?" *Annieneugebauer* 24 Mar. 2014. Web. 5 May 2015.

Ojetade, Balogun. "Building Black Youth Through Science Fiction and Fantasy: Why Black Children Need to Read and Write Science Fiction." *chroniclesofharriet*. 4 Oct. 2010.

Web. 7 May 2015.

African American science fiction writer discusses the importance of the science genre in the lives of black children.

Resources

Classroom Titles

Blackman, Malorie. *Thief*. London: Random House, 2011. Print.

Eleven Year old travels to the future, sees the results of events in her time and travels back to right the wrongs done to her.

Scieszka, Jon. Ed. *Guys Read: Other Worlds*. New York: Harper Collins, 2013. Print.

Anthology of science fiction stories collected just for boys. (Girls will appreciate it too.)

Wells, Rosemary. *On the Blue Comet*. Somerville: Candlewick Press, 2010. Print.

During the Great Depression a boy must sell his beloved train set in order to help raise money for the family. Time travel adventure on a train ensues.

Sources for copies of stories and full length Star Trek episode

www.scaryforkids.com/a-sound-of-thunder

includes original comic book illustrations

[staff.esuhd.org/Danielle/English Department. L Village/RT/Short Stories/All Summer in a Day.pdf](http://staff.esuhd.org/Danielle/English%20Department/L%20Village/RT/Short%20Stories/All%20Summer%20in%20a%20Day.pdf)

www.waupaca.k12.wi.us/ms_pie_documents/zoo by Edward D.pdf

www.cbs.com/shows/star_trek/video/620094838/star-trek-the-original-series-city-on-the-edge-of-forever/

www.pbs.org/wgbh/nova/physics/traveling-through-time.htm

www.wisegeek.org/what-is-the-butterfly-effect.htm#

Common Core State Standards

Fifth Grade Reading: Informational Text Standards

Key Ideas and Details

- RI.5.1. Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
- RI.5.2. Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.
- RI.5.3. Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.

Craft and Structure

- RI.5.4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
- RI.5.5. Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts.
- RI.5.6. Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.

Integration of Knowledge and Ideas

- RI.5.7. Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.
- RI.5.8. Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s).
- RI.5.9. Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.

Range of Reading and Level of Text Complexity

- RI.5.10. By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 4–5 text complexity band independently and proficiently.

Fifth Grade Reading: Literature Standards

Key Ideas and Details

- RL.5.1. Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.

- RL.5.2. Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text.
- RL.5.3. Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact).

Craft and Structure

- RL.5.4. Determine the meaning of words and phrases as they are used in a text, including figurative language such as metaphors and similes.
- RL.5.5. Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem.
- RL.5.6. Describe how a narrator's or speaker's point of view influences how events are described.

Integration of Knowledge and Ideas

- RL.5.7. Analyze how visual and multimedia elements contribute to the meaning, tone, or beauty of a text (e.g., graphic novel, multimedia presentation of fiction, folktale, myth, poem).
- RL.5.8. (Not applicable to literature)
- RL.5.9. Compare and contrast stories in the same genre (e.g., mysteries and adventure stories) on their approaches to similar themes and topics.

Range of Reading and Complexity of Text

- RL.5.10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 4–5 text complexity band independently and proficiently.

Appendix

Time Travel Student Handout

MEASURING TIME

How Long Have You Lived?

If you are 11, what percent of your life have you lived? What about if you are 40? Or 70? Or 90? Plot the ages of your friends, brothers, sisters, cousins, aunts, uncles, parents, grandparents, and great grandparents and then – using the average expectancy – figure out what percent of their lives they have lived. According to the U.S. Census bureau, the average female born today is expected to live to 83 and the average male born today to 73.

Average Life Expectancy

Female

Age in years
0 _____ 10 _____ 20 _____ 30 _____ 40 _____ 50 _____ 60 _____ 70 _____ 80 _____ 90 _____ 100

_____ | _____
100% % lived

Male

Age in Years
0 _____ 10 _____ 20 _____ 30 _____ 40 _____ 50 _____ 60 _____ 70 _____ 80 _____ 90 _____ 100

_____ | _____
100% % lived

HOW LONG IS A MINUTE?

How long is a minute? Try this activity and see if it means the same to everyone.

- Get a stopwatch or use a cell phone.
- Choose people of different ages and genders and ask them to tell you when a minute is up after you start the timer.
- Record each person's name, age, and gender and how long each person thought a minute was.
- Once you have recorded all your data, look for any patterns that might explain why some people think a minute is more or less than an actual minute.