



Bearkats Read to Succeed Curriculum Activities



Set in a dystopian future dependent on virtual reality and threatened by environmental decline, *Ready Player One* is a tale of a teenager's quest through cyberspace to solve a puzzle that will define his world and his place in it. Wade struggles with good and evil on his way to self-discovery and a new understanding of what it means to be human in a technologically dominant world. Uniting the past and present, author Ernest Cline asks us to think about key concerns in contemporary life and technology's place in our future: social networking, online identity, environmental sustainability, online education, and our relationship to the past.



*Special thanks to our excellent
Bearcats Read to Succeed
committee
of talented authors who
contributed
to this enriching
Curriculum Activities Guide*

Marsha Harman
Brent Estes
Michael Fortunato
Mary Funck
Donovan Haines
Howard Henderson
Scott Kaukonen

Roseann Keathley
Jeff Littlejohn
Brian Miller
Valerie Powell
Pamela Stanosheck
Rebecca Wentworth
Candice Wilson

Table of Contents

Subject	Page
Academic Skills	4
Business	12
Criminal Justice	17
Education	20
Arts	25
Humanities	30
Sciences	35
Social Sciences	45
Health Sciences	53

Activity	Critical Thinking	Reflection	Communication (written/oral/visual)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Fine Arts	Business	Criminal Justice	Education	Humanities	Science	Social Science
ACADEMIC SKILLS																
Scavenger Hunt Major/Minor Choose 2 majors of possible interest to you, find their offices, and answer the following questions on a separate sheet of paper. <ul style="list-style-type: none"> • Where is the department office located? • What are the prerequisites for your major (classes you must complete before you declare the major)? • How many units must you complete within the major in order to graduate? • What are the prerequisites for your minor (classes you must complete before you declare the minor)? • How many units must you complete within the minor in order to graduate? 			X		X					X	X	X	X	X	X	X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
As a team, create a scavenger hunt for your peers to find and take phone photos of the items needed for a perfect study area.	X	X		X	X			X				X	X	X	X	X
Find places within the city of Huntsville where public or private school students could go to study, either individually or as a group, and find the appropriate characteristics of an effective study environment. Make a brochure advertising advantages and disadvantages of each study area chosen	X	X	X	X	X			X	X				X			
Choose two majors with which you are interested. Interview a department professor in each area and interview at least one student with the major in each area. Be sure to determine the advantages and disadvantages of majoring in each area. Then, write a riddle for each major.	X		X	X	X								X	X		

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
<p>You are tasked with rewriting Ready Player One with a new theme: your college experience. Halliday’s Easter egg represents your college diploma and Halliday’s estate represents the benefits of a college education. Pick two of the characters below and write detailed descriptions for them using the new theme.</p> <ul style="list-style-type: none"> • Wade Watts • James Halliday • Art3mis • Aech • Ogden Morrow • Nolan Sorrento 	X		X	X									X	X		
Using the Sixers to represent people who plagiarize, create a presentation to show what plagiarism is and why it is unethical. Use specific examples of Sixers’ schemes in your presentation.	X		X	X										X		X
Read pp. 61-64. Wade’s success was a result of his extensive knowledge of James Halliday. List the strategies Wade used to help him find, retain, and retrieve information.	X		X		X									X		X

Activity	Critical Thinking	Reflection	Communication (written/oral/visual)	Creativity	Inquiry & Analysis	Intercultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Fine Arts	Business	Criminal Justice	Education	Humanities	Science	Social Science
How Social is Social Media? Debate Read p. 30, the 4 th full paragraph Prep: Does social media affect developing healthy self-esteem, communication skills, and social skills? How? Use news and research articles to help develop and support your response. Here are a few: <i>Opinion: Why social media is destroying our social skills, USA Today Educate</i> <i>Social Capital on Facebook: Differentiating Uses from Users, CHI '11</i> <i>The Flight from Conversation, New York Times Sunday Review</i> <i>The Impact of Social Media on Children, Adolescents, and Families, Pediatrics</i> Debate: two teams will debate the pros and cons of social media's effects on self-esteem, communication skills, and social skills. The third team will write down their impressions of each team's debate presentation, level of persuasion, and use of relevant information to support their arguments. Reflect: Examine your own social media use. In what ways does it benefit you? In what ways does it have a negative effect on you? How can you make better use of social media?	X	X	X		X			X					X			X

Activity	Social Science	Science	Humanities	Education	Criminal Justice	Business	Fine Arts	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral/visual)	Reflection	Critical Thinking
Read Chapter 19. Wade has developed and transformed daily rituals so that he is in optimum shape to continue his quest. List your daily goals and rituals. Which rituals help you achieve your goals? Which rituals make it difficult for you to achieve your goals? Develop new rituals and journal about their effects in your life.	X											X	X	X	X	X
Read p. 206. Despite all of his credentials, “Bruce Lynch” is only able to get an entry-level position. What about Wade’s society creates this employment environment? What kind of employment environment exists in our society? Is a college degree enough to get the job of your dreams? What kind of job do you expect to be able to get when you graduate? What credentials and experiences will you need to obtain this kind of position?	X			X		X						X			X	X

Activity	Critical Thinking	Reflection	Communication (written/oral/visual)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Fine Arts	Business	Criminal Justice	Education	Humanities	Science	Social Science
<p>Part 1: Using examples from Ready Player One, define “avatar” in one-two paragraphs.</p> <p>Part 2: Create three avatars: a social avatar, an academic avatar, and a professional avatar. You will be presenting these avatars to the class. In your presentation, you must do the following:</p> <ol style="list-style-type: none"> 1. Describe your avatar (name, background, appearance, likes and interests, etc.). 2. What skills/abilities does your avatar have that will help it succeed in its environment? 3. In what ways is your avatar different than you? In what ways is it similar? 4. In what kinds of environments would your avatar not be appropriate? <p>Part 3: Reflect on the avatars you created. Identify avatars that you have already created and use in your life. Why did you create these avatars? Are there situations in which you benefit from having an avatar?</p>	X	X	X	X	X					X	X		X			X

Social Science	Science	Humanities	Education	Criminal Justice	Business	Fine Arts	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication <small>(written/oral/visual)</small>	Reflection	Critical Thinking	Activity
																<p>All of the main characters in Ready Player One had to deal with stereotypes and the ways that they thought they would be perceived because of their appearance or social identity.</p> <p>Part 1: Define “stereotype.” Then, list common stereotypes that each of the following characters battled: Wade Samantha Helen</p> <p>Discussion: How did stereotypes affect these characters? What types of defense mechanisms did these characters use to deal with the stereotypes they faced or perceived they would face? How were these stereotypes overcome?</p> <p>Part 2: Using a list of personal characteristics/social identities, have students’ list stereotypes that they hold. Where do these stereotypes come from? How might they affect relationship building? How might they affect the other person? Students can share their responses to the last two questions.</p> <p>Part 3: Find three articles about stereotypes in society. Using your articles and your opinion, discuss the following questions: As a society, why do we hold stereotypes? Should we? Are stereotypes ever good? What are practical ways to combat stereotyping?</p>

Activity	Social Science	Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking
Read p. 60. How much social time do you spend in the online world? For a week, calculate the number of hours that you spend using a social media platform or virtual program. This includes the time that you spend sending tweets, checking Facebook, Snap chatting, playing video or computer games, etc. What percentage of your week do you spend engaged in social activities online? Do you think this number is high or low? How does it compare to the percentage of your week you should spend sleeping (25%), going to class and studying (21%-36%), or engaging in face-to-face social activities?	X			X						X		X			X	X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
<i>BUSINESS</i>																
Compare and contrast the gaming industry in the 1980's and the gaming industry in 2014. What are reasons for any major changes? How does the gaming industry effect the U.S. and global economies?	X				X	X					X					X
Pretend you have a gaming company; a person comes to you with an idea for a game. Create a checklist (or rubric) you could use to determine the viability of the game as a sales success. Evaluate the idea and write a one-paragraph decision. If you would prefer to do this in a team, please form a team and follow the directions.	X	X	X	X	X						X					
Your gaming company wants to reach a different minority population. Research what would be the best minority to target. Determine what should be included in a sales campaign for this minority group and create a sales poster for the games available through your company.	X		X	X	X	X				X	X					X
Analyze John DeLorean's business practices in the automobile industry. Write a narrative regarding the practices that led to his success and those practices that led to his ultimate failure.	X		X		X						X					X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
At this link, http://www.npr.org/blogs/alltechconsidered/2014/03/26/294879293/backlash-to-facebook-buying-virtual-reality-firm-comes-swiftly?sc=17&f=1001 read or listen to the story. Then, write an essay summarizing the major issues of the article and your conclusion. If you would like to do more research in the area, please feel free to do so and include in your essay.	X	X	X		X						X					X
What happens with a collapsed economy? How can economists intervene?	X				X	X	X				X		X	X		x
How does the barter system work? Research communities that have used bartering—how does one determine a value? Why would the American Psychological Association (APA) Code of Ethics prohibit bartering for psychological services?	X	X			X	X					X					X
When does money, as we know it, become worthless? What circumstances allow this phenomenon?	X	X			X						X					X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
What can marketing do to help ensure we do not end up in a dystopia, a society characterized by human misery, as squalor, oppression, disease, and overcrowding (Dictionary.com)?	X	X			X	X					X	X	X	X	X	X
Business ethics involves identifying proper business behaviors and approaches to resolving problems that arise in the business environment. You have just been hired by Innovative Online Industries (IOI) to develop a training program to promote ethical behavior in new hires. Use the “Shades of Grey: the Business Ethics Game” as a model for creating your program. This will require that you develop several multiple choice questions based on short ethical dilemmas presented in the <i>Ready Player One</i> text. The multiple-choice questions should each identify four possible responses and should include both positive and negative options. http://www.ascilite.org.au/conference/s/auckland09/procs/oldfield-poster.pdf	X	X	X	X	X	X		X		X	X			X		X

<p>A traditional economy is community-based; it relies on customs and rituals to determine its practices. A market economy relies instead on the consumption (supply and demand) choices of its constituents. In a centrally controlled economy, a governing body has complete authority in the decision-making process. It is the year 2044, and you have decided to enter the election for the top governing position. Devise a campaign slogan and outline an economic policy to address the current fiscal state of your potential domain. Include in your policy a discussion about what type of economy you think is best suited to meet the needs of an OASIS-centered community.</p>	X	X	X	X	X	X	X	X		X	X					X
<p>Watch or read the <i>Hunger Games</i>. Compare and contrast (in-class group discussion) the societal control of Panem by the governing Capitol City with the forces that control OASIS. Cite and describe examples from the <i>Hunger Games</i> and the <i>Ready Player One</i> text that demonstrate how incentives have altered the framework of each of these cultures. Describe how, in each of these works, the quest for the ultimate incentive first created then destroyed alliances among participants. Discuss how your findings can be applied to the business environment to explain the use of incentives to influence behavior within and outside the</p>	X	X	X		X	X					X					X

corporation.																
Wade's avatar Parzival starts the book with very limited options, since transportation costs money he doesn't have. In the past several years 'microtransactions' have become very common in online games in our society. Discuss the benefits and drawbacks of the microtransaction-based business model in gaming for the business and for the consumer (game player).	X	X	X		X						X					
Massively Multiplayer Online games (MMOs) have generated very large markets for goods that are purely virtual with consumers paying real-world money for virtual weapons and clothing to use in games. In Second Life, for example, there are entire malls of shops selling clothing for avatars using virtual dollars people invest real money to obtain. Interestingly, the goods being sold cost their creators nearly nothing to make after the creation of the original virtual object. Discuss how such virtual goods obtain real world value, and what the risks and rewards are of setting up a business selling virtual goods.	X	X	X		X						X					

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
<i>CRIMINAL JUSTICE</i>																
One of the most media-covered criminal trials of the 1980's was the John DeLorean trial in which he was accused of drug trafficking. What were the elements of the case? What was the outcome? How has the outcome affected criminal justice in this day and age?	X				X							X				X
Although the trials of the Menendez brothers took place in the 1990's, the crime took place in 1989. Research the details of the crime and the evidence that caused the brothers to be charged with the murders, including a brief analysis of the forensic methods and evidence. Additionally, recount the development and outcomes of the trials. Write a brief narrative describing the Menendez brothers, the crime, and the trials.	X		X		X							X			X	X

Activity	Social Science	Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking
December 8 – Mark David Chapman buys a copy of <i>The Catcher in the Rye</i> and spends most of the day outside John Lennon's apartment building in New York City. Having obtained Lennon's autograph at about 5pm, he approaches the star again on his return at 10:50pm and shoots him dead. Read more about Mark David Chapman. In 2014, would we be able to predict what his ultimate behavior might be from his observed behavior that day?	X		X		X							X				X
Watch the movie, <i>Minority Report</i> , about a dystopian world in which crime is eliminated. Study and react to the film's premise and storyline outcomes. With your group, discuss your ideas. Then, as a group, write a narrative that incorporates all the group's ideas.	X		X		X				X			X		X	X	X

Activity	Social Science	Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking
Massively Multiplayer Online games (MMOs) have generated very large markets for goods that are purely virtual, with consumers paying real-world money for virtual weapons and clothing to use in games. In Second Life, for example, there are entire malls of shops selling clothing for avatars using virtual dollars people invest real money to obtain. What kinds of laws govern virtual objects with real life-value? If a person steals such an object in the virtual world, have they committed a real crime? What are the current laws and are they sufficient to address these emerging issues?					X	X						X		X	X	X
Write an essay about laws that address copyright and gaming. Cite cases/suits as you find them. How do laws govern online games and players?	X				X	X						X		X		X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
EDUCATION																
Research gaming and teaching through games from elementary school through college. What are the trends? When is gaming considered a success? When is it considered an ineffective method? Write a persuasive letter to a teacher of your choice that either portrays the advantages of gaming on education or portrays the disadvantages of gaming on education. Give examples of whichever view you are taking.	X		X		X								X			X
Study Wade's work habits as he played the game and was ultimately successful. Which of his characteristics determined his success? Which characteristics might have been less effective? Use research from education and social sciences to support your determinations.	X	X			X								X			X
Research and analyze the personality trait known as "grit." Then write a narrative explaining what "grit" is and whether Wade possessed this character trait; be sure to provide evidence of your decision. /Can "grit" be taught?	X	X	X		X								X			X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
What sorts of information do you think we should make sure to have on hand in an apocalyptic future? Ask this question of different leaders in your community. Make sure you question minority leaders as well. With team members, create a list of this information and supply reasoning for your choices.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
If society falls and books and our knowledge have been moved to digital format, how will we access it? Can we prevent losing our knowledge? Has this happened previously in societies? Write an essay responding to these questions.	X	X	X	X	X											
In Ancient Egypt the Library at Alexandria was destroyed by fire and so much knowledge was lost. What sorts of items does history tell us were lost and never recovered? Of what do we only have fragments? How are people trying to recover lost knowledge? How do people prevent losing knowledge? What roles might librarians play? Debate your ideas with a classmate or peer.	X		X	X	X	X		X		X	X	X	X	X	X	X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
Classroom discussion topics 1: How does the virtual education discussed in the novel differ from today's online course work? Which of the two pedagogical models do you think provides a more authentic learning environment for the students? How can you improve each of these models to more closely simulate the experiences in face-to-face classrooms? Is simulation of face-to-face classrooms a goal toward which we should strive? Provide evidence for your conclusion.	X	X	X		X						X		X			X
Classroom Discussion Topic 2: As prospective teachers in a society with quickly advancing technologies, some of you will certainly be hired to teach online courses. What types of preparatory course work and assignments do you need in case you are hired for such a position? What struggles are you likely to face as an online instructor? What advantages will you have? Evaluate the benefits and limitations of such a career and consider whether you would accept a job offer as an online teacher.	X	X	X		X								X			X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
In the world created in the novel, education has become so costly that an online alternative was offered for students on a trial basis. The main character eagerly accepted a position in the new school. Analyze the reasons for his choice. Interview a student who has taken several online courses and capture the interview digitally. Also discuss with your interview subject the virtual school in the text. What is your interviewee's reaction? Would they attend a virtual school if it were posed as an option? Why? Transcribe your interview. Create a Venn diagram to compare and contrast this person to the main character with special emphasis placed on their assessment of online/virtual educations.	X	X	X		X								X			X
Teaching in a virtual world would mean no limitations on the education you could offer the students. Build the outline for a lesson on one of your favorite topics that takes advantage of the virtual classroom. How could you use the virtual classroom as an advantage over a traditional classroom? Also discuss drawbacks to a virtual classroom.	X	X	X	X	X	X		X	X	X			X			X

Activity	Social Science	Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking
In Wade's virtual classroom the teacher had nearly complete control over potential student distractions (although Wade had found ways around some of these controls). What would the ideal virtual classroom conducive to learning and free of distractions be like? Design a classroom, describing both the physical aspects to be presented to student avatars and the classroom rules and policies to be imposed by the virtual world to optimally increase learning.	X			X			X					X	X	X		X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
ARTS																
Research the visual art of the 1970's and 1980's. Then compare and contrast the art of those two decades, paying particular attention to the themes of the art and the media used to create the pieces. Write a paragraph about the 1970's art, one about the 1980's, and a third paragraph delineating your comparisons.	X		X		X					X				X		
Research composers whose works appeared in the 1980's. Crumb's <i>The Sleeper</i> and A Haunted Landscape experimented with music in an avant-garde way. Find additional composers of the 1980's, analyze their styles and group them together in meaningful groups that would help one to distinguish the groups. Create a way to display your work (mind-map, chart, etc.)	X		X	X	X					X				X		
Compare and contrast works of American composers and another culture (French, Latin America, etc.). Write a narrative to share your contemplations.	X		X		X	X				X				X		
Do computer games count as "art"? Discuss.	X		X	X						X						X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
Discuss art depicting a post-apocalyptic world. What sorts of symbols represent certain ideas? What color schemes are often used and why? Pick an era in art or an artistic movement and discuss any post-apocalyptic or apocalyptic portrayals.	X		X	X	X					X			X	X		X
Discuss with peers artists that portray a post-apocalypse. Research some of them. What do you suppose is their motivation?	X	X	X	X	X					X				X		X
Create artwork that 1) shows a vision of the post-apocalypse; or 2) depicts a scene from the book.	X	X	X	X						X			X	X		X
Medium for Art: What happens to art during an economic decline? How do artists manage financial hardships? Do they continue making art or do they work in another manner? How does the value of art shift? How is the price of art determined?	X				X					X	X			X		X
Create an avatar for yourself for the game in <i>RPO</i> . What does this avatar say about you? How is it a fantasy and a realistic view of the avatar creator?	X	X	X	X	X					X				X		X
Do artists have a social responsibility? Why or why not?	X				X					X			X	X		X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
You can watch the 1983 movie, <i>The Next Day</i> via this YouTube link: https://www.youtube.com/watch?v=r2B7sdLPMfc Find the 2013 movie, <i>How I Live Now</i> . Compare how we envisioned a nuclear holocaust in 1983 to how we envisioned it in 2013. Write a narrative about your comparisons and the artistic differences you observe in the films. This would be even more fun to do as a group project.	X		X		X			X		X				X		X
December 8, 1980 – Mark David Chapman buys a copy of <i>The Catcher in the Rye</i> and spends most of the day outside John Lennon's apartment building in New York City. Having obtained Lennon's autograph at about 5pm, he approaches the star again on his return at 10:50pm and shoots him dead. Lennon's single, "(Just Like) Starting Over", subsequently becomes a number one hit in many countries, including the United States, United Kingdom and Australia. Describe your perception of this phenomenon to make his last single a number-one hit.	X	X	X		X					X	X			X		X

Activity	Social Science	Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking
One of the fascinating aspects of virtual worlds is that the users can (when set up appropriately) interact with them from avatars with greatly varied perspectives (walk through the same garden as a person, an ant, and a giant, for example and you will be amazed what you notice differently in each perspective). Create parallel works of art showing the same subject or scene from the perspective of very different viewers.							X					X		X		X
Many virtual worlds in games even now, let alone in the future of <i>Ready Player One</i> , are magnificent works of art in and of themselves. We are currently seeing a transition from worlds that user operate in, to worlds the users actively change themselves, building their own creations the game-makers never imagined. How does this relatively new situation in games compare to traditional forms of art? Find examples in traditional art where the line between artist and audience is blurry or ceases to exist altogether.							X					X		X		X

Activity	Social Science	Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking
An argument can be made that virtual avatars are not in fact new at all; that everyone we meet forms a virtual avatar version of us in their mind. Create an avatar of yourself from the perspective of different people you have met in your life. What parts of the avatar would strongly stand out in the viewer's mind, fade out of memory or go without notice, or perhaps even completely misrepresent the real you? How could you represent that in your art?	X						X					X		X		X
How does gaming music work? If you had a game to which you wanted to add music, to whom would you turn? How does one create/compose/orchestrate such music? Write an essay that explains this phenomenon.	X					X	X					X	X	X		X
What is the artist's responsibility to social values, such as random acts of kindness or recycling? How might one do this through music, dance, theatre? Write a persuasive paragraph detailing your musings.	X		X				X					X	X	X	X	X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
<i>HUMANITIES</i>																
From the best sellers of the 1980's at this link: http://eightiesclub.tripod.com/id359.htm choose either two fiction or two nonfiction books to compare and contrast. Be thorough in your analysis and write a narrative of your analysis.	X		X		X									X		
What were the major historical events of the 1980's? Write an essay of your findings.	X	X	X		X									X		X
Game narration: What stories are told in video games? How does mythology or pop culture, etc., create a better storyline? Debate this issue with peers.	X		X		X	X							X	X		
What makes a good storyline for a game? With a partner, brainstorm a storyline idea for a video game. How will you assure that it is appropriate for people of minority status?	X	X	X	X	X	X		X			X		X	X		X
What can we learn from <i>Ready Player One</i> ? What does it have in common with Orwell, Ayn Rand, Margaret Atwood, or Shakespeare? Discuss your thoughts with your peers.	X	X	X		X			X		X	X	X	X	X	X	X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
What does dystopian fiction tell us about the author's experiences? Research some of the dystopian fiction authors and analyze how their fiction might relate to their experiences? Organize your research in some way and present it to peers. Through your research, determine if it is satire or political commentary.	X		X		X			X			X	X	X	X	X	X
How does language change in gaming? How has it progressed over the years, especially since the 1980's? Write an essay about your findings.	X	X	X		X									X	X	
How has the art of storytelling changed through the ages? Include various cultures. What will be its place in the future? Discuss these issues with your peers.	X		X		X	X		X					X	X		X
How is language currently changing today with technology? How do we understand each other with so many languages? How are people able to learn a foreign language online? After completing some research, talk with your teammates about these issues.	X	X	X		X	X								X		X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
December 8 – Mark David Chapman buys a copy of <i>The Catcher in the Rye</i> and spends most of the day outside John Lennon's apartment building in New York City. Having obtained Lennon's autograph at about 5pm, he approaches the star again on his return at 10:50pm and shoots him dead. Does his buying a copy of <i>The Catcher in the Rye</i> have any meaning in this instance? What would make someone like Mark David Chapman want to buy a copy of the book? From your research of Mark David Chapman and your knowledge of the book, what did Chapman and Holden Caulfield have in common? Discuss these questions with your group.	X		X		X			X					X	X		X
What did John Lennon's death mean to the people of the world at the time? How did other races and ethnic minorities relate to his death? Make a mind map of your thoughts.	X	X	X	X	X	X				X				X		X

Activity	Social Science	Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking
I recall in the early days of online virtual worlds watching an avatar ‘go insane’, and become disruptive to require those running the game to address him and remove him for the benefit of the players. How does human nature differ when acting as avatar versus in real life? Will there be unique mental disorders in virtual worlds that haven’t existed in real life? Would there be any real-life impact to a virtual mental disorder?	X	X	X	X								X		X	X	X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
In <i>Ready Player One</i> , players from around the world compete in the contest, playing simultaneously. In today's world, this is not uncommon either, with online games hosting players from many countries. Language barriers currently keep many of those players from intermingling in a meaningful way. As computers gain the ability to translate languages in live conversation, language might no longer be a meaningful barrier. What other barriers might remain? How might such constant daily interactions between people of significantly different cultures change our civilization over the coming decades? Whose laws and whose social norms govern those interactions?	X	X	X		X	X						X		X		X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
SCIENCES																
In the 1985 movie, <i>Back to the Future</i> , what scientific developments were obvious between the time 30 years previously and those of the 1980's? Write a paragraph about each development.	X	X	X		X					X				X	X	X
At the link: http://science.howstuffworks.com/innovation/inventions/5-cool-inventions-from-the-1980s.htm#page=4 , choose three of the 1980's inventions. Describe each invention, how the inventor struggled with the process, and what the invention meant to American society. Share your impressions with team members.	X		X	X	X			X			X				X	X
What is the future of gaming? What are the components of a successful game? Create a checklist of effective components.	X	X	X	X	X						X				X	X
How can technology improve our future? What happens if society falls, then how do we get the technology back? How do we access our lost knowledge? With team members, discuss these questions and create some bullet points in response to each.	X	X	X	X	X			X					X		X	X

	Social Science	Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking	Activity
	X	X										X		X		X	What sort of physical trauma is seen from playing video games? With video games of the future, what sort of trauma might one expect? Discuss your ideas with your peers.
	X	X										X	X	X		X	What sort of side effects might be physically seen from too much gaming? How will the medical profession help or hurt future gamers? Write a persuasive essay with nurses as your target audience answering these questions.
	X	X										X				X	Does sexism exist in the sciences? What might cause the phenomenon? What sciences might exhibit more sexism than others? What might men scientists do to encourage less sexism? What might women do to counteract sexist behaviors from both men and women?
		X										X		X		X	How is science affected by technology? What sciences are almost entirely reliant on technology? What have we learned because of the technological improvements? Discuss this issue with peers.
	X	X									X	X				X	How can the sciences prevent a dystopian world as described in <i>Ready Player One</i> ?

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
What social responsibilities does science have to the world? How have societies expected more from science over the years?	X	X			X	X									X	X
How could living in a virtual world work?	X	X			X										X	X
What has been done and what still needs to be done to make technological graphics appear more realistic? Write an essay that describes the history thus far and speculate about the next steps.	X	X	X		X					X	X		X		X	X
Examine the Geology of Skyrim: http://www.gamespot.com/articles/a-sight-for-ore-eyes-examining-the-geology-of-skyrim/1100-6403844/ Debate with your lab mates to determine if it would be useful in geology education.	X		X		X						X		X		X	X
Research and identify games that incorporate mining and ores—how realistic is what they display? Make recommendations to game programmers regarding what would be necessary to allow the displays to appear more realistic?	X		X	X	X						X		X		X	
With your teammates, discuss the ideas of <i>Hunting, Gathering, & Videogames</i> by Todd Allen Gates. Explain his ideas in relation to agriculture.	X	X	X		X								X		X	X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
Research the game, <i>Guild Wars 2</i> ? How does one play the game? How does topography and terrain, etc. affect game play or the world? Write a persuasive essay to parents regarding whether this is a suitable game for adolescents as well as its advantages and disadvantages of the game.	X			X	X					X			X		X	
What can history teach us about the future? How have “dystopias” developed previously in history? Write about one of the “dystopias.”	X	X	X		X						X		X	X	X	x
What is the history of sexism and poverty in American history? What inroads have been made over the years? Write a persuasive essay about what needs to happen next.	X	X	X		X	X					X	X	X	X	X	X
What can we learn from the past to prevent a world like Wade’s? What lessons are we learning or ignoring? Write a persuasive essay regarding your conclusions.	X	X	X		X	X					X	X	X	X	X	X
Compare/contrast the political situation of the 80s in Iraq, etc. to today. Make a chart of your comparisons	X	X	X	X	X	X					X	X	X	X	X	X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
What does history tell us about the 1980s? What do you think history will teach folks about this current decade? Create a Wikipedia page like the 1980s for now.	X	X	X	X	X	X				X	X	X	X	X	X	
<i>"The WarGames Scenario": Regulating Teenagers and Teenaged Technology (1980-1984).</i> Read this article at http://tvn.sagepub.com/content/9/6/487 . Afterwards, summarize the entire article in 250 words or less. Write an information piece for someone 80 years of age or older and explain how the film portrayed the internet to adolescents at the time. Remember: People in their 80's will have lived through the 1980's.	X	X	X	X	X		X				X			X	X	X

Social Science	Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking	Activity
X	X	X									X		X		X	When visiting a virtual reality, your body responds in some ways as if you are really there – when running for your avatar’s virtual life, your real-world body’s pulse is likely to quicken and adrenaline levels may increase even though you might really be sitting still on a couch. How do events in games alter levels of hormones like adrenaline in the player? What are the long-term effects of these changes? Predict some potential changes and see if they have been examined in the literature.
X	X										X		X	X	X	In Chapter 23 (page 229), the author mentions “vintage breakfast foods of the 80s” that were popular among all ages of consumers. These sugar and processed based foods are classified as “empty calories” that contain no nutrient value. Using the current nutritional guidelines recommended in ChooseMyPlate.gov , create a table and analyze your current breakfast foods for nutrient value. Upon completion of the evaluation, modify your breakfast selections to meet the nutritional guidelines recommended in the link.

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
In Chapter 13 (page 196), the author discusses that an attempt was made to “get a little exercise” because he had put on some pounds due to his obsession with OASIS. Write an essay to explain the chronic and acute health risks associated with a sedentary lifestyle as the behavior relates to the dimensions of wellness mentioned above. In an effort to counteract the negative effects of video gaming in respect to weight gain, evaluate the various video games that integrate exercise and movement into the spirit of the game. Describe the duration and intensity of the activity to achieve health related benefits.	X		X		X						X				X	X
Think about fitness gaming in the 21st century. Write a description of your own self-created exercise gaming system that allows you to exercise through the virtual world of gaming.	X	X	X	X	X									X	X	X

Social Science		X
Science	X	X
Humanities	X	X
Education		
Criminal Justice		
Business		
Art		
Community Engagement		
Team-work & Problem Solving		
Quantitative Literacy		
Inter-cultural		
Inquiry & Analysis	X	X
Creativity	X	X
Communication (written/oral)	X	X
Reflection	X	X
Critical Thinking	X	X
Activity	<p>Think of a virtual experience pertaining to a game or sport that you would like to see come to life. In a paragraph, describe this experience relating to the movement of the human body</p> <p>On page 72, Wade describes how each OASIS school has common athletic teams like basketball, volleyball and baseball, etc. He also describes activities such as quidditch and zero gravity capture the flag, which cannot be played in “real life” due to physical limitations. Describe a game or sport you would create without physical limitations. Discuss the aspects and purpose of your game or sport. Any health related benefits? Social benefits?</p>	

	Social Science	Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking	Activity
	X	X										X		X	X	X	One of the current trends in health technology is the use of free Smart Phone applications to track exercise, hydration, food intake, alcohol consumption, and other health related behaviors. Evaluate several health apps that would help individuals modify their lifestyles. Develop a comparative matrix of the app features. Then determine which of the apps you would be more likely to use to help you make some positive behavior changes in your lifestyle.
	X	X										X		X	X	X	In Chapter 24 (page 237), the author states that he was feeling the beginning of a “panic attack.” The art of managing stress, whether eustress or distress, is critical to the quality of life of college students. Successful time management, proper nutrition, diffusion techniques, and conflict resolution are a few of the successful strategies that can be used to combat stress. Create a list of positive and negative stressors in your life and describe several positive strategies you could utilize to stop or modify your level of stress.

Activity	Social Science	Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking
Computers and games are starting to get good at recognizing our faces, understanding our words, and predicting our needs before we even realize them (for example, Google tells me the time for my route home on my phone before I even think about the drive each day). New video game consoles can reportedly even read your pulse from across the room while you play and we have screens that know if your eyes are looking at them or not. Looking into the near future, what other hardware and software technologies might enable computers to better understand, measure, and track the humans they are interacting with?	X	X	X									X		X		X
In Chapter 30 (page 288), the author details the signs and symptoms of sleep deprivation. Discuss the guidelines that have been established for healthful sleep in the young adult population. Maintain a sleep journal for one month to determine the time and quality of your sleep. Analyze your sleep patterns to determine if your level of stress has improved over the course of one month.	X	X										X		X	X	X

Social Science	Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking	Activity
																<i>SOCIAL SCIENCES</i>
X	X										X		X	X	X	What happens in our brains when we play games? How do we interact with other gamers? Discuss with your peers.
X											X		X	X	X	How does what happens in games affect our interactions with others? Do you find yourself playing well with others for a common goal or do you play to win, forget anyone else? Share your observations with peers. Ask them how they would answer as well.
X											X	X	X	X	X	Is game addiction an actual addiction? How does game addiction work? What are the causes/cures? How can folks today entertain themselves with games and still ensure they don't become addicted? Create some recommendations for people your age.

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
Is our common reader a dystopian novel? What makes people like to read dystopian fiction?	X	X			X									X		X
In the book, Wade was occasionally worried about his survival. What characteristics did he possess that contributed to his survival? How can we ensure that our society survives?	X	X			X											X
Discuss sexism in gaming. What about gender roles? Is it better for women to go masked as men? How does race/ethnicity contribute to this question?	X	X	X		X	X							X			X

Activity	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Science	Social Science
In pairs, visit people in nursing homes or retirement centers. Ask them what it was like to live in the 1980's. Ask them to tell you stories about their lives. Ask questions for clarification. After you leave, write up the story to share with your class. Be sure to acknowledge the person who told you the story. What did this teach you about older people? What do you think it did for the person telling the story?	X	X	X	X	X	X		X	X				X	X		X
How does the saturation of media affect us now? What are messages from the media currently telling us about our identity, about our future, about the economy, etc.? Are they conflicting messages? How does one unmask the "truth?"	X	X			X	X					X		X			X
What sort of communication exists in an online world? Does the language change? How?	X	X			X								X			X

Activity	Social Science	Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking
Out of body experiences can be triggered by specifically designed virtual experiences coupled with real life sensations (see for example http://blogs.discovermagazine.com/notrocketscience/2009/07/28/virtual-reality-illusions-produce-out-of-body-experiences-in-the-lab/). Review the experiments that produce these experiences. What do they tell us about our sense of ‘self’, and our mapping of ‘self’ to our body?	X	X	X	X								X		X	X	X
Get together with a team of three to four other people. Go out into the community and interview community members (store owners, people on the street, librarians, city workers) about what they think could make Huntsville better. Then, ask some acquaintances online the same thing. Compare your answers as a group. How do people in person compare to people online in relation to “politeness” and ideas?	X							X	X			X		X	X	X

Activity	Social Science	Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking
The Stanford Virtual Reality Lab uses virtual reality to study, among other things, human interaction. Their technology allows them to test the response of people to avatars presenting information or performing actions, while in real time controlling the features of the avatar presenting the information. Not only do they change the speaking avatar's sex and race, they can actually map the viewer's own facial features onto the speaking or acting avatar in real time (without the viewer being aware this was done). Read about some of this work. As this technology becomes more commonplace, how might such techniques be used to the benefit of the viewer, and how might it be used to the detriment viewer?	X	X	X	X								X		X	X	X

Activity	Social Science	Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking
The Stanford Virtual Reality Lab has experimented with having people interact with older virtual avatars of themselves. The idea is that in interacting with your future self, you will make decisions that are more beneficial to your real future self. Read the paper “Increasing Saving Behavior Through Age-Progressed Renderings of the Future Self”. In this paper, the authors find that “In all cases, those who interacted with their virtual future selves exhibited an increased tendency to accept later monetary rewards over immediate ones”. Why might a conversation with our future self as a virtual avatar cause us to save more? What other behaviors do you think might benefit from this technology? Are there any risks in overusing this new tool?	X	X	X	X		X						X		X	X	X

Activity	Social Science	Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking
Get together with a team of three to four other people. There were lots of new products and educational technologies used in Ready Player One. Develop an idea to launch a new company producing your favorite idea from the book. Who would be your customers? How would this new product/service benefit society? How would the outcome be similar or different to that in the book?	X					X			X			X	X	X		X
Politics are complicated in <i>Ready Player One</i> . Politicians and virtual technology companies work together to maintain power over the people, whose real lives are online. In the upcoming election cycle, what are some messages you hear that empower citizens? Which messages seem to empower government and/or corporations?	X							X				X			X	X

Activity Health Science	Critical Thinking	Reflection	Communication (written/oral)	Creativity	Inquiry & Analysis	Inter-cultural	Quantitative Literacy	Team-work & Problem Solving	Community Engagement	Art	Business	Criminal Justice	Education	Humanities	Health Science	Social Science
HEALTH SCIENCES																
At one point in the text, Wade becomes aware of his increasing weight and takes steps to address this issue. Using scholar.google.com, search for articles linking video games and obesity. Choose an article to read using the 4A Model (Assumptions, Agreements, Arguments, and Aspirations). In class be prepared to discuss the article you chose as an expert.	X	X	X		X	X									X	X
At the end of the novel we learn that Art3mis has a large birthmark covering a portion of her face. Research a variety of birthmarks and other visible lesions. In a table, summarize your findings to include: name, appearance, causes, concerns, and treatments. As further investigation, consider how visible markers such as birthmarks and lesions impact self esteem, confidence, social skills, etc.	X	X	X		X	X		X							X	X

	Social Science	Health Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking	Activity Health Science
	X	X	X	X				X	X	X	X	X	X	X	X	X	Review the American Pediatric Association guidelines concerning screen time for children and associated health concerns/impacts. Develop an education/teaching presentation for parents and children based on the information you discover. Final product could be presented in a community forum at YMCA, PTA, Library, etc. Plan should be aimed at the general populace and might include specific recommendations for a variety of ethnic groups, keeping children physically active/alternative activities, food and nutrition.
	X	X	X	X				X	X	X	X	X	X	X	X	X	Community Health: Based on Wade's living situation, complete a community health assessment based on his 'community'. Identify problems and develop nursing interventions that would benefit the health of the community at large. Prepare a presentation aimed at the populace that describes health impacts of their living situation and specific steps individuals can take to intervene on their own behalf.

Activity Health Science	Social Science	Health Science	Humanities	Education	Criminal Justice	Business	Art	Community Engagement	Team-work & Problem Solving	Quantitative Literacy	Inter-cultural	Inquiry & Analysis	Creativity	Communication (written/oral)	Reflection	Critical Thinking
Addiction: Observe a 12-step program meeting such as Alcoholics Anonymous. Based on those observations, write a reflection discussing impacts of addition on the addict, friends and family, community, etc. Research the role of the nursing profession regarding addiction. What impact can a nurse have in addiction prevention, education, and intervention? What are the links between addiction and suicide? Investigate the link between cultural group and addiction.	X	X	X	X				X	X	X	X	X		X	X	X