Science Fiction

Critiquing the Present, Exploring the Future

Six Week Conceptual Unit

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Texts Used in the Unit

Science Fiction

"Frustration," by Isaac Asimov—a very short story found in his 1990 anthology *Gold*.

"Harrison Bergeron," by Kurt Vonnegut, Jr.—short story written in 1961.

Fahrenheit 451, by Ray Bradbury (1953).

Gattaca, film directed by Andrew Niccol (1997).

"The Evitable Conflict," by Isaac Asimov—the final chapter of Asimov's novel *I, Robot* (1950). Each chapter of *I, Robot* was originally published as its own stand-alone short story in the magazine *Astounding Science Fiction*.

Nonfiction

Sayles, John (September 9, 2004). Infotainment at the RNC. *The Nation*. Retrieved December 2, 2004, from http://www.thenation.com/doc.mhtml%3Fi=20040927&s=sayles

The American Library Association (2004). The 100 most frequently challenged books of 1990—2000. Retrieved December 2, 2004, from http://www.ala.org/bbooks/top100bannedbooks.html

The American Library Association (2004). Suggested editorial for banned book week. Retrieved December 2, 2004, from http://www.ala.org/ala/oif/bannedbooksweek/bbwlinks/suggestededitorial.pdf

Speech given by Newton Minnow (former chairman of the FCC) on May 9, 1961 to the National Association of Broadcasters, in which he accuses television programming of being a "vast wasteland." After lamenting the deplorable quality of television programming, he identifies how broadcasters can live up to their responsibility to deliver quality programming to their viewers. Retrieved December 2, 2004, from http://www.janda.org/b20/News%20articles/vastwastland.htm

Anonymous news report (November 1, 2000). Digital angel unveiled: Human-tracking subdermal implant technology makes debut. *World Net Daily*. Retrieved December 2, 2004, from http://www.worldnetdaily.com/news/article.asp?ARTICLE_ID=17705

Farah, Joseph (February 14, 2000). Meet the "Digital Angel"—from hell. *World Net Daily*. Retrieved December 2, 2004, from http://www.worldnetdaily.com/news/article.asp?ARTICLE_ID=14913

Dotinga, Randy (November 18, 2004). FCC crackdown could spread. *Wired News*. Retrieved December 2, 2004, from http://www.wired.com/news/politics/0,1283,65734,00.html

Human Genome Website—http://doegenomes.org

Excerpts from Kurzweil, Ray (1999). *The age of spiritual machines: When computers exceed human intelligence*. New York: Penguin Group. Excerpts are taken from the Introduction (pp. 1-6), and samples of poetry written by Kurzweil's computer (pp. 163-166).

Anonymous news report (November 4, 2004). "Brain" in a dish flies flight simulator. *CNN.com*. Retrieved December 2, 2004, from http://www.cnn.com/2004/TECH/11/02/brain.dish

Samples of visual art created by Ray Kurzweil's computer (named AARON), retrieved December 2, 2004, from http://www.kurzweilcyberart.com/aaron/static.html

Other Materials Needed for the Unit

Large Sketch Pad—to keep up with technologies, issues, and values we discuss in class throughout the unit.

Overhead Projector—used on day one, when demonstrating the kind of thinking that goes into writing in the journal.

TV and DVD Player—used on days nine and ten, when we watch *Gattaca*.

Access to a Computer Lab—for day eight, when we explore the Human Genome Project website.

Access to the Media Center (or computer lab if unavailable)—for days thirteen and fourteen, when we're working on final projects in class.

Distribution of Grades in the Unit

I plan on applying the following weights to the individual grades throughout the unit:

20%: Reading quizzes, homework, and other short assignments.

20%: Literature circle work done while reading *Fahrenheit 451*. There will be three grades, based on the three times we stop and work in literature circles as we cover the novel.

30%: Reading journal, worked on throughout the unit and handed in and graded at the end of each week. The final journal grade will be the average of each of these weekly grades.

30%: Final project.

Rationale

While science fiction is widely read for leisure, it can also be read with several pedagogical purposes in mind. Indeed, the enjoyable nature of science fiction may be of immense value in teaching reluctant readers, unmotivated learners, and students who demonstrate little success in an English class that studies texts from a more traditional literary canon. The approachability of science fiction is one of many reasons why I intend to use it as the central focus of this conceptual unit. The unit may be incorporated into a year long overarching concept of taking perspectives. Furthermore, its reliance on several nonfiction sources (the materials from which we'll study current issues) makes this unit appropriate for teaching effective reading and thinking strategies for nonfiction. Its purpose is to use science fiction as a vehicle for critiquing current issues and events, and using the knowledge we construct to consider perspectives on what the future might hold.

Lloyd Biggle, Jr. (1988) identifies several themes one may consider when teaching science fiction as current events, though his list is far from exhaustive. I plan on introducing literature related to just three themes, since I only have four to six weeks. The first theme concerns the contention between the individual and the larger society. To explore this theme, we will look at science fiction texts that explore contemporary issues such as individual rights, social demands, our culture coming under increasing surveillance, popular culture, and rampant anti-intellectualism. The second theme centers on biotechnology and the ethical issues surrounding this controversial topic. The final theme we will explore looks into rapidly evolving computer technology and artificial intelligence. As we cover each text, we will study nonfiction artifacts (such as speeches, websites, editorials, and news articles) from contemporary culture, which identify with the themes we explore in our readings. My reason for only focusing on three

themes is twofold. First, I feel that depth is more important than breadth. Secondly, it is my hope that many students will pick up an interest in science fiction, taking their learning from this unit and applying it to the diversity of other texts on their own. Science fiction is a broad genre that couldn't be covered in entirety in a single school year, let alone in a single unit.

One may be inclined to ask, "Why teach science fiction, when there are other ways to bring current events to students' attention?" My response is that it serves as a highly effective means of discussing current events in an interesting, productive manner. Marshall Tymn (1988) justifies the use of science fiction in the classroom, writing,

> Because science fiction portrays a multitude of alternate futures, it can provide students not only with a means for evaluating the forces affecting the shape the future may take, but also with extrapolations depicting various directions in which advances in science and technology may lead us. These alternate futures can also provide the perspectives needed to appreciate the possibilities open to society and the human race—a vision not always easy to achieve in our rapidly changing environment (p. vii).

Another advantage science fiction has in the classroom is that many students seem to gravitate towards it in their own outside reading. Students will be more likely to engage in literature they already enjoy. With its fantastic, exploratory nature, science fiction also serves as an excellent prompt for writing, allowing students an open invitation for creativity. Anthony Wolk (1990) discovered that science fiction inspires vibrant creative writing in his classroom, writing, "It allows free reign of the imagination as well as an opportunity to write freely on personal and social relationships—which is what literature is inevitably about" (p. 26). I plan on harnessing science fiction's power to inspire productive creativity with several open ended options for culminating student texts at the end of the unit.

In his case for the teaching of science fiction as current events, Biggle (1988) writes, “Science fiction is the one literature that deals with today's reality—that provides a basis for discussion and understanding of the complex events of our time. It opens doors for students—doors into all branches of knowledge” (p. 125). Heeding his advice, I plan on teaching science fiction not as fantasy, but as reality. Science fiction writers get their inspiration from the events of their time, and I want to share this inspiration with my students as they extrapolate on our future. The knowledge we construct and the artifacts we create are grounded in our conceptions of current issues. The tightly knit relationship between “what is” and “what might be” justifies the juxtaposition of science fiction texts with related current events.

Our examination of current issues will undoubtedly lead us to consider the impact of values, which are deeply embedded in science fiction. Values are more effectively transmitted through imaginative, meaningful contexts, rather than through cold, hard fact. Reason is a staple of modern scientific thought, yet when values are condensed into facts and drilled into our heads, they aren’t often internalized. James Prothero (1990) writes, “Reason may answer the question, 'What?' but only imagination can answer the question, 'Why?' The post-industrial assumption that humankind needs only cold, hard facts and scientific reason is culturally disastrous and psychologically naive” (p. 33). He argues that one reason why our society is concerned with values, or the lack thereof, is because ours is a culture of science and empiricism rather than storytelling and myth. He suggests that in the past, cultures transmitted values through myth, which is absent from contemporary culture. Modern society wants “just the facts,” and perhaps science fiction is a necessary remedy, revitalizing our culture with contemporary myths that express values much the same as more traditional mythologies. We will explore the values

inherent in all of the science fiction texts we read, and one of my goals is to examine how these values are expressed (or violated) in many of the nonfiction artifacts we study.

Peter Smagorinsky (2002, p. 58) suggests that an effective unit of instruction provides appropriate justification for its teaching. I have considered such justification for this science fiction unit along three dimensions. The first is that it promotes civic awareness, in that many of our science fiction texts prompt the reader to consider multiple roles for an individual in a larger community. For example, when we read of anti-intellectual public policies, intrusive tracking devices, and the potential to use technology to discriminate, the students will be prompted to consider whether or not they should approve of such actions. The second justification is that this unit is relevant to current social problems. Some of the texts we cover will illuminate contemporary ethical issues surrounding modern technological advances such as computers and genetics. Others will explore modern dilemmas such as the meaning of equality and the consequences of building computers more intelligent than ourselves. I will also invite students to explore social problems not expressed in the unit's texts as part of their culminating text. The third justification for this unit—that it explores social needs—is intertwined with the second. As we discuss current social problems, we will also think about what needs should be considered in constructing a better future.

A unit centered entirely on science fiction won't be found in a traditional curriculum or literary canon, and so there is the possibility that members of the community might challenge the integrity of this conceptual unit. One of the criticisms I anticipate is that I may be accused of being subjective in choosing texts and artifacts for the unit. I suspect this criticism may arise from the lack of a standard literary canon of science fiction. Teachers must search beyond the traditional canon to incorporate science fiction into their instruction, excepting the few short

stories that might appear in some anthologies. I make no attempt to disguise the fact that I am indeed being subjective in my choice of texts. As I mentioned earlier, science fiction is a broad genre that would take an inordinate amount of time to cover fully. Consequently, I am not familiar with every "major" work of science fiction. I feel I would be doing my students a great disservice by teaching them something I am not familiar with myself, and I took my own prior knowledge into account as I chose texts for the unit. My primary goal is to *introduce* students to the genre so they will be encouraged to pursue outside reading of their own. The other major criticism I anticipate is the accusation that science fiction isn't genuine literature—that it's low-brow, it has no place in school, and it isn't to be taken seriously. For those who seriously believe that science fiction is low-brow, I would remind them of the scholarship I have cited thus far. Science fiction is an effective means of critiquing reality and opening doors to critical, meaningful discussions of relevant events. It isn't simply mindless entertainment. This goal of critical thinking and discussion reverberates through all literature instruction, and I believe a similar argument has been made in support of teaching more traditional English texts. Concerning the argument that it isn't taken seriously, I wish to point out that traditional texts aren't always taken seriously either (especially by students!). I affirm that *I* take it seriously, and there are even college courses devoted entirely to science fiction—I enrolled in one myself. Science fiction has a rich history, and there are entire subsets of themes within the genre that correspond to various social, historical, political, and cultural movements in the nineteenth and twentieth centuries. Coverage of such a culturally embedded history is outside the scope of this conceptual unit, but it serves as strong evidence that science fiction is neither a cult following nor a passing fad.

Reference List

Biggle, Lloyd, Jr. (1988). Teaching science fiction as current events. In Marshall Tymn (ed.), *Science fiction: A teacher's guide & resource book* (pp. 125-132). Mercer Island, WA: Starmont House, Inc.

Prothero, James (1990). Fantasy, science fiction, & the teaching of values. *English Journal, 79*(3), 32-34.

Smagorinsky, Peter (2002). *Teaching English through principled practice*. Upper Saddle River, NJ: Pearson Education, Inc.

Tymn, Marshall (1988). Introduction. In Marshall Tymn (ed.), *Science fiction: A teacher's guide & resource book* (pp. vii-xi). Mercer Island, WA: Starmont House, Inc.

Wolk, Anthony (1990). Challenge the boundaries: An overview of science fiction & fantasy. *English Journal, 79*(3), 26-31.

Goals and Accompanying Rubrics

As stated in my rationale, the purpose of this science fiction unit "is to use science fiction as a vehicle for critiquing current issues and events, and [to use] the knowledge we construct to consider perspectives on what the future might hold." Keeping in line with my purpose, the ultimate goal of the unit is to teach students to read science fiction critically and to draw relationships between what they read and actual events in the real world. In accomplishing this task, students will have learned just one of many means by which they can examine critically the current events of our time. In designing goals for this unit, I have constructed ways of assessing students' learning throughout the unit, including a final goal that will assesses their ability to extrapolate on the present independently through a science fiction creation of their own. This final goal may be formidable to many students, but the texts and current events we study should serve as scaffolding to prepare them to accomplish this final goal.

Throughout my unit plan, I have decided to write everything students will receive in Arial font. It's an easy font to read, and I feel that its appearance may be less intimidating to some students than a more professional font such as Times.

Goal #1: Reading Quizzes. Whenever reading is assigned for students to complete as homework, they will have a reading quiz at the beginning of the period in which it is due. Most reading, however, will be done in class, as I understand many students have demands from work or family on their free time. Also, those who have trouble understanding the reading may fall behind in the coursework if frequent independent reading is assigned. Reading quizzes will be *summary quizzes* (see Smagorinsky, 2002, p. 184) in which students will be asked to write a brief

summary of the reading. Besides proving to me that they did the reading, these quizzes help bring it into students' memory. Quizzes will be graded on a pass/fail basis, and at the end of the unit, these reading quiz grades will be averaged in with other short assignment grades as 20% of the unit grade. The next page provides a generic template for the reading quizzes, including the rubric students will receive when they get the first quiz.

Reading Quiz **(Title of reading goes here)**

For the reading I assigned you as homework, I want you to write a brief summary of the story that *proves to me that you read it*. The following tips may help you generate a summary that provides ample evidence of your reading:

- Who were the characters / people in the reading?
- What did they do?
- What was/were the setting(s)? Describe some key characteristics of the setting.
- What else happened in the reading that may not have involved the characters?
- What are some key details in the beginning, middle, and end of the reading?

Rubric for Reading Quizzes

You will receive a grade of *pass* for your reading quiz if it proves to me that you did the reading by providing evidence of relevant details (characters, setting, plot) throughout the entire reading (beginning, middle, end). Some details may be sketchy or confused, but there is evidence that they were discovered through reading.

You will receive a grade of *fail* for your reading quiz if it is returned to me blank, it has material that is clearly made up (i.e. inventing a character that doesn't exist), or it provides insufficient evidence that you did the *entire* reading.

Goal #2: Personal Journals. Students will keep a journal in which they reflect on class readings and discussions. The writing can be exploratory in nature, it can be expressive of their personal opinions, and it should also explore their own thinking through unit topics, readings, and discussions. What students write may be an impetus for working on other unit goals. The journals will be collected at the end of each week, with each "installment" being graded by the accompanying rubric. The final grade for this goal will be assessed by averaging the weekly grades for the journals. On the next page is the handout that will be passed out near the beginning of the unit:

Journal Assignment

Throughout our unit on science fiction, you will keep a journal in which you think through the ideas, opinions, and feelings that come up in our reading, in our class discussions, and in the current issues we'll be discussing. Your thoughts can originate from anywhere: from yourself, from the reading, from your classmates, or from any of my crazy rants (which I'll try to keep to a minimum!). Your writing is an open-ended response to all our experiences throughout the unit, and it's OK if you write about unanswered questions, mysteries, or things that blow your mind. The following tips will help you organize your journal. Also included are some factors that will affect the way I grade it. *Please read the accompanying rubric!* There's no reason why everyone can't earn an A for this assignment!

- Your journal doesn't have to follow conventional, textbook English—neither usage (grammar) nor mechanics. I'm more concerned with getting an idea of the things you're thinking about. Think about all the mind-blowing issues science fiction brings up, think about all the crazy things happening in the world, but don't think about how perfect your writing is! However, keep in mind that I must at least be able to understand it, and I must be able to read it. Be neat!
- To help you out with neatness, the following formatting guidelines are required: you may type out your journal, but it must be double spaced with 1-inch margins, in a professional font like Arial or Times. If you write your journal on notebook paper, it must be double spaced (it's easier to read, and I have room to write comments), and you must leave a 1-inch margin on the right side of the page (about where the pink line from the other side is).
- Your journal must include 500 words of writing each week (if you want to pace yourself, that's 100 words a day). At the top of each entry, put the date in which you're writing the entry.
- Do not simply summarize the literature, articles, or current issues we talk about in class. You do need to take what we read into account when writing, but I also want you to *engage critically* with the reading. That is, I want to hear *your* response to what we read. Your response should be diversified—make connections and responses to *both* science fiction texts *and* current issues (though there's no minimum to *how many* of each you should connect with).
- Your response may consist of personal opinions, related issues, related experiences, and criticism of the reading, and it can be drawn from the reading and from class discussion.
- I will take up journals at the beginning of class each Friday, and return them with comments and grades the following Monday. You will have time to work on your journals at the beginning of most class periods, but they must be completed outside of class, if needed.
- I will be reading your journals, not merely skimming them. Keep in mind that **I am required to report any thoughts of or suggestions of violence, suicide, substance abuse, family abuse, or other harmful behavior with the school counselors.**

Rubric for Journals

Please pay careful attention to the following requirements as you write in your journal!

A journal earning a grade of "A" will:

- Meet or exceed the 500 words / week requirement.
- Conform to formatting requirements (double spaced with margins), be legible, and the writing, though maybe not textbook English, will be understandable.
- Represent a thoughtful response to both the science fiction texts and the current issues we cover in class by showing *ample* evidence of engagement with the material (this evidence can include opinions, related issues or experiences, criticisms, or reflections from discussions, and it responds to most of the readings of the week).

A journal earning a grade of "B" will:

- Fall somewhat short of the 500 words / week requirement.
- Conform to formatting requirements, be legible, and the writing will be understandable.
- Represent a thoughtful response to both the science fiction texts and the current issues we cover in class by showing *some* evidence of engagement with the material, though it only responds to a few of the readings of the week.

A journal earning a grade of "C" will:

- Fall far short of the 500 words / week requirement (300-450 words).
- Conform to formatting requirements, but is somewhat illegible, and the writing is somewhat difficult to understand.
- Represent a response to both the science fiction texts and the current issues we cover in class, but it struggles to demonstrate engagement with the material.

A journal earning a grade of "D" will:

- Be less than 300 words.
- Forget to conform to formatting requirements, is illegible, and is difficult or impossible to understand.
- Demonstrate no engagement with the material, or will only demonstrate scant engagement with either science fiction texts or current issues (but will fail to engage with both).

A journal earning a grade of "F" will be one that isn't turned in.

Furthermore, a journal not turned in on time will lose one letter grade for each day it is turned in late. Journals will not be accepted and will receive a grade of "F" if they are more than four days late.

Goal #3: Literature Circles. Before we begin reading *Fahrenheit 451*, the class will divide up into groups of four (odd-sized groups are anticipated and will be provided for), and each group will be its own literature circle. We will be running a modified version of literature circles in which all groups will read all three parts of the novel—they will be generating their own discussions independently. We will read the novel entirely in class, since there's only a class set. While reading, a primary responsibility of the literature circle is to make sure group members are keeping up with the reading (this will be considered in grading). When we finish each of the three parts, the literature circles will discuss the novel and related issues. On the next page is the handout that will be given out the first day I introduce literature circles:

Literature Circles: Roles and Responsibilities

Now that you've gotten into your literature circles, we can go over some of the things you'll be doing while we're reading *Fahrenheit 451*. The primary goal of your literature circle is to work together with your teammates, helping each other out as the class moves through the novel. Therefore, your first responsibility is to help each other out with the reading. Make sure your teammates are all on the same page, and help each other out if someone doesn't understand something.

Fahrenheit 451 is divided into three parts, and these parts will serve as starting and stopping points in our reading. At the end of each part, we will spend some time discussing the novel. At times during our reading, we will also look at some real current issues that relate to what we've read (some of this stuff will blow your mind!). During these stopping points your literature circle will discuss anything and everything related to the novel and current issues. To help guide your discussion, each member will take on one of the following roles:

- Discussion leader: Starts off the discussion with a topic, keeps the discussion on task, and keeps the discussion moving when it starts faltering.
- Question manager: Keeps track of the questions the team has generated, uncovers difficult passages or words in the reading, works on generating further questions.
- Artist: This is either really easy or really tough—you will only jump into the discussion occasionally, and most of the time, you will work on creating an artistic summary of what the group has talked about—it can be a drawing, a poem, a song, a dance—anything except "normal" speaking and "normal" writing.
- Reporter: You will work on summing up everything the group talked about, and you will coordinate with the question manager and artist as you report back to the whole class on what your group talked about.
- Groups with 5 or more people: I'll help you come up with another member task, or you can float your own ideas by me, or you can work under the same role as someone else.

In addition to participating in the discussion, each group member will be responsible for writing at least three open-ended discussion questions the night before we finish each part of the novel. Near the end of each part, I will inform you of when we'll probably be ready to discuss each part, so you will have at least one night's notice to work on your questions. These questions must be open ended, not asking for a single correct answer, but instead opening up room for discussion. An example of a closed question would be, "How many legs does the robotic dog have?" Avoid these questions! Think of something a little more open-ended, like, "Why do you think Bradbury created a robotic dog with eight legs?" There could be many reasons, and you'll have more lively discussion thinking about it.

How Your Group Work Grade Will Be Determined

Your grade for participation in your literature circle will be derived from a combination of peer and teacher evaluation. Therefore, it's in your best interest to participate and cooperate with your group members, since they can adversely affect your grade. For each of the three times we end discussion in literature circles and move on, each group member will receive the following form:

Team Member's Name	Participated constructively in the group.

You will place a check by each of your teammates' names if they participated constructively in the group. As I observe each group, I will also place a check by your name on my own evaluation form if I see that you are participating constructively. You also get a check for coming prepared with at least three questions. This means that at the end of each of our three group discussion sessions, everyone has the potential of earning 5 checks—3 checks from each of your 3 teammates, one check from me, and one check for coming with your questions. For groups of 5, you have a potential to earn 6 checks. After the last discussion we have over *Fahrenheit 451*, the total number of possible checks will be 15 for groups of four and 18 for groups of five. The following rubric determines your group work grade:

Grade	**Group of four**	**Group of five**
A	13-15 checks	15-18 checks
B	10-12	11-14
C	7-9	7-10
D	4-6	3-6
F	0-3	0-2

I realize the distributions aren't quite fair between a group of five and a group of four. So, If you're one check short of the next highest letter grade, I will ask your group to vote by secret ballot whether or not to give you that one extra point to raise your letter grade. I will be the tiebreaker for groups of five (when 2 teammates vote yes and 2 no).

Goal #4: Final Culminating Text. By the end of the unit, students should be ready to engage in the primary unit goal on their own. I wanted to give them multiple options for completing this final goal. I have provided them with two possibilities (and one of these is truly limitless, much like the imagination of science fiction). The first is a more traditional analytic paper, an assignment that some students may be more comfortable with. The other is much more open-ended: students will create a science fiction artifact of their own, much like the science fiction writers we've read. However, they will have to provide a rationale, in the form of a short essay, which explains the meaning and inspiration behind their artifact. They must relate it to a current issue (which must be cited and explained), and they must explain the reasoning behind how this current issue may lead up to the science fiction artifact they've created. In the process, they will have accomplished our primary unit goal—critiquing the present, exploring the future. This final project will be introduced to the students at the beginning of the unit, in case some of them might be interested in working on a much longer final project (such as a short story).

The first option requires students to view or watch an outside science fiction text. In the Appendix, I have provided two handouts that will be passed out along with the final project assignment. The first is a list of science fiction authors, books, short stories, and anthologies. The second is a list of science fiction films. Students may use any of these selections for their final projects (they'll need parental permission for R-rated or unrated films), but they are certainly welcome to use science fiction texts not on the lists—these handouts are only suggestions.

Science Fiction Unit **Final Project**

For the final project in our science fiction unit, you will demonstrate your ability to read science fiction critically. This critical reading includes three important skills:

1) The ability to read science fiction and discover relevant themes and values. These themes and values may be those of the author, those of your own, or those of a given culture's.
2) The ability to think about these themes and values in relation to current events, or the events of the author's time. And finally,
3) The ability to extrapolate on the intersection between science fiction and the present in order to construct some kind of interpretation of what the future might hold.

Believe it or not, we've been doing these things together since we started this unit. Now, you have the opportunity to show how well you can engage in this process on your own. You may do this through one of two options.

Option 1

You will engage in the same process of reading, engaging, thinking, and extrapolating that we've been doing together all along, except you will start from scratch. You will read or watch a science fiction text of your own choosing. *Important note: If you choose to watch an R-Rated film for your final project and you are under 17, you must get approval from a parent or guardian before you may use it for your project*. I have provided lists of possible short stories, novels, anthologies, and films from which you may choose a text (though you are not limited to what's on these lists). The texts are organized by date. For whichever text you choose, you must do a little research and uncover some of the current issues of the time around which the text was written / filmed that may have influenced that text (even for texts created closer to the present, you need documentation of a real-world current event). All sources need to be cited and documented in APA style (we'll go over this in class). Once you've chosen your text, read / watched it, and uncovered a relevant issue from around its time, you will be ready to work on your final paper, in which you explore how your chosen science fiction text represents a way of critiquing the real-world events of the time it was created. It must be at least 1,000 words (roughly four typed pages) and it must contain the following:

- It must express your opinion of why you think the text is science fiction. That is, what do you think it is about this text that makes it science fiction?
- It must contain a *brief* summary (200 words maximum) of relevant settings, characters, and plot(s) in the text, much like those reading quizzes you've had to write.
- Much like the short essay you wrote earlier, it must identify and explore some theme or value in the text that relates to a contemporary issue or event.
- It must cite (for films, mention) where in the story the relevant theme or value occurs, and it must explain why this theme / value is important to the story.

- It must explore how the relevant theme / value relates to the contemporary issue or event you researched and explains why this issue was (or is) important to society.
- It must conclude by exploring what the science fiction text might suggest about the future. Your exploration might be inspired by what the author thinks, or it could be entirely your opinion. Regardless, you must explain to me why you believe the way you do. The following questions might help you think through your opinion: Do you agree with the author's vision of the future? What might be some other possibilities? What do you know about the real world that supports your opinion?
- It must follow rules of conventional grammar, spelling, punctuation, and usage throughout the essay.
- It must provide evidence of having been revised through at least one rough draft that has been reviewed by your peers.

Option 2

For your final project, you get to assume the creative role of science fiction writer. You will create a science fiction *artifact* that convinces me of your ability to use science fiction as a means of analyzing current events and extrapolating on what their consequences for the future might be. At this point in your scholastic career, *artifact* might be a familiar word with a new definition. For our purposes, it could be *any made up object* that comes from a fictitious world, or it could be something you produce that explores a fictitious world. You have the freedom to be as imaginative as possible as you create this science fiction artifact. However, there are a few guidelines:

- It must relate to either a contemporary issue of our time, or a contemporary issue of another time. Just like those who choose the first option, *you too will do a little research to cite evidence of a relevant contemporary issue related to your artifact.*
- You will write a brief proposal for what you plan to do, and before I approve your proposal, you must convince me that your idea relates to a relevant issue, and that the construction of your artifact will help you explore the significance of this issue.
- Anything containing sexually explicit material or excessive profanity will not be accepted.
- I am required to report any thoughts of or suggestions of violence, suicide, substance abuse, family abuse, or other harmful behavior with the school counselors.

Furthermore, all artifacts must be accompanied by a written *rationale* of at least **500 words**. For those doing the 1,000 word first option, keep in mind I am taking into account the fact that you're doing additional work when you undertake the second option. In your rationale, I want you to explain to me (a) why you chose to construct this artifact, (b) its significance in relation to your researched issue—this is where you will cite what you've researched *and* where you will relate your research to your artifact, and

(c) what your opinion of the future is—in relation to the issue you researched. In other words, address the question, "How does your artifact express your thoughts and opinions of the future?"

If you have an idea for an artifact—Awesome!—run it by me whenever you want, or bring it up when we talk about the project in class. I have thought of a few suggestions myself, just to give you an idea of how wide-open this project is. Keep in mind that these DO NOT represent any limit I'm imposing on your creativity. They're just examples to help orient you in some sort of direction of your own.

- Pretend you live in the year 3004 (or some other ridiculously far-off date). Write an encyclopedia article for some sort of technology that doesn't exist today.
- Design some sort of product, or invent a brand-new technology, that doesn't exist today. You can draw up blueprints, or you can write up technical specifications, or you can write an advertisement for it, or you can make up an interview with the inventor, or you can . . .
- Write a computer program that does something outrageous that computers can't do today. You might want to look at examples of real computer languages (such as Java, C++, FORTRAN, or ActionScript) for inspiration. You might not want to tackle this one unless you already have some background knowledge of computer code and algorithms.
- Create a travel brochure for some far-off destination. It could be a real place, or somewhere totally made up, but getting there requires some technology that we don't have just yet.
- Write a persuasive essay that delves into fictional current issues in some distant science fiction time or place. Example topic: "We shouldn't go to war with the Klingons because . . ."
- Write your own science fiction short story. You might want to get started on this early in the unit. I know I couldn't write a short story in just a few days. Who knows, you might even want to publish it some day.

Rubric for Option 1

A final project earning a grade of "A" will:

- Introduce the purpose of writing the paper with a general thesis and provide convincing arguments that the purpose is relevant (i.e. it answers the question, "So What!?").
- Use *ample* evidence and opinion for why the author thinks the chosen text is science fiction.
- Contain a brief summary (200 words max) of the text.
- Identify a theme or value in the text and provide *ample* evidence that the theme / value is important in the text.
- Relate the theme / value in the text to the researched contemporary issue and use evidence from research to provide *ample* evidence the theme or value is / was important to society.
- Conclude by providing the author's opinion, backed by convincing arguments, of what the text might suggest about the future.
- Provide evidence of having been revised from a rough draft that has been reviewed by peers.
- Have a few minor grammatical errors that do not interfere with the author's communication of ideas.

A final project earning a grade of "B" will:

- Introduce the purpose of writing the paper with a general thesis but provide very little argumentation that the purpose is relevant. It answers the question, "So What!?" but not very convincingly.
- Use *some* evidence and opinion for why the author thinks the chosen text is science fiction.
- Contain a brief summary (200 words max) of the text.
- Identify a theme or value in the text and provide *some* evidence that the theme / value is important in the text.
- Relate the theme / value in the text to the researched contemporary issue and use evidence from research to provide *some* evidence the theme or value is / was important to society.
- Conclude by providing the author's opinion, backed by convincing arguments, of what the text might suggest about the future.
- Provide evidence of having been revised from a rough draft that has been reviewed by peers.
- Have a few noticeable grammatical errors, some of which might interfere slightly with the author's communication of ideas.

A final project earning a grade of "C" will:

- Introduce the purpose of writing the paper with a general thesis, but the paper neglects to offer any reasons or arguments concerning the relevance of the paper. The question of "So What!?" seems to have been forgotten.

- Use very little evidence or opinion for why the author thinks the text is science fiction.
- Contain a summary of the text, but the summary may be so short that it lacks evidence the author read / watched the text, OR the summary is entirely too long for the paper, turning the final project into more of a *book report* than a *critical exploration* of science fiction.
- Identify a theme or value in the text, but it provides evidence that does nothing to show how the theme / value is important in the text.
- Show that the author did research a contemporary issue, but there is little convincing evidence that this issue was / is important to society. There is only a tenuous relationship between the researched issue and the chosen science fiction text.
- Conclude by providing the author's opinion of what the text might suggest about the future, but the author's opinion has little or no convincing arguments to support it.
- Provide evidence of having been revised from a rough draft that has been reviewed by peers.
- Have some significant grammatical errors that make the author's communication of ideas difficult to understand.

A final project earning a grade of "D" will:

- Introduce the purpose of writing the paper, but there is no recognizable thesis and no arguments or reasons addressing the relevance of writing the paper.
- Neglect to address why the author thinks the chosen text is science fiction.
- Contain no summary of the text, OR the entire project is nothing but a summarized "book report" of the author's chosen text.
- Show that the author attempted to research a contemporary issue, but there is no evidence that suggests this issue is important to anyone, and there is no relationship between the researched issue and the chosen science fiction text.
- Conclude with some opinion of the author's, but it says nothing about the author's opinion of what the text might suggest about the future.
- Provide evidence of peer review, but it appears that no attempt at revision has been made.
- Have several significant grammatical errors, some of which make the author's communication of ideas impossible to understand.

A final project earning a grade of "F" will:

- Provide neither a thesis nor a coherent introduction to the purpose of writing the paper.
- Suggest the author did not read or watch a science fiction text by completely lacking any mention of such a text.
- Show no sign the author did any research on a contemporary issue, OR suggest that the author made up the research, OR suggest that the author plagiarized another author's work. This includes copying all or part of a classmate's paper.

You may write an "A" quality paper, but plagiarism or cheating will earn you an "F!"

- Contain no coherent conclusion.
- Provide no evidence of peer review or revision from a first draft.
- Have several severe grammatical errors that make the author's communication of ideas impossible to understand.

For each day your project is late, its final grade will be lowered by one letter. All projects not turned in after the third day late will not be accepted, and will receive a grade of "F." Please do not procrastinate! We will spend some time in class writing, researching, and doing writing workshops, so you won't be doing this all on your own.

Rubric for Option 2

A final project earning a grade of "A" will:

- Be one in which both the artifact and rationale are turned in together
- Be one in which prior approval was given to work on.
- Show evidence that the artifact was carefully planned out and not thrown together the night before.
- Have a rationale of 500 words or more.
- Have a rationale that clearly explains the student's reasons for constructing the accompanying artifact.
- Have a rationale that cites *ample* evidence of a contemporary value / issue that has a *strong* relationship to the artifact the student constructed.
- Have a rationale that demonstrates a *strong* relationship between the student's artifact and the student's thoughts and opinions about the future.
- Have a rationale that provides evidence of having been revised from a rough draft that has been reviewed by peers.
- Have both a rationale and any written artifact that has little or no grammatical errors, and any errors that exist do not interfere with the student's communication of ideas.

A final project earning a grade of "B" will:

- Be one in which both the artifact and rationale are turned in together
- Be one in which prior approval was given to work on.
- Show evidence that the artifact was carefully planned out and not thrown together the night before.
- Have a rationale that falls somewhat short of the 500 word requirement.
- Have a rationale that explains the student's reasons for constructing the accompanying artifact, but these reasons may not be as convincing or as clear as those in a project earning an "A."
- Have a rationale that cites *some* evidence of a contemporary value / issue that has a relationship to the artifact the student constructed, but that relationship isn't as strong or as clear as in a project earning an "A."

- Have a rationale that demonstrates *some* relationship between the student's artifact and the student's thoughts and opinions about the future, but this relationship isn't as strong or as clear as in a project earning an "A."
- Have a rationale that provides evidence of having been revised from a rough draft that has been reviewed by peers.
- Have both a rationale and any written artifact that has a few noticeable grammatical errors, some of which might interfere slightly with the student's communication of ideas.

A final project earning a grade of "C" will:

- Be one in which either the artifact or rationale is turned in separately (i.e. by being late).
- Be one in which prior approval was given to work on, but the final project deviates somewhat from the project that was proposed.
- Show evidence that the student might have procrastinated in completing the artifact, rushing to get it turned in on time.
- Have a rationale that falls short of the 500 word limit.
- Have a rationale that explains the reasons for constructing the accompanying artifact, but these reasons have almost nothing to do with the unit's goals.
- Have a rationale that cites *almost no* evidence of a contemporary value / issue that has *little* relationship to the artifact the student constructed.
- Have a rationale that demonstrates a *weak* relationship between the student's artifact and the student's thoughts and opinions about the future.
- Have a rationale that provides evidence of having been revised from a rough draft that has been reviewed by peers.
- Have a rationale that has some significant grammatical errors that make the author's communication of ideas difficult to understand.

A final project earning a grade of "D" will:

- Be one in which either the artifact or rationale is turned in separately (i.e. by being late).
- Be one in which prior approval was given to work on, but the final project deviates drastically from the project that was proposed.
- Show evidence that the student put little thought or effort into completing the project, as if it were thrown together the night before.
- Have a rationale that falls far short of the 500 word requirement.
- Have a rationale that gives almost no reason for constructing the accompanying artifact, and what reason there is has nothing to do with the unit's goals.
- Have a rationale that suggests the student did some research on an issue / value, but there is no evidence of any relationship between this issue / value and the artifact the student constructed.
- Have a rationale that discusses the student's thoughts or opinions about the future, but draws no relationship between these opinions and the artifact constructed.

- Have a rationale that provides evidence of going through peer review, but no attempts at revision have been made.
- Have a rationale that has several significant grammatical errors, some of which make the author's communication of ideas impossible to understand.

A project earning a grade of "F" will:

- Be one in which either an artifact or a rationale are not turned in, or if neither are turned in.
- Be one in which prior approval was not sought, OR prior approval was sought but the final project has nothing to do with the project that was proposed.
- Show no evidence the student put any effort into the artifact, if it was even turned in at all.
- Have a rationale that is insufficient in length (less than 300 words), if it was even turned in at all.
- Have a rationale that makes no attempt to explain the reasons for constructing the accompanying artifact, if there even is an accompanying artifact.
- Show no evidence the student did any research on a contemporary issue / event, OR the research is fabricated, OR the research is plagiarized.
- Have a rationale that doesn't discuss the student's thoughts or opinions about the future.
- Have a rationale that provides no evidence of going through peer review or revision.
- Have a rationale that has several severe grammatical errors that make the author's communication of ideas impossible to understand.

For each day your project is late, its final grade will be lowered by one letter. All projects not turned in after the third day late will not be accepted, and will receive a grade of "F." Please do not procrastinate! We will spend some time in class researching, workshopping, and working on projects, so you won't be doing this all on your own.

Daily Lesson Plans

It is important to note that I have planned this unit according to block scheduling time constraints. Under the system for which I'm planning, our class will meet every other day for about 105 minutes. Each period counts as two days of class. Class meets three times a week during the first week, while during the second week it meets twice—this is a consequence of having alternating days during a five-day school week. Every week of the school year alternates between these time frames. This means that we have six "days" of class during the first week and four "days" during the second week. Still, by the end of two weeks, the class has done two weeks worth of work. I have planned this conceptual unit to last for about six weeks. To accommodate the constraints of block scheduling, I will cover the unit in six calendar weeks. This means that I have **fifteen** 105 minute periods for which to plan. Each day in the lesson plan represents one period of class, which equals two days worth of work.

All handouts that I have made for the unit may be found on the next page from whichever daily plan requires them (except for the unit goal assignments, which are contained in the *Goals* section above). Furthermore, there are guiding discussion questions found throughout the unit plan that can also be made into separate handouts. Class discussion is intended to be student led, yet I have developed several open-ended questions for many of the readings, to be used when student discussion falters or begins to get off task.

Day One

5 min: Attendance / housekeeping. Pass out vocabulary for the week. The words will be found in this week's reading, and the most context-specific definition of the words will be emphasized. The words are convention, demographic, delegate, parody, hyperbolically, incontinence, waif, flue, and refracted.

20 min: Pass out the Introductory Activity to all students. Make sure they're writing on a clean sheet of paper, and take a few minutes to explain the activity.

30 min: As a class, discuss what everyone wrote about. Ask individual students to share their ideas, and record the conversation on a large sketch pad. On the pad, I'll have a column for the issues students bring up, a column for the technologies we talk about, and a miscellaneous column that keeps up with the questions on the activity and other features of our conversation. We'll keep this record throughout the unit, to compare our thinking now with our thinking after we've read some science fiction and looked at some current issues/events. The discussion will be mostly student led, and when conversation falters or gets off track, interject by asking aloud some of the same questions written on the intro. activity sheet. The goal is to have as broad and diverse a list of topics and issues as possible by the end of this session.

10 min: Briefly introduce the unit as a whole. Mention the texts we'll be covering for the next several weeks, and the goals I expect the students to work on throughout the unit. Pass out the final project assignment (see *Goals* above—I will pass out another copy much later to students who lose their copies), explain it to the class, and emphasize how they should really begin thinking about it now if they plan on doing the more creative option. Encourage the creative option.

20 min: Pass out the journal assignment (See *Goals* above). Explain how it works and how important it is, as this will be one of the most important ways I'll be gauging understanding and engagement throughout the unit. With all questions answered, demonstrate how the journal may be used in conjunction with the unit texts through the following example: while reading the short story "Frustration" (a short, two page Asimov story), use an overhead page to demonstrate aloud the kinds of thinking and writing that can go in the journals. Emphasize how open-ended the writing can be, that what I write isn't the only kind of thinking that can go into journals. Explain that they must write 500 words a week, but since this is the first week and class has already begun, they only have to write 300 words this week.

20 min: Pass out copies of the Handout "Tips for Reading Science Fiction" and go over it. Pass out copies of "Harrison Bergeron." Read it aloud—get four students to volunteer to read the dialogue of George, Hazel, the ballerina, and Harrison, and I'll read the narration. Stop a few minutes before class ends. Explain that on the next class, we'll look at this story in relation to a current issue: the prevalence of "infotainment" in the media. Explain that this isn't the only issue at work in the story. Encourage them to write in their journals. Students will finish reading on their own at home.

Science Fiction Unit **Introductory Activity**

To help you get started thinking about the stories, articles, and current issues we'll be reading about for the next few weeks, as well as all the mind-blowing things we'll be talking about, I want you to think about the future. The distant future! What do you think the world will be like in 100 years?

Now, I know it's impossible to talk about <u>everything</u> about the future in just 20 minutes, so I want you to focus on just one feature of your future. It can be government, medicine, computers, space—anything at all. Tell me what you think it'll be like in 100 years. This activity will count as the very first entry in the journal you'll be keeping throughout this unit.

To help guide your thinking, you might want to consider the following questions…

- Is your vision of the future optimistic or pessimistic? Why?
- What topic, value, or issue in the real world inspired you to think the way you do?
- What do you already know about something specific in the real world that influenced you to think the way you do?
- Why do you think the world is heading in this direction?
- What kinds of values are you taking into account as you're thinking about the future? Are your values being confirmed or violated in your vision of the future?

I'd like for you to write about the above question for about twenty minutes. Then, we'll talk about what everyone wrote about as a class, so don't write about anything freaky that you would hate to talk about with your classmates! Please write this on a fresh, clean sheet of notebook paper. Double space your writing, and leave about an inch of space on the right side of the page (about where the pink link of the next page is). Don't worry about mechanics, spelling, grammar, or usage for this activity. Don't worry about how logical it is or how it flows, either. I just want you to write freely and get down some ideas for now. Be as crazy as you want—the more interesting your ideas, the more interesting our conversation will be.

Tips for Reading Science Fiction

Science fiction may be tough for some people to read, because there are so many features in these stories that don't exist in the real world. Strange technology, alien cultures, strange practices and behaviors, and a history of the world that is much different from ours (because it may be a history of a future that is yet to come) are a few characteristics of some science fiction stories that may make them hard to follow. This is not to say that *all* science fiction stories have these features, nor am I trying to say that this is a complete list of all the difficulties you may have reading science fiction. Don't beat yourself up if you have trouble figuring out what's going on. In fact, it will probably make for more interesting discussion when you and your classmates get something different from reading the same story. As everyone talks about the story, you'll find that some people understood some things, while other people understood other things. When you talk about what you read, it will help you make sense out of all the confusing parts of the story. The following are just a few tips that I myself have used when trying to read science fiction. My hope is that if you keep these ideas in mind, it will help keep your reading from becoming frustrated and unproductive.

- "Not knowing" is not a sign that you're a bad reader. Science fiction gets its life from the unknown, and from making things up to try to explain what we don't know.
- Context is *very important* to reading science fiction. Often, science fiction writers will write as if the audience existed in the fictional world. This means that they will often write about nonexistent technology, history, or people, as if you're already supposed to know what these things are. This means that the writer probably won't stop telling the story to explain to you what a "flux capacitor" is. *You have to pay attention to the story.* You will have to figure out as you're reading along how these things work, or what happened in the past.
- Some science fiction writers are very descriptive about what their fictional worlds look like. Others aren't so elaborate. You may want to think about what the story might look like if someone made a movie out of it. Try to create rich, detailed mental images, and don't let the author's words interfere with whatever mental picture you're trying to come up with. Maybe buildings in the future don't look like square concrete blocks like they do today. Maybe they look like upside-down pyramids, made of nothing but glass. Be imaginative!
- If you have trouble coming up with a mental picture of the author's world, don't let it distract you. In many science fiction stories, the setting is pretty much irrelevant to the real story. What really matters may be what's happening. It may be more about what the people or machines are doing in the story.

Finally, if you get stuck on something, *keep on reading*! You may have to skip over some things like weird names or incomprehensible settings. Often, these things will make sense after you've read a little further. You may want to re-read some parts of the story if you have time. Just like some of the coolest movies you've ever seen, there are many science fiction stories that you have to read through a second time to get a solid understanding of them. Let's keep this in mind as we're reading these stories, and by all means, ask questions about things you don't understand!

Day Two

15 min: Time for students to come in and get situated. Pass out a reading quiz on "Harrison Bergeron." They also have this time to work on journals. During this time, I will take attendance and pass out two items: the Handout "Tips for Reading Nonfiction", and the article "Infotainment at the RNC," an opinion piece in the magazine *The Nation* that looks at the intersections of news, politics, and entertainment.

10 min: Go over handout "Tips for Reading Nonfiction." Emphasize the importance that nonfiction doesn't always tell us the whole truth about something.

25 min: Read the article "Infotainment at the RNC" aloud using the popcorn method—student reads a paragraph, then chooses the next reader to read the next paragraph. Stop periodically to go over difficult vocabulary, confusing syntax, or to review issues at work in the article that the students may not be aware of (example: what are "delegates?").

30 min: Students will physically get out of their seats as they arrange the classroom into groups of four or five (It's good to get the students moving in the middle of such a long period). They will then work on the questions below in their groups. Each group will turn in a single answer sheet, which will serve as a "short assignment" grade (like a daily grade). The questions are as follows:

- What sorts of current issues do you need to have background knowledge of to understand the reading?
- How does the author's language color his position? Try to look for words and descriptions that convey a particular meaning or arouse a particular emotion or feeling.
- Do you think the author approves of the way entertainment and information was presented at the Republican National Convention? What makes you think he does/does not?
- What about you? Do you think it's OK to mix up information and entertainment to convince someone of a certain position? Why or why not?
- The author makes references to many people, shows, events, and other things in popular culture, many of which you are probably familiar with. What do you think he is trying to do by making these references to things outside the Convention that he's writing about?
- Think about the handout I gave you to help you with reading nonfiction. What kind of writing do you think this article is? Hint: it won't be just one kind, and I want you to explain to me why you think it follows the kind of writing you identified.

20 min: As a whole class, discuss the questions the groups worked on. Be sure to identify current issues at work in the piece, as well as technologies relevant to it (such as movies, cameras, and broadcasting). Add topics to the class list that may not have been mentioned in the last whole-class discussion. Encourage students to draw parallels

between the article, the short story, and infotainment (i.e. that the delegates are like participants in the broadcast in the story).

5 min: Return desks to original arrangement. Turn in group work. Remind class to continue working in journals. If they're looking for inspiration, ask them to look at TV and magazines, and listen to the radio, for infotainment and write about what they encountered and what they think about it. Explain that next period we'll begin reading *Fahrenheit 451*, which is full of many relevant issues, including the consequences of taking mass entertainment too seriously.

The following handout is based on material found in the introduction to a unit on nonfiction found in the textbook *Elements of Literature* (3rd ed.), Holt, Rinehart, and Winston, 1989.

Tips for Reading Nonfiction

Isn't it strange that we call nonfiction "nonfiction" instead of calling it "fact"? What we name it is just a label, but it sounds like the label's trying to say that we're mostly supposed to read fiction in English class. That may be, but in the world outside of school, there's a lot of nonfiction out there that a lot of people read all the time. That's why I'm going to help you learn how to read it, and by the end of the unit, I hope you'll see how diverse and interesting this kind of reading can be.

An important thing to keep in mind while you're reading nonfiction is that even though it is based on fact and it presents facts, *it doesn't always give you the total truth!* This may sound strange, and it could be that nobody told you this before, but we'll see how this happens as we're reading the texts in this unit. Even in nonfiction, the author's personality, background, beliefs, prejudices, and biases affect the author's writing. The following questions will help you understand not only what you're reading, but the reasons for why the author wrote what you're reading the way it appears:

- What do you already know about what the author's writing about that may help you understand what the author's saying, or that might lead you to believe or not believe the author?
- What is the author trying to get you to think or believe?
- What is the author telling you to get you to believe this?
- What is the author *NOT* telling you that you may need to know?
- Where else might you go to find information about the same thing? The cool thing about nonfiction is that many authors can write about the same thing, and we can create facts of our own just by comparing two pieces of writing.
- Remember, even though a piece of writing may be considered nonfiction, it may not contain the truth, the whole truth, and nothing but the truth, and it's OK if you don't believe the author. In fact, if you don't believe what the author says, it would be a powerful move on your part to write a response that disagrees with the author.

Something else you'll hear about nonfiction is that it's divided up into several styles, or purposes. It is important to understand the author's purpose, but that doesn't mean the author only has one purpose, or that the author tries to achieve that purpose in just one way. The following are common styles of nonfiction you'll need to keep in mind:

- **Exposition:** the author is trying to explain, inform, define, or clarify something.
- **Description:** the author might explore moods or emotions, and describes things as they are (or as the author sees them), typically relying heavily on imagery.
- **Narration:** the author tells a series of events (usually in chronological order, but not always).
- **Persuasion:** the author Uses evidence and arguments to convince the reader of a certain position. This one is tricky—sometimes the author is trying to manipulate you with evidence (that might be made up!).
- **Personal**: Writing that reveals the writer's feelings and biases, the author has a strong presence in the writing.
- **Objective:** Writing where we don't see much of the author's thoughts or feelings—something like a news article or a science report.

Don't ever feel like you have to slap a single label onto any piece of writing. Many examples of nonfiction can have multiple purposes and use multiple styles!

Day Three

15 min: Students will take a quiz on the vocabulary handed out on day 1. Attendance/housekeeping taken care of at this time.

20 min: As a whole class, we'll look at two materials on banned books from the American Library Association's website: "The 100 Most Frequently Challenged Books of 1990—2000" and a suggested editorial for libraries, book stores, and other groups to publish in celebration of Banned Book Week 2004. Even though this event has passed, the editorial brings to mind many of the same issues brought up in *Fahrenheit 451*. The discussion will be guided by the following questions:

- Have you read any of the books on the banned book list?
- What are some of your favorite books, movies, or CD's? How would you respond if someone else took these things from you and said you could never read, watch, or listen to them again?
- What are some reasons you can think of for why someone would want to ban a book? Do you think these are valid reasons to take books away from other people?
- Can you think of any reasons why we *should not* ban books? Why do you think the way you do?

Students will be asked to take notes in response to these questions while we're discussing them. During discussion, emphasize how the editorial uses certain language to emphasize its anti-book banning position. Remind students of purpose in nonfiction writing, as well as propaganda and persuasion.

25 min: Arrange seats so that there are two large groups of seats facing opposite each other. Divide students as evenly as possible into two groups. The two groups will have a modified debate (I forget the official name for this activity). Here's how it works: the question of the debate is, **"Should some books be banned from school and public libraries?"** One side will argue that they should, the other side will argue that they absolutely should not. This serves as an exercise in argumentation and persuasion. After about 8 minutes, each side will take the opposite argument and begin debating it. After about 8 more minutes, the two groups will synthesize the whole of their arguments, and we'll construct some concluding observations on the issue of book banning. This exercise is intended to promote critical thinking and argumentation through a non-aggressive debate style that doesn't lead to polarization or blind allegiance to a single position. The content of the debate is intended to bring into consciousness an important issue found in *Fahrenheit 451*—the issue of censorship and book banning. At the end, students turn in their notes on the discussion questions above for a short assignment grade.

20 min: Students re-arrange class into groups of four. In case of odd-sized groups, we may have some groups of four, and some groups of five. Copies of *Fahrenheit 451* will be passed out at this time. **Important note:** since we only have a single class set of the novel, the students will only be able to read it in class.

Pass out and go over the Literature Circles assignment (see *Goals* above). For the rest

of the time we're reading the novel, the class will be arranged into the Literature Circles.

20 min: Begin reading *Fahrenheit 451*. Inform students that there will be a reading quiz next period on what we read today. In order to cover as much ground as possible, I will read aloud the entire time (I know it's not the best way to read, but time is short!).

5 min: Rearrange class back to original configuration. Remind students of reading quiz next period. Collect journals and remind them to keep working on them, even during the weekend (especially if they watch a sci-fi movie, etc.)

Day Four

10 min: Time to work on journals. Attendance/housekeeping taken care of at this time. Hand back journals and briefly discuss how well the class seems to have done on them. Hand back vocabulary quizzes and pass out next set of vocabulary words. The words are melancholy, proboscis, incinerator, centrifuge, cacophony, pantomime, bestial, tactile, and rationalizing.

50 min: Students get into literature circles. We will spend this time reading *Fahrenheit 451* aloud, asking for volunteers to read. Students are urged to make sure their teammates in their literature circles are keeping up with the rest of the class.

5 min: Students will get up and rearrange the classroom into a semicircle of desks surrounding the teacher's podium (or the closest thing to a podium to be found in the classroom). Tell them that we'll be doing a role-playing activity. Students will be asked to close their eyes, breathe deeply, and realize that they are now presidents of TV networks. We are about to read Newton Minnow's "Vast Wasteland" speech, delivered to the National Association of Broadcasters on May 9, 1961. This speech criticizes TV networks for turning television into a "vast wasteland," and it urges network presidents to be more responsible with their programming.

10 min: Pass out printed copies of the speech. Playing the role of Newton Minnow, I will read it aloud.

25 min: Continuing the role-play, students will work on an activity (see handout next page) in which they plan out a block of prime-time television programming to be shown in the society described in *Fahrenheit 451* (I expect that by this point we will have covered enough of the novel that they understand how wall-TV's work and the kinds of programming that comes on). They may create any kind of show they wish, and I will provide the following common formats: soap opera, game show, news, investigative report, documentary, children's educational program, general educational program, reality-TV show, cartoon, situational comedy, music video, sports broadcast, other live broadcasts. They are encouraged to use other formats they may think of. Students will fill the block from 7:00 p.m. until 10:00 p.m. with programming (we'll say the nightly news comes on at 10:00). On the handout, they *must* do the following:

- Briefly describe what kind of show it is they're creating.
- Indicate how long the show lasts (they must have at least four shows, none lasting more than two hours).
- Describe how their programming will *use*, not *abuse*, the technology of the wall-TV systems in the novel (they can also make up additional technologies, such as surround sound).
- Justify their choice of programming based on what they heard from the speech.

In addition, the students must attach a paragraph that answers the following question: How does my programming benefit viewers like Mildred in a way that won't turn them into mindless couch potatoes?

5 min: Return desks to original arrangement. Tell students to finish the activity on their own at home, to be turned in next class for a short assignment grade. Warn them that we will probably finish part I of *Fahrenheit 451* on the next class, and that they should bring their three questions for their literature circles for the next class.

Name: _____

Prime Time Planning Activity

Time (p.m.)	Name of Show	Description	How it uses wall-TV technology	Justification for showing this program.
7:00—7:30				
7:30—8:00				
8:00—8:30				
8:30—9:00				
9:00—9:30				
9:30—10:00				

➔ While you're planning your TV shows, be sure to think of the ways in which it can effectively use Wall-TV technology (having an image that covers all four walls of a room, having the ability to adjust the programming to the individual viewer, etc.). Feel free to invent technologies not mentioned in the novel, like surround sound, Internet access, or anything else you can think of.

➔ Keep in mind Minnow's speech as you're justifying the programs you create. Remember, it's OK to show some entertainment, but he also wants programming to be balanced with other kinds of shows.

➔ **Important:** Either on the back of this sheet, or on an attached sheet of paper, you must write at least one paragraph answering this question: **How does my programming benefit viewers like Mildred in a way that won't turn them into mindless couch potatoes?**

Day Five

10 min: Time to work on journals. Attendance/housekeeping/taking up homework taken care of at this time. Journals taken up at the end of the 10 minutes (this is the end of week 2).

10 min: Reading quiz on what we've read so far in *Fahrenheit 451*. This assignment is intended to "reload" the story into memory as we prepare to finish part I.

45 min: Students get into literature circles. Finish reading Part I of *Fahrenheit 451* aloud. I will ask students who haven't read aloud yet to read, and if time grows short, I'll finish reading this part of the novel aloud myself.

20 min: Students will discuss Part I of the novel, using the questions they should have brought as discussion guides. I will check in on groups, jump in to some discussions, and offer some questions of my own if I see some groups struggling. The following are some open ended questions I though of while reading the novel. Some are strong, some are weak, but I think each could be an impetus for discussion.

- What do you think Clarisse might be trying to get at by asking Montag, "Are you happy?"
- How would you describe Montag's wife, Mildred? What specific actions, emotions, or objects related to her did you use to construct your description?
- Do you think that Mildred listens to the seashells in her ear all the time? What might her listening habits suggest about her awareness of the real world?
- Creative: What does Mildred listen to in her seashell ear radio?
- Clarisse says that "they" make her go to a psychiatrist, and she makes up answers to his questions. Do you think this sort of thing happens in the real world? Is the psychiatrist really trying to help the patient, or is there something more to it?
- Capt. Beatty says of the Hound, "It doesn't think anything we don't want it to think." Who do you think "we" is? Who or what else might "we" want to control?
- Look over part I and pay attention to what Clarisse says. How might she serve as a mouthpiece for Bradbury? That is, how does he use her character to criticize the real world?
- What are some similarities between the wall-TV systems in the novel and the home entertainment systems of today? Think about both the technology itself, and the kinds of programming people watch on it?
- How might Beatty also serve as a mouthpiece for Bradbury? Might Beatty be a foil of Clarisse and her family?
- Look back on just a part of Beatty's rant on p. 58. Do you think the anti-intellectualism he describes in school really exists? Do you think things have gotten better, worse, or stayed the same since you started school?
- What do you think happened to Beatty, who's obviously well-educated and well-read, to make him turn his back on higher thinking and to blindly destroy learning by doing the state's bidding? (In the Afterword, Bradbury actually talks about some dialogue he added to Beatty's character for a theatrical version of the novel. In this dialogue, we learn that Beatty failed to put his education to good use—he was basically an

overeducated loser. Lashing out over his own failures, Beatty becomes a fireman and denies others the chance to obtain the kind of education he squandered.)

- Why do you think Montag decided to show Mildred his secret stash of books? Was he trying to evoke some sort of change in her?

10 min: Taking turns, each reporter from the groups will report to the whole class what each literature circle talked about

5 min: Return seats to original arrangement. Have each student fill out the evaluation form for literature circle group work (see the literature circle handout in the *Goals* section for the form).

5 min: Hand out the next nonfiction reading, to be worked on as homework, consisting of the following three short articles:
"FCC Crackdown Could Spread"—addresses the issue of government censorship.
"Digital Angel Unveiled"—addresses issues of privacy and surveillance
"Meet the 'Digital Angel'—from Hell"—an editorial critical of the Digital Angel.
These are three very recent news articles that deal with current issues related to *Fahrenheit 451*. The Digital Angel is a microchip the size of a grain of rice, which is injected into a person's skin. The chip can hold important information on the person, and it can track the person's location using GPS. We will hold a Socratic Seminar during the next class, in which we discuss the issues raised in these articles in light of what we read in the novel.

Students will take notes on the copies of the articles I hand them, writing thoughts, reflections, reactions, and issues that relate to the novel. These notes will help them during the Socratic Discussion.

In addition, students will be encouraged (not required) to visit the following related websites, and they can write reflections and reactions in their journals:
• http://www.adsx.com — Applied Digital Solutions, the corporation developing and marketing the Digital Angel chip.
• http://www.4verichip.com — VeriChip, the name of the technology Applied Digital Solutions is working on.
• http://www.ion-kids.com — Ion Kids, a slightly less frightening example of tracking technology, this product is a tracking device disguised as a wristwatch. You put the watch on your kids and you can track them with a system similar to radar.
Students are also encouraged to search out any other related websites and share them next class.

Day Six

15 min: Hand back journals. Students hand in their packets with the three news articles and the notes they took on them. They will take a vocabulary quiz on the last set of vocabulary words. I will leaf through the packets while they're taking the quiz, assigning a "pass" reading quiz grade as long as they took notes on the three articles. Students will get their articles and notes back as they turn in the vocabulary quiz. Attendance / housekeeping.

25 min: I will lead a Socratic Seminar on the news articles the students read, helping them reinforce connections between current events and *Fahrenheit 451*. The goal is to have a sobering (but not frightening) discussion of some of the more sinister consequences of government censorship and a perpetual state of surveillance. There will be two questions guiding the seminar: **What are the dangers of government controlled media?** and **Is it OK to implant chips in people that track their movement and store their personal information?** Be sure to add to the class list of technologies, issues, and values as new ones are uncovered during the seminar.

60 min: Student get into literature circles and begin reading Part II of *Fahrenheit 451*. We will read aloud using the popcorn method, unless the students want to read another way.

5 min: Return desks to original configuration. Warn students of a reading quiz the next period, and to work on their three literature circle discussion questions, as we'll be finishing part II the next period (it's the shortest part of the novel).

Day Seven

15 min: Students will take a reading quiz based on what we read of the novel last period. Attendance / housekeeping. Pass back the vocabulary quizzes from last period, and hand out a new set of vocabulary. The words are praetorian, dentifrice, valise, aesthetic, liquefaction, thoroughfare, indecisive, phosphorescent, bombardier, and metropolis.

50 min: Students get into literature circles. Finish reading Part II of *Fahrenheit 451* aloud: I will read the dialogue of Beatty (He has much significant dialogue in this part), and students will volunteer to read other characters' dialogue and the narration. If we finish before the allotted 50 minutes, the students will have more time to work in their circles on their discussion questions.

25 min: Students will discuss part II in their roles in the literature circles. The following are some open-ended questions of my own that may be used to assist groups who are unprepared, faltering in their discussion, or otherwise not being productive:

- Why do you think it is that every so often, Bradbury mentions jet bombers streaking across the sky?

- The following quote from Mildred (p.73) is an excellent question for you to answer yourself: "Why should I read? What for?"
- What are the consequences when every copy of a particular book is destroyed?
- Why do you think Montag begins to think about the sieve and the sand from his boyhood memories?
- What do you think the "litter of machinery and steel tools" in Faber's room might be?
- Do you think all of Faber's cynical, negative remarks about technology and society ring true with our world today?
- Do you agree with Faber's quote that "those who don't build must burn."?
- How would you describe Mildred's friends, Mrs. Phelps and Mrs. Bowles?
- How does the poem "Dover Beach" that Montag reads (p. 100) compare with the issues and plot at work in the novel as a whole?
- Once again, it looks like Bradbury is using Montag as a mouthpiece on p. 101 with his rant against Mrs. Bowles. Do you think his admonition to her is intended to be an admonition to society as a whole? If so, what do you think he is trying to say?
- Is it appropriate for those of us who have had our eyes opened to something sinister to criticize and insult others who are still in the position in which we so recently found ourselves?
- Is there anything in Beatty's verbal assault against Montag that suggests he's suspicious of Montag?

10 min: The group reporters from each literature circle will share the highlights of their group's discussion.

5 min: Return desks to original configurations. Students fill out another evaluation form for their literature circle teammates.

Day Eight

10 min: Attendance / housekeeping. Time to work on journals. Journals handed in at the end of the 10 minutes.

50 min: Students get into literature circles. Begin reading Part III of *Fahrenheit 451* aloud, in whichever manner the students wish. This part of the novel begins with the exciting chase sequence!

5 min: Relocate class to computer lab for next activity: we're going to explore and map out the official website of the Human Genome Project. Students are asked to bring everything they need with them, as we won't be returning to class this period (gives us more time in the lab).

40 min: As a class, we'll explore the Human Genome Project website. During the last couple minutes of class, remind students to think about final projects. Two class periods from now, they will submit proposals for what they plan to do. The following is a more

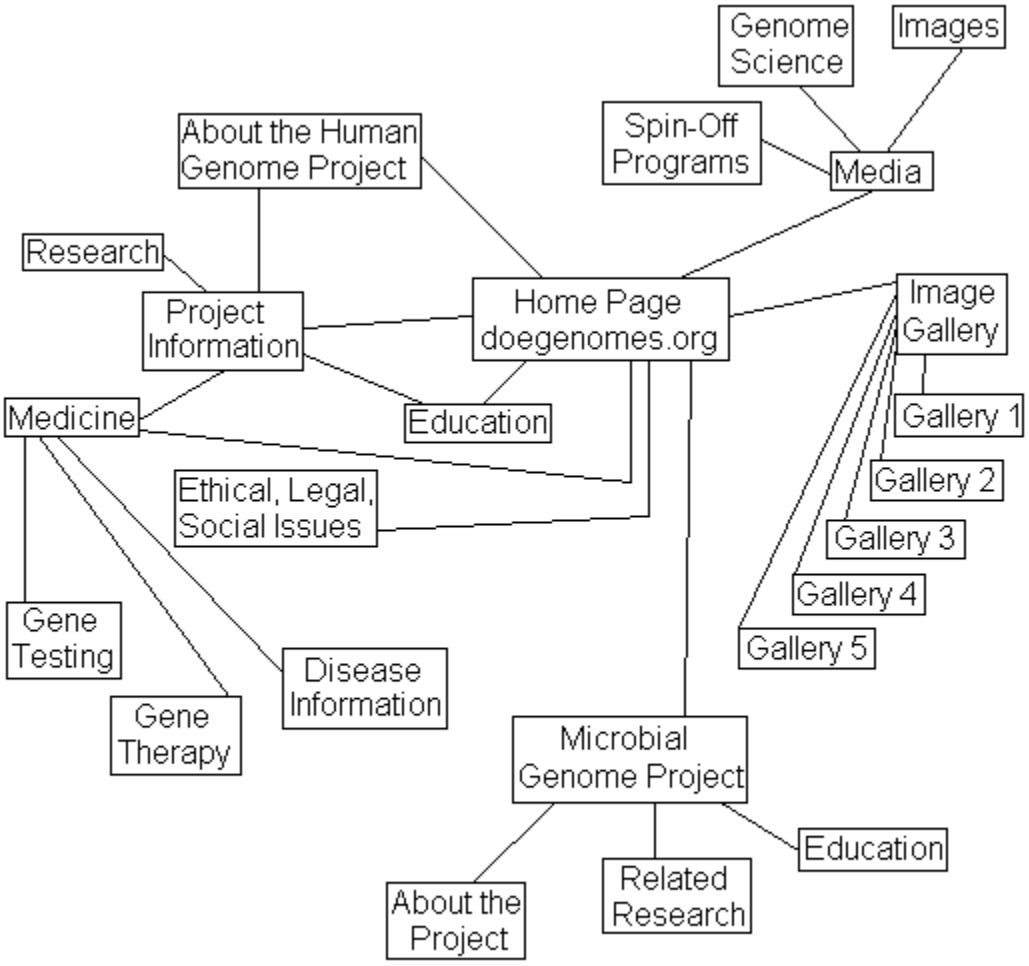
specific breakup of how we will spend our time (40 min) in the computer lab:
10 min: Everyone will begin on the same page (http://www.ornl.gov/sci/techresources/Human_Genome/project/about.shtml), which provides a brief overview of the Human Genome Project (what it is, how it is being implemented, social/ethical/legal issues, its intended benefits, etc.). Read through the information on this webpage, asking students to follow along.
5 min: Briefly review the basics of DNA sequencing (this information is also on the above webpage, and hopefully it will be a review to students who have taken Biology). This review should help give students some background knowledge on the issues we'll be discussing today and when we watch the film *Gattaca*. The following is the essence of the review: Each species of life on Earth has a unique genome, which is the entire set of DNA found in almost every cell of every organism. Genes are strands of DNA that control specific features of organisms, and all the genes can be found in the genome. The strands of DNA that make up genes and the genome look like a twisted ladder (double helix), and each "rung" of the latter consists of two connected proteins. There are four kinds of proteins—abbreviated as A, G, C, and T—that make up the ladder rungs. Each rung is paired as A—T or G—C, *there are no other combinations*. The sequence of ladder rungs is like a computer code that guides the cells of organisms, as well as the organisms themselves. An example "code" would be G-A-T-T-A-C-A (I don't know if this is a real gene, but it is where the movie gets its name!). In this example, the complete double helix gene would look like this:

```
G – A – T – T – A – C – A
|   |   |   |   |   |   |
C – T – A – A – T – G – T
```

(This model shows why the ladder metaphor makes it easier to see how DNA works.)

23 min: Pose the following guiding question: **What are the consequences (both wonderful and dangerous) when humans have the technology to play around with the very building blocks of life?** Students will now begin at the Project's homepage (http://doegenomes.org) and explore the website in any way they wish, keeping in mind the guiding question. Students may work in groups of no more than three (they may have to if working computers are in short supply). They will map out the pages they visit on a sheet of paper, using lines to draw links between the pages as they visit them. The example on the next page will be provided as a sample map. They will also take notes on the information they find on the webpages they visit. Walk around, checking to make sure students are on task, and to help out when needed.
2 min: Students close web-browsers and log out of the computers they're using, returning them to the way they were before we entered. Students will hand in notes and maps for a short assignment grade. Encourage them to think and write about the above guiding question in their journals, since next week we will watch a film that addresses this very issue.

Example Website Map
http://doegenomes.org



Now you know why they call it the World Wide *Web*!

Remember! This will just be a map of the pages you visited. You won't be able to map *every single* page on the website and *every single* link. There wouldn't be a piece of paper long enough to hold it all, since, in some way, every single page on the Internet is linked to some other page! Also, keep in mind that your map doesn't have to look exactly like mine—I only want to know where you went on the website.

Day Nine

5 min: Attendance / housekeeping. Hand back journals from last week and the website activity from day eight.

10 min: Remind students that proposals for their final projects are due next period (giving them another 48 hours to think about them). If they choose option 1 (essay on a film, short story, or novel), are under 17, and they choose to watch an unrated or R-rated film, they must write the following statement in print and get it signed by a parent/guardian:
I give (student's name) permission to watch the film (film's name) for Mr. Dyer's English class, knowing that the film is either unrated or R-rated. I understand that the film will not be shown in class, but that my child will watch it on his or her own, and that it is to be used as part of a major project.

For students choosing the second option (create an artifact), go over the following guidelines for proposals:
Explain what an *artifact* is—a created object that comes from a certain time, place, and culture (we will pretend that the students' creations come from a science fiction world), or it could be any creation of the students' that explores a science fiction world (like a science fiction story of their own).

- Emphasize how open-ended the project is—they can do anything as long as I approve it.
- The proposal must tell me what the student plans to create.
- It must also address a relevant issue or value (it can be one we've covered in class, or not).
- It must explain how the issue or value relates to what the student plans on creating.
- It must explain how the creation of the artifact will help the student explore the significance of the issue or value.

35 min: Get into literature circles. Pick up reading *Fahrenheit 451* from where we last left off.

10 min: Introduce *Gattaca*. Explain how the rest of the period isn't free movie time. Students will take notes during the movie. They may arrange the desks any way they want, and they may sit on the floor, but they must watch the movie and take notes. Remind them to exhibit the same courtesy they should exhibit when watching movies at the theater.
Go over the following guidelines for taking notes during the movie.
While you're watching *Gattaca*, I want you to take notes on the technologies and issues at work in the film. The following points will help you think about some of the things you should be writing down:

- Think back on the big question I asked you in the computer lab last week: **What are the consequences when humans have the technology to play around with the very building blocks of life?**
- Write down the technologies you see in the film as you encounter them—some of these include space rockets and devices that confirm people's identities through fingerprints, blood tests, and retinal scans.
- Beside the technologies you write down, write down *how* people in the film

use them. For instance, employers use drug tests to check applicants' DNA for "genetic purity."
• What do you think about the things people in the film *do* with technology? For instance, do you think it's right that people like Jerome are automatically hired just on the basis of their "genetic purity," without employers even bothering to interview them?
• Finally, whenever you're at the movies, do you find yourself whispering comments to the people you're watching the movie with? Instead of whispering to your neighbor, write these comments down.
You will hand in your notes after we finish the film, to be considered as a short assignment grade.

45 min: Begin screening *Gattaca*. Return desks to original configuration a couple minutes before class ends.

Day Ten

10 min: Students take a vocabulary quiz on the last set of words.

5 min: Take up vocabulary quizzes, journals, and project proposals.

20 min: Get into literature circles. Pick up reading *Fahrenheit 451* from where we last left off.

70 min: Finish screening *Gattaca*. Return desks to original configuration a couple minutes before class ends. Take up notes on the film, to be graded as a short assignment grade. Warn students that we'll be finishing *Fahrenheit 451* next period, and to bring their three questions for literature circles.

Day Eleven

10 min: Hand back vocabulary quizzes, journals, and notes from *Gattaca*. Explain that since we only have one more science fiction story to cover, and because the students will have to get serious about projects, this week's journal only has to be 300 words long. Housekeeping / attendance taken care of at this time.

30 min: As a whole class, we will discuss both *Gattaca* and what we learned from the Human Genome Project website. Add new technologies, issues, and values to the list we've been keeping throughout the unit. Whatever relevant topics the students want to discuss will come first, but the following are questions I also would like to cover, especially if discussion falters or gets off topic:
• What are the consequences when humans have the technology to play around with the very building blocks of life? (This is the third time I've addressed this question, but I really want to discuss it in detail, as I think it's an important issue in both the film and the very relevant issue of genomics).

• *Gattaca* claims the time in which its setting occurs is the "not-so-distant future." From what you've gathered of the Human Genome website, do you believe that the events that happened in the movie really could happen in the not-so-distant future?
• How is the conflict of faith vs. science expressed in the movie?
• What do you think it must feel like to have high expectations placed on you when everyone just knows you're perfect? (To clarify, review how Jerome tried to kill himself when out of the country.)
• Do you think that science is something that liberates and enlightens us, or does it confine us and place limits on our perceptions of the world? (A loaded question that should be broken apart if necessary)
• Think about all the differences you see in the people around you. What would it be like if someone thought these differences were imperfections?
• What might be the consequences if a small group of people were in charge of genetic engineering technology, and these people decided characteristics such as race (and other associated characteristics that are coded in our genes) were undesirable and imperfect? What might society and our world be like then? (Get the students to think really hard about race and culture when addressing these last two questions.)

40 min: Students get into literature circles. Finish reading *Fahrenheit 451* in whichever way the students wish. Altogether, I've planned 145 min. to finishing the third and final part of the novel. Should we finish early, it will provide more time for the next activity.

20 min: In their literature circles, students will discuss not only the third part of *Fahrenheit 451*, but they will begin to think about the book as a whole. The following are some guiding, open-ended questions to help struggling groups:

- What do you think is going through Montag's mind as he's about to torch his own house?
- Why is it that the Hound waits until after Montag's killed Beatty and knocked out the other firemen before it attacks him? What might have prompted it to go into attack mode?
- Now that Montag's on the run, do you think he has any regrets for what he's done so far? Why or why not?
- Do you agree that Beatty really wanted to die, as Montag thinks? Why might he have wanted that?
- Why does Montag take the books he retrieved from his house and plant them at Black's house (Black is one of the firemen he worked with)? There could be more than one reason, so explain why you think the way you do.
- What do you think about the eerie link between the TV network that is proud to follow the new Hound on its hunt for Montag and some of the reality TV programs on TV today?
- During the chase scene, do you think everyone obeyed the media and opened their doors at the count of ten?
- What are some significant characteristics of the ways in which the refugee professors memorize books, and, if necessary, will pass them down to their children?
- If you were one of the refugees, and you had to memorize one book, which book would it be?

- Do you agree with Grangers philosophy on life on pp. 156-157, that for someone to have lived a worthwhile life, they must leave something that they *did*, that they *created*?
- Do you suppose that even the scholars thought the city would actually get nuked so suddenly?
- Is Granger's comparison of mankind to the phoenix fair and accurate? What do you think?

In addition, each group will collaborate on an interpretation of the novel though the following dramatic activity: Each group will choose one scene (or a combination of scenes) that they feel uncovers a theme in the novel. Each group will perform this scene (or scenes) in front of the class in any way they wish (but make it clear that interpretations with suggestions of violence or sexual innuendo won't be tolerated). Furthermore, each group will turn in one collaboratively written paragraph explaining 1) What theme the group identified, 2) How the scene(s) chosen express this theme, and 3) How their planned performance helps express this theme. Each group's performance must be at least two minutes long, and each group member must participate in some way—putting the scene(s) together, acting it out, doing the writing, or even providing an additional artistic accompaniment (drawing, song, anything). The theme the groups come up with may or may not be one we've discussed in class, but the paragraph must make it clear how the group's chosen scene expresses this theme.

While students are working in their literature circles, hand back the project proposals they turned in last period. Call up students whose projects weren't approved, one at a time, to discuss ways of tweaking their projects so they fulfill the requirements (see day nine to review the requirements).

5 min: Return classroom to original configuration.

Day Twelve

5 min: Attendance / housekeeping.

30 min: Groups finish working on their dramatic interpretations to conclude our work on *Fahrenheit 451*. During this time, they will do their third and final group member evaluation.

20 min: Groups take turns presenting their dramatic interpretations.

20 min: Read the Introduction to Ray Kurzweil's *The Age of Spiritual Machines* aloud. It's only six pages, but it's dense material, requiring careful reading and frequent explanation. Emphasize the following points from the passage:

- Kurzweil's research led him to formulate his Law of Accelerating Returns, which claims there is an exponential rate at which technology advances. An example is Moore's Law, a prophecy made by a computer engineer in the 40's, which claims that the power of computing doubles every two years—an exponential relationship (1, 2, 4,

8, 16, 32, 64, …).

• What we define as intelligence is important to issues of artificial intelligence. Computers are vastly superior to humans when it comes to certain narrow definitions of intelligence (calculating numbers, predicting stocks, firing missiles), but they're inferior to humans in broader, more abstract intelligences (summarizing a novel, recognizing satire, contemplating the meaning of life).

• Right now, the average computer is just circuit boards and chips. Technology will really take off once computer components become as complex as the human brain—Kurzweil in fact calls them "neural nets."

• Remember that things may seem impossible because there's no way technology can do it today, but things that were impossible a decade ago are no big deal today. "What? Wireless telephone service for cheap? Impossible!"—cell phones are everywhere now.

• Kurzweil discusses evolution in the first part of the book, and he claims that the evolution of technology above and beyond the evolution of life is a perfectly natural, perfectly expected consequence of time inside the universe.

• We have to address the issue of what consciousness is. Once computers become self-aware and capable of higher order thinking, are we to consider them conscious beings?

30 min: Discuss some of the issues raised from the reading of Kurzweil's introduction. Add to class list. Because of the density of the material, much of it will be teacher-led. However, the following open-ended questions can open up the floor for students to think about the reading:

• Dealing w/ problems and solving them is part of human nature. What happens when we have the technology to solve every problem, even death?

• What might be the consequences of creating computers more intelligent than ourselves? We haven't gotten to that point yet, but Kurzweil says it's inevitable.

• What is the difference between calculation and intelligence? Are computers thinking, or just calculating? For that matter, are humans thinking, or just calculating?

• Have you ever interacted with a computer that seemed intelligent, or are the only ones you've dealt with just tools like a home PC? (I have—remind me of the last time I bought a radiator!)

• Kurzeil claims in the next few decades, computers will be able to read for themselves, reading all human literature in a matter of moments and processing this information beyond all levels of human understanding. What might be the positive and negative impacts of such technology?

• How do you think Gary Kasparov, the world's greatest chess player, felt when a computer first beat him at chess in 1997? Now, how do you think the computer felt about it?

• At some point, computers will be able to think for themselves. This means that we can expect them to have goals and ambitions like ourselves. Do you think it's possible that human ambitions may conflict with computer ambitions in the future? (Anyone who's seen *The Matrix* or *The Animatrix* will have a rich knowledge base to discuss this issue.)

• If computers come to have emotions, free will, and ambition, as Kurzweil believes they will, then what does that suggest about human law and morality? Will computers have rights? Will they have to obey the law and be punished for breaking it?

While we're discussing the above issues, I will quickly hand out and go over the following items:

- A recent CNN article about a "brain" that was developed from rat brain tissue and can fly a flight simulator (this may be a prototype of the neural nets Kurzweil talks about).
- Samples of poetry and art written by Kurzweil's computer. We have to ask ourselves, "Since this material was created by a machine, does that make it poetry and art?"

The issues covered this period are complex (and hopefully interesting). The discussion may be continued into the next day if needed or desired by the students—however, it will cut into the time set aside for students to work on final projects (see day thirteen).

The last couple minutes of the period, mention that for anyone who is really interested in the kinds of issues we discussed today, it is strongly recommended that they look into cyberpunk science fiction. Cyberpunk is a particular "flavor" of sci-fi that's been around since the early 1980's, and deals with innumerable issues of machine intelligence and a reality distorted by technology. In most cases, it's really hard to read or watch, but very enjoyable and worth the effort.

Day Thirteen

5 min: Attendance and housekeeping. Students hand in journals. Inform them that this is the last week of journals (no journals next week, as we'll be working on projects during the last two days of the unit).

45 min: Hand out short vocabulary list (students won't be tested on it, since we're getting close to the final project deadline, but these few words will help them with the next short story). The words are evitable, ideological, deus ex machina, obsolescent, sinecure, and sublime. Start reading "The Evitable Conflict" aloud. This "long short story" addresses the issue of powerful computer systems that are self-aware and command considerable power over people. Stop periodically to check for understanding, connect to issues discussed earlier in the period, or go over unfamiliar terms (such as "evitable"). If we don't finish it in class, students will finish it for homework.

5 min: Relocate class to media center (computer lab if media center is unavailable). Make sure students bring everything with them, as we will not be returning as a class today.

50 min: Time for students to work on their final projects. During this time, students should clear up project proposals that still need tweaking. They should also be researching contemporary issues to use in their projects. This is also time for them to work on any other part of the project they wish, and to see me for help and advice.

Day Fourteen

10 min: Students work on a reading quiz for "The Evitable Conflict." Attendance / housekeeping taken care of at this time.

40 min: Discuss "The Evitable Conflict" in an individual → small group → whole group format:
5 min: Individually, students will jot down ideas based on these questions:
- Thinking back on Ray Kurzweil's introduction, I want you to pretend you live in a world in which computer intelligence is vastly superior to human intelligence, as it is in Asimov's story. Would you want computers to be in charge of how the world runs? Why or why not?
- What might happen if the Machines of the future really did break down? How do you think the people of the future would deal with it?
- Suppose you lived in a world in which the best decisions you could make were already mapped out for you, and if you chose to make those decisions, you'd live the best, happiest life possible. Would you go with those decisions, or would you do whatever you wanted regardless?
- Do you think one of the Machines in the story can make an error? How might it go about correcting such an error?
- Do you think the regional coordinators are underestimating the "errors" in the world systems directed by the Machines? Are there even any errors?
- Susan Calvin gives advice on how to deal with the Machines' decisions based on a lifetime of experience in robotics. Do you agree with her advice to Stephen?
- Do you think there's any way to stop the computers from running this futuristic world? Would the people living in the future benefit from such action?

15 min: In groups no larger than five, students will discuss their jottings, jotting down ideas constructed during this group discussion.

20 min: As a whole class, we'll discuss these questions and work towards a group understanding of the following questions:
- What are the consequences when technology runs every aspect of our lives?

And, more importantly,
- To what extent is technology already running our lives?

5 min: Relocate to media center or computer lab. Students should bring all their belongings, as we won't be returning to class today.

50 min: Time for students to work on final projects and ask me for help or advice. During the last 20 minutes of this time, students will share what they've written so far with at least one classmate for peer review.

Day Fifteen

5 min: Attendance / housekeeping.

100 min: One at a time, students present their final projects to the class. For a 20 student class, this leaves 5 minutes per presentation. For a 30 student class, it leaves about 3 minutes. Those taking the essay option will touch on the high points of the essays they wrote, while those who took the creative option will present their artifact and talk about the related issue they researched. Those who aren't finished with their projects will present as much as they can. All projects are due by the beginning of the next day of school.

If there is time left in the period, we will informally reflect on what we've covered in the unit. Ask for feedback on the unit, such as if it was interesting, if it was too demanding, if anyone learned anything from it, etc. Ask students to think back on the first activity—what the world will be like in 100 years. Do they still think the way they do? Do they have a positive, negative, or undecided outlook on the future?

Appendix

On the following pages are supplementary handouts to the final project of the unit. These lists of science fiction texts are far from exhaustive, and students are welcome to choose texts not on the lists for their projects.

Science Fiction Books and Anthologies

Compiled by Dr. Lisa Yaszek (2002), including a few contributions of my own.
Authors marked with an asterisk * are ones with whom I am somewhat familiar, and I can recommend for a project.

1800-1926

*Mary Shelley: *Frankenstein*; *The Last Man*
Nathaniel Hawthorne: "The Birthmark," "Rappaccini's Daughter," "The Celestial Railroad," and "The Artist of the Beautiful"
Jules Verne: Journey to the Centre of the Earth*; *20,000 Leagues Under the Sea*
Edward Bulwer-Lytton: *The Coming Age*
Samuel Butler: *Erewhon*
Mary E. Bradley Lane: *Mizora: A Prophecy*
E.A. Abbot: *Flatland*
*Mark Twain: *A Connecticut Yankee in King Arthur's Court*
*H.G. Wells: *The Island of Dr. Moreau*; *The Invisible Man*; *The War of the Worlds*; *The Time Machine*
William Morris: *News from Nowhere*
*Hugo Gernsback: *Ralph 124C41+*; *A Romance of the Year 2660*
Karel Capek: *R.U.R.* (first use of the word "Robot")

1926-1940

Olaf Stapledon: *Last and First Men*; *Odd John*
E.E. Smith: *Skylark of Space*; *Triplanetary* (these books represent the first "Space Opera"—for reference, *Star Wars* is also a space opera.)
*C.L. Moore: *The Northwest Smith* stories; *The Jirel of Joiry* stories; "No Woman Born"
*Stanley G. Weinbaum: "The Adaptive Ultimate"
*Edmund Hamilton: "Thundering Worlds"

1940-1960 (The "Golden Age" of Science Fiction)

*Isaac Asimov: *I, Robot*; *The Foundation Trilogy*; *Gold* (collection of short stories and memoirs concerning SF); *Caught in the Organ Draft* (ed.)
Fritz Leiber: *Conjure Wife*
Clifford Simak: *City*
Groff Conklin: *The Best of Science Fiction* (ed.)
John Healy Raymond and Jesse Francis McComas: *Adventures in Time and Space* (eds.)
*Ray Bradbury: *The Martian Chronicles*; *Fahrenheit 451*
*Judith Merrill: *Shadow on the Heath*; "That Only A Mother"
Philip Jose Farmer: *The Lovers*
Frederik Pohl and C.M. Kornbluth: *Space Merchants*
Bernard Wolfe: *Limbo*
Alfred Bester: *The Demolished Man*
Arthur C. Clarke: *Childhood's End*; *Rendezvous with Rama*
Theodore Sturgeon: *More Than Human*
Hal Clement: *Mission of Gravity*
Kurt Vonnegut, Jr.: *The Sirens of Titan*
*Walter M. Miller, Jr.: *A Canticle for Leibowitz*

Note

This is by far NOT a complete list of all science fiction narratives ever written. If you're interested in something not on this list, run it by me for approval. This may include, for example, non-traditional literary styles such as Manga (Japanese comics).

1960-1980

Theodore Sturgeon: *Venus Plus X*
*Philip K. Dick: *The Man in the High Castle*; *Do Androids Dream of Electric Sheep?*
Samuel R. Delany: *Babel-17*; *Dhalgren*; *Trouble on Triton*
*J.G. Ballard: *Terminal Beach*; *Crash*
Andre Norton: *Witch World*
*Daniel Keyes: *Flowers for Algernon*
*Harlan Ellison, Ed.: *Dangerous Visions*; "A Boy and His Dog"
*Robert A. Heinlein: *The Moon is a Harsh Mistress*; *Stranger in a Strange Land*; *The Past Through Tomorrow*
Joanna Russ: *Picnic on Paradise*; *Female Man*
*Ursula K. LeGuin: *The Left Hand of Darkness*; *Dispossessed*: *An Ambiguous Utopia*
Larry Niven: *Ringworld*
Pamela Sargent: *Women of Wonder* (ed.); *The New Women of Wonder* (ed.)
David Gerrold: *When Harlie Was One*
Brian W. Aldiss: *Cryptozoic!*
Joe Haldeman: *The Forever War*; *Worlds*
Vonda MacIntyre: *Dreamsnake*
Marge Piercy: *Woman on the Edge of Time*
Damon Knight: *Orbit 20* (ed.)
*Robert Silverberg: *Science Fiction Hall of Fame* (ed.)
*Michael Crichton: *The Andromeda Strain*

1980-present

*Bruce Sterling: *Mirrorshades* (ed.); *Artificial Kid*; *Schizamatrix*; *Holy Fire*; *Millenium*
Suzy McKee Charnas: *The Vampire Tapestry*
David Brin: *Startide Rising*
Joan D. Vinge: *The Snow Queen*
Lucius Shepard: *Green Eyes*
Greg Bear: *Blood Music*; *Eon*; *Psychlone*
*William Gibson: *Burning Chrome*, *Neuromancer*
Kim Stanley Robinson: *Red Mars*; *The Years of Rice and Salt*
Rudy Rucker: *Software*; *Sphereland*
Dan Simmons: *Hyperion*
Sheri S. Tepper: *Raising the Stones*
Vernor Vinge: *A Fire Upon the Deep*
*Pat Cadigan: *Synners*; *Fools*; *Tea from an Empty Cup*; "Rock On"
Neal Stephenson: *Snow Crash*; *The Diamond Age*
*Octavia Butler: *Clay's Ark*; *Patternmaster*; *Dawn*; *Parable of the Talents*; "Bloodchild"
Kathleen Ann Goonan: *Queen City Jazz*; *The Bones of Time*
*Paul DiFilippo: *The Steampunk Trilogy*; *Ribofunk*; *Fractal Paisleys*
Melissa Scott: *Dreaming Metal*; *Trouble and Her Friends*
Mary Dora Russell: *The Sparrow*
Nalo Hopkinson: *Brown Girl in the Ring*, *Skin Folk*
Sherree S. Thomas: *Dark Matter, A Century of Speculative Fiction from the African Diaspora*
*Michael Crichton: *Jurassic Park*, *Sphere*, *Congo*

Science Fiction Films
From Wikipedia (http://en.wikipedia.org/wiki/Main_Page)

Before 1930
1902: *A Trip to the Moon* (original title Le voyage dans la lune)
1927: *Metropolis
1929: Frau im Mond
1930s
1931: *Frankenstein
1933: The Invisible Man
1936: *Flash Gordon (very cheesy serial)
1938: Things to Come
1950s
1951: *The Day the Earth Stood Still; The Thing From Another World (Howard Hawks original)
1953: *The War of the Worlds
1954: Godzilla; This Island Earth
1955: The Quatermass Xperiment (based on the BBC Television serial The Quatermass Experiment)
1956: **Forbidden Planet; Invasion of the Body Snatchers; X the Unknown
1957: The Incredible Shrinking Man
1958: The Blob; Plan 9 from Outer Space
1959: Journey to the Center of the Earth
1960s
1960: The Time Machine
1962: La Jetée
1963: Day of the Triffids
1964: Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb
1965: Alphaville, une étrange aventure de Lemmy Caution
1966: Fahrenheit 451; Seconds
1968: *2001: A Space Odyssey
1969: Colossus: the Forbin Project
1970s
1970: THX 1138
1971: A Clockwork Orange; The Andromeda Strain; *The Omega Man
1972: Solaris
1973: Sleeper; Soylent Green
1974: Dark Star
1975: Rollerball
1977: Star Wars; *Close Encounters of the Third Kind
1979: *Star Trek: The Motion Picture; *Alien
1980s
1980: The Empire Strikes Back
1981: Outland; Escape from New York
1982: Star Trek II: The Wrath of Khan; *E.T. the Extra-Terrestrial; *Blade Runner; The Thing (John Carpenter remake); Tron
1983: Return of the Jedi; Le Prix du Danger
1984: Dune (David Lynch version); *The Terminator; Star Trek III: The Search for Spock; Starman; Sexmisja
1985: Brazil; Cocoon; The Quiet Earth
1986: Star Trek IV: The Voyage Home; *Aliens
1987: *Robocop
1988: Akira (film) (animated film by Katsuhiro Ôtomo); Miracle Mile
1989: *The Abyss; Star Trek V: The Final Frontier
1990s
1990: Robocop 2; *Total Recall
1991: Star Trek VI: The Undiscovered Country; *Terminator 2: Judgment Day
1993: *Jurassic Park
1994: Star Trek: Generations
1995: **Twelve Monkeys; *Waterworld
1996: Star Trek: First Contact; *Mars Attacks
1997: **Contact; *The Fifth Element; The Postman
1998: Star Trek: Insurrection; **Dark City; *Ghost in the Shell
1999: **The Matrix; eXistenZ; Star Wars Episode I: The Phantom Menace; The Thirteenth Floor
2000s
2000: Mission to Mars; *Pitch Black
2001: **A.I.: Artificial Intelligence; **Vanilla Sky; *Planet of the Apes
2002: *Minority Report; Star Trek: Nemesis; Star Wars Episode II: Attack of the Clones; Equilibrium; Cowboy Bebop: Knockin' on Heaven's Door
2003: *The Matrix Reloaded; *The Matrix Revolutions; **Terminator 3: Rise of the Machines
2004: Eternal Sunshine of the Spotless Mind; *The Chronicles of Riddick; **I, Robot; Thunderbirds

Notes

Films marked with an asterisk * are those that I have seen myself, and I can recommend for a project. Those with two asterisks ** are particularly rich in SF themes and values (although that's just my opinion).

Disclaimer: Many of the films on this list (including recommendations) are rated R. *If you are under 17, I will require approval from a parent or guardian before allowing you to use an R-Rated film for your final project.*

Keep in mind that this is by far NOT a complete list of all science fiction films ever made. If you're interested in a film not on this list, run it by me for approval. For example, there's a great deal of Anime that serve as beautiful and fascinating examples of science fiction.