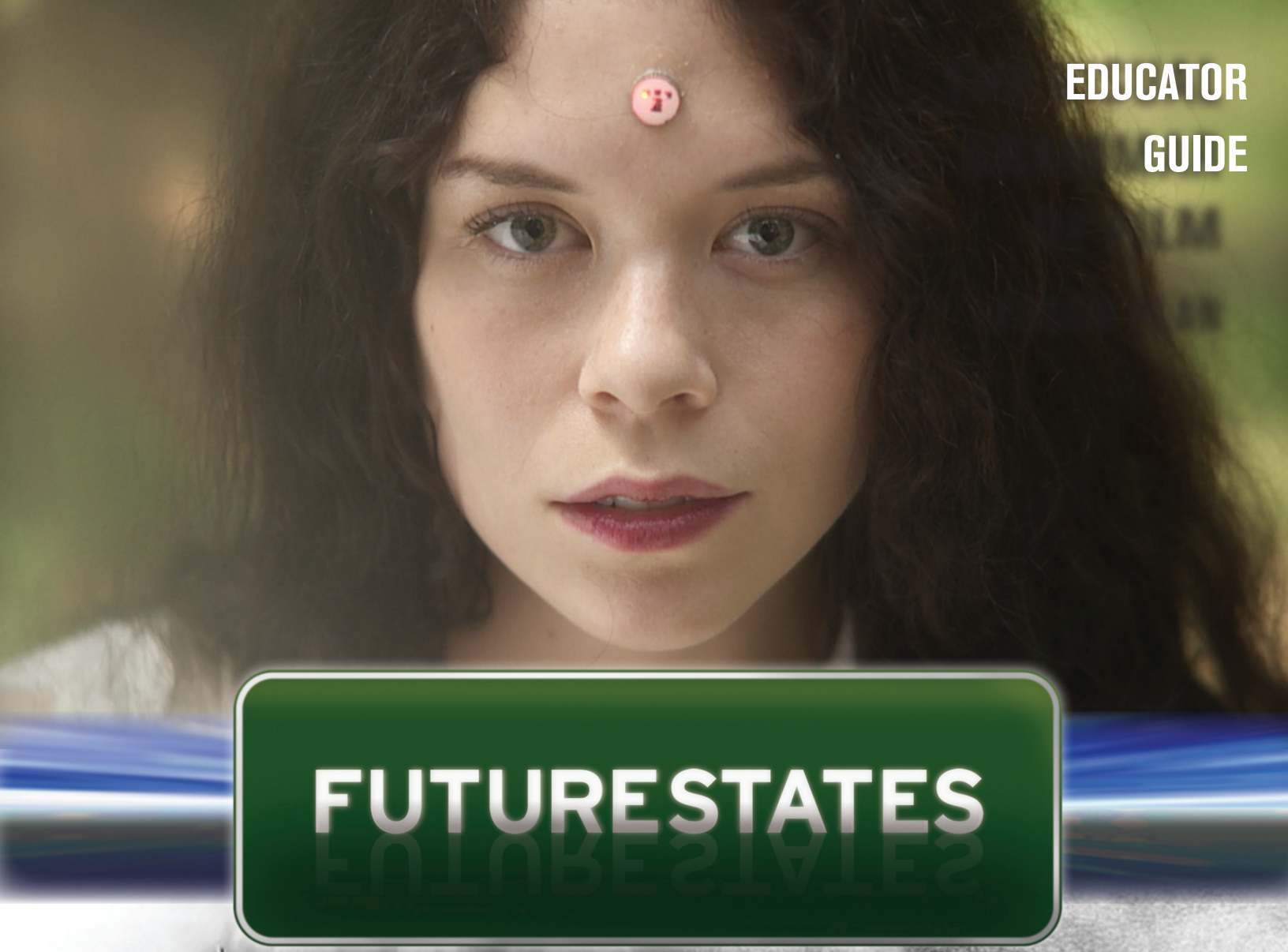

EDUCATOR GUIDE

FUTURESTATES

COMMUNITY CLASSROOM

ENGAGING STUDENTS AND EDUCATORS THROUGH FILM

PRESENTED BY:

cpb ITVS

FUTURESTATES.TV

FUTURESTATES®

Beholder

Directed by Nisha Ganatra

PRESENTED BY:
ITVS
Public Media's Independent Voice
cpb

COMMUNITY CLASSROOM
ENGAGING STUDENTS AND EDUCATORS THROUGH FILM

FUTURESTATES.TV

ABOUT

FUTURESTATES

Imagining tomorrow's America today,

SCENES AND BEHIND THE SCENES FROM *FUTURESTATES* FILMS.
TOP LEFT TO BOTTOM RIGHT: *Gunny* by Patrick Stettner, *That Which Once Was* by Kimi Takesue, *Laura Keller-NB* by Mo Perkins, and *Beholder* by Nisha Ganatra

Futurestates is a series of independent mini-features—short narrative films created by experienced filmmakers and emerging talents—transforming today's complex social issues into visions about what life in America will be like in decades to come. Now in its third season, *Futurestates*, which debuted in March 2010, is available online at futurestates.tv.

available online at FUTURESTATES.tv.

ITVS
Public Media's Independent Voice

The Independent Television Service (ITVS) funds and presents award-winning documentaries and dramas on public television, innovative new media projects on the Web and the Emmy® Award-winning weekly series *Independent Lens* on Monday nights at 10 PM on PBS. ITVS is a miracle of public policy created by media activists, citizens, and politicians seeking to foster plurality and diversity in public television. ITVS was established by a historic mandate of Congress to champion independently produced programs that take creative risks, spark public dialogue, and serve underserved audiences. Since its inception in 1991, ITVS programs have revitalized the relationship between the public and public television, bringing TV audiences face-to-face with the lives and concerns of their fellow Americans. More information about ITVS can be obtained by visiting itvs.org. ITVS is funded by the Corporation for Public Broadcasting, a private corporation funded by the American people.

OVERVIEW

What happens when you are reluctant to make the choices that others expect of you?

This is a question that high school students face regularly as they continue to move from adolescence toward greater independence. It is also the dilemma that Sasha, the main character of *Beholder* faces. This film is set in a future where technology has allowed for everyone living in the fictional Red Estates gated community to pick and choose all of the genetic features of the children before they are born. When Sasha learns that her unborn child has a genetic marker for homosexuality, knowing that the laws of her community dictate that she must either "fix" the fetus with an inoculation or have an abortion, she begins to question the morality of the place where she has lived most of her life.

TARGET AUDIENCE:

Grades 9–12

ENGLISH, SOCIAL STUDIES, HEALTH, OR BIOLOGY

DURATION:

The main lesson is designed to be completed within a **55-minute class period**, with additional and extension activities that can expand to three or four class periods.

The film itself has a running time of about **20 minutes.**

STANDARDS:

Common Core State Standards for Reading Literature:

Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.

Analyze how complex characters (e.g., those with multiple or conflicting motivations) develop over the course of a text, interact with other characters, and advance the plot or develop the theme.

BEFORE

(5–10) minutes

Based on the time available, ask students to consider one or more of the following questions and topics:

1. Currently, there are a lot of tests that can be done on babies before they are born to look for birth defects and other abnormalities. Soon, there are likely to be tests that can identify other qualities, such as an eye color, intelligence, markers for alcoholism, athletic ability, danger of leukemia, and so on. Ask students to consider some of the following:

- What traits would you like your children to have and which ones would you not want them to have?
- If you could control these qualities prior to birth, would you?
- Would you predetermine hair color and height? Would you make your child more physically attractive?
- Would you try to prevent the possibility of certain diseases?
- What would be the lines that you might not cross?

2. Think about laws currently in place in which the government tells an individual what to do: mandatory seatbelt laws in cars, helmets for motorcycle riders, and drug laws. Do you think the government has a role to play in the decisions you thought about in question #1? Why might it be in the best interest of a society to prevent or create certain genetic aspects in its members? Should some of these decisions be left to the government, not the individual?

3. What does the phrase "Beauty is in the eye of the beholder" mean? What do you think a film with this title might be about?

4. According to the director, this film is partly a response to California's Proposition 8. This ballot measure was approved by voters in 2008 and includes the following provision to the state constitution: "…only marriage between a man and a woman is valid or recognized in California." Regardless of how you feel about the issue of same-sex marriage, what do you know about the reaction to the law at the time and since? Or, what do you imagine might be the response to a similar law in your state? This film could also be seen as a comment on the current state of women's reproductive rights. What do you know about your state's laws about women's access to abortions, contraception, and family planning information?

5. The fictional community where Sasha lives is called "Red Estates." This is likely intended to make the viewer think about the way that political commentators in the U.S. have identified Republican or Democratic leaning states as "red" or "blue." It is important that students have some background on these terms and the social issues that often distinguish the voters in these states. There are many images available of the US map described in these terms; here is one that shows the results of the 2008 presidential election: http://www.vaughns-1-pagers.com/politics/red-blue-states-summary.htm

6. Additional previewing activity: If students have not been asked to view film critically before, you may want to consider taking some time to review film terminology with students, using the lesson on the *Futurestates* For Educators page.

DURING

(22) minutes

As students watch the film, direct them to complete the Viewing Guide, which asks them to keep track of the theatrical elements – costumes, props, and set design – as well as the cinematic elements – framing, lighting, sound, etc. – of the film and infer what's happening in Sasha's head as she faces her dilemma.

If this is their first time viewing film critically in this manner, you may want to assign half of the class to keep track of the theatrical/cinematic elements and the other half to keep track of Sasha's thoughts. Afterward, students can pair up with someone who took notes on the other topic.

AFTER

(8–10) minutes

Based on the time available, ask students to consider some of the following questions and topics:

1. How does the director establish the setting of this future world in the opening minutes? Ask an artist or two in the class to sketch out a particularly striking image from the film that captures the essence of Red Estates.
2. How do the director and the actress who plays Sasha help the audience to understand what was happening in her mind as she wrestles with her decision?
3. Red Estates is supposed to look both old fashioned and futuristic. Why was it presented this way? How did the director create this feeling?
4. What are the pressures that Sasha feels to conform to the society of Red Estates? How are they similar or different from the pressures that her husband Bobby faces? Why does she choose to leave, while he chooses to remain?
5. Ask students, in pairs, to act out a dialogue between Sasha and Bobby as they debate the merits of staying in Red Estates.
6. How does the director contrast Red Estates with the Coasts? What is the purpose of this contrast? Why does the audience not see anything of the Coast until Sasha does?

ASSESSMENT

(10) minutes

Ask students to imagine they were Sasha after the birth of her child, and to write a letter to **her husband** explaining the reasons for her departure. Or, they could choose to be Bobby, **writing a letter to Sasha**, explaining why he will not be joining her outside of the dome. Both letters should include references to the way that each person views Red Estates differently, as illustrated by the theatrical and/or cinematic elements used in the film.

If you have additional time for this assessment, you may want to have students create a podcast or a picture slide show of Sasha's first days at the coast. Students can access legally acquired photographs and video at creativecommons.org.

ADDITIONAL MEDIA LITERACY ACTIVITIES

1. Imagine that Sasha returns to Red Estates a year later to run a campaign against her husband and some of the policies that led to her to leaving. Develop the ad campaign that she might use in the election. You can find resources to assist you at: http://www.livingroomcandidate.org/lessons. Working in a group, students could:
    a. Design a campaign poster with an appropriate slogan
    b. Write a speech she might deliver
    c. Make a TV or radio ad that would be broadcast in Red Estates
2. View the *Making of Beholder* documentary that is available on the website (running time: 5 minutes) or read the excerpt below of an interview with the director, Nisha Ganatra. What was she hoping her film could do about the political dialogue in this country, specifically around issues like California's Proposition 8 and women's reproductive rights? What are some specific choices that the director and her team made in order to achieve her stated goals? Is the director presenting a balanced or a biased view on the issues? How does the science fiction genre allow the filmmaker to comment on current political and social issues?

From the Interview:

"We had the obvious challenge of creating what the future looked like – even with a limitless budget this is a big task. Our team came together in an inspiring way to use our resources and assemble the proper aesthetic. Red Estates had to look like a futuristic near-Utopia. Everything from the doctor's office to the park had to take on a pristine, sanitized appearance that was nearly oppressive in its perfection."

"Costume design was another important factor. When coming up with a design concept, I sat back and thought about what the residents of Red Estates might want to look like. And then it hit me: since the whole philosophy behind the community was centered on a return to "simpler times," a sort of 1950s fashion sense was a natural choice."

"Javiera Varas, our designer, helped come up with the palette for the world and for the Health Center. We went full circle from a very empty white space to an old-fashioned doctors office in a home to landing back on a white palette with a clean and modern look."

"Our cinematographer Eric Koretz was able to change the look of everyday things by using LED ribbon lights; a simple addition to a white desk suddenly took on a futuristic shape. Eric ensured that each frame was its own beautiful picture, lit gorgeously with a soft and perfect glow."

"Since we aspired to create a different look for the future and since our story was grounded in political theory, we decided on a futuristic set with retro costumes and design. Also, we made sure Red Estates was clearly removed from nature; all of the natural-seeming things in Red Estates are synthetic. We extended that to the art work in their homes, which were all framed *depictions* of natural scenes. This all works as set up, so that when Sasha's character does arrive on the coasts there is a contrast to the sterility of Red Estates."

3. Using the free online software Morf Thing http://www.morphthing.com/, students can "make their own baby" by combining photos of themselves with those of others, including celebrities. Or, have students go through magazines and determine what they think their child would look like, which they could post on construction paper, for a gallery tour. Students can discuss whether they picked the typical beautiful media-types or went for more of a "real" look.

EXTENSION ACTIVITIES

1. Have students use the Predict-O-Meter tool on the *Futurestates* website. First, using the forms at the end of this lesson plan, students will evaluate up to three predictions from this film based on scientific facts and their own knowledge. Then, they have an opportunity to make a prediction of their own about an issue raised in the film and have it evaluated by another student. Finally, if they have made an interesting and a likely prediction, they can have it posted onto the *Futurestates* website.

2. Explore the historical and literary representation of utopias and dystopias. Students who have read *The Giver* and *The Hunger Games* already have some familiarity with the genre. Ask students to describe or draw pictures of their own personal utopias and to describe the elements that could transform it into a dystopia. Then, ask students to read one or more of the following: "Harrison Bergeron," "Those Who Walked Away from Omelas," *Brave New World*, *1984*, or *The Handmaids Tale*. How is the utopian/dystopian theme presented in these texts similar or different ways than in *Beholder*?

3. It's clear that the director made this film in order to examine a political issue that she does not agree with. Identify school, local, or national issues that you feel strongly about and write a film treatment – a description that covers the basic ideas and issues of the production as well as the main characters, locations, and main story idea – that explores and comments on that issue. For example, if you think that the administration in your school is being unfair in banning cell phones in school, your film could be an action film that shows how students' cell phones were instrumental in preventing an alien attack on the school. In groups, decide on one person's film proposal to film the story and present it to a community or school group.

4. This film examines the often-difficult balance between an individual's rights and a community's expectations of behavior. Choose a topic in which one person's rights may be in conflict with the community (such as gun and drug laws, dress codes in school, or women's reproductive rights) and deliver a persuasive speech to your class, trying to convince them of your point of view.

5. Politically, the director of the film appears to be much more in favor of the Coasts (which represent the blue states and liberals) than Red Estates (or red states and conservatives). But, what would the film be like if it were made by a more conservative filmmaker? In other words, describe what the Blue Estates might look like, and what laws would they have in place that someone might want to leave behind, as Sasha did in this film?

BEHIND THE SCENES OF *BEHOLDER*.

An essential way to analyze this film is to examine the choices that the director makes in terms of costumes, props, and set design. Keep track of these elements of the Red Estates community, as well as the choices in the setting at the end of the film.

Theatrical Elements (costumes, props, set design)
and/or **Cinematic Elements** (shot type, angle, lighting, sound, etc.)

Another key component of this film is Sasha's character development as she faces her dilemma, and because she can't really talk to anyone of her concerns, much of her development happens within her own mind. Keep track of what you think is happening in Sasha's mind that she is not saying to others.

In Sasha's Mind

Futurestates
Predict-O-Meter

Log on to www.futurestates.tv. Go to the Predict-O-Meter. There are three rows of predictions. The row on the far left contains the predictions based on the *Futurestates* films, including *Beholder*. The center row consists of predictions submitted by viewers. The far right row contains dates of know events. For this activity, click on the green *Futurestates* predictions. The number that appears in each green square is the number of predictions related to the specified year. Be certain to scroll down to see all predictions for a given year. At the end of each prediction is the tag for the film associated with each prediction. Find as many predictions as you can for the *Beholder* film. Choose three predictions to evaluate using the rubric below. When the assigned evaluations are finished, create at least one prediction of your own. Your prediction will be evaluated by another student. If the evaluation is at least a "3", you may post it on the *Futurestates* website.

FILM: _____ **YEAR:** _____

PREDICTION: _____

KEY– No: 1 Somewhat: 2 Yes: 3 Don't Know: 4	VALUE
Is the prediction based on scientific possibilities?	
Do the consequences of the prediction support the film?	
Does the prediction directly lead to the next prediction?	
Do known events in the past support the prediction?	
Is this prediction plausible? (This is your opinion.)	
Overall Total: (add up the values)	
Score: (Overall Total ÷ 5)	

FILM: _____ **YEAR:** _____

PREDICTION: _____

KEY– No: 1 Somewhat: 2 Yes: 3 Don't Know: 4	VALUE
Is the prediction based on scientific possibilities?	
Do the consequences of the prediction support the film?	
Does the prediction directly lead to the next prediction?	
Do known events in the past support the prediction?	
Is this prediction plausible? (This is your opinion.)	
Overall Total: (add up the values)	
Score: (Overall Total ÷ 5)	

FILM: _____ **YEAR:** _____

PREDICTION: _____

KEY– No: 1 Somewhat: 2 Yes: 3 Don't Know: 4	VALUE
Is the prediction based on scientific possibilities?	
Do the consequences of the prediction support the film?	
Does the prediction directly lead to the next prediction?	
Do known events in the past support the prediction?	
Is this prediction plausible? (This is your opinion.)	
Overall Total: (add up the values)	
Score: (Overall Total ÷ 5)	

PERSONAL PREDICTION FOR _____ **(film name)**

NAME: _____ **EVALUATOR:** _____

FILM: _____ **YEAR:** _____

PREDICTION: _____

KEY– No: 1 Somewhat: 2 Yes: 3 Don't Know: 4	VALUE
Is the prediction based on scientific possibilities?	
Do the consequences of the prediction support the film?	
Does the prediction directly lead to the next prediction?	
Do known events in the past support the prediction?	
Is this prediction plausible? (This is your opinion.)	
Overall Total: (add up the values)	
Score: (Overall Total ÷ 5)	

Should this prediction be posted to the website? _____

Teacher's approval _____

Date posted _____

If not posted, explain the reason for declining.

CREDITS

CURRICULA WRITER
John Golden

John Golden is currently a curriculum specialist for high school Language Arts in Portland, Oregon. He is the author of *Reading in the Dark: Using Film as a Tool in the English Classroom* (NCTE, 2001) and *Reading in the Reel World: Teaching Documentaries and Other Nonfiction Texts* (NCTE, 2006). John has delivered presentations and led workshops around the country in order to help teachers use film actively in the classroom as a way for students to improve their reading, analytical and critical thinking skills.

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SCENES FROM FUTURE STATES FILMS.
TOP LEFT TO BOTTOM RIGHT: *Gunny* by Patrick Stettner, *Advantageous* by Jennifer Phang, *Asparagus* by Robby Henson, *Laura Keller-NB* by Mo Perkins, and *Worker Drone* by Sharat Raju

FUTURESTATES®

Crossover

Directed by Tina Mabry

PRESENTED BY:

ITVS
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[C] COMMUNITY CLASSROOM
ENGAGING STUDENTS AND EDUCATORS THROUGH FILM

FUTURESTATES.TV

ABOUT

FUTURESTATES

Imagining tomorrow's America today,

SCENES AND BEHIND THE SCENES FROM *FUTURESTATES* FILMS.
TOP LEFT TO BOTTOM RIGHT: *Gunny* by Patrick Stettner, *That Which Once Was* by Kimi Takesue, *Laura Keller-NB* by Mo Perkins, and *Beholder* by Nisha Ganatra

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OVERVIEW

Do all children in the United States have the same opportunities to succeed in life?

According to some research reports and media accounts, American society is facing a growing separation between rich and poor. Many researchers find that this disparity is increasingly reflected in our education system. Do all children in the United States have the same opportunities to succeed in life? And to what lengths would parents go in order to give their children the same chances to succeed? Over the past couple of years there have been political movements, Occupy Wall Street, for example, that have tried to bring attention to the growing economic divide in this country. This episode of *Futurestates* is called *Crossover*, referring to the desires of the main character, Angela, to help her children "cross over" from their poor public school into the fully resourced private school in a restricted section of the city. She is willing to consider undergoing an illegal organ donation procedure to pay for their chance at a better future.

TARGET AUDIENCE:

Grades 9–12
ENGLISH, SOCIAL STUDIES, OR SCIENCE

DURATION:

The main lesson is designed to be completed within a **55-minute class period**, with additional and extension activities that can expand to three or four class periods.

The film itself has a running time of about **20 minutes.**

STANDARDS:

Common Core State Standards for Reading Literature:

Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

Common Core State Standards for Writing:

Write narratives to develop real or imagined experiences or events using effective techniques, well-chosen details, and well-structured event sequences.

BEFORE

(5–10) minutes

Based on the time available, ask students to consider one or more of the following questions and topics:

1. Fictional news broadcasts in the film refer to the recent overturning of the Supreme Court case *Brown v. Board of Education*. It might be helpful for students to complete a K/W/L (Knows/Wants to know/Learned) chart about the topic. Students should know that in 1954, the Court determined that "separate educational facilities are inherently unequal." The result was that forced segregation of white and black students in separate schools was illegal. Students ought to also consider whether segregation still exists today, despite the 1954 ruling.
2. Much of the plot of this film is about Angela's children's movement from a public school to a private school. Ask students to complete and share a Venn diagram comparing public and private schools, based on their own experiences and background knowledge. Or, ask students to identify the rich and low income schools in their district or area. Why are some schools wealthier than others? What are the obstacles that students from poorer schools have to overcome that students from wealthier schools do not? Or, ask students to make a list of all of the elements that would make a perfect school: course offerings, materials, resources, class size, etc. Then, students should compare their ideal list with their actual school. What keeps students from having everything on their ideal list?
3. The other main plot deals with Angela's selling of some of her own organs to fund her children's crossover into the private school system. Students should have an opportunity to learn about and discuss the issue of organ transplants and donations before viewing the film. Ask students to debate whether people should be allowed to sell an organ, such as a kidney, that they can live without, which is currently illegal. Why is it legal to donate an organ but not to sell it?
4. Additional previewing activity: if students have not been asked to view film critically before, you may want to consider taking some time to review film terminology with students, using the lesson on the *Futurestates* For Educators page.

DURING

(20) minutes

As students watch the film, ask them to take notes about the details they notice about the school Jennifer attends, and the environment in which her family lives. On the other side of the chart, students should take notes on what they infer about the new school and home life that Angela wants for her children. These inferences should be based on information presented in the film, including the news broadcasts that can be heard on the soundtrack.

AFTER

(8–10) minutes

Based on the time available, ask students to consider some of the following questions and topics:

1. Using the free resource, PollEverywhere, develop a quick poll that students can respond to with their cell phones on how they feel about Angela's decision at the end of the film: strongly agree, agree, disagree, strongly disagree. You can also have students text in the reasons why they feel the way they do about her choice. Conduct the poll again to see if students have changed their opinions. Another low-tech approach to this activity is to have students move to one of four corners of the room, based on their opinion. As they share their reasoning, students can move to one of the other corners.
2. Take some time to help students consider the deep, personal sacrifice that Angela is making for her children. What are the factors that have put her in this position and what are other possible solutions? Ask students to write a letter as if they were Angela to Jennifer or to Quincy that explains the choice she made.
3. The film takes place in 2028. How did the filmmakers make the time period seem both futuristic and recognizable to us today? What were the effects of some of the choices they made?
4. While there is little information provided about it in the film, what do students think brother Quincy's life will be like? How will it be different from Jennifer's?
5. Notice that we only see only a very little bit of the outside of the school and housing of the private, restricted areas. Why do you think the filmmakers chose to keep us from seeing too much of this? What is the effect of this on the viewer? Is Jennifer really going to be better off? Why or why not?
6. Ask students to make a list of ways that Jennifer's school is similar and different from their own school or schools in their community. Is the portrayal exaggerated, and if so, is the exaggeration effective?

ASSESSMENT

(10) minutes

Have students write a diary entry from the point of view of Jennifer a week or two after her arrival in her new school, in which she compares her new life with her old. Be sure that the entry draws on specific evidence that the film presents, as well as appropriate inferences about how you imagine the new school would look like, based on the information included in the film.

If you have additional time for this assessment, you may want to have students create a PowerPoint of Jennifer's first days at the new school with contrasting images of her old school. Students could create their own images or they can access legally acquired photographs at creativecommons.org.

ADDITIONAL MEDIA LITERACY ACTIVITIES

1. Using their cell phones, students can make a film or a slide show of still images that document the conditions of their own school. They should focus on exploring a single topic: overcrowded classrooms, cafeteria food, athletics, cliques or social groups, etc. Be sure that students acquire these images ethically and that they receive permission from anyone who is recognizable in their film. It would also be advisable to alert your school administration about this activity.

   Watch the documentary *Crossed Over* (7 minutes), about the making of this film. Why do you think the producers of the documentary decided to start not with the film at all, but with interviews and images of actual classroom teachers and administrators? In the documentary, the director of photography of *Crossover* discuses his and the director's choices for the contrasting areas – restricted and unrestricted – of the film. What were some of the most effective choices that helped you to understand these differences?

EXTENSION ACTIVITIES

1. Have students use the Predict-O-Meter tool on the *Futurestates* website. First, using the forms at the end of this lesson plan, students will evaluate up to three predictions from this film based on scientific facts and their own knowledge. Then, they'll have an opportunity to make a prediction of their own about an issue raised in the film and have it evaluated by another student. Finally, if they have made an interesting and a likely prediction, they can have it posted onto the *Futurestates* website.

2. Explore the science and ethics of transplants. Read or listen to the PBS story transcript about the ethics of transplants or the article and the charts about the issue of transplant tourism, which, according to the World Health Organization, is where rich patients can essentially buy organs that have been harvested from poor residents of countries like India, Bangladesh, and others. Students can then create an awareness campaign about the issue that includes press releases, posters, videos, editorials, or podcasts.

3. Explore the issue of school funding further by reading a portion of an article written by Jonathon Kozol called "The Shame of the Nation," or an excerpt from his book Savage Inequalities. Students could also view portions of the documentaries *Hard Times at Douglass High* or *Waiting for Superman*. Once they have an idea of the problem of inequitable school funding, students should then research possible solutions, such as vouchers, school choice, federal funding, etc. and present their solutions in a persuasive speech, letter to the editor, or their own documentary or fiction film.

4. While it is not explicitly stated, it is clear that Quincy, Jennifer's brother, is going to have a very different education than his sister because of his autism. Unfortunately, until very recently, this also has been the case in real life; it was thought that autistic students could not learn. Ask students to research the history of educating autistic students in this country. A good starting place could be this power point: http://www.dps.missouri.edu/Autism/2011AWNC/Aut_Hist_Handouts.pdf. Then, students could hold a panel discussion about the challenges that autistic students face and the ways that the education system can best meet their needs.

As you watch, note the conditions presented in the kids' current school and home life, by referring to details the filmmakers use (such as costumes, set designs, props, music, lighting, and other choices).

Current School and Home Conditions	Inferences About New School

Futurestates

Predict-O-Meter

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FILM: _____ **YEAR:** _____

PREDICTION: _____

KEY– No: 1 Somewhat: 2 Yes: 3 Don't Know: 4	VALUE
Is the prediction based on scientific possibilities?	
Do the consequences of the prediction support the film?	
Does the prediction directly lead to the next prediction?	
Do known events in the past support the prediction?	
Is this prediction plausible? (This is your opinion.)	
Overall Total: (add up the values)	
Score: (Overall Total ÷ 5)	

FILM: _____ **YEAR:** _____

PREDICTION: _____

KEY– No: 1 Somewhat: 2 Yes: 3 Don't Know: 4	VALUE
Is the prediction based on scientific possibilities?	
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Overall Total: (add up the values)	
Score: (Overall Total ÷ 5)	

FILM: _____ **YEAR:** _____

PREDICTION: _____

KEY– No: 1 Somewhat: 2 Yes: 3 Don't Know: 4	VALUE
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Do the consequences of the prediction support the film?	
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Do known events in the past support the prediction?	
Is this prediction plausible? (This is your opinion.)	
Overall Total: (add up the values)	
Score: (Overall Total ÷ 5)	

PERSONAL PREDICTION FOR _____ **(film name)**

NAME: _____ **EVALUATOR:** _____

FILM: _____ **YEAR:** _____

PREDICTION: _____

KEY– No: 1 Somewhat: 2 Yes: 3 Don't Know: 4	VALUE
Is the prediction based on scientific possibilities?	
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Should this prediction be posted to the website? _____

Teacher's approval _____

Date posted _____

If not posted, explain the reason for declining.

CREDITS

CURRICULA WRITER
John Golden

John Golden is currently a curriculum specialist for high school Language Arts in Portland, Oregon. He is the author of *Reading in the Dark: Using Film as a Tool in the English Classroom* (NCTE, 2001) and *Reading in the Reel World: Teaching Documentaries and Other Nonfiction Texts* (NCTE, 2006). John has delivered presentations and led workshops around the country in order to help teachers use film actively in the classroom as a way for students to improve their reading, analytical and critical thinking skills.

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SCENES FROM FUTURE STATES FILMS.
TOP LEFT TO BOTTOM RIGHT: *Gunny* by Patrick Stettner, *Advantageous* by Jennifer Phang, *Asparagus* by Robby Henson, *Laura Keller-NB* by Mo Perkins, and *Worker Drone* by Sharat Raju

FUTURESTATES®

Gunny

Directed by Patrick Stettner

COMMUNITY CLASSROOM
ENGAGING STUDENTS AND EDUCATORS THROUGH FILM

PRESENTED BY:
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ABOUT

FUTURESTATES

Imagining tomorrow's America today,

SCENES AND BEHIND THE SCENES FROM *FUTURESTATES* FILMS.
TOP LEFT TO BOTTOM RIGHT: *Gunny* by Patrick Stettner, *That Which Once Was* by Kimi Takesue, *Laura Keller-NB* by Mo Perkins, and *Beholder* by Nisha Ganatra

Futurestates is a series of independent mini-features—short narrative films created by experienced filmmakers and emerging talents—transforming today's complex social issues into visions about what life in America will be like in decades to come. Now in its third season, *Futurestates*, which debuted in March 2010, is available online at futurestates.tv.

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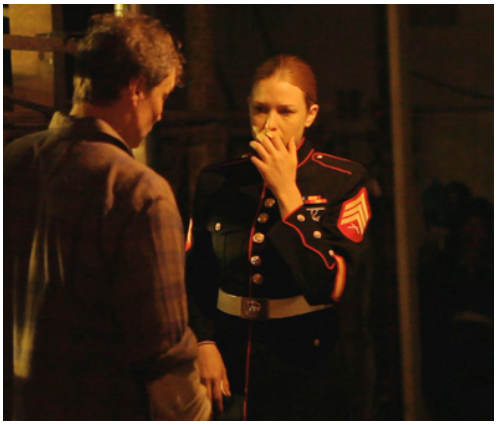
OVERVIEW

While all Futurestate episodes use the future to comment on our present-day circumstances,

Gunny, which is about a returning female solider who is suffering from post-traumatic stress disorder (PTSD), is particularly timely. According to the *New York Times* in June 2012, "The suicide rate among the nation's active-duty military personnel has spiked this year, eclipsing the number of troops dying in battle and on pace to set a record annual high since the start of the wars in Iraq and Afghanistan more than a decade ago." The futuristic element in the film is a new procedure that is intended to erase selective memories of whatever experiences may have triggered their PTSD and subsequent thoughts of suicide. The film is a powerful exploration of the lasting effects of war, told in a unique style that moves backward in time.



TARGET AUDIENCE:

Grades 9–12
ENGLISH OR SOCIAL STUDIES

PLEASE NOTE:

Please note that there is a strong implication that Gunny, the female protagonist, is involved in a sexual relationship with another woman.

DURATION:

The main lesson is designed to be completed within a **55-minute class period**, with additional and extension activities that can expand to three or four class periods.

The film itself has a running time of about **20 minutes.**

STANDARDS:

Common Core State Standards for Reading Literature:

Analyze how an author's choices concerning how to structure a text, order events within it (e.g., parallel plots) and manipulate time (e.g., pacing, flashbacks) create such effects as mystery, tension, or surprise.

Common Core State Standards for Writing:

Write narratives to develop real or imagined experiences or events using effective techniques, well-chosen details, and well-structured event sequences.

BEFORE

(5–10) minutes

Based on the time available, ask students to consider one or more of the following questions and topics:

1. Be sure that before beginning the film that students have a working definition of post-traumatic stress disorder (PTSD), which is "a severe anxiety disorder that can develop after exposure to any event that results in psychological trauma, overwhelming the individual's ability to cope," according to the American Psychiatric Association.
2. Using the free online resource, PollEverywhere, or an offline questionnaire, ask students try to guess the current number of US active-duty soldiers (greater than 1,400, 000), the number serving in Afghanistan (greater than 100,000, as of June 2012), and the number of suicides of active-duty soldiers between January and June 2012 (154 soldiers). The questionnaire should also ask students to share what they know about our current wars in Afghanistan and Iraq, in terms of objectives, results, and history of involvement.
3. Additional previewing activity: if students have not been asked to view film critically before, you may want to consider taking some time to review film terminology with students, using the lesson on the *Futurestates* For Educators page.

DURING

(15) minutes

Because this film starts at the end and moves backward in time, students may need a little assistance to help them through the plot by using the Viewing Guide, which includes the days and times of the story. The chart asks them to track both the information they learn about Gunny as the story unfolds, as well as the visual and sound of each sequence.

If time allows, students would benefit from watching the film a second time to fully appreciate and understand the role that structure plays in the film. If time does not allow, you may want to assign students to take notes on only one half of the chart and to share their notes with a partner afterward.

SCENES AND BEHIND THE SCENES FROM *GUNNY* by Patrick Stettner

AFTER

(8–10) minutes

Based on the time available, ask students to consider some of the following questions and topics:

1. Working in pairs or small groups, retell the story of *Gunny* to one another in chronological order, being sure that all of the key plot points are addressed.

2. A lot of the information in this story is not directly stated, but needs to be inferred by the viewer, especially the scenes between Gunny and her father. Working with a partner, either write or act out a dialogue of what Gunny and her father are thinking to themselves, but do not say out loud.

3. In the scene identified as "six hours earlier," it's clear that one member of Gunny's squad did not take the medication that erases memories. What was his argument against it and, based on what we learn through the film, why do you think Gunny decided to do the same?

4. Sound plays a significant role in this film. Think back on effective uses of sound effects: clocks, insects, crowd noise, etc. How were they used and for what effect?

5. The only two scenes that are not time or day identified are the opening and closing scenes. Where and when do you think these scenes take place and how do you think they relate to the rest of the story?

6. Ask students to identify whether they would take the pill or not. Then, encourage them to talk with someone in class who thinks differently and discuss the reasoning behind their choices.

7. Direct students to identify and discuss other traumatic events that could bring memories that one would like to forget (natural disasters, violence in other arenas, etc.) and ways we deal with these changes to our lives without the use of the pill that Gunny takes.

8. In some ways, Gunny is a passive character. Other than take the pill and get into the fight, she does not do much. What do her actions and her inactions reveal about her character? How has taking the pill affected her identity?

ASSESSMENT

(10) minutes

In a full paragraph, have the students respond to the following prompt: why do you think the director decided to tell this story backwards, what is the effect of this choice on the viewer, and how do you think it relates to the ideas explored about war and memories?

JOHN AND GUNNY ARGUE ABOUT THE CONTROVERSIAL NEW PROCEDURE.

ADDITIONAL MEDIA LITERACY ACTIVITIES

1. What happens when you rearrange the chronological order of a story? What do you have to do in order to help your audience to follow the story? These are valuable questions for writers, filmmakers, and other artists to consider. Give students a Xerox copy of a story they have already read this year or a story with a straightforward narrative; for example, "The Most Dangerous Game" by Richard Connell is widely available and is perfect for this activity. After (re)reading and discussing the chronological plot of the story, direct students to physically cut up the story, moving a scene that happened at the end to the beginning and re-arranging at least one other section. Students should then glue the sections onto blank paper, leaving some space between the re-arranged sections. Next, students need to fill in the spaces between the sections with dialogue, setting, details or other information that will help the reader to understand the new time sequence. Last, students should discuss the role that chronology plays in the creation and development of a story, as well as what you have to do to address your audience.

2. Look at the "Making of …" documentary about this film. The director, Patrick Stettner, discusses the issue of the pros and cons of being able to take a pill and erase one's memories of war. Based on what he says in the documentary, how do you think he feels? Why? How does he show this attitude in his film? How might the story have been told differently if he had different feelings about the subject?

EXTENSION ACTIVITIES

1. Have students use the Predict-O-Meter tool on the *Futurestates* website. First, using the forms at the end of this lesson plan, students will evaluate up to three predictions from this film based on scientific facts and their own knowledge. Then, they have an opportunity to make a prediction of their own about an issue raised in the film and have it evaluated by another student. Finally, if they have made an interesting and a likely prediction, they can have it posted onto the *Futurestates* website.

2. Students should have an opportunity to interview a soldier who has served in combat. However, this needs to be handled very carefully since some veterans are reluctant to speak of their experiences. One of the best ways to go about this is to arrange for an active or retired solider to come to your class for a presentation and Q and A that students have been fully prepared for. You can arrange for a speaker by contacting your local American Legion post, which you can identify at http://www.legion.org/.

3. Research the issue of suicides by active and veteran soldiers. A good starting place is this *New York Times* special debate section on the issue: http://www.nytimes.com/roomfordebate/2011/11/20/how-can-we-prevent-military-suicides/. Then, become involved in a campaign to address this problem by writing a letter to the editor of your school or local newspaper, contacting your Congressman, or making a video, poster, or song about your findings that you can share with others to help work toward solutions.

4. Compare the experiences of soldiers in this film with sections of other fiction or nonfiction films. Suggestions for other films are *Born on the Fourth of July*, *Coming Home*, *The Deer Hunter*, *Gunner Palace*, *Restrepo*, *Iraq in Fragments*, and *Hell and Back Again*. As with any film you use in the classroom, be sure to preview any of the above films ahead of time since the material is often very graphic.

As you watch, note the conditions presented in the kids' current school and home life, by referring to details the filmmakers use (such as costumes, set designs, props, music, lighting, and other choices).

	Information Learned	**Visuals Sound**
Opening sequence		
0700 hr October 3, 2021		
4 hours earlier		
6 hours earlier		
19 hours earlier		
48 hours earlier		
79 hours earlier		
96 hours earlier		
Closing Sequence		

Futurestates
Predict-O-Meter

Log on to www.futurestates.tv. Go to the Predict-O-Meter. There are three rows of predictions. The row on the far left contains the predictions based on the *Futurestates* films, including *Gunny*. The center row consists of predictions submitted by viewers. The far right row contains dates of know events. For this activity, click on the green *Futurestates* predictions. The number that appears in each green square is the number of predictions related to the specified year. Be certain to scroll down to see all predictions for a given year. At the end of each prediction is the tag for the film associated with each prediction. Find as many predictions as you can for the *Gunny* film. Choose three predictions to evaluate using the rubric below. When the assigned evaluations are finished, create at least one prediction of your own. Your prediction will be evaluated by another student. If the evaluation is at least a "3", you may post it on the *Futurestates* website.

FILM: _____ **YEAR:** _____

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KEY– No: 1 Somewhat: 2 Yes: 3 Don't Know: 4	VALUE
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Overall Total: (add up the values)	
Score: (Overall Total ÷ 5)	

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PERSONAL PREDICTION FOR _____ **(film name)**

NAME: _____ **EVALUATOR:** _____

FILM: _____ **YEAR:** _____

PREDICTION: _____

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FUTURESTATES®

That Which Once Was

Directed by Kimi Takesue

COMMUNITY CLASSROOM
ENGAGING STUDENTS AND EDUCATORS THROUGH FILM

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OVERVIEW

The issue of global warming is a significant one,

but to many of our students it seems like a distant problem: distant both in time and in geography. *That Which Once Was*, a gorgeously shot film, gives the issue an immediacy that allows students to connect with in meaningful ways. The story, set in 2028, revolves around the unlikely friendship between two environmental refugees, Vicente, an eight-year boy from the Caribbean, and Siku, an Inuk ice-carver. It is a beautiful and emotionally complex film that students find deeply engaging and moving.

TARGET AUDIENCE:
Grades 9–12
ENGLISH, SOCIAL STUDIES, AND SCIENCE

DURATION:
The main lesson is designed to be completed within a **55-minute class period**, with additional and extension activities that can expand to three or four class periods.

The film itself has a running time of about **20 minutes.**

STANDARDS:
Common Core State Standards for Reading Literature:

Analyze how complex characters (e.g., those with multiple or conflicting motivations) develop over the course of a text, interact with other characters, and advance the plot or develop the theme.

Common Core State Standards for Writing:

Write informative or explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

BEFORE

(5–10) minutes

Based on the time available, ask students to consider one or more of the following questions and topics:

1. The day before screening the film, ask students to bring in a single object from home that has some significant meaning to them. This could be a medal, a photograph, a toy, a letter, and so on. In pairs or small groups, students will present their objects and explain their significance.
2. While there are so many topics to discuss about global warming, it would be most useful and relevant for this film to have students talk about how it can lead to people losing their homes and becoming environmental refugees. Ask students to read and discuss this short article from *The New York Times* about refugees from Bangladesh.
3. While it is not about global warming, the Academy Award® nominated short film *The Tsunami and the Cherry Blossoms* recounts the effects of a natural disaster that might provide students with more visual context for the destruction that could befall low lying areas due to rising sea levels. The trailer and screening information is available at: http://thetsunamiandthecherryblossom.com/ Sections from another documentary, *Chasing Ice*, could be shown to students to provide additional background on the effects that global warming is having on the polar ice caps. Information is available at: http://chasingice.com/
4. Be sure that before beginning the film that students have a working definition of posttraumatic stress disorder (PTSD), which is "a severe anxiety disorder that can develop after exposure to any event that results in psychological trauma, overwhelming the individual's ability to cope," according to the American Psychiatric Association.
5. Show students a clip or two from YouTube about ice sculpting and discuss its role as an art form. What is its purpose, since it lasts so short a time?
6. Additional Previewing Activity: if students have not been asked to view film critically before, you may want to consider taking some time to review film terminology with students, using the lesson on the *Futurestates* For Educators page.

DURING

(20) minutes

Ask students to use the viewing guide to keep track of the character traits, including costumes, gestures, and actions, of the two main characters. The guide will help them to collect information to use on their assessment.

SIKU AND VICENTE IN *THAT WHICH ONCE WAS*.

AFTER

(8–10) minutes

Based on the time available, ask students to consider some of the following questions and topics:

1. Create a timeline of the significant events in Siku's and Vicente's lives before and after meeting each other. To make this task more challenging, students can be asked to locate or create an image for each of the points on their timelines.

2. It's clear that the characters affect the other, helping each to come to terms with their pasts and the effect that displacement has had on them. Direct students, in pairs, to role play Siku and Vicente by imagining that they were being interviewed on a TV talk show about their friendship.

3. Even though the characters do not say a lot aloud, the audience understands what's going on their heads. How does the filmmaker accomplish this? Why do you think the filmmaker chose to have so little dialogue?

4. Why did the filmmakers decide to have Siku be an ice sculptor? How does that choice of profession and type of art relate to the themes in the film?

5. What is the effect of the flashbacks? Why did the filmmaker keep the full truth about Vicente's experience from the viewers until near the end of the film? How would the effect of this revelation been different if it had been seen earlier in the film?

6. There are a number of objects that act as symbols in this film. Explain their significance to the theme of the film. Focus especially on the symbolic meaning of the fishing lure that Vicente keeps with him.

7. Both characters' home countries were destroyed by environmental disaster. What would this be like for you? What would you miss most about your hometown if it were suddenly gone?

8. Students may or may not have noticed the numbers tattooed on Vicente's arm, a clear reference to the Holocaust. What is the filmmaker suggesting about the ways that being the victim of an environmental disaster reduced people to numbers?

ASSESSMENT

(10) minutes

Have students write an analysis that compares the characters of Vicente and Siku. What is it about their similarities and differences that draw them together? How do they benefit each other?

FILMMAKER KIMI TAKESUE

ADDITIONAL MEDIA LITERACY ACTIVITIES

1. Using PowerPoint, Prezi, or a tool like iMovie, have students make a presentation that includes images of places, objects, animals, etc. that might disappear if the threat of global warming becomes reality. Students should use Creative Commons or a similar search engine to locate and use images that are appropriate and copyright free. If possible, students should add relevant music to make their presentations more engaging and persuasive to the audience.

2. View the *Making of That Which Once Was* documentary (9 minutes) available on the *Futurestates* website. Writer-director Kimi Takesue spends a good deal of time in the film discussing her actors and the motivations they have for their craft. What did you learn or find interesting about acting after watching the first part of this documentary? Why do you think that Takesue placed so much emphasis on the casting in this film?

EXTENSION ACTIVITIES

1. Have students use the Predict-O-Meter tool on the *Futurestates* website. First, using the forms at the end of this lesson plan, students will evaluate up to three predictions from this film based on scientific facts and their own knowledge. Then, they have an opportunity to make a prediction of their own about an issue raised in the film and have it evaluated by another student. Finally, if they have made an interesting and a likely prediction, they can have it posted onto the *Futurestates* website.

2. While there continues to be some political disagreement about the causes of global warming, much of the scientific community agrees that human development has played at least some role in the warming of the earth's temperatures. Ask students to try to identify the factors that their own activities may be contributing to global warming. You can use this article as a starting point: http://planetsave.com/2009/02/02/how-humans-cause-global-warming/. Then, ask students to create a piece of media – a song, a poster, a video, a podcast, an editorial – directed to students their own age and designed to raise awareness about one particular factor that may be causing the earth to grow warmer. You may also want to refer to the lesson plan developed for the *Futurestates* film called *Mr. Green*, which delves more deeply into the science of global warming.

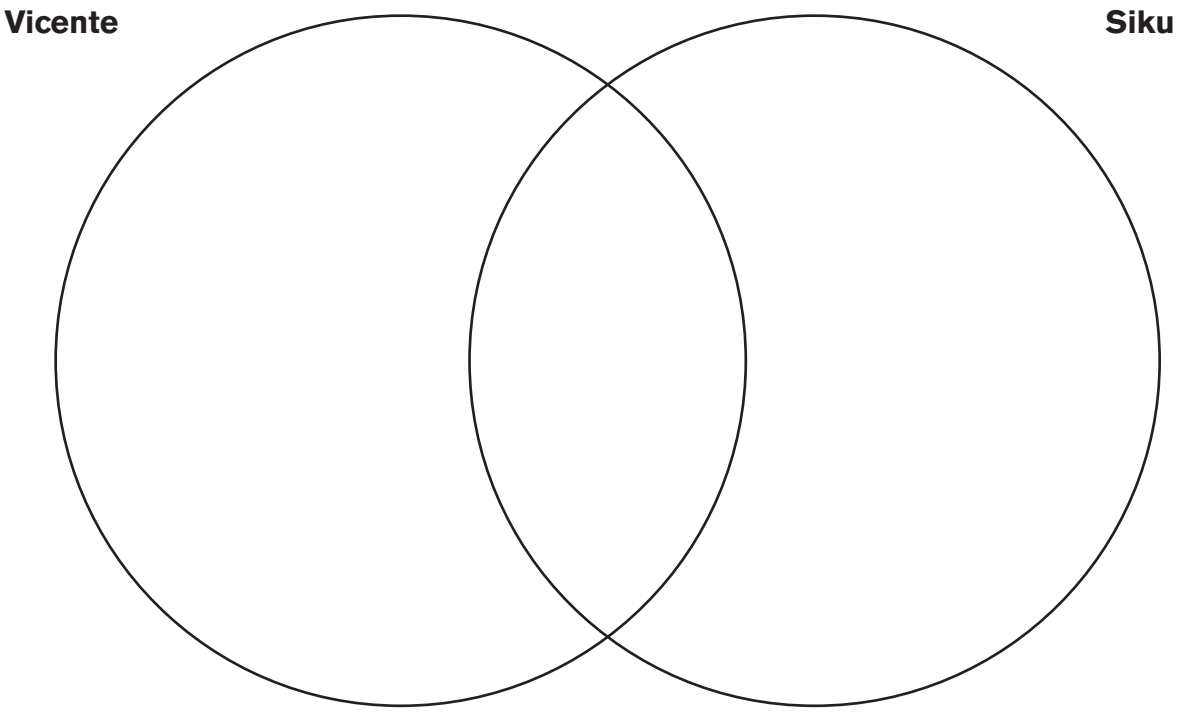
3. Ice sculpting is considered an ephemeral art form since the duration of its existence is significantly less than, say, a painting or a sculpture made of bronze. There are a number of other art forms that could also be considered ephemeral that students would likely enjoy exploring further. Show students a portion of the documentary *Rivers and Tides*, which follows artist Andy Goldsworthy as he creates a number of his pieces out of sand, twigs, driftwood, and light, few of which last longer than a few minutes; clips of the film are widely available online. Additional information about this type of art can be found at: http://www.ephemeralproject.com/an-introduction-to-ephemeral-art-andy-goldsworthy-richard-shilling/. Then, ask students to create a piece of ephemeral art out of available materials that reflects a specific theme or tone. As a class, discuss how these art pieces would be different had they been made using more permanent materials.

4 There is no doubt that the threat of global warming is very real to a the residents of low-lying island nations such as the Maldives, the Marshall Islands, Federated States of Micronesia, Vanuatu, Tuvalu, Kiribati, and Nauru, whose entire countries could be submerged by the end of the century if the sea levels continue to rise. Ask students to select one of the low-lying nations of the world and to research the unique situation the residents there face, due to global warming. A good primer on the topic can be found here: http://www.collegiateclimatecollab.com/the-perils-of-low-lying-island-nations/. Students should then present their findings in a panel presentation with visual aides that demonstrate the growing threat. For additional background, consider showing a portion of the film *The Island President*: http://theislandpresident.com/, which is about President Mohamed Nasheed of the Maldives who tries to get the world's attention to the danger his country faces.

Keep track of the physical traits, costumes, backgrounds, personality, etc. for the two main characters.

Vicente	Siku

After viewing, compare and contrast the two main characters.



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FILM: _____ **YEAR:** _____

PREDICTION: _____

KEY– No: 1 Somewhat: 2 Yes: 3 Don't Know: 4	VALUE
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Do the consequences of the prediction support the film?	
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Do known events in the past support the prediction?	
Is this prediction plausible? (This is your opinion.)	
Overall Total: (add up the values)	
Score: (Overall Total ÷ 5)	

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Does the prediction directly lead to the next prediction?	
Do known events in the past support the prediction?	
Is this prediction plausible? (This is your opinion.)	
Overall Total: (add up the values)	
Score: (Overall Total ÷ 5)	

PERSONAL PREDICTION FOR _____ **(film name)**

NAME: _____ **EVALUATOR:** _____

FILM: _____ **YEAR:** _____

PREDICTION: _____

KEY– No: 1 Somewhat: 2 Yes: 3 Don't Know: 4	VALUE
Is the prediction based on scientific possibilities?	
Do the consequences of the prediction support the film?	
Does the prediction directly lead to the next prediction?	
Do known events in the past support the prediction?	
Is this prediction plausible? (This is your opinion.)	
Overall Total: (add up the values)	
Score: (Overall Total ÷ 5)	

Should this prediction be posted to the website? _____

Teacher's approval _____

Date posted _____

If not posted, explain the reason for declining.

CREDITS

CURRICULA WRITER
John Golden

John Golden is currently a curriculum specialist for high school Language Arts in Portland, Oregon. He is the author of *Reading in the Dark: Using Film as a Tool in the English Classroom* (NCTE, 2001) and *Reading in the Reel World: Teaching Documentaries and Other Nonfiction Texts* (NCTE, 2006). John has delivered presentations and led workshops around the country in order to help teachers use film actively in the classroom as a way for students to improve their reading, analytical and critical thinking skills.

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SCENES FROM FUTURE STATES FILMS.
TOP LEFT TO BOTTOM RIGHT: *Gunny* by Patrick Stettner, *Advantageous* by Jennifer Phang, *Asparagus* by Robby Henson, *Laura Keller-NB* by Mo Perkins, and *Worker Drone* by Sharat Raju


PREDICTING
THE FUTURE
LESSON PLAN
FUTURESTATES
COMMUNITY
CLASSROOM
ENGAGING STUDENTS AND EDUCATORS THROUGH FILM
PRESENTED BY:
cpb
ITVS
FUTURESTATES.TV

COMMUNITY CLASSROOM
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COMMUNITY CLASSROOM is an innovative education resource providing short documentary video content and accompanying curricular materials, lesson plans, and homework assignments to high school and community college instructors and youth-serving community-based organizations. Film modules are drawn from documentaries scheduled for broadcast on the Emmy Award-winning PBS series *Independent Lens*. Content is grouped into subject specific segments that correspond to lesson plans and educational activities. All COMMUNITY CLASSROOM lesson plans are designed with key education standards in mind, and are available free of charge online, along with the film modules.

COMMUNITY CLASSROOM is a program of the Independent Television Service, created with support from the Corporation for Public Broadcasting. Lesson plans were developed with guidance from the American Association of Community Colleges, KQED Education Network, National Association for Media Literacy Education, National Council for the Social Studies, National State Teachers of the Year, and PBS Teachers.

Introducing the Future
Lesson Plan Overview

The films that make up the FUTURESTATES series explore possible future scenarios through the lens of today's global realities. They are not, in a literal sense, science-fiction films, but they do make predictions based upon how they interpret the present. Each of the lessons that are a part of the curriculum for this site ask students to use a "Predict-O-Meter" to examine predictions about the future related to the films. Before engaging with the films, it might be worthwhile to explore the role of predictions and ask why humans always seem to want to project themselves into the future.

Target Audience
This lesson is designed for high school students of all ability levels.

Total Duration
This lesson should take 1-2 day, depending on the class.

Procedures

1. Put the word "prediction" on the board and ask students to freewrite about the word: what does it mean, when do you do it, why do you do it? As an extension, you could show students the trailer for one of the films from the FUTURESTATES series and ask students to make a prediction about the film's probable themes and plot.

2. Direct students to look over the Famously Wrong Predictions sheet. Ask them to choose two or three incorrect predictions and explain how they know the predictions were wrong. This might be best done in pairs or small groups. Be sure to ask students to consider the evidence that makes the predictions wrong.

3. Ask students to complete the Literary Predictions survey. (All of the examples except for the *Harry Potter* example are true.) At this point, take a couple of minutes to show students the short clip at the top of the FUTURESTATES homepage, which acts as an introduction to the film series and includes a series of rhetorical questions. Ask students to consider each rhetorical question presented in the film clip.

4. Next, ask students to make some of their own predictions, starting with personal ones and moving to political and world predictions, using the Your Predictions sheet. Then, working with a partner, students should evaluate one or more of each other's world predictions using the Predict-O-Meter sheet. The predictions that seem most likely to come true should be shared with the rest of the class. The class can discuss the evidence that makes the prediction seem likely to come true.

5. As a wrap up, ask students to return to their original freewrite on the word "prediction" to see what else they can add after considering the various topics explored in this lesson.

Famously Wrong Predictions

"Computers in the future may weigh no more than 1.5 tons."
-- *Popular Mechanics*, forecasting the relentless march of science, 1949

"I think there is a world market for maybe five computers."
-- Thomas Watson, chairman of IBM, 1943

"There is no reason anyone would want a computer in their home."
-- Ken Olson, president, chairman and founder of Digital Equipment Corp., 1977

"This 'telephone' has too many shortcomings to be seriously considered as a means of communication. The device is inherently of no value to us."
-- Western Union internal memo, 1876

"The wireless music box has no imaginable commercial value. Who would pay for a message sent to nobody in particular?"
-- David Sarnoff's associates in response to his urgings for investment in the radio in the 1920s.

"We don't like their sound, and guitar music is on the way out."
-- Decca Recording Co. rejecting the Beatles, 1962

"Heavier-than-air flying machines are impossible."
-- Lord Kelvin, president, Royal Society, 1895

"Drill for oil? You mean drill into the ground to try and find oil? You're crazy."
-- Drillers who Edwin L. Drake tried to enlist to his project to drill for oil in 1859

"Airplanes are interesting toys but of no military value."
-- Marechal Ferdinand Foch, Professor of Strategy, Ecole Superieure de Guerre

"Everything that can be invented has been invented."
-- Charles H. Duell, Commissioner, U.S. Office of Patents, 1899

"Louis Pasteur's theory of germs is ridiculous fiction."
-- Pierre Pachet, Professor of Physiology at Toulouse, 1872

"The abdomen, the chest, and the brain will forever be shut from the intrusion of the wise and humane surgeon."
-- Sir John Eric Ericksen, British surgeon, appointed Surgeon-Extraordinary to Queen Victoria 1873

"640K ought to be enough for anybody."
-- Bill Gates, 1981

"$100 million dollars is way too much to pay for Microsoft."
-- IBM, 1982

"Who the hell wants to hear actors talk?"
-- H.M. Warner, Warner Brothers, 1927

(Quotes retrieved from: http://wilk4.com/humor/humore10.htm)

Literary Predictions

Sometimes a writer can envision something that eventually comes true in the future. Science fiction writers have long imagined things such as space travel, time machines, and lasers. Look over the following statements about some literary predictions and identify each as True or False.

_____ The word robot was invented by Karel Capek, a Czechoslovakian playwright, in 1921.

_____ Geostationary communications satellites were first proposed by science fiction writer Arthur C. Clarke in 1945.

_____ Author Philip K. Dick included the first computer touch screens in his short story "Minority Report" in 1956.

_____ Flip phones were inspired by the Gene Roddenberry TV series *Star Trek*.

_____ Department of Defense researchers liked the idea of an Invisibility Cloak in J. K. Rowling's *Harry Potter* series, so they developed a prototype that was tested by the US military.

_____ The word "cyberspace" was coined by science fiction novelist William Gibson in his 1982 story "Burning Chrome" and popularized by his 1984 novel *Neuromancer*.

What are some films, novels, stories, or TV shows that make predictions about the future? Identify one or two that seem to portray a realistic view of the future. Explain why.

In each of the examples above, creative writers were able to envision a technological development before scientists and engineers could make it happen. What technology would you like to see developed to address a current need?

Why do artists, including writers and filmmakers, like to envision the future?

Your Predictions

What are some of your predictions in the following categories? What evidence do you have to support these predictions? The first box in each section includes an example.

TYPE	PREDICTION	EVIDENCE/REASON FOR YOUR PREDICTION
PERSONAL	**I think that I will graduate from high school and go to college.**	**I am getting good grades and my family is saving money for me to go to college.**
LOCAL AND/ OR AMERICAN POLITICS	**President Obama will not be reelected in 2012.**	**He is trailing in many polls and the economy shows few signs of improving anytime soon.**
THE WORLD	**Electric cars will become more common than gas-powered cars by 2015.**	**The price of oil is continuing to rise and the technology for long-lasting batteries is improving.**

Predict-O-Meter

Name: _____ **Partner:** _____

Briefly describe one of your predictions: _____

_____

Now, evaluate your partner's prediction using the following chart:

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total (all columns) = _____

So, is this a realistic prediction? What is best the evidence in its favor? What evidence works against it or is not yet known?

Imagine a movie or a book in which this prediction appears. Describe what the movie or film might be about.

LESSON PLAN CREDITS

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John Golden
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About FUTURESTATES:
Imagining tomorrow's America today, FUTURESTATES is a series of independent mini-features – short narrative films created by experienced filmmakers and emerging talents transforming today's complex social issues into visions about what life in America will be like in decades to come. The first season of FUTURESTATES debuted in March 2010, and is available online at futurestates.tv.

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THE VISUAL GRAMMAR OF FILM

LESSON PLAN

FUTURESTATES

COMMUNITY CLASSROOM

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Film Terminology
Lesson Plan Overview

Because students often passively consume film and other media, it is essential that you give students an opportunity to examine media critically as they explore these FUTURESTATES films. To become active, analytical viewers, students need to first learn the language of film. This lesson walks students through a few exercises that will give them the terminology to talk about the films from a more critical perspective.

Target Audience
This lesson is designed for high school students of all ability levels.

Total Duration
This lesson should take 1-2 days, depending on the class.

Objective for the Lesson
Students will be able to:

- Identify film terminology and explain the effects of the director's choices.
- Recognize the cinematic and theatrical elements in film.
- Understand how filmmakers use cinematic and theatrical elements for particular effects.

Teacher Preparation

- Have access to the FUTURESTATES site and a projector with sound.

Procedures Part One (Cinematic Elements)

1. Begin by asking students to complete the Film 101 survey, which asks them about their interests in film. Then, ask them to complete the Media Habits survey, which asks them about their use of "new media technologies." Be sure that they have some time to write and discuss with a partner what they have learned about themselves.

2. Instruct students to roll a sheet of construction paper into a tube and hold it up to their eye like a telescope. After students have completed this task, ask them to manipulate the paper camera as if it were a real camera. For example, ask a volunteer to stand in front of the class to be the subject of the students' frame:
    - To get a long shot, students will have to unroll the paper to create a larger lens in order to get a shot of the student's full body. Ask them what this shot enables the viewer to see.
    - Next, ask students to decrease the size of the lens on the paper camera to get a medium shot (from the waist up). Ask students to consider why a director might choose to use this shot. Further, what does this shot unveil to the viewer?
    - Next, ask students to decrease the size of the lens of the camera to get a close up shot (capturing only the face). Ask students to consider why a director might use this shot.
    - Finally, ask students to roll their paper camera tighter in an effort to zoom into an extreme close up (focusing on one specific aspect, for example an eye or ear). Again, ask students why a director might choose this shot.
    - The paper camera can be adjusted to create many different shots, angles, and camera movements. For example, a pan may be demonstrated by turning your head from left to right, and a low angle may be demonstrated by sitting on the floor and "filming" a clock up on the wall.
    - There are many other movements that you could direct students to try in order to give them a conceptual understanding of how to apply cinematic terminology. As you expose students to these terms, ask them why these shots, angles, and movements might be used. Engage students in a discussion about the similarities between a literary author's decisions and a film director's choices.

3. Now, hand out the Film Terminology sheet and ask students to read through the document, marking any questions or examples they have.

4. Play either the trailer for or the opening segment (the first 90 seconds) of *Play* and ask students to identify the use of as many film effects as possible. Remember, it is not enough to ask them to only identify the effect – they must learn to explain its function. Always prompt your students to follow up by asking, "Why do you think the director used that?" or "How would it have been different if the director used …?"

5. Replay the clip and ask students to identify the use of any film terms they see, using the cinematic elements note taking sheet. Show students a second clip, perhaps the trailer for *Fallout*, and ask them to focus on one or more of the elements on the note taking form. Note: students should NOT be asked to take notes on ALL the elements at first; it is a skill they will develop. In the meantime, assign an individual element to each student or assign students to work in groups.

Procedures Part Two (Theatrical Elements)

Teacher Notes: When watching film, it is essential that students look at more than just the cinematic elements (shot type, angle, lighting, etc.) discussed in the previous part. Film is also made up of theatrical elements (costumes, props, sets, acting, etc.), which students also need to learn to examine.

1. Select at least two clips from the films identified below:

- FUTURSTATES clips: The opening two minutes of *The Rise* or *Silver Sling*. The trailer for any of the films from the FUTURESTATES site would also work well.

- Others films:
  - The opening scene from *Life is Beautiful.*
  - The opening scene from *Chocolat.*
  - When Cyrano tries to tell Roxanne he loves her at the bakery (about 20 minutes in) in the film *Cyrano de Bergerac.*
  - Just about any scene from *Moulin Rouge.*
  - The scene from *Chicago* where the lawyer and Roxie have their press conference.
  - The scene in *Whale Rider* where Paikea looks in on the boys training (about 35 minutes into the film).

As students watch each clip, ask them to write down what they notice about the costumes, props, sets, and acting choices on the theatrical elements note taking form. Note that acting can include movement, gestures, voices, etc.

2. After viewing the film clips, students should write a paragraph with a strong topic sentence that explains the effect of one or more of those theatrical elements. The way to get students to respond well is to ask them, “Why did the director use ...?”

3. Before looking at one of the films from the FUTURESTATES site in its entirety, it might be a good idea to practice with the combined theatrical and cinematic note taking form while viewing one of the clips already examined.

Film 101 Survey

1. Approximately how many movies do you watch a month (DVD, cable, online, or in the theater)?

2. What are your favorite types of movie? Explain.

3. What are your least favorite types of movie? Explain.

4. Rank the top five best films ever made, in your opinion.

5. What kinds of movies do your parents or guardians like to watch? How often do you watch movies with them?

6. What are the differences between watching a movie at home, in a theater, and watching online?

7. What kinds of movies do you watch in school?

8. What do teachers normally ask you to during or after watching a movie in school?

9. Have you or someone you know ever created and shared films with others? What do you think is involved in the filmmaking process?

Media Habits Survey

Use the following scale to identify how often you partipate in the following:

Often	Sometimes	Rarely	Never
4	3	2	1

_____ Play videogames

_____ Play interactive videogames with other people online, such as *World of Warcraft* or similar role playing games

_____ Use Facebook, MySpace, Twitter, or similar social networking sites

_____ Keep a blog

_____ Share music online

_____ Use the internet for research

_____ Watch TV shows and movies online on sites such as Hulu

_____ Watch videos on YouTube or similar video sharing sites

_____ Create and share your own videos

_____ Look online for current news and/or sports information

_____ Send e-mails

_____ Send texts

Write for a few minutes about your own media viewing and creating habits. How are you similar or different from your parents/guardians in your use of media? How has your use of media changed as you've grown older?

Film Terminology

Shots and Framing

Shot: A single piece of film uninterrupted by cuts.

Establishing Shot: Often a long shot or a series of shots that sets the scene. It is used to establish setting and to show transitions between locations.

Long Shot (LS): A shot from some distance. If filming a person, the full body is shown. It may show the isolation or vulnerability of the character (also called a Full Shot).

Medium Shot (MS): The most common shot. The camera seems to be a medium distance from the object being filmed. A medium shot shows the person from the waist up. The effect is to ground the story.

Close Up (CU): The image being shot takes up at least 80 percent of the frame.

Extreme Close Up: The image being shot is a part of a whole, such as an eye or a hand.

Two Shot: A scene between two people shot exclusively from an angle that includes both characters more or less equally. It is used in love scenes, where the interaction between the two characters is important.

Camera Angles

Eye Level: A shot taken from a normal height; that is, the character's eye level. Ninety to ninety-five percent of all shots are taken at eye level because it is the most natural angle.

High Angle: The camera is above the subject. This usually has the effect of making the subject look smaller than normal, giving him or her the appearance of being weak, powerless, and trapped.

Low Angle: The camera films the subject from below. This usually has the effect of making the subject look larger than normal, and therefore strong, powerful, and threatening.

Camera Movements

Pan: A stationary camera moves from side to side on a horizontal axis.

Tilt: A stationary camera moves up or down along a vertical axis

Zoom: A stationary camera lens is adjusted to make an object seem to move closer to or further away from the camera. With this technique, moving toward a character often preceeds a personal or revealing movement, while moving away distances or separates the audience from the character.

Dolly/Tracking: The camera is on a track that allows it to move with the action. The term also refers to any camera mounted on a car, truck, or helicopter.

Boom/Crane: The camera is on a crane over the action. This is used to create overhead shots.

Film Terminology (cont.)

Lighting

High Key: The scene is flooded with light, creating a bright and open-looking scene.

Low Key: The scene is flooded with shadows and darkness, creating suspense or suspicion.

Bottom or Side Lighting: Direct lighting from below or the side, which often makes the subject appear dangerous or evil.

Front or Back Lighting: Soft lighting on the actor's face or from behind gives the appearance of innocence or goodness, or a halo effect.

Editing Techniques

Cut: The most common editing technique. Two pieces of film are spliced together so that the film "cuts" from one image to another.

Fade: Can be to or from black or white. A fade can begin in darkness and gradually assume full brightness (fade-in) or the image may gradually get darker (fade-out). A fade often implies that time has passed or may signify the end of a scene.

Dissolve: A kind of fade in which one image is slowly replaced by another. It can create a connection between images.

Wipe: A new image wipes off the previous image. A wipe is more fluid than a cut and quicker than a dissolve.

Flashback: Cut or dissolve to action that happened in the past.

Shot-Reverse-Shot: A shot of one subject, then another, then back to the first. It is often used for conversation or reaction shots.

Cross Cutting: Cuts between actions that are happening simultaneously. This technique is also called parallel editing. It can create tension or suspense and can form a connection between scenes.

Eye-Line Match: Cut to an object, then to a person. This technique shows what a person seems to be looking at and can reveal a character's thoughts.

Sound

Diegetic: Sound that could logically be heard by the characters in the film.

Non-Diegetic: Sound that cannot be heard by the characters but is designed for audience reaction only. An example might be ominous music for foreshadowing.

Film Viewing Note Taking Form: Cinematic Elements

Title of Film:_____ **Director:** _____

Shot Types	Angles	Camera Movement
Ligthing	**Sound**	**Editing**

General Response

Film Viewing Note Taking Form: Theatrical Elements

Title of Film:_____ **Names of Characters:** _____

Costumes/Makeup	Props/Sets	Acting Choices

Title of Film:_____ **Names of Characters:** _____

Costumes/Makeup	Props/Sets	Acting Choices

Title of Film:_____ **Names of Characters:** _____

Costumes/Makeup	Props/Sets	Acting Choices

Film Viewing Note Taking Form: Theatrical and Cinematic Elements

Title of Film:_____ **Director:** _____

CINEMATIC **Shot type, angle, lighting, sound, etc.**	**THEATRICAL** **Costumes, props, sets, acting, etc.**

General Response

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MR. GREEN

LESSON PLAN

FUTURESTATES

COMMUNITY CLASSROOM

ENGAGING STUDENTS AND EDUCATORS THROUGH FILM

PRESENTED BY:

cpb ITVS

FUTURESTATES.TV

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Global Warming
Lesson Plan Overview

Topics
Ecology; global warming; climate change; photosynthesis; human effects on climate change; science and technology in local, national, and global challenges; autotrophic/heterotrophic organisms; bioengineering; epidemiology; evolution.

Target Audience
Grade 9 Biology; Grades 10-12 Advanced, AP, or Dual-Credit Biology; Environmental Science. This lesson is designed to follow instruction in Ecology and ecological cycles and requires familiarity with the concepts of global warming and climate change. Knowledge of photosynthesis and genetic transfer are also recommended.

National Educational Standards
All components are aligned to the National Science Education Standards as presented by the National Academy of Science and available as a free download at http://www.nap.edu/catalog/4962

NS.9-12.3 LIFE SCIENCE
As a result of their activities in grades 9-12, all students should develop understanding of
- The cell
- Molecular basis of heredity
- Biological evolution
- Interdependence of organisms
- Matter, energy, and organization in living systems

NS.9-12.5 SCIENCE AND TECHNOLOGY
As a result of activities in grades 9-12, all students should develop
- Abilities of technological design
- Understandings about science and technology

NS.9-12.6 PERSONAL AND SOCIAL PERSPECTIVES
As a result of activities in grades 9-12, all students should develop understanding of
- Environmental quality
- Natural and human-induced hazards
- Science and technology in local, national, and global challenges

In addition to the National Standards for Science, the lesson plans provide an excellent framework for instruction in Media Literacy. This instruction further supports both NS.9-12.1 SCIENCE AS INQUIRY and NS.9-12.7 HISTORY AND NATURE OF SCIENCE by instructing students in methods that will make them more effective in media analysis. Information on Media Literacy can be found at www.NAMLE.net.

Time
Each lesson is designed for a 45-55 minute class period. The modules may be separated or combined to accommodate differences in instructional time. The entire unit may be completed in 3 days, but may also be extended to include additional activities or to provide additional time where needed (see Extension Activities).

Overview of *Mr. Green*

In this parable about climate change, a jaded government undersecretary becomes the unwitting test subject in an experimental program to curb global warming.

Summary of Lesson

In this lesson, students will analyze selected data that supports global warming, watch the film *Mr. Green*, analyze the validity of the solution presented in the film, and investigate the concept of carbon dioxide sequestration.

Background Brief

This is information for the teacher. It includes information that may help you help your students understand the underlying science in the film.

The Problem of Excess Carbon Dioxide

Since the beginning of the Industrial Revolution, the levels of atmospheric carbon dioxide have risen. The resulting increase in CO2 is contributing to a rise in the average temperature of the planet. This change in global temperature, often referred to as "global warming," is linked to many apparent widespread changes in our climate. Examples of these changes include greater storm intensity; increased drought, flooding, and wildfires; shifts in seasons; and more severe heat waves.

How Did This Happen?

The most commonly stated reason for global warming is the excessive burning of fossil fuels like coal, oil, and natural gas. The carbon within these fuels has been locked inside the original plant material for millions of years. Burning these products releases carbon from deep within the Earth into the atmosphere at an accelerated rate. While the ocean, soil, and plants have always acted as gigantic carbon "sinks," absorbing excess carbon dioxide from the air, the rate and amount of carbon dioxide released by the burning of fossil fuels is overwhelming the cycle, leading to a buildup of CO2 levels in the atmosphere.

What About the Trees?

The soils and land-based plants of the world are collectively the world's largest carbon sink. Through the process of photosynthesis, the trees and other plants are able to take in carbon dioxide gas and "tie it up" in the form of glucose as part of the biomass of the plant. Although plants do release some carbon dioxide as a waste gas during respiration, they sequester much more during the process of photosynthesis. However, deforestation has greatly reduced the number of forests on the planet. Also, rising temperatures and decreased rainfall have affected the efficiency of photosynthesis for many plants.

Euglena/Endosymbiont Theory

Is there such a thing as an organism that can be both photosynthetic (autotrophic) and heterotrophic? The protist known as Euglena is. In fact, the Endosymbiont Theory implies that in the past, many organisms were able to accomplish this feat. The chloroplast, which is the photosynthetic "machine," has its own genome. If you needed to isolate the gene for a chloroplast, you could find it in the plastid itself.

Genetic Engineering/Gene Transfer

Although certainly not likely to happen any time soon, the idea of genetically altering a human to express chloroplasts in the skin does deserve some consideration. If the chloroplast genome and its controls could be isolated, if there were vectors that could deliver it (such as pollen grains or viral particles), and if the host could avoid being harmed by the products of the chloroplast (glucose), then such a gene transfer might be possible. If the transfer worked, it could result in a planet of organisms with a combined carbon footprint of zero. Such a scenario might not reverse global warming, but it could potentially halt further warming.

Precautionary Principle

In 1998, the Precautionary Principle was presented as a proposed basis for future environmental and public health policy. In effect, it stated that when the health of humans or the environment was at stake, it was not always necessary to wait for scientific proof before taking protective actions. In other words, it followed the old adage "it is better to be safe than sorry." The Precautionary Principle is based on the ethical assumption that humans have the responsibility to protect, preserve, and restore the global ecosystem. It also puts the burden of proof that the action is harmless on those taking the action. Future development and cultivation of agricultural GMOs may be approved or prohibited based on this policy.

Commercial Production and Identification of GMOs

Web Resources:

For more information on genetic transfer, PCR, and bioengineering:

http://www.hhmi.org (Click on "Biointeractive," then choose "Animation")

http://wwwdnalc.org

For more information on Bt corn and Roundup Ready Soybeans:

http://www.ars.usda.gov/is/br/btcorn

http://www.ca.uky.edu/entomology/entfacts/ef130.asp

For more information on organic foods:

http://www.organic.org

http://www.organicfoodinfo.net

For more information on the Precautionary Principle:

http://www.sehn.org

http://www.precaution.org

http://www.pprinciple.net/the_precautionary_principle.html

Additional information is available in most advanced biology textbooks.

Lesson 1

Objectives

Students will:

- Differentiate between the terms “global warming” and “climate change.”
- Discuss some of the issues associated with excess carbon dioxide in the atmosphere.
- Analyze data from three different sources to answer the following question: “Do we have any evidence to support or refute the proposition that the level of carbon dioxide in our atmosphere is increasing?”

Materials

- Worksheet 1 (see page 8).
- Worksheet 2 (see page 10).
- Graph paper.

Beginning (5-7 minutes)
Whole class discussion. The teacher should write the terms “Global Warming,” “Climate Change,” and “Something Else” on the board. The teacher will begin by asking students to place the term “Greenhouse Effect” under the correct heading(s). The teacher will continue this procedure with similar terms in an attempt to determine prior knowledge and to highlight misconceptions. Terms to include: ozone, CFCs, fossil fuels, humans, ocean, carbon dioxide, solar radiation, natural, unnatural, etc. When the list is finished, the teacher and students will discuss each choice and correct any misconceptions. Discussion ends with the question: “Do we have any evidence to support or refute the proposition that the level of carbon dioxide in our atmosphere is increasing?”

Middle (30 minutes)
The class will investigate ice core sample analysis data and data on atmospheric carbon dioxide levels (see Worksheet 1 and Worksheet 2 in supplemental materials). Organize students in groups of 4. Each group will organize and analyze data from both data sets. Two students will work on the ice core data, and the other two will analyze the atmospheric carbon dioxide data. Upon completion of their assignment, the teams will meet in their group to discuss their findings. When all groups are finished, the instructor will lead the class in a discussion and clarification of the findings. The work of both teams will be counted toward a single grade for the group.

End (10 minutes)
Return to the original question: “Do we have any evidence to support or refute the proposition that the level of carbon dioxide in our atmosphere is increasing?” Conclude with a brief discussion of class consensus. “What can we do about it?” Tomorrow we will look at one possible answer.

Assessment

- Responses during the introductory discussion and final discussion.
- Accurate completion and interpretation of group data activity.

Lesson 2

Objectives

The student will:

- View the *Mr. Green* film.
- Discuss the basic premise of film.
- Analyze the science behind the premise of the film.
- Evaluate the impact of photosynthetic humans on excess carbon dioxide levels.

Materials

- Computer/internet access for viewing film.

Beginning (10 minutes)
Remind students of data from the previous lesson. Ask: "Do we have any evidence to support or refute the proposition that the level of carbon dioxide in our atmosphere is increasing?" Discussion should lead to an affirmative answer. The instructor then asks, "What can we do about it?" The teacher and the students discuss some possible answers. The teacher asks students to consider the terms "carbon footprint" and "going green." The teacher may use examples from media to facilitate the discussion. The teacher then asks students, "Are we trying to reduce the amount of carbon dioxide we release into the atmosphere or are we trying to reduce the levels already present?" Students briefly discuss the statement, supporting their answer. The teacher then introduces the film by saying, "The film we are about to see presents an imaginative approach to reducing the carbon footprint of every human to zero."

*Middle (*30 minutes)
View *Mr. Green*.

Upon completion of the film, discuss the students' impressions of the film. It is likely that students will not find the solution presented in the film realistic or plausible. The teacher should use the following questions, which encourage students to think "outside the box."

- Do we know of any creature in nature that can be both autotrophic and heterotrophic? (Example: Euglenoids.)
- What does the Endosymbiont Theory imply?
- Do you have to have roots and leaves to be photosynthetic? What do you need?
- From a biotech standpoint, what would you have to isolate and transfer to create a photosynthetic human?
- In the film, is the transfer an infection or an actual gene transfer or both?
- Are there any repercussions to the development of photosynthetic humans, as presented in the film?
- Why was this film made?

End (5-7 minutes)
Wrap up the discussion and summarize major points. Students are the asked to respond to the writing prompt: "What if the transfer of chloroplasts to humans could be accomplished? Would it eliminate the human carbon footprint? If it did, would that be a good thing?"

Note: If the teacher wishes to complete the writing assignment in class, discussion time may be adjusted as needed.

Assessment

- Classroom discussion.
- Response paper.

Lesson 3

Objectives

The student will:

- Investigate methods of carbon dioxide sequestration.
- Evaluate the effects of sequestration on reducing carbon dioxide in the atmosphere.

Materials

- Worksheet 3: Carbon Sequestration (see page 12).
- Ticket Out Worksheet (see page 13).
- Access to computer for website information.

Beginning (5-7 minutes)
Review the major points of the film and the previous day's discussions. Ask students: "What can we do now? The film mentions carbon dioxide sequestration. What is it? Is it a viable answer to the problem of excess carbon dioxide in our atmosphere? Just because we can do it, should we? Today we will look at the feasibility of carbon dioxide sequestration."

Middle (30 minutes)
Students will investigate carbon dioxide sequestration. Go to: www.ccs-education.net and watch the CCS film. Using the Overview on the website and information from the film, students will complete the worksheet on carbon dioxide sequestration (Worksheet 3).

End (10-12 minutes)
Teacher will give a final verbal overview of topic. Students will complete a "Ticket Out" concerning what they have learned (see supplemental materials).

Assessment

- Accurate completion of the Carbon Dioxide Sequestration worksheet.
- Responses to Ticket Out questions.

Extension Activities and Modifications

Lesson 1

To save time, the teacher could use just the ice core data activity. It provides the information that links increased carbon dioxide levels to an increase in global temperatures. If the goal is to introduce students to the debate over global warming, excerpts from the film *An Inconvenient Truth* could be shown along with the IZZIT film *Unstoppable Solar Cycles*, which is available for free to teachers at www.izzit.org. The films present two opposing viewpoints and will encourage students to consider both sides of the argument.

Lesson 2

If time is an issue for the teacher, *Mr. Green* could be used as enrichment to support instruction in climate change. It can also be paired with the FUTURESTATES film *Seed* as enrichment to accompany a unit on biotechnology, and/or paired with the FUTURESTATES film *Rise* to further explore the possible repercussions of climate change.

Lesson 3

If time is short, this lesson can be foregone. In its place, the teacher may ask students to research other ways of reducing excess carbon dioxide in our atmosphere. The focus could be on renewable resources and energy efficiency. For more information:

- www.nrel.gov (Follow the links to student resources on renewable energy. This site has information on biomass, geothermal, hydrogen, solar, and wind energy sources.)
- www.ccs-education.net
- www.eere.energy.gov
- www.energy.gov/energytips.htm
- www.energy.gov/energyefficiency/index.html

Worksheet 1: Ice Core Data

Background Information

Although scientists have found substantial evidence that atmospheric carbon dioxide levels are rising, the increase does not necessarily imply an accompanying increase in global temperatures. Ice cores provide a unique look into the past composition of the atmosphere. They are a frozen record of the gases trapped in the ice at the time of its formation. As a result, levels of carbon dioxide (and other gases) can be determined from the cores. The most recent ice core data is typically from a decade or so in the past, as it takes time for the cores to form.

Purpose

In this lab, the students will analyze carbon dioxide data from the Law Dome ice cores and compare the CO2 levels to changes in the global temperatures within selected decades.

Procedure

Using the ice core data in Table 1, students will construct a dual-line graph showing the relationship between atmospheric carbon dioxide concentration as preserved in the ice cores and changes in global temperatures over a selected period of years. The X-axis should consist of the years, the first Y-axis should track the CO2 concentrations, and the second Y-axis should track the mean change in global temperature. Use a different color for each line. Be certain to appropriately label your graph.

The students will repeat this procedure using data from Table 2 and Table 3. Upon completion, there will be three separate graphs of the data. The students will then use the graphs to answer the analysis questions.

Table 1 – Ice Core Data Activity *

Year	Carbon Dioxide level (ppm)	Global Surface Air Temperature Change
1900	295.8	.02
1901	296.1	.02
1902	296.5	- .17
1903	296.8	- .27
1904	297.2	- .37
1905	297.6	- .17
1906	298.1	- .07
1907	298.5	- .36
1908	298.9	- .23
1909	299.3	- .26
1910	299.7	- .17

Table 2 – Ice Core Data Activity *

Year	Carbon Dioxide level (ppm)	Global Surface Air Temperature Change
1945	310.1	- .01
1946	310.1	.00
1947	310.2	.12
1948	310.3	- .03
1949	310.5	- .09
1950	310.7	- .17
1951	311.1	- .02
1952	311.5	.04
1953	311.9	.12
1954	312.4	- .08
1955	313.0	- .07

Table 3 – Ice Core Data Activity *

Year	Carbon Dioxide level (ppm)	Global Surface Air Temperature Change
1968	322.8	- .09
1969	323.8	.00
1970	324.8	.05
1971	325.8	- .10
1972	326.9	- .06
1973	328.0	.19
1974	329.2	- .07
1975	330.3	- .02
1976	331.5	- .23
1977	332.6	.15
1978	333.7	.06

*Ice Core Data – Historical CO2 record from the Law Dome DE08, DE08-2, and DSS ice cores, June 1998
Source: D.M. Ethridge, L.P. Steele, R.L. Langenfelds, and R.J. Francey
www.cdiac.ornl.gov/ftp/trends/co2

Global Surface Air Temperature Change – adapted from Hansen et al. (2001)
Tabular data available at: http://data.giss.nasa.gov/gistemp/graphs/Fig.A.txt
(6/29/2010)

Worksheet 2:
Atmospheric Carbon Dioxide Data

Background Information

Our atmosphere is only about 0.03% carbon dioxide, but that amount makes it possible for the planet to maintain a surface temperature necessary for life as we know it to survive. The atmospheric temperature directly influences oceanic temperatures and the interplay of the two creates our weather and climate. Even slight changes in the level of carbon dioxide may raise the average temperature of the planet. Atmospheric carbon dioxide concentrations have been measured for years. In any given calendar year, there are increases and decreases in the levels. The concern is not the natural fluctuations, but the apparent overall trend of increased minimum carbon dioxide levels. The longest continuous record of air samples comes from a facility on Mauna Loa, an inactive volcano and the highest point on the big island of Hawaii. The data for this activity is from the site in Hawaii.

Purpose

In this lab, students will analyze monthly atmospheric carbon dioxide data recorded at the Mauna Loa station and will compare the levels from samplings at 15 year intervals.

Procedure

Using the atmospheric carbon dioxide data in Table 1, the students will construct a dual-line graph showing the relationship between monthly atmospheric carbon dioxide concentration levels recorded on Mauna Loa in 1975, 1990, and 2005. The X-axis should list the calendar months, the first Y-axis should track the CO2 levels for 1990, and the second Y-axis should track the CO2 levels for 2005. Use a different color for each line. Be certain to appropriately label your graph.

The students will repeat the procedure using data from 1975 and 2005. Upon completion, there will be two separate graphs of the data. The students will then use the graphs to answer the analysis questions.

Is this prediction plausible?
This is the evaluator's opinion based on the evidence presented in defense of the prediction.

Table 1: Atmospheric Carbon Dioxide (ppm) for the years 1975, 1990, and 2005 *

Year	Carbon Dioxide level (ppm)	Global Surface Air Temperature Change
1900	295.8	.02
1901	296.1	.02
1902	296.5	- .17
1903	296.8	- .27
1904	297.2	- .37
1905	297.6	- .17
1906	298.1	- .07
1907	298.5	- .36
1908	298.9	- .23
1909	299.3	- .26
1910	299.7	- .17

Analysis Questions

1. Based on your knowledge of natural processes like photosynthesis, how could you explain the changes in carbon dioxide concentrations through the year?

2. When was the highest recorded level of carbon dioxide? (Which month and which year?) How could you explain the high level during this particular time?

3. Based on your graphs, what would you conclude about the overall trend in atmospheric carbon dioxide levels?

4. Is the information from the Mauna Loa site enough evidence to conclude that the amount of carbon dioxide in the atmosphere is increasing? Explain.

5. Is the information from the Mauna Loa site enough evidence to conclude that the amount of carbon dioxide in the atmosphere is responsible for global warming? Explain.

Worksheet 3:
Carbon Dioxide Sequestration

Name:

Go to the following website: www.ccs-education.net

After watching the film (about 10 minutes) and reading about the process in the Overview section, use what you have learned to answer the following questions.

1. Name at least two ways we could reduce the emission of carbon dioxide.

2. a) How much has the global temperature already risen since the Industrial Revolution?

b) Why didn't it rise much before then?

3. Although most of the "unnatural" CO2 appears to be associated with human energy sources, which source alone is responsible for 40% of the carbon dioxide emissions?

4. What is CCS? (Just provide the definition.)

5. Nature has already provided a natural form of sequestration in the metabolic activities of trees and in the solutional capabilities of the ocean. Both have successfully functioned as carbon dioxide "sinks" for the planet. Why aren't they sufficient now?

Ticket Out

Name:

In your own words, how would CCS technology create “clean” power plants?

Ticket Out

Name:

In your own words, how would CCS technology create “clean” power plants?

LESSON PLAN CREDITS

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About FUTURESTATES:
Imagining tomorrow's America today, FUTURESTATES is a series of independent mini-features – short narrative films created by experienced filmmakers and emerging talents transforming today's complex social issues into visions about what life in America will be like in decades to come. The first season of FUTURESTATES debuted in March 2010, and is available online at futurestates.tv.

About ITVS:
The Independent Television Service (ITVS) funds and presents award-winning documentaries and dramas on public television, innovative new media projects on the Web and the Emmy Award-winning weekly series *Independent Lens* on Tuesday nights at 10 PM on PBS. ITVS is a miracle of public policy created by media activists, citizens and politicians seeking to foster plurality and diversity in public television. ITVS was established by a historic mandate of Congress to champion independently produced programs that take creative risks, spark public dialogue and serve underserved audiences. Since its inception in 1991, ITVS programs have revitalized the relationship between the public and public television, bringing TV audiences face-to-face with the lives and concerns of their fellow Americans. More information about ITVS can be obtained by visiting itvs.org. ITVS is funded by the Corporation for Public Broadcasting, a private corporation funded by the American people.

PLASTIC BAG
LESSON PLAN

FUTURESTATES

COMMUNITY CLASSROOM
ENGAGING STUDENTS AND EDUCATORS THROUGH FILM

PRESENTED BY:
cpb ITVS

FUTURESTATES.TV

COMMUNITY CLASSROOM
Independent Television Service (ITVS)
651 Brannan Street, Suite 410
San Francisco, CA 94107
E-mail: outreach@itvs.org
http://www.itvs.org/classroom

COMMUNITY CLASSROOM is an innovative education resource providing short documentary video content and accompanying curricular materials, lesson plans, and homework assignments to high school and community college instructors and youth-serving community-based organizations. Film modules are drawn from documentaries scheduled for broadcast on the Emmy Award-winning PBS series *Independent Lens*. Content is grouped into subject specific segments that correspond to lesson plans and educational activities. All COMMUNITY CLASSROOM lesson plans are designed with key education standards in mind, and are available free of charge online, along with the film modules.

COMMUNITY CLASSROOM is a program of the Independent Television Service, created with support from the Corporation for Public Broadcasting. Lesson plans were developed with guidance from the American Association of Community Colleges, KQED Education Network, National Association for Media Literacy Education, National Council for the Social Studies, National State Teachers of the Year, and PBS Teachers.

Where Does It All End Up? Lesson Plan Overview

Topics

Ecology; environmental quality; human-induced hazards; science and technology in local, national, and global challenges.

Target Audience

Grade 9 Biology, Environmental Science, Earth Science, Grades 10-12 Advanced Earth/Space Science, Advanced Biology, Advanced Environmental Science.

National Educational Standards

All components are aligned to the National Science Education Standards as presented by the National Academy of Science and available as a free download at http://www.nap.edu/catalog/4962.

NS.9-12.1 SCIENCE AS INQUIRY
As a result of activities in grades 9-12, all students should develop

- Abilities necessary to do scientific inquiry
- Understanding about scientific inquiry

NS.9-12.3 LIFE SCIENCE
As a result of their activities in grades 9-12, all students should develop understanding of

- Interdependence of organisms

NS.9-12.4 EARTH AND SPACE SCIENCE
As a result of their activities in grades 9-12, all students should develop an understanding of

- Geochemical cycles

NS.9-12.6 PERSONAL AND SOCIAL PERSPECTIVES
As a result of activities in grades 9-12, all students should develop understanding of

- Natural resources
- Environmental quality
- Natural and human-induced hazards
- Science and technology in local, national, and global challenges

In addition to the National Standards for Science, the lesson plans provide an excellent framework for instruction in Media Literacy. This instruction further supports both NS.9-12.1 SCIENCE AS INQUIRY and NS.9-12.7 HISTORY AND NATURE OF SCIENCE by instructing students in methods to make them more effective in media analysis. Information on Media Literacy can be found at www.NAMLE.net .

Time

Each lesson is designed for a 45-55 minute class period. The modules may be separated or combined to accommodate differences in instructional time. The entire unit may be completed in 4 days.

Overview of *Plastic Bag*

Struggling with its immortality, a discarded plastic bag ventures through the environmentally barren remains of America as it searches for its maker.

Summary of Lesson

In this lesson, the students will view the film *Plastic Bag* and evaluate the information presented in the film. They will gather data and determine the scope of plastic bag use and disposal issues. Students will investigate predictions related to *Plastic Bag* on the FUTURESTATES Predict-O-Meter website and discuss their viability. They will present proposed solutions to the problem presented in the film and post their own predictions on the website.

Background Brief

This is the information for the teacher. It includes information about the disposal, recycling, and environmental problems associated with the widespread use of plastic bags, and may help you direct your students through the lesson plans for *Plastic Bag*.

Paper or Plastic?

The commonly asked question "Paper or plastic?" is simply a reflection of how common the use of plastic bags has become. In the United States alone, over a billion plastic bags are given away to customers every day. Less than 3% of those bags are ever recycled. The rest are destined for the landfill, although many of them never make it there. The bags are so light that they often become airborne and can drift until they become stuck on something or bogged down in water. Those that do make it to the landfill will take as much as a thousand years to degrade.

Ironically, the plastic bag is in many ways more desirable than the alternative, the paper bag. Both are expensive in terms of the energy needed to produce them, but the paper bag requires the most energy to produce. In addition, paper bags take up much more room in our landfills. Paper bags are biodegradable, but because our landfills are designed to keep out water and air, paper bags take much longer to break down than they would in a normal environment. In a landfill, it may take a century for a paper bag to decompose, which creates significant volume issues for landfills.

What's the Problem?

In most cases, the real problem with plastic bags is the fact that they don't reach the landfills. The United States alone introduces over 8 billion pounds of plastic into the waste stream every year. When even a fraction of that amount escapes the waste stream as litter, the consequences can be devastating, particularly if the plastic becomes airborne.

Land animals and birds often mistake bits of plastic for food. When the plastic is ingested, the plastic can choke the animal or block the intestinal tract. Even when the pieces are tiny, they can be very hazardous to wildlife. The plastic particles are polymers, which act as "sponges," accumulating hazardous chemicals.

The effects of plastic bags on land animals are significant, but the effects on marine life are devastating. Over a million seabirds and over 100,000 marine mammals and sea turtles die every year from ingesting pieces of plastic or tangling in plastic netting and line. Small pieces of plastic bags look like jellyfish to turtles. Animals have been found dying with nothing but pieces of plastic bags in their stomachs. Seals and turtles alike have suffocated, encircled by plastic rings that slowly choke them as they grow.

The Pacific Ocean

The major oceans are made of gigantic gyres that drive the currents and the flow of water around the planet. In the center of the North Pacific Gyre is an area of virtually no wind and very high air pressure. It is the center of a slowly circling vortex of water. Wind and water currents have come together to create a "trap" for the plastic debris floating in the ocean. In an area roughly twice the size of the continental United States, over 100 million tons of flotsam–mostly plastic in origin–have created a "trash vortex" that continues to circulate through the Pacific Ocean. The danger to wildlife is significant and the vortex is growing.

What Can We Do?

The most obvious answer is to reduce the amount of plastic entering the waste stream. Some countries, such as Ireland, have already instituted a tax on the use of plastic bags. Cities like Boston, and the entire state of California, have considered bans on plastic bags. The problem is that people will either pay the tax or increase the use of paper bags. The current focus for most people working on this issue is on the development of more efficient, consumer-friendly ways to recycle the plastic bags.

Web Resources

- http://.FutureStates.tv. "The Making of *Plastic Bag*"
- http://.www.savetheplasticbag.org. "Paper Bags in Landfills"
- http://harpers.org/archive/2007/01/0081345. An article on the plastic ducks ending up in the Pacific gyre.
- http://www.nationalgeographic.org. "Are Plastic Grocery Bags Sacking the Environment?"
- http://www.AlterNet.org. "The World's Dump: Ocean Garbage From Hawaii to Japan"
- http://www.worldwatch.org. "Good Stuff?"
- http://www.theplastiki.com. An adventure ecology project that follows the creation of a huge catamaran from recycled plastic and its voyage through the Pacific vortex.

Lesson 1

Objectives

Students will:

- Compare and contrast the benefits and problems associated with the use of paper and plastic bags.
- View the film *Plastic Bag*.
- Calculate theoretical plastic bag use in the students' community or state for one day.

Materials

- Paper and plastic bag
- Computer with internet access
- Plastic bag use worksheet (optional, see page 8)
- Calculators (optional)

Beginning (10 minutes)
The teacher will have a paper bag and a plastic bag. Ask: "Have you ever been asked to choose 'Paper or plastic?' What did you choose? Why?" Follow with a brief discussion of the pros and cons of each choice. The teacher will differentiate between biodegradable and recyclable. "Have you ever wondered how many plastic bags are actually used every day? Let's try to develop an educated guess. How many bags do you typically use when groceries are purchased?" Come up with a class consensus. How many people buy products in a single day in a single store? (Select and discuss a specific store, such as Costco or Best Buy.) Multiply the number of customers by the number of bags, then multiply that by number of days in a week, the number of other stores in the community, etc. "Are you surprised at the number? We are now going to watch a film that presents a different perspective on the use of plastic bags. It is a futuristic fantasy with a very strong message. Enjoy the film, but listen to its message."

Middle (30 minutes)
View *Plastic Bag*.

Upon completion of film, discuss student impressions of the film. Sample questions:

- What did the film reveal that you didn't already know?
- Is this film based on fact, opinion, or something else?
- Do you think the "Pacific Vortex" is real?
- What is left out of this message that you probably need to know?
- What might have happened to the pieces of the plastic bag?
- Why are the people "missing"?
- Have any of you seen *A.I.*? It is the story of an android that lives forever, waiting for its "mother." How is the android like the plastic bag?
- Do you think things are as bad as the film implies?

End (3-5 minutes)
Tomorrow we will investigate some of the claims in the film. We'll try to find an answer to the question "How bad is the problem of plastic bags…really?"

Assessment

- Responses to intro discussion.
- Responses to discussion questions after viewing film.

Lesson 2

Objectives

The students will:

- Investigate and verify or refute information from the film.
- Assess the nation's current usage of plastic bags per day or year.
- Identify procedures in place to reduce plastic bag use.
- Identify procedures in place to safeguard wildlife from non-biodegradable waste.

Materials

- Computer with internet access
- Website evaluation guide (see page 9)
- *Plastic Bag* Web Research Sheet (see page 10)

Beginning (10-12 minutes)
Remind students of information from the film. Remind students of the theoretical amount of plastic bags generated per day in their community or state. "The film presents a very strong warning about the continued use of plastic bags, but is it a valid warning? Where did the filmmakers get their information? Today we are going to search for more information on the problems associated with plastic bag disposal, but first everyone will examine the information used in the making of *Plastic Bag*." Students will go to http://FutureStates.tv, click on *Plastic Bag*, and then click on "The Making Of" video the left hand bar. The film is about five minutes long and provides additional information on the problems associated with plastic bag disposal.

Note: "The Making Of" film may be used as a source of research or as an introduction to the student's own research.

*Middle (*35-40 minutes)
Students will be assigned specific areas to research. The teacher will provide suggestions for evaluating the credibility of websites. Students will share their information with class using worksheet provided (see supplemental documents).

General instructions using Google (any search engine may be used for this investigation):

Group 1	Google: plastic bag environment
Group 2	Google: plastic bags in the Pacific Ocean
Group 3	Google: plastic bags in the food chain
Group 4	Google: plastic bags recycling
Group 5	Google: plastic bags in landfills

Students are to gather information from the internet pertaining to the group topic. Each group should divide the website investigations among the members. Each student should be responsible for evaluating and gleaning information from 1-2 websites.

End (5 minutes)
Tomorrow we will discuss our findings and investigate the predictions on the FUTURESTATES Predict-O-Meter website. Begin thinking of a prediction of your own about future environmental issues related to plastic bags. You must be able to support your prediction with current facts or trends.

Assessment

- Responses during introductory discussion.
- Accurate location and evaluation of assigned website.
- Completion of information worksheet

Lesson 3

Objectives

The student will:

- Investigate the predictions for *Plastic Bag* posted on the Predict-O-Meter located on the FUTURESTATES website (http://FutureStates.tv).
- Create and post their predictions about the future effects of plastic bag usage.

Materials

- Computer with internet access
- Prediction Evaluation sheet (see supplemental materials)

Beginning (10-15 minutes)
Students will share and discuss the information they found from the previous day's lesson. The teacher will aid the students in creating a summary (list) of the important facts about plastic bag use and disposal.

Middle (30-35 minutes)
Students will visit the FUTURESTATES website and investigate the predictions posted on the Predict-O-Meter for *Plastic Bag*. Students will select three predictions to analyze on the provided worksheet (see supplemental materials). Students will then create 1-3 predictions of their own to post on the site. The predictions must be based on science and approved by the teacher. The predictions may alter a course projected in a Predict-O-Meter prediction. Students may require an example of a valid prediction. Using the rubric to instruct the students, prepare a sample prediction and lead the class in an analysis of the statement. The following is an example of a proposed prediction and the evaluation of it using the prepared rubric.

Proposed Prediction: "In 2012, following the disastrous leaks of undersea oil rigs during 2010 and 2011, a new strand of petroleum-eating bacteria is developed. The organism is capable of devouring many plastic polymers as well."

- Is the prediction based on scientific possibilities?
  Yes: there are already bio-engineered bacteria that can consume oil.

- Do the consequences of the prediction support the film?
  Don't know. The film does not present an answer to pollution already present.

- Do known events in the past support the prediction?
  Yes: Archaebacteria have species that are chemosynthetic.

- Is this prediction plausible?
  This is the evaluator's opinion based on the evidence presented in defense of the prediction.

End (Time Varies)
Go over the Predict-O-Meter activity instructions with students (see supplemental materials) and direct them to complete the activity. Tell the class that tomorrow we will share our preidctions and revisit the film.

Extension Activities and Modifications

Lesson 1

To save time, the teacher could already have the calculations finished for the plastic bag use calculation activity.

The activity could be extended into a homework assignment in which students select different establishments and collect actual data on the number of customers and the number of bags used by the store.

The film could be viewed as enrichment following instruction in ecology/pollution or it could also be paired with *Mr. Green*, as both address environmental concerns.

Lesson 2

The search for information on this topic could easily extend to two class periods. There is a wealth of information to investigate. If desired, the students could write a research paper on one of the group topics.

Lesson 3

It may be desirable to simply investigate the Predict-O-Meter site. Students may explore the site without formal evaluation or development of predictions.

Other Ideas

If time permits, the unit could be expanded by viewing the film a second time and:

- Responding to the following writing prompt: "How has your perception of the film changed from the first time you saw it? What is your answer to the question 'How bad is it…really?'"

  Information for creating writing rubrics may be found at:
  - o http://www.englishcompanion.com/pdfDocs/aprubricjago.pdf (AP 9-point rubric)
  - o http://educationnorthwest.org/resource/464 (Sample Six Traits rubrics)
  - o http://rubistar.4teachers.org (Templates for personalized rubrics)

- Instead of a writing prompt, the students could propose a sequel to the film based on what they have learned. Students would work in teams of 3-5 to develop an outline of their sequel. Upon approval by the instructor and depending upon availability of equipment, students could write a short skit and either perform or film it for the class. The film could also be posted on the school or class website. If desired, the students could analyze the presentations using the "key questions" presented by the National Association for Media Literacy Education at www.NAMLE.net.

- Students could analyze the effectiveness of the film *Plastic Bag* in educating students about the problem of waste plastic bags. If the students have not previously been instructed in media literacy, this lesson could provide an opportunity to do so. In addition to *Plastic Bag*, students could watch the film *Story of Stuff* and evaluate it using the internet site evaluation guide from Lesson 2. Students could then compare the differences in the approaches used by the filmmakers as well as the effectiveness of each film in educating students about the problems of waste. (*Story of Stuff* is 20 minutes long and can be found at www.storyofstuff.com.)

Plastic Bag Use Worksheet

Store name: _____

Average number of bags per visit (A) _____

Approximate number of customers per day (B) _____

A x B = number of plastic bags per day

_____ **x** _____ **=** _____

Plastic bags per week _____

Plastic bags per month _____

Plastic bags per year _____

Number of stores in the community _____

Number of plastic bags per day in your community _____

Number of plastic bags per day in your state (assume one store per county) _____

Website Evaluation Guide: Criteria for Evaluation

Everyone needs to learn to evaluate the quality of information found on the Web. Unlike magazine articles and books, it's not always easy to find the author or source of the information. Be skeptical of every site until you are convinced that the site is valid. The following guide may help you critically evaluate a potential website as a source of information.

Authority

Who is the author of the information?

Is the author associated with a school, group, or product?

Authenticity

Where does the information actually come from?

Are the sources clear and can they be verified?

Timeliness

Is the information reasonably current?

Purpose

What's the point of the information?

Who is sponsoring this site? Look at the URL!

What is the bias present in the information?

Does the bias affect the facts presented by the website?

Relevance

Is the information relevant to the topic you are researching?

Does it tell you something you didn't already know?

Plastic Bag Web Research Sheet

Name:

Group Assignment:
Web Address:
Article Title:
Author/Source of Information:
Date of Publication:
Summary of Information:

Extension Activity: Predict-O-Meter Evaluation Form

FUTURESTATES Predict-O-Meter Activity Instructions
Instructions: Log on to www.futurestates.tv. Choose the Predict-O-Meter. There are three rows of predictions. The first row on the far left contains predictions based on the film. The center row has predictions submitted by viewers. The far right row contains dates of known events. For this activity, click on the green FUTURESTATES predictions. The number that appears in the green box is the number of predictions posted for that year. Be certain to scroll down to view all the predictions. At the end of each prediction is the tag for the film it is associated with. Read all the predictions for Plastic Bag. Choose three predictions to evaluate using evaluation rubric (see Supplemental Materials). When the assigned evaluations are finished, create at least one prediction of your own. Your prediction will be evaluated by another student. If the evaluation is at least a "3", you may post it on the FUTURESTATES website.

Film:_____ **Year:** _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total / 5 = _____

Film:_____ **Year:** _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total / 5 = _____

Film:_____ **Year:** _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total / 5 = _____

Personal prediction for _____ **(film name)**

Name: _____ **Evaluator:** _____

Year: _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total / 5 = _____

Should this prediction be posted to the website? _____

Teacher's approval _____

Date posted _____

If not posted, explain the reason for declining.

LESSON PLAN CREDITS

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About FUTURESTATES:
Imagining tomorrow's America today, FUTURESTATES is a series of independent mini-features – short narrative films created by experienced filmmakers and emerging talents transforming today's complex social issues into visions about what life in America will be like in decades to come. The first season of FUTURESTATES debuted in March 2010, and is available online at futurestates.tv.

About ITVS:
The Independent Television Service (ITVS) funds and presents award-winning documentaries and dramas on public television, innovative new media projects on the Web and the Emmy Award-winning weekly series *Independent Lens* on Tuesday nights at 10 PM on PBS. ITVS is a miracle of public policy created by media activists, citizens and politicians seeking to foster plurality and diversity in public television. ITVS was established by a historic mandate of Congress to champion independently produced programs that take creative risks, spark public dialogue and serve underserved audiences. Since its inception in 1991, ITVS programs have revitalized the relationship between the public and public television, bringing TV audiences face-to-face with the lives and concerns of their fellow Americans. More information about ITVS can be obtained by visiting itvs.org. ITVS is funded by the Corporation for Public Broadcasting, a private corporation funded by the American people.

COMMUNITY CLASSROOM
ENGAGING STUDENTS AND EDUCATORS THROUGH FILM

PRESENTED BY:
cpb ITVS

FUTURESTATES.TV

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COMMUNITY CLASSROOM is an innovative education resource providing short documentary video content and accompanying curricular materials, lesson plans, and homework assignments to high school and community college instructors and youth-serving community-based organizations. Film modules are drawn from documentaries scheduled for broadcast on the Emmy Award-winning PBS series *Independent Lens*. Content is grouped into subject specific segments that correspond to lesson plans and educational activities. All COMMUNITY CLASSROOM lesson plans are designed with key education standards in mind, and are available free of charge online, along with the film modules.

COMMUNITY CLASSROOM is a program of the Independent Television Service, created with support from the Corporation for Public Broadcasting. Lesson plans were developed with guidance from the American Association of Community Colleges, KQED Education Network, National Association for Media Literacy Education, National Council for the Social Studies, National State Teachers of the Year, and PBS Teachers.

VIDEO GAMES AND SOCIAL CONTROL
Lesson Plan Overview

In the final scene of *Play*, a video gamer is told, "Congratulations. Next level." It is clear to the audience that she should stop playing, but she continues, unwilling or unable to exit the game.

In this scene and throughout the film, *Play* explores a question that runs throughout science fiction writing: what happens when people lose control over the technology they developed? Writers have addressed this question often in novels and films such as *Frankenstein*, *Brave New World*, *Player Piano*, *2001: A Space Odyssey*, *Blade Runner*, and many others. Along with *Play*, other films in the FUTURESTATES series also address this issue. *Play* takes the question to the next level and cautions viewers about dependency that can, at times, seem to border on addiction.

In this lesson, students will discuss the theme of the film *Play*. They will gather data about their own use of technology, discuss it, and draw conclusions. Do they agree with the writers of technological cautionary tales, or do they dismiss the fears as groundless? Students will create and present a digital response.

Target Audience
This lesson is designed for high school students of all ability levels.

Total Duration
This unit will take 3-4 days, depending on the class.

Educational Standards
These Common Core Standards are addressed in this lesson:
For grades 9-12: Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

Procedures (Day 1)

Teacher Preparation

The teacher will want to preview *Play* to make sure it meets community standards. In addition, it will be helpful to read the synopsis found here: http://futurestates.tv/episodes/play.

Have available both a copy of the trailer for *Play* and the complete film. The trailer is about 80 seconds, and the film is about 18 minutes (not counting credits).

Because *Play* does not use a traditional plot arc (with a conflict, a climax, and a resolution), students may have difficulty analyzing the film at first. It may be necessary to show the film more than once. It may also be helpful to tell students where to find the film online, so they can watch it again outside of class if they want to.

Objective for the Lesson

Students will analyze the film and determine its theme.

Lesson Structure

Beginning (5-10 minutes)
Begin class with an assignment: challenge students to monitor how they interact with technology for 24 hours, starting now. They are to keep track of how much time they spend online at social networking sites, following a sports team or fantasy team, or watching movies, TV shows, or YouTube films. They are to keep track of how many text messages they send/receive. They should keep track of how much time they spend playing digital games, even cell phone games. The handout "Play: Interaction with Technology" (in the supplemental materials) may be useful for this task.

Clarify that you are not asking for any secret details about students' lives; you just want their best estimate of time spent interacting with technology. The data will be gathered anonymously and discussed during the next class.

Review the concept of a literary theme. Begin by showing students the trailer to *Play* (80 seconds). Discuss the following questions:

- What is your initial response to this montage of images? Which images especially stand out?
- The trailer makes limited use of language: there are some menus near the heads of the characters, we hear the spoken words "Something's wrong," and we see the words "Game Over" and "Exit." What do these words add to your expectations about this film?
- What theme do you expect from this film based on the trailer?

Middle (60-75 minutes)
Let students know in advance that *Play* does not have a traditional plot. They will need to pay attention to the details to understand the story.

Distribute the **Viewing Guide** and show the film. (If students have difficulty watching *Play* and taking notes at the same time, consider showing it twice. Encourage students to watch the film and not take notes the first time. They can take notes as they watch it a second time.)

End
Divide the class into small groups to discuss the questions on the **Viewing Guide**. Have each group appoint someone to make sure they discuss all the questions, someone to take notes, and someone to report to the whole class. Remind students that the purpose of the exercise is to focus on how the director shaped the film to explore a theme. Allow time for small-group discussion before calling the class together to compile and discuss responses.

Procedures (Day 2)

Teacher Preparation

Determine in advance how best to compile the data your students will bring to class today. The goal is to produce and share two graphs: one for the number of texts the students sent and received during the past day, and one for the amount of time they spent using technology to accomplish other tasks. The ideal option is to select a student who can compile the information using a spreadsheet and then generate and project the graphs.

If you have more than one class working on this lesson, it might be an interesting exercise to keep one set of data for each class and a second set that combines all the classes.

Objective for the Lesson

Students will analyze data and draw conclusions about their own interaction with technology.

Lesson Structure

Beginning (5-10 minutes)
Divide students into small groups to compile subtotals of their data. When they have handed in group totals to a central person who will compile the spreadsheet, they should discuss their observations about their use of technology. They can use the questions at the bottom of the data handout as a springboard for discussion.

Middle (60-75 minutes)
When all the data has been compiled, project a graph and discuss the following questions with the class:

- What digital activity takes up the most time?
- Do any of the blocks of time seem excessive?
- Do the numbers of texts sent or received seem excessive?
- If your parents saw this graph, how might they respond?
- Think for a moment about the theme of *Play*. If the filmmaker saw your graph, how might he respond? Would you agree with him? Why or why not?
- If young children spent as much time engaged with technology as the characters in the film, would it be healthy or unhealthy? Explain.

End
What conclusions can the class draw about their own use of technology? Is the amount of time involved healthy or unhealthy? Do they anticipate that their interactions with technology will increase or decrease as they enter the work world?

Close by connecting today's discussion with the theme of *Play*. The film suggests that people may become too dependent on interacting with technology. Based on their own research, are students more in agreement or more in disagreement with that idea?

Procedures (Day 3)

Teacher Preparation

1. Determine in advance what online tools will best enable your students to produce a digital response to their research. This response might take the form of a cautionary tale for today, a warning for young children, or a report on "internet addiction" or the overuse of technology.

- If your students are to produce a narrative, visit the Animoto.com site and become familiar with how it works before expecting students to use it in the final project. If Animoto is not available at your school, consider Stupeflix.com or Capzles.com as alternatives. A narrative of sorts can be cobbled together using PowerPoint, if necessary.
- Glogster.com will enable students to produce online posters with a punch.
- For a more extensive project, students might wish to share information via a wiki. Wikispaces.com and WetPaint.com might prove useful. If students prefer to generate a website, Weebly.com might be a good choice.

Regardless of the tool students will use, the teacher will want to visit the site and try it first.

2. Determine in advance what rubric you will use to assess student work. These two sites may prove useful:

- Evaluating Multimedia Presentations (http://www.learnnc.org/lp/pages/647)
- Kathy Schrock's Guide: Multimedia Rubrics (http://school.discoveryeducation.com/schrockguide/assess.html#multimedia)

Distribute a copy of the rubric to students in advance.

3. Schedule time in the computer lab.

Objective for the Lesson

Students will synthesize the theme from *Play* with the results of their research, analysis, and discussion to create a narrative response. This response might take the form of a cautionary tale for today; a warning for young children; or information about "internet addiction," the overuse of technology, or some other topic that emerged during discussion.

Lesson Structure

Beginning, Middle, and End (1-2 days)

Students will probably need a full class period to produce a narrative, poster, or website that demonstrates a theme related to the wise use of technology. After production work is complete, encourage students to share their projects and to discuss why they selected certain images or information to convey a theme. Does the class feel that the images and/or information convey the theme well? How might the project have been improved?

Extension/Supplemental Activities

The **Viewing Guide** is intended to help students look for patterns in the film that can help them understand a theme.

The **Alternate Viewing Guide** can serve as scaffolding for students who have difficulty following the events in the film. It focuses on character rather than plot or theme, so it may help students make sense of what they're watching.

Some students have difficulty interpreting images. The **Analyze a Photograph** activity can help develop that skill.

Play: Interaction with Technology

This task is not intended to invade your privacy. All data will be compiled into a master file, and we will analyze the results of the master file as a class. Please DO NOT put your name on this paper.

Task: For the next 24 hours, keep track of how much time you spend interacting with technology. This could include some or all the following:

A. time spent at Facebook or other social networking sites
B. time spent following a sports team or fantasy team
C. time spent watching movies or TV shows online
D. time spent creating, uploading, and/or watching YouTube films
E. time spent in video games, from online games to cell phone games
F. how many text messages you send/receive
G. any other interaction with technology

TASK	TIME SPENT
A	
B	
C	
D	
E	
F	SENT: RECEIVED:
G	

Reflect on the time you spend interacting with technology. Consider these questions along with other observations:

1. Was your interaction with technology for this 24-hour period more than usual, less than usual, or about typical for you?

2. Do you ever feel that your time texting or online interferes with friendships or other relationships (siblings, parents, grandparents)?

3. Do you think you use technology more than others, less than others, or about the same as others? (You will know for sure when the class compiles the data.)

4. If you lost your cell phone or Web access for 24 hours, in what ways would your life be different?

5. Were you surprised at the number of text messages you sent/received? Was it an acceptable amount or an excessive amount?

Viewing Guide

1. The film uses repetition (motifs) for emphasis. What do the following elements add to our understanding or interpretation of the film?

- **Scenes in which someone is drinking.**

- **Scenes in which someone looks at their hands.**

- **Scenes in which gamers wear something on their heads.**

- **Scenes in which the Mystery Child appears.**

2. What theme(s) do you find in this film? What details support your interpretation?

Viewing Guide (Teachers Edition)

1. The film uses repetition (motifs) for emphasis. What do the following elements add to our understanding or interpretation of the film?

- **Scenes in which someone is drinking.**

In the opening scene, the thug drinks while walking down the street and then becomes violent. Akira, the Japanese student, drinks during the pillow fight and regains energy to continue. (We see a change in her health bar/life bar.) The waiter brings water to Barry and Jenni/Jessie/Jasmine, but no one drinks and the game goes nowhere. The Mystery Child brings water to the girl in the woods. After she drinks, she moves to the next level. In each case, drinking is equated with gaining energy.

- **Scenes in which someone looks at their hands.**

Sakurako looks at her hands after taking off her headgear. The Senator looks at his hands before getting out of the car, and the young woman in the woods looks at her hands after stepping out of the door. Looking at hands suggests that the person is trying to understand what persona s/he is inhabiting at that moment. The person appears to be aware that s/he is gaming.

- **Scenes in which gamers wear something on their heads.**

Sakurako wears headgear that looks like a helmet from a bad science fiction movie. The senator's headgear looks like a bobble-head doll. The headsets for both Doris and the psychiatrist also look ridiculous. However, in the forest scene, the identical forehead dots suggest that we can't just dismiss the games as silly. When everyone is doing the same thing, there must be a reason. People's willingness to choose the game over a beautiful natural environment and the company of other people suggests that something more insidious is present. The film remains vague, however, on what that might be. The audience must decide.

- **Scenes in which the Mystery Child appears.**

The Mystery Child's cowboy outfit suggests children's games of the past, games that required other people to be present physically and required a certain amount of imagination from all participants. Childhood is usually seen as a time of innocence, but this child does not fit that pattern. Because he encourages people to keep playing – even when it's bad for them – he can be seen as a Trickster figure, one who misleads people. The Mystery Child suggests that there is more danger than value in video games.

Viewing Guide (Teachers Edition cont.)

2. What theme(s) do you find in this film? What details support your interpretation?

Answers will vary. Possibilities include the following:

- ***Overdependence on technology***
- ***Fantasy vs. reality***
- ***Quest for identity***

What matters most is the student's support for his/her choices.

Some may see* Play *as a cautionary tale about the dangers of spending too much time playing video games. Others may broaden their criticism to include all technology. Some students may see video games as a metaphor for relationships, pointing to the "drama" of some high school incidents as a kind of game and pointing to some people as "drama queens." Encourage any reasonable interpretation that includes accurate details from the film as support.

The description states, "*Play *has the structure of a puzzle, and is not meant to resolve into a single explanation or interpretation. Rather, the film is a meditation on our present day of hyperconnectivity and information overload, using video games as the metaphor for the very human search for meaning and identity."

Alternate Viewing Guide

This film does not use a traditional plot to tell a story. Instead it uses a sequence images that develops contrasts between different characters and actions. The film challenges the viewer to identify not WHAT is happening, but WHY. The film focuses on theme.

You will notice that characters usually appear in two roles. In one scene a character will appear to be a person in real life – or what appears to be real life – while in another scene the character appears to be part of a video game. What might these contrasts suggest about the role of fantasy and reality in our everyday lives?

Jot down details about the characters from the film. When you have finished, share your observations with a partner. The first character has been done for you.

Character	Dual Roles
Doris	She first appears as an older woman who fights off a thug who is stealing her purse; then she turns out to be a character in a video game. Later she is the receptionist for the psychiatrist. She is also a gamer.
Sakurako (first Japanese schoolgirl)	
Barry	
Jenni	
Senator Solomon Nash	
Patient	
Psychiatrist	
Young woman in woods	
Mystery Child (cowboy outfit)	

Alternate Viewing Guide
(Teachers Edition)

This film does not use a traditional plot to tell a story. Instead it uses a sequence images that develops contrasts between different characters and actions. The film challenges the viewer to identify not WHAT is happening, but WHY. The film focuses on theme.

You will notice that characters usually appear in two roles. In one scene a character will appear to be a person in real life – or what appears to be real life – while in another scene the character appears to be part of a video game. What might these contrasts suggest about the role of fantasy and reality in our everyday lives?

Jot down details about the characters from the film. When you have finished, share your observations with a partner. The first character has been done for you.

Character	Dual Roles
Doris	She first appears as an older woman who fights off a thug who is stealing her purse; then she turns out to be a character in a video game. Later she is the receptionist for the psychiatrist. She is also a gamer.
Sakurako (first Japanese schoolgirl)	At first she plays the role of a thug in a video game. Then she seems to be just a typical schoolgirl. Then we understand that she is a character in a video game that Barry plays.
Barry	At first he seems to be a guy playing the Pillow Fight game. Next he seems to be a guy on a blind date, until we realize he is playing a Blind Date game. Then we understand him to be a character in the Senator's Blind Date game.
Jenni	Jenni at first seems to be a real person. Then we understand her to be a character in the Blind Date game. In the woods she appears to be a real person who is playing a video game and crying.
Senator Solomon Nash	At first the Senator appears to be a real person. When menus appear, however, he appears to be a character in a video game. Something goes wrong, however, and his game crashes. The audience sees him again later as one of the gamers in the woods.
Patient	The patient appears to be real. She leaves the audience wondering whether all of the previous characters have been her, dreaming or playing a video game. The actions of the psychiatrist, however, leave the audience wondering whether the patient is real. He uses menus to respond; he is unable to leave his office after she does. If he is part of a game, perhaps she is, too.
Psychiatrist	The psychiatrist uses menus to respond to his patient and is unable to leave his office after she does. This leads the audience to suspect that he is a character in a game. However, his actions in accepting the new game from the Mystery Child, canceling his appointments, and putting on a Game Helmet suggest that he is real. The audience sees him again later as one of the gamers in the woods.
Young woman in woods	The young woman in the woods steps through a door that isn't attached to anything, suggesting that she is not real, but she also looks at her hands, suggesting that she is trying to find out who she is. She can see the seated gamers, but she can also see herself as a gamer, and the gamer can see her. Her tear suggests pity or compassion. The standing girl disappears as the Mystery Child brings water to the sitting girl and congratulates her on reaching the next level, suggesting that the sitting girl is real. She is at least aware of what she is doing.

Alternate Viewing Guide
(Teachers Edition cont.)

Character	Dual Roles
Mystery Child (cowboy outfit)	The Mystery Child appears as both an onlooker and an active participant in the game. He seems out of place alone at night on a city street and in the restaurant booth, drinking cappuccino. He encourages people to keep playing by giving Barry a clue, by giving the psychiatrist a new game, and by encouraging the girl in the woods to level up. Significantly, he is not wearing a gamer's dot in the final scene.

Analyze a Photograph

Beginning (20-30 minutes)
Share with students a Pulitzer Prize-winning photograph, available here:
http://www.pulitzer.org/works/2010-Breaking-News-Photography

If possible, project the photograph to the front of the room. Otherwise, it may be necessary to photocopy it and distribute copies to students. (Photocopying for classroom use does not violate copyright.)

Ask students (as a class) to analyze elements of the photograph to reveal as much as possible about it. Use the questions below to lead discussion. It may be helpful to distribute the questions to students in advance. (See below for a printable handout of the questions for an analysis of the photograph.)

- What do you notice first about this image and why?
- Who are the people in this image? What emotions are present?
- What is the situation? What is happening?
- What is the setting (place and time)?
- Does the picture contain any repetition, framing, or balancing?
- What message or theme does the picture seem to convey? What aspects of the picture make you think this?

Middle (15-20 minutes)
When the class has completed a thorough analysis of the photograph, have students form small groups and select a second photograph from those you have made available. Allow a few minutes for them to analyze the images using the same questions as before.

End
If time permits, ask students to prepare a brief presentation to the class. (This would probably occur on a second day.) If not, each group should submit a written summary of their analysis.

Handout: Analyze a Photograph

Directions: Analyze your photograph using the questions below.

1. What do you notice first about this image and why?
2. Who are the people in this image? What emotions are present? (Names are not essential.)
3. What is the situation? What is happening?
4. What is the setting (place and time)? (Specifics are helpful but not essential.)
5. Does the picture contain any repetition? What does the repetition, if any, add?
6. What message or theme does the picture seem to convey? What aspects of the picture make you think this?

Analyze a Photograph
(Teachers Edition)

1. What do you notice first about this image and why?
The eye is drawn to the image of the rescuer because he is wearing orange and blue, and those colors stand out against the neutral white and gray of the background of the photo. He is also located in a focal point in the upper right of the image.

The eye is drawn next to the orange floatation device and the arms of the person in the water. Again, the orange stands out against all the white surrounding it. The victim is located in another focal point in the lower left corner. Also, because the rescuer's full attention is focused in that direction, we naturally want to look at what he is looking at.

The diagonal line in the background where the white water meets the gray dam emphasizes that the rescuer is "up" and the woman is "down," both physically and metaphorically.

2. Who are the people in this image? What emotions are present?
The people are a rescuer (the caption says a construction worker) and a person who appears to be drowning (the caption says a woman). We can see focus and determination on the face of the man. We can only see the arms of the victim, but we can sense desperation in the uplifted hand.

3. What is the situation? What is happening?
Someone is trying to prevent a drowning.

The rescuer is not wearing anything that suggests he is a first responder; nothing says "Fire Department" or "Police." The caption tells us he is a construction worker, which explains the improvised sling made of chain. We can imagine a crane on a nearby bank and other people watching the scene, including the photographer. According to the caption, earlier efforts to rescue the woman failed, so we can also envision tension, fear, and hope.

4. What is the setting (place and time)?
We know from the caption that the setting is Des Moines, Iowa, and since the picture was published on July 1, 2009, it was probably taken on June 30. Nothing in the photo itself, however, identifies place (beyond "near a dam") or time. The photo could have been taken in Canada, Great Britain, Europe, Australia, South Africa, or anywhere else one might find a Caucasian construction worker. Nothing in the photo identifies time except the style of the orange life jacket and the man's haircut.

5. Does the picture contain any repetition?
The bright orange of the life preservers is repeated on the rescuer and the person in the water. Because we associate that color with danger, the repetition emphasizes the feeling of danger.

6. What message or theme does the picture seem to convey? What aspects of the picture make you think this?
Answers will vary. One possibility is that this is a picture of heroism in action. The man is putting himself at great personal risk to help someone else. Another possibility is a theme of "never give up." Both people in this picture are still trying to beat the odds. Accept any response that students can support with details from the picture.

Extension Activity: Predict-O-Meter

Objectives

The student will:

- Investigate and analyze predictions for *Play* as posted on the FUTURESTATES Predict-O-Meter.
- Formulate and post their prediction on the Predict-O-Meter site.

Beginning (5-7 minutes)
Reactivate prior knowledge by reviewing discussions related to the film.

Middle (30-35 minutes)
Students will investigate predictions as presented on the Predict-O-Meter, which is located on the FUTURESTATES website. After selecting and evaluating three of the predictions using the evaluation rubric, students will develop at least one prediction to post on the website. The proposed prediction will be evaluated by a peer and approved by the instructor before posting. The predictions may alter the course projected in the Predict-O-Meter predictions. Students may require an example of a valid prediction. Using the rubric to instruct the students, prepare a sample prediction and lead the class in an analysis of the statement. The following is an example of a proposed prediction and the evaluation of it using the prepared rubric.

Proposed prediction: "In 2020, a computer virus launches on April Fool's Day, shutting down every video game and online game for 24 hours. Police report a surge in crime, hospitals report emergency rooms over capacity, and suicide prevention hotlines are so overloaded that they have to call in additional volunteers."

- Is the prediction based on realistic possibilities?
  Yes. Viruses have disrupted communications in the past. A determined programmer or programmers could insert a command to launch a virus into a video game easily.

- Do the consequences of the prediction support the film?
  Yes. People in the film are very dependent on their games.

- Do known events in the past support the prediction?
  Yes. People have responded to loss of power with violence; it's reasonable to think they might do the same when deprived of entertainment.

- Is this prediction plausible?
  This is the evaluator's opinion based on the evidence presented in defense of the prediction.

FUTURESTATES Predict-O-Meter Activity Instructions

Log on to www.futurestates.tv. Go to the Predict-O-Meter. There are three rows of predictions. The row on the far left contains the predictions based on the FUTURESTATES films, including *Play*. The center row consists of predictions submitted by viewers. The far right row contains dates of known events. For this activity, click on the green FUTURESTATES predictions. The number that appears in each green square is the number of predictions related to the specified year. Be certain to scroll down to see all predictions for a given year. At the end of each prediction is the tag for the film associated with each prediction. Find as many predictions as you can for the *Play* film. Choose three predictions to evaluate using the rubric below. When the assigned evaluations are finished, create at least one prediction of your own. Your prediction will be evaluated by another student. If the evaluation is at least a "3", you may post it on the FUTURESTATES website.

Film:_____ **Year:** _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total = _____
5

Film:_____ **Year:** _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total = _____
5

Film:_____ **Year:** _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total / 5 = _____

Personal prediction for _____ **(film name)**

Name: _____ **Evaluator:** _____

Year: _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total / 5 = _____

Should this prediction be posted to the website? _____

Teacher's approval _____

Date posted _____

If not posted, explain the reason for declining.

LESSON PLAN CREDITS

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About FUTURESTATES:
Imagining tomorrow's America today, FUTURESTATES is a series of independent mini-features – short narrative films created by experienced filmmakers and emerging talents transforming today's complex social issues into visions about what life in America will be like in decades to come. The first season of FUTURESTATES debuted in March 2010, and is available online at futurestates.tv.

About ITVS:
The Independent Television Service (ITVS) funds and presents award-winning documentaries and dramas on public television, innovative new media projects on the Web and the Emmy Award-winning weekly series *Independent Lens* on Tuesday nights at 10 PM on PBS. ITVS is a miracle of public policy created by media activists, citizens and politicians seeking to foster plurality and diversity in public television. ITVS was established by a historic mandate of Congress to champion independently produced programs that take creative risks, spark public dialogue and serve underserved audiences. Since its inception in 1991, ITVS programs have revitalized the relationship between the public and public television, bringing TV audiences face-to-face with the lives and concerns of their fellow Americans. More information about ITVS can be obtained by visiting itvs.org. ITVS is funded by the Corporation for Public Broadcasting, a private corporation funded by the American people.

COMMUNITY CLASSROOM
ENGAGING STUDENTS AND EDUCATORS THROUGH FILM

PRESENTED BY:
cpb ITVS

FUTURESTATES.TV

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COMMUNITY CLASSROOM is an innovative education resource providing short documentary video content and accompanying curricular materials, lesson plans, and homework assignments to high school and community college instructors and youth-serving community-based organizations. Film modules are drawn from documentaries scheduled for broadcast on the Emmy Award-winning PBS series *Independent Lens*. Content is grouped into subject specific segments that correspond to lesson plans and educational activities. All COMMUNITY CLASSROOM lesson plans are designed with key education standards in mind, and are available free of charge online, along with the film modules.

COMMUNITY CLASSROOM is a program of the Independent Television Service, created with support from the Corporation for Public Broadcasting. Lesson plans were developed with guidance from the American Association of Community Colleges, KQED Education Network, National Association for Media Literacy Education, National Council for the Social Studies, National State Teachers of the Year, and PBS Teachers.

The Future of Genetic Engineering Lesson Plan Overview

Topics Covered

Biological diversity; genetic engineering; environmental balance; natural and human-induced hazards; population growth; science and technology in local, national, and global levels challenges.

Target Audience

Grade 9 Biology, Environmental Science with modifications for Grade 10-12 Advanced, AP or Dual credit Biology or Environmental Science. This lesson is designed to follow instruction in biotechnology and requires some familiarity with agricultural GMOs.

National Educational Standards

All components are aligned to the National Science Education Standards as presented by the National Academy of Science and available as a free download at: http://www.nap.edu/catalog/4962.

The lesson addresses the following standards:

NS.9-12.1 SCIENCE AS INQUIRY
As a result of activities in grades 9-12, all students should develop

- Understandings about scientific inquiry

NS.9-12.3 LIFE SCIENCE
As a result of their activities in grades 9-12, all students should develop understanding of

- Molecular basis of heredity
- Interdependence of organisms

NS.9-12.5 SCIENCE AND TECHNOLOGY
As a result of activities in grades 9-12, all students should develop

- Understandings about science and technology

NS.9-12.6 PERSONAL AND SOCIAL PERSPECTIVES
As a result of activities in grades 9-12, all students should develop understanding of

- Environmental quality
- Natural and human-induced hazards
- Science and technology in local, national, and global challenges

NS.9-12.7 HISTORY AND NATURE OF SCIENCE
As a result of activities in grades 9-12, all students should develop understanding of

- Science as a human endeavor
- Nature of scientific knowledge
- Historical perspectives

In addition to the National Standards for Science, the lesson plans provide an excellent framework for instruction in Media Literacy. This instruction further supports both NS.9-12.1 SCIENCE AS INQUIRY and NS.9-12.7 HISTORY AND NATURE OF SCIENCE by instructing students in methods that will make them more effective in media analysis. Information on Media Literacy can be found at www.NAMLE.net .

Time

Each lesson is designed for a 45-55 minute class period. The modules may be separated or combined to accommodate differences in instructional time. The entire unit is designed to be completed in four days.

Overview of *Seed*

In an industry dominated by genetically modified seeds, a poor farmer struggles to survive. When he resorts to smuggling now-illegal organic seeds across borders, he risks everything.

Summary of Lesson

The lesson reviews the history of agricultural biotechnology. Students will propose a new GMO product based on need, potential for profit, and minimal environmental effects. After the film is shown, students will be asked to consider a future similar to the one depicted in the film. Students are invited to make a prediction concerning the future use of GMOs. They will then investigate the predictions on the Predict-O-Meter, which is located on the FUTURESTATES website. Students are encouraged to add a prediction of their own design. Students will conclude the lesson by responding to a writing prompt.

Background Brief

This is information for the teacher. It includes information about agricultural biotechnology that may help you guide your students as they contemplate the future status of GMOs.

Definitions

Before investigating the development of genetically modified foods, it is important to understand the differences between conventional, organic, and genetically modified foods. Throughout history, conventional farming and organic farming have been virtually the same. It wasn't until the development and subsequent wide-spread use of inorganic pesticides and herbicides during the mid-twentieth century that agriculture moved away from organic farming techniques. Conventional farming differs from organic farming in its use of synthetic chemicals to enhance either the product itself or the productiveness of the product. Conventional farming utilizes herbicides, pesticides, fertilizers, and selected hormones to improve plant production. Routine use of antibiotics and growth hormones is also employed in the raising of animals for human consumption. Organic farming generally prohibits the use of any inorganic pesticides, insecticides, or herbicides in the production of the food. Organically raised food is virtually free of antibiotics, growth hormones, and residual inorganic pesticides or herbicides. By definition, the genome is also free of any contaminants. This definition precludes the possibility of organic GMOs: although GMOs can be grown organically, the USDA does not certify them as organic foods. Genetically modified foods may be raised either conventionally or organically. The distinction is in their genome. GMOs contain bits of other organisms' DNA and are often termed "transgenic."

Selective Breeding

Humans have been engaged in selective "engineering" for thousands of years. The selective crossing of one individual with another to produce a desired trait in an offspring has been the basis for the development of the many breeds of domesticated plants and animals. In the past, the success or failure of an individual cross was largely a matter of chance, as explained by Mendel and other geneticists. Today, selective breeding occurs at the molecular level with the direct transfer of desired DNA from one organism to another. Bioengineering produces organisms with modified genomes. As a result, they are most often referred to as GMOs (genetically modified organisms).

Basic Techniques of Biotechnology
Although there are many different ways to create a GMO, the process involves four basic procedures.

- Stage 1: DNA cleavage
  Once a desirable characteristic has been selected, isolation and removal of the gene responsible for the trait must be accomplished. Restriction enzymes are used to cleave the DNA and remove the desired segment from the genome.
- Stage 2: Production of recombinant DNA
  The cleaved fragments of DNA are joined with either a bacterial plasmid or viral vector to form a new "designer gene". At this point, there is only one piece of recombinant DNA and it is not in the target cell.
- Stage 3: Cloning
  The plasmid or virus will act as a vector to introduce the new piece of DNA back into the host's cells. If the transfer is successful, the cells will contain a piece of recombinant DNA in their genome. Every time the cell undergoes cell division, it will replicate the recombinant DNA along with its own genome and transfer it to the daughter cells. The result is an increase in the number of cells containing the desired gene.
- Stage 4: Screening
  Although every cell is theoretically supposed to contain the recombinant gene, in reality not every vector will successfully deliver the gene. In this final stage, the cells are examined for evidence of the transferred gene. Tagging the recombinant DNA with radioactive probes, antibiotic sensitivity, or bioluminescence are all common screening techniques.

Commercial Production and Identification of GMOs
Once a particular gene is identified and the transfer is successful, there is still the need to make multiple copies of it. Polymerase chain reaction (PCR) is a commercial application that can produce billions of copies of a gene fragment in a matter of hours.

After the successful development of a GMO, there still remains the need to identify the genetic marker of the GMO. In some instances, the modified trait might not remain stable in future generations. The Southern blot technique is a simplified form of DNA fingerprinting that identifies a specific sequence, notably the engineered gene, within the offspring. It is a means of identifying and verifying the quality of the GMO.

Current Products and Concerns
The number of GMOs increases every year. Some of the oldest and most accepted agricultural GMOs are Bt corn, Bt cotton, and "Roundup Ready" soybeans. The Bt products are the result of the insertion of a gene from the organism *Bacillus thuringiensis* into the target plant. The Bt organism is poisonous to caterpillars and when the gene is expressed in the leaves of a plant, it serves as a powerful internal pesticide. The greatest concerns over the use of Bt products came from a study on the effects of Bt pollen on monarch butterflies. When the insects were fed a diet of only Bt silks, they were poisoned in the same manner as the caterpillars. Although most scientists see this as an extremely flawed experiment, the concern over the indiscriminant poisoning of non-target insects remains at the forefront in the debate over the use of Bt corn.

"Roundup Ready" soybeans have been engineered to resist the effects of glyphosate, the active ingredient in the herbicide Roundup. The resistance was found naturally occurring in certain weeds. The concern with the use of "Roundup Ready" technology is the accidental natural selection for "super-weeds."

In general, there is a concern over the loss of diversity as agriculture turns to the more productive, disease-resistant, genetically-modified varieties of seeds. History has many examples of famine that resulted from a single disease destroying crops that were all of the same genetic make-up (for example, the Irish potato famine). Opponents of the wide-spread use of agricultural GMOs caution against the exclusive use of the products. There is a movement to safeguard and cultivate the older, less resistant varieties of plants. The seeds from these plants are collected and sold as "heirloom seed."

Precautionary Principle

In 1998, the Precautionary Principle was presented as a proposed basis for future environmental and public health policy. In effect, it stated that when the health of humans or the environment was at stake, it was not always necessary to wait for scientific proof before taking protective actions. In other words, it followed the old adage "it is better to be safe than sorry." The Precautionary Principle is based on the ethical assumption that humans have the responsibility to protect, preserve, and restore the global ecosystem. It also puts the burden of proof that the action is harmless on those taking the action. Future development and cultivation of agricultural GMOs may be approved or prohibited based on this policy.

Commercial Production and Identification of GMOs

Web Resources

For more information on genetic transfer, PCR, and bioengineering:

http://www.hhmi.org (Click on "Biointeractive," then choose "Animation")

http://wwwdnalc.org

For more information on Bt corn and Roundup Ready Soybeans:

http://www.ars.usda.gov/is/br/btcorn

http://www.ca.uky.edu/entomology/entfacts/ef130.asp

For more information on organic foods:

http://www.organic.org

http://www.organicfoodinfo.net

For more information on the Precautionary Principle:

http://www.sehn.org

http://www.precaution.org

http://www.pprinciple.net/the_precautionary_principle.html

Additional information is available in most advanced biology textbooks.

Lesson 1

Objectives

Students will:

- Identify selected GMOs and describe the technology used in the development of the products.
- Relate the intended benefits associated with the use of the products.
- Recognize and discuss the potential problems associated with the products.
- Discuss the contrasts between the intended benefits and the potential problems associated with developing the products, and consider the precautionary principle.
- Propose and defend the development of an agricultural GMO. (Students will design their own.)
- Make predictions pertaining to the development of their proposed GMOs.

Materials

- A "Grapple" or other example of an enhanced agricultural product
- Proposed Product Worksheet (see page 11)
- Ticket Out worksheet (see page 13)

Beginning (10-12 minutes)
Begin with a whole class discussion. Show students a "Grapple" (a Grapple is a grape-flavored apple: http://www.grapplefruits.com/index.html). Explain the product. Ask students to determine if this is an example of genetic engineering. Discussion will lead to the conclusion that it is not. It is an enhanced product. Why would a company want to know about the popularity of a grape-flavored apple? Could this be a GMO product in the future? What might be some problems associated with the development of this or any other genetically modified apple? Just because we can do this, should we? Introduce or re-teach the precautionary principle and the ethics of altering the genome of a species.

Middle (30 minutes)
Organize students into teams of 3-4. Their task is to prepare a proposal for a new GMO. They must be prepared to address the potential benefits and risks associated with the product. Distribute the Proposed Product Worksheet. Each team will present and defend their proposal to the class. This is a brainstorming/critical thinking exercise and if possible should not be extended beyond the class period.
Suggested development time: 10-15 minutes
Presentations: 2-3 minutes/group
Times will vary according to class size and ability.

End (5-7 minutes)
End the class using the "ticket out" strategy. This strategy asks students to answer one question on a worksheet as their "ticket" out of the classroom (see supplemental documents for the Ticket Out Worksheet). Ask students the following question: "Of the products proposed by the class, which one do you believe is most likely to be developed? When do you think we could make this product (1 year, 5 years, 10 years, beyond 10 years)?" The answers will provides a quick, informal assessment that checks for understanding and permits the instructor to re-direct teaching if necessary. Additional information on the "ticket out" strategy may be found at: http://teachingstrategies.pbworks.com/Ticket-Out-the-Door

Assessment

- Responses during discussions.
- Ticket Out responses

Lesson 2

Objectives

The student will:

- View and analyze the film *Seed*.
- Make predictions pertaining to the future of GMO foods.

Materials

- Computer/Internet access for viewing the film
- Question Guide for *Seed* (see page 12)

Beginning (5-7 minutes)
Share some of the predictions from the previous class's "ticket out" worksheets. Briefly discuss the selections and student responses. Tell students that today they will be viewing *Seed*, a film that presents a futuristic view of agricultural GMOs and their use in the world. As students watch the film, they should use the Question Guide to jot down impressions, important information, and any questions they might have. Tell the students that, as in all media messages, there is bias in this film. Be certain to consider what the significance of the bias might be, who this film is really trying to target, and who might benefit or be harmed by the messages in this film.

*Middle (*25-30 minutes)
View the film *Seed*.

Upon completion of the film, discuss the students' impressions of the film. Suggested questions:

- How is the future depicted in the film different from the current status of GMOs?
- What is the reason for the exclusion of all non-engineered seed?
- What is the significance of the monarch butterfly?
- What was the tool actually detecting?
- Do we have the technology to create the world depicted in the film?
- How could a private company like the Mendelian Company ever actually control the food supply?
- If it is for "our own good," does the government have the right to control our food supply? Where does the FDA fit into this discussion?

End (10 minutes)
Students will complete Question Guide worksheet.

Assessment:

- Responses during the post-viewing discussion
- Worksheet responses

Lesson 3

Objectives

The student will:

- Investigate and analyze predictions for *Seed* as posted on the FUTURESTATES Predict-O-Meter.
- Formulate and post their prediction on the Predict-O-Meter site.

Materials

- Computer/Internet access for website and Predict-O-Meter.
- Prediction evaluation worksheet/rubric (see supplemental materials).

Beginning (5-7 minutes)
Brief discussion of question guide responses. This introduction is simply to reactivate prior knowledge.

Middle (30-35 minutes)
Students will investigate predictions as presented on the Predict-O-Meter located on the FUTURESTATES website. After selecting and evaluating three of the predictions using the evaluation rubric, students will develop at least one prediction to post on the website. The proposed prediction will be evaluated by a peer and approved by the instructor before posting. Students may require an example of a valid prediction. Using the rubric to instruct the students, prepare a sample prediction and lead the class in an analysis of the statement. The following is an example of a proposed prediction and the evaluation of it using the prepared rubric.

Proposed prediction: "In 2025, a new strain of corn root worm has appeared. The Mendelian Corporation corn strains, while producing greater yields, have become much heavier with the additional weight of more and larger ears of corn. The weakened root systems do not hold the plants upright, resulting in an unprecedented loss of crop as the weakened stalks buckle and collapse."

- Is the prediction based on scientific possibilities?

  Yes, root worms do weaken the root systems of corn plants. Larger yield implies either more ears or larger ones or both.

- Do the consequences of the prediction support the film?

  Yes, decreasing diversity in a crop increases the likelihood of massive crop loss if a new pest or disease arises.

- Do known events in the past support the prediction?

  Yes. The development of the Mendelian corn itself was in response to a weakness of other strains to corn rot.

- Is this prediction plausible?

  This is the evaluator's opinion based on the evidence presented in defense of the prediction.

FUTURESTATES Predict-O-Meter Activity Instructions:
Log on to www.futurestates.tv. Go to the Predict-O-Meter. There are three rows of predictions. The row on the far left contains predictions based on the FUTURESTATES films, including *Seed*. The center row consists of predictions submitted by viewers. The far right row contains dates of known events. For this activity, click on the green FUTURESTATES predictions. The number that appears in each green square is the number of predictions related to the specified year. Be certain to scroll down to see all predictions for a given year. At the end of each prediction is the tag for the film associated with each prediction. Find as many predictions as you can for the *Seed* film. Choose three predictions to evaluate using the FUTURESTATES Predict-O-Meter Evaluation Form. When the assigned evaluations are finished, create at least one prediction of your own. Your prediction will be evaluated by another student. If the evaluation is at least a "3", you may post it on the FUTURESTATES website.

Note: It is likely that students will take all period to explore the Predict-O-Meter. The evaluation of the predictions may be required homework or can be extended to the beginning of the next class period.

End (10 minutes)
Choose one or two predictions to briefly discuss.

Assessment

- Student responses on selected predictions.
- Completion of prediction evaluation worksheets.

Extension Activities and Modifications

Lesson 1

This lesson can easily be extended over two days. This may be particularly desirable if the students struggle with the brainstorming part of the activity. Also, larger classes may not have time to present their proposed products. A suggested modification would be to develop the product proposal on day one and present the proposed GMOs on day two. With the additional time, the presentations could be videotaped or presented as PowerPoint presentations. An extension of time would permit multiple classes to view each other's presentations and analyze the presentations using the "key questions" presented by the National Association for Media Literacy Education at www.NAMLE.net. This would provide the students with practice in analyzing media messages.

Lesson 2

If the students have not previously been instructed in media literacy, this lesson could begin with an introduction to media literacy.

If time is an issue for the teacher, the film could be used as enrichment to support instruction in bioengineering. It can also be paired with the FUTURESTATES film *Mr. Green* as enrichment to accompany a unit on biotechnology.

Lesson 3

It may be desirable to simply investigate the Predict-O-Meter site. Students may explore the site without formal evaluation or development of predictions.

Additional Lessons

If desired, the unit may include additional time to explore some of the ethics associated with controlling the food supply. Students may investigate a current issue by reading articles from opposing viewpoints and then discussing the information with the class. Example: Monsanto's proposed use of GMO alfalfa.

Suggested websites:

USDA/Monsanto GE alfalfa (June 2010)
http://www.reuters.com/article/idUSN232672520100623
http://healthfreedoms.org/2010/03/01
http://action.fooddemocracynow.org

General current topics (updated)
www.foodsafetynews.com
www.usda.gov/documents/BIOTECHNOLOGY.pdf

This unit may also include a response to a writing prompt. Information for creating writing rubrics may be found at:

- AP 9-point rubric: http://www.englishcompanion.com/pdfDocs/aprubricjago.pdf
- Sample Six Traits rubrics: http://educationnorthwest.org/resource/464
- Templates for personalized rubrics: http://rubistar.4teachers.org

Suggestions for the prompt include, but are not limited to:

Could exclusive use of high yield, high quality genetically-modified seed actually safeguard the world against famine, or would it ensure a future food shortage? Support your answer.

Do you think a world like the one depicted in Seed *could ever come to be?*

Currently, most of Europe is against genetically-modified food. Do you think the logic presented in Seed *could lead to such a profound change of opinion in America concerning the use of GMOs?*

In the film, the use of genetically modified seed is not merely encouraged, but required, while heirloom seeds are outlawed. Why? Who is benefiting from this law? How could such a law come into being?

Proposed Product Worksheet

Company name:

R & D Team members:

Proposed product (*GMO or its name*): _____

Needs Assessment for Product (*Who would benefit from the development of the product?*):

Production Techniques (*How would you make the product?*):

Potential Concerns (*Just because it can be done, should it? What or who might be affected by the development of this product?*):

Public Relations (*How would you market your product?*):

Question Guide for *Seed*

Before watching the film, read through the following questions. Use the guide to help you take notes and organize your thoughts during and after viewing the film.

1. At the beginning of the film, Juan is using a device to verify the purity of the plants. What do you think the device is detecting? Why do you think that?

2. What is the reason for the exclusion of all non-engineered seed? Does the film ever tell you the reason?

3. How is the future status of agricultural GMOs depicted in the film different from the current status of genetically modified food?

4. What is significant about the use of a monarch butterfly to detect "pure" seed? Would everyone viewing the film understand the significance of the monarch?

5. Who is this movie targeting with its message? How do you know?

6. What other youth group did the "Sprouts" remind you of? What did the filmmaker use to make that connection in your mind?

7. The source of the "heirloom seed" was a Native American. Do you think the filmmaker was trying to express anything with that choice, or was it just a coincidence?

8. Is the premise of this film plausible? Do we have the technology to create the world depicted in the film?

Ticket Out

Name:

Period:

Of the products proposed by the class, which one do you believe is most likely to be developed?

Why do you think this product will probably be developed?

I think this product could be created….
a) in 1 year
b) within 5 years
c) within the next 10 years
d) beyond 10 years from now (Circle your choice.)

What needs to happen to meet the timeline you've chosen?

Ticket Out

Name:

Period:

Of the products proposed by the class, which one do you believe is most likely to be developed?

Why do you think this product will probably be developed?

I think this product could be created….
a) in 1 year
b) within 5 years
c) within the next 10 years
d) beyond 10 years from now (Circle your choice.)

What needs to happen to meet the timeline you've chosen?

Extension Activity: Predict-O-Meter Evaluation Form

FUTURESTATES Predict-O-Meter Activity Instructions
Log on to www.futurestates.tv. Go to the Predict-O-Meter. There are three rows of predictions. The row on the far left contains the predictions based on the FUTURESTATES films, including *Seed*. The center row consists of predictions submitted by viewers. The far right row contains dates of known events. For this activity, click on the green FUTURESTATES predictions. The number that appears in each green square is the number of predictions related to the specified year. Be certain to scroll down to see all predictions for a given year. At the end of each prediction is the tag for the film associated with each prediction. Find as many predictions as you can for the *Seed* film. Choose three predictions to evaluate using the FUTURESTATES Predict-O-Meter Evaluation Form below. When the assigned evaluations are finished, create at least one prediction of your own. Your prediction will be evaluated by another student. If the evaluation is at least a "3", you may post it on the FUTURESTATES website.

Film:_____ **Year:** _____

Prediction: _____

	No 1	**Somewhat 2**	**Yes 3**	**Don't know 0**
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total = _____
5

Film:_____ **Year:** _____

Prediction: _____

	No 1	**Somewhat 2**	**Yes 3**	**Don't know 0**
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total = _____
5

Film:_____ **Year:** _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total / 5 = _____

Personal prediction for _____ **(film name)**

Name: _____ **Evaluator:** _____

Year: _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total / 5 = _____

Should this prediction be posted to the website? _____

Teacher's approval _____

Date posted _____

If not posted, explain the reason for declining.

LESSON PLAN CREDITS

CURRICULA WRITER

Kathie Hilbert
A 23 year veteran of teaching, Kathie L. Hilbert is currently the Science Chair at Connersville High School in Connersville, Indiana. Ms. Hilbert has both a BA (University of Evansville) and MAT (Miami of Ohio) in Biology. Ms. Hilbert has taught all levels of Biology and Earth Science, as well as Botany and Geology. She has also accompanied and supported her students on several summer Marine Biology programs held in Hawaii. Ms. Hilbert has written and developed curriculum for Botany, Geology, and Early College Earth Science as well as revised curriculum for other classes. She has also written curriculum for community Science Outreach Programs and was a Science Ambassador for the CDC (writing lesson plans for their website). Ms. Hilbert was Fayette County's Teacher of the Year in 2001 when she also successfully attained National Board Certification in science teaching.

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About FUTURESTATES:
Imagining tomorrow's America today, FUTURESTATES is a series of independent mini-features – short narrative films created by experienced filmmakers and emerging talents transforming today's complex social issues into visions about what life in America will be like in decades to come. The first season of FUTURESTATES debuted in March 2010, and is available online at futurestates.tv.

About ITVS:
The Independent Television Service (ITVS) funds and presents award-winning documentaries and dramas on public television, innovative new media projects on the Web and the Emmy Award-winning weekly series *Independent Lens* on Tuesday nights at 10 PM on PBS. ITVS is a miracle of public policy created by media activists, citizens and politicians seeking to foster plurality and diversity in public television. ITVS was established by a historic mandate of Congress to champion independently produced programs that take creative risks, spark public dialogue and serve underserved audiences. Since its inception in 1991, ITVS programs have revitalized the relationship between the public and public television, bringing TV audiences face-to-face with the lives and concerns of their fellow Americans. More information about ITVS can be obtained by visiting itvs.org. ITVS is funded by the Corporation for Public Broadcasting, a private corporation funded by the American people.

SILVER SLING
LESSON PLAN

FUTURESTATES

COMMUNITY CLASSROOM
ENGAGING STUDENTS AND EDUCATORS THROUGH FILM

PRESENTED BY:
cpb ITVS

FUTURESTATES.TV

COMMUNITY CLASSROOM
Independent Television Service (ITVS)
651 Brannan Street, Suite 410
San Francisco, CA 94107
E-mail: outreach@itvs.org
http://www.itvs.org/classroom

COMMUNITY CLASSROOM is an innovative education resource providing short documentary video content and accompanying curricular materials, lesson plans, and homework assignments to high school and community college instructors and youth-serving community-based organizations. Film modules are drawn from documentaries scheduled for broadcast on the Emmy Award-winning PBS series *Independent Lens*. Content is grouped into subject specific segments that correspond to lesson plans and educational activities. All COMMUNITY CLASSROOM lesson plans are designed with key education standards in mind, and are available free of charge online, along with the film modules.

COMMUNITY CLASSROOM is a program of the Independent Television Service, created with support from the Corporation for Public Broadcasting. Lesson plans were developed with guidance from the American Association of Community Colleges, KQED Education Network, National Association for Media Literacy Education, National Council for the Social Studies, National State Teachers of the Year, and PBS Teachers.

The Future of Reproduction Lesson Plan Overview

In the past, science fiction writers have predicted or inspired later technological developments in the real world. They were able to respond creatively to perceived future needs and desires. This lesson pairs the exploration of a specific need – the need for surrogate mothers – with an imaginative look at the future.

Students will watch *Silver Sling*, a film in which a young, impoverished woman considers becoming a surrogate despite possible long-term consequences. After discussing the film, students will read a nonfiction article about American and European couples who travel to India to find surrogate mothers. Students will consider the advantages and disadvantages of this practice.

Students will compare and contrast the film with the article. In the closing activity, students will consider creatively where our current situation might lead.

(Note to teachers: some students may see a connection between traveling abroad to find a surrogate mother and traveling abroad to adopt a child. They are not the same, of course, but this could become a sensitive issue to a student who was adopted from a foreign country by an American couple. Teachers should be prepared to work with students for whom this is an issue.)

Target Audience

This lesson is designed for high school students of all ability levels.

Total Duration

This lesson should take 2-3 days, depending on the class length. In the first activity (day one), students will analyze the film to determine which aspects of the story appear to be possible now and which aspects do not. In the second activity (day two), they will read and respond to an article about surrogate mothers.

Educational Standards

This lesson addresses the following Common Core standards in literature:

For grades 9-10
Analyze various accounts of a subject told in different mediums (e.g., a person's life story in both print and multimedia), determining which details are emphasized in each account.

For grades 11-12
Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.

Procedures (Day 1)

Teacher Preparation

- Preview the film, which is about 10 minutes long.
- Set up web access to view the film online.
- Have a projector available so that all students can view the film.

Lesson Structure

Beginning (Mixed large/small group activity, 5-10 minutes)
Present students with the following question. Give them a few minutes to talk to a partner before asking for their response. Compile answers at the front of the room.

Question
All of the following statements are true except one. Which statement is false?

- The word "robot" was invented by Karel Capek, a Czechoslovakian playwright, in 1921.
- Geostationary communications satellites were first proposed by science fiction writer Arthur C. Clarke in 1945.
- Author Philip K. Dick included the first computer touch screens in his short story "Minority Report" in 1956.
- Flip phones were inspired by the Gene Roddenberry TV series *Star Trek*.
- After reading about an Invisibility Cloak in J. K. Rowling's *Harry Potter* series, Department of Defense researchers developed invisibility uniforms for the United States Army.

(Answer: the last one is false. An invisibility cloak has been developed, but so far it only works on something about the size of a strand of hair. All of the other statements are true.)

Discussion
In each of the examples above, creative writers were able to envision a technological development before scientists and engineers could make it happen. What technology would you like to see developed to address a current need? (Answers will vary. Encourage students to think in terms of current issues, like a nonpolluting fuel or vaccines for cancer or AIDS.)

Follow up the brainstorming by asking if students could envision any drawbacks to the development of these technologies. (Answers will vary. We have already seen problems with pollution from millions of discarded cell phones and computers. We have also seen problems with bacteria that resist even our strongest medications.)

Middle and End (Time needed will vary.)
Remind students of the initial activity, in which science fiction writers envisioned technological developments to meet specific needs. Tell students that they will now watch a short fictional film set in a future in which top female corporate executives are encouraged to hire surrogates rather than to take time off from their jobs to have babies.

As they view the film, ask students to watch for two specific things:

- What technology exists in the film that we don't have now?
- What unintended consequences have developed because of this technology?

Then show the film *Silver Sling*, which lasts about 10 minutes. Discuss student responses to the film in a large group briefly. Then divide students into small groups to discuss one more question:

- Are the young women who are hired as surrogates treated fairly? Why do you think that they are or are not treated fairly?

After a few minutes of discussion, compile the main ideas from the student responses and save them for tomorrow's lesson.

Procedures (Day 2)

Teacher Preparation

Students need access to the article found here:
http://www.marieclaire.com/world-reports/news/international/surrogate-mothers-india.
(Teachers may wish to print the article to avoid commercial content and unrelated links.)

Lesson Structure

Beginning (5-10 minutes)
Open class by reviewing students' statements from the end of yesterday's lesson. Tell them that today they will read an article about modern surrogate mothers in India.

Middle (Time needed will vary.)
Distribute a copy of the article "Surrogate Mothers: Womb for Rent" and the discussion questions (see handout). As a pre-reading activity, read the discussion questions aloud together. Then encourage students to read the article with a partner and work together to answer the questions. When everyone has finished, discuss the questions from the handout together.

(Note to teachers: some students may need additional support for this activity. Consider giving them the article in advance or giving them a copy that has the passages containing key concepts highlighted. The T-Chart Graphic Organizer included in the supplemental documents may also be useful.)

End (Time needed will vary.)
Ask students to respond to these questions:

- What attitude does the writer of the article seem to have toward surrogacy? What attitude does the filmmaker of *Silver Sling* seem to have?
- What details in the article and the film best reveal attitude or tone?
- A topic becomes controversial when both sides have a good point, and the topic lacks a middle ground on which people can agree. What facts or beliefs might make a person favor surrogacy? What facts or beliefs might make a person oppose surrogacy? Which side do you agree with more, and why?

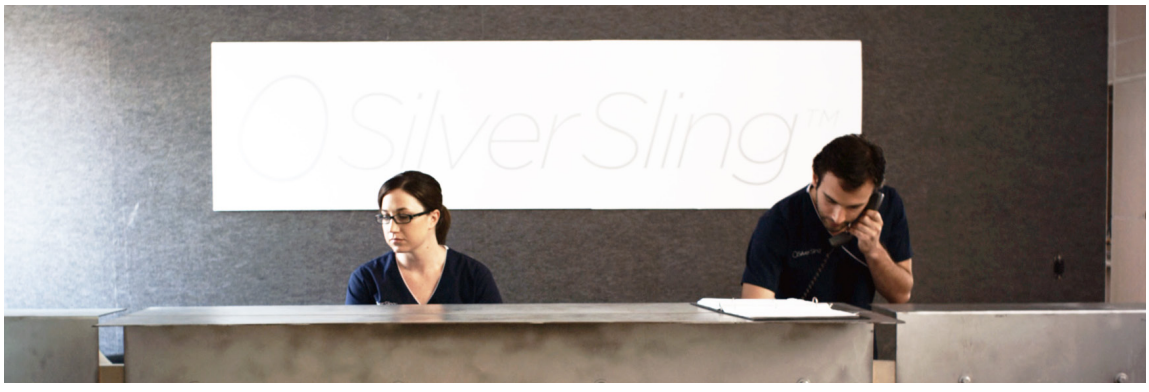
Informal Assessment

As an informal assessment, students could contribute a prediction to the Predict-O-Meter. (See page 8.)

Additional Resources

Additional information on the surrogacy that made Dr. Patel famous:

- http://www.smh.com.au/articles/2004/01/30/1075340823076.html
- http://news.bbc.co.uk/2/hi/health/3441939.stm
- http://www.thefreelibrary.com/Reunited%3A+grandmother+and+her+surrogate+twins%3B+First+picture+together...-a0121652011



Discussion Questions

"Surrogate Mothers: Womb for Rent"
By Abigail Haworth
http://www.marieclaire.com/world-reports/news/international/surrogate-mothers-india

Directions: As you read the article, respond to these questions.

1. What does "reproductive tourism" mean?

2. What issues might cause an American woman to seek an Indian surrogate?

3. What risks and benefits exist for the surrogate mothers in India?

4. What risks and benefits exist for the women who hire a surrogate?

5. Do you agree with the people who believe that the Indian women are being exploited? Why or why not?

Discussion Questions (Teacher's Edition)

"Surrogate Mothers: Womb for Rent"
By Abigail Haworth
http://www.marieclaire.com/world-reports/news/international/surrogate-mothers-india

Directions: As you read the article, respond to these questions.

1. What does "reproductive tourism" mean?
"Reproductive tourism" refers to people traveling to another country for the purpose of conceiving children.

2. What issues might cause an American woman to seek an Indian surrogate?
Frustration and lack of success with American medical practice and laws.
A much cheaper cost in India.
Publicity surrounding the success at Dr. Patel's clinic in Gujarat.
India's good health care system.
India's doctors speak English.

3. What risks and benefits exist for the surrogate mothers in India?
Risks include health issues related to the pregnancy and disapproval from the community.
Because the practice is not well regulated, a chance exists that the surrogates could be exploited.
Some surrogates may become attached to the baby and find it difficult to give it up.
Benefits include money to provide a better future for the family or to meet immediate family needs.
Some Americans send gifts to the surrogates and try to keep in touch with them.
Intangible benefits include a sense of helping someone else have a child.

4. What risks and benefits exist for the women who hire a surrogate?
The women have to travel to India and endure the heat and living conditions.
They have to trust that the surrogate is healthy and takes good care of herself during her pregnancy.
The benefit is that they have a child.

5. Do you agree with the people who believe that the Indian women are being exploited? Why or why not?
Answers will vary. Focus on the reasons that students give.

T-Chart Graphic Organizer

Directions: The film *Silver Sling* is about surrogate mothers. In what ways is it similar to and different from the situation described in the magazine article? Use the chart below to help organize your thoughts.

The film is similar to the article because…	**The film differs from the article because…**
Both are about surrogacy. *Both take place in urban areas.* *Poor women are the surrogates; wealthy women hire them.* *The wealthy women seem genuinely appreciative of the surrogate's help.* *The surrogates make this choice to help their families.* *Long-term consequences exist for the surrogates.*	*Lydia is not married.* *Lydia feels she does not have a choice about becoming a surrogate.* *The long-term consequence in the film is physical (sterility) rather than social (shunning).* *The wealthy women in the film hire the surrogates for convenience rather than because of physical problems. This makes them seem more selfish.*

T-Chart Graphic Organizer Teachers Edition

Directions: The film *Silver Sling* is about surrogate mothers. In what ways is it similar to and different from the situation described in the magazine article? Use the chart below to help organize your thoughts.

The film is similar to the article because…	The film differs from the article because…

Extension Activity: Predict-O-Meter

Objectives

- Investigate and analyze predictions for *Silver Sling* as posted on the FUTURESTATES Predict-O-Meter.
- Formulate and post their prediction on the Predict-O-Meter site.

Beginning (5-7 minutes)
Review the discussions about surrogacy, real and fictional. This introduction is simply to "reactivate prior knowledge."

Middle (30-35 minutes)
Students will investigate predictions presented on the Predict-O-Meter located on the FUTURESTATES website. After selecting and evaluating three of the predictions using the evaluation rubric, students will develop at least one prediction of their own to post on the website. The proposed prediction will be evaluated by a peer and approved by the instructor before posting. The predictions may alter the course projected in the Predict-O-Meter predictions. Students may require an example of a valid prediction. Using the rubric to instruct the students, prepare a sample prediction and lead the class in an analysis of the statement. The following is an example of a proposed prediction and the evaluation of it using the prepared rubric.

Proposed prediction: "In 2025, the round arm scar of surrogate mothers becomes fashionable, and urban women volunteer to become surrogates just so they can have the scar. Surrogate agencies like Silver Sling see record profits due to a cost decrease."

- *Is the prediction based on realistic possibilities?*
  Yes. Fashion and fads are highly unpredictable.

- *Do the consequences of the prediction support the film?*
  Yes. Surrogacy is presented in a very positive light.

- *Do known events in the past support the prediction?*
  Yes, the round arm scar can be compared to a tattoo.

- *Is this prediction plausible?*
  This depends on the evaluator's opinion, based on the evidence presented in defense of the prediction.

FUTURESTATES Predict-O-Meter Activity Instructions

Log on to www.futurestates.tv. Go to the Predict-O-Meter. There are three rows of predictions. The row on the far left contains the predictions based on the FUTURESTATES films, including *Silver Sling*. The center row consists of predictions submitted by viewers. The far right row contains dates of known events. For this activity, click on the green FUTURESTATES predictions. The number that appears in each green square is the number of predictions related to the specified year. Be certain to scroll down to see all predictions for a given year. At the end of each prediction is the tag for the film associated with each prediction. Find as many predictions as you can for the *Silver Sling* film. Choose three predictions to evaluate using the rubric below. When the assigned evaluations are finished, create at least one prediction of your own. Your prediction will be evaluated by another student. If the evaluation is at least a "3", you may post it on the FUTURESTATES website.

Film:_____ **Year:** _____

Prediction: _____

	No 1	**Somewhat 2**	**Yes 3**	**Don't know 0**
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: $\frac{\text{Overall Total}}{5}$ = _____

Film:_____ **Year:** _____

Prediction: _____

	No 1	**Somewhat 2**	**Yes 3**	**Don't know 0**
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
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Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: $\frac{\text{Overall Total}}{5}$ = _____

Film:_____ **Year:** _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total / 5 = _____

Personal prediction for _____ **(film name)**

Name: _____ **Evaluator:** _____

Year: _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total / 5 = _____

Should this prediction be posted to the website? _____

Teacher's approval _____

Date posted _____

If not posted, explain the reason for declining.

LESSON PLAN CREDITS

CURRICULA WRITER

Carla Beard
Carla Beard teaches high school English in Indiana. She often presents at NCTE and has served as Teacher in Residence for the Indiana Department of Education, where she helped teachers integrate technology into their classrooms. She maintains Web English Teacher, a web-based resource for English Language Arts teachers.

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COMMUNITY CLASSROOM
ENGAGING STUDENTS AND EDUCATORS THROUGH FILM

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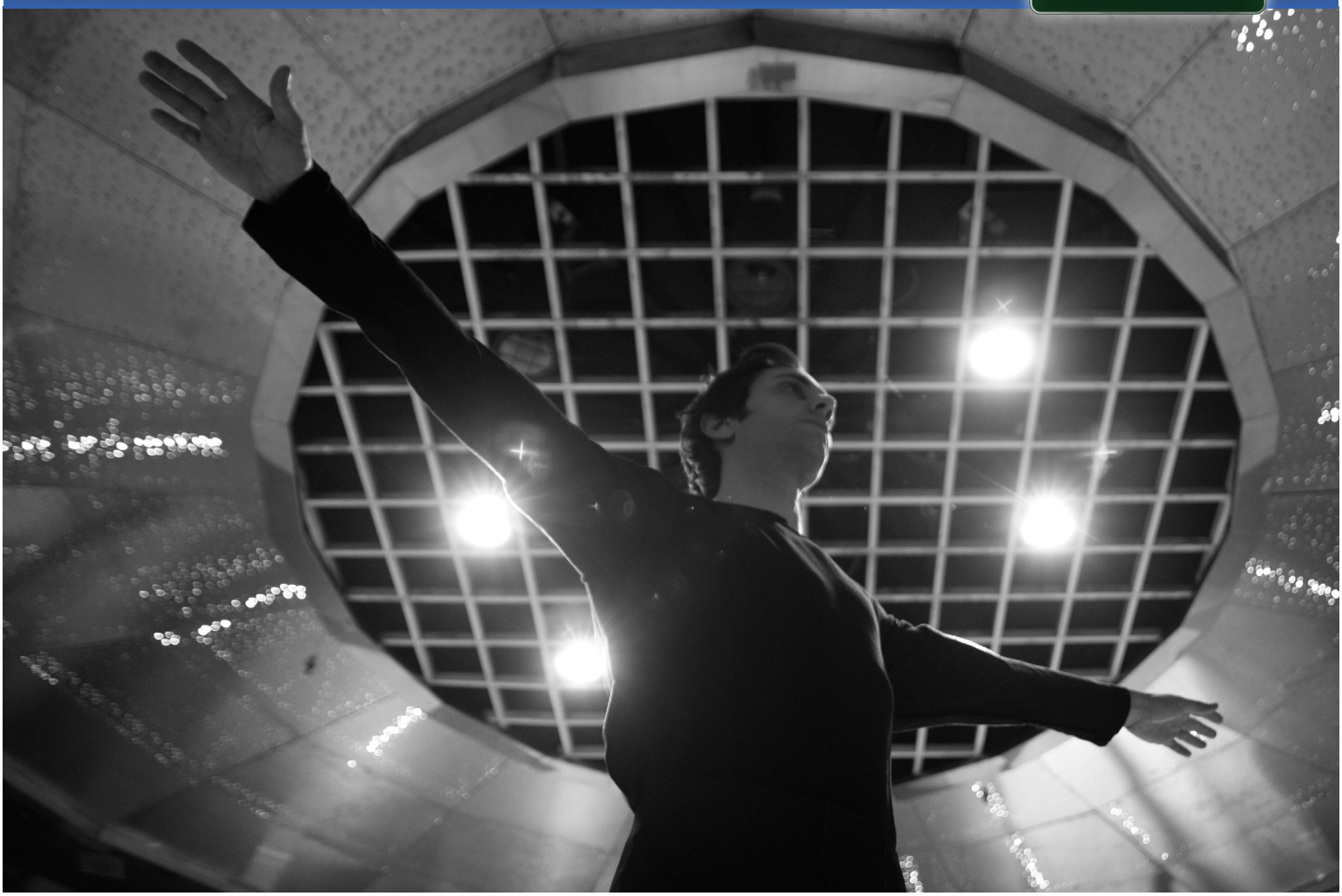

COMMUNITY CLASSROOM
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http://www.itvs.org/classroom

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Building a Story within a Story Lesson Plan Overview

Tent City is a frame story. In the outer story, Matthew seeks to provide for his wife and son Ivan by taking a job he dislikes but that enables them to live in a house. One night Ivan asks Matthew to tell him a story, and it forms the plot of the inner story. In the inner story, a robot discovers that he has been programmed to unleash a deadly disease in the city. The robot's programmer plans to make a fortune by providing the only cure. In an attempt to thwart the plan, the robot kills himself, unwittingly releasing the disease and infecting the city. The narrative then returns to the outer story, in which Ivan convinces Matthew to quit his job. As a result, the family is evicted from their home and moves to Tent City, a community of homeless people on the edge of town.

As the two stories unfold, the viewer will note parallels between the two stories, with the inner story emphasizing the conflict in the outer one. This lesson treats the film as a text, asking students to analyze the filmmaker's choice to create an effect that strengthens the impact on the viewer.

Extension activities at the end of the unit encourage students to respond creatively to the issues presented in the lesson.

Topic

This lesson focuses on the narrative techniques of a frame story. Extension activities invite students to write their own frame stories and to research tent cities of the Depression era and of today.

Target Audience

This lesson is designed for high school students of all ability levels.

Total Duration

This lesson will take 2-3 days, depending on the class.

Summary of Lesson

Students will analyze the parallels between the inner and outer stories to determine what the narrative tension adds to the story.

Educational Standards

This lesson addresses the following Common Core Standards in literature:

For grades 9-10
Analyze how an author's choices concerning how to structure a text, order events within it (e.g., parallel plots), and manipulate time (e.g., pacing, flashbacks) create such effects as mystery, tension, or surprise.

For grades 11-12
Analyze how an author's choices concerning how to structure specific parts of a text (e.g., the choice of where to begin or end a story, the choice to provide a comedic or tragic resolution) contribute to its overall structure and meaning as well as its aesthetic impact.

Procedures

Teacher Preparation

- Preview the film, which is a little over 17 minutes long, not counting the credits.
- Read the synopsis and watch the film "The Making of *Tent City*." The comments in "The Making of *Tent City*" will help the viewer understand the writer/director's intent.
- Set up web access to view the film online.
- Have a projector available so that all students can view the film.
- For the introduction, bring a small, empty picture frame and a large picture, poster, or map.

Objective for the Lesson

Students will analyze the effect of parallels identified in the two plots of *Tent City*.

Lesson Structure

Introduction to the concept of a frame story (5-10 minutes)
Direct students' attention to a large picture, poster, or map. Hold up the smaller frame in front of the larger picture. Ask students, "If I put this frame right here, what happens, at least for a moment, to your attention?" Students should respond that the frame causes them to focus mostly on the framed section of the picture. Help students reach the conclusion that the frame's purpose is to draw attention to what is inside it.

If students are not already familiar with the concept of a frame story, take a moment to explain it to them. Explain that this is an ancient storytelling technique. The purpose of the outer story is usually to introduce the inner story, which is the more important plot. Some stories, however, establish a narrative tension so that the outer and inner stories influence one another. That is the case with the story for today.

Pre-viewing activity (15-20 minutes)
Divide the class into small groups and give each group one set of questions (below) to discuss. After 5-10 minutes, ask them to share their thoughts with the whole group.

- When people lose their homes in your community, where do they go? How do they cope? Does anyone try to help them?
- Sometimes young people notice aspects of a situation that older people don't see. If you disagreed with a major decision your parents were making, how might you approach them?
- What can people realistically do when corporations act illegally or when their actions are legal but have a negative impact on a community?

Middle (about 50 minutes)
Distribute the *Tent City* viewing guide. Explain to students that you will show the film twice. Prior to the first viewing, ask students to just watch the film to understand what is happening. They will not be expected to analyze the film until they see it a second time.

After showing the film the first time, allow a couple of minutes for comments or for questions about anything students did not understand.

Explain that students should take notes using the viewing guide as they watch the film a second time. Because it can be difficult to watch and take notes at the same time, they might want to divide up the work with a partner.

Then show the film a second time. When it is finished, give students a few minutes to complete their graphic organizers and compare answers. Then engage students with the post-viewing discussion questions (see Teacher's Guide):

- When Matthew said that he had no choice, was he making excuses, like Ivan said, or was he seeing a bigger picture that a child can't see?
- Do you agree with the family's decision? Why or why not?
- Would you have made the same decision for your family?
- What do you think Tent City will be like? How will people treat Matthew and his family when they move into the Tent City?
- At what point did you guess that the story would end the way it did?
- The director chose to use black-and-white photographs for the inner story. How does this affect the telling of the inner story? What does this add to the overall narrative?
- What elements of the inner story highlighted or emphasized the conflicts that were taking place in the outer story?

End (Time determined by needs of the class)
Invite students to respond creatively to one of the following scenarios by developing and presenting a digital story. Encourage them to use the frame story narrative technique.

- Tent City continues to grow. It develops problems with crime, sanitation, and chronic unemployment. What happens to Ivan and his family?
- Tent City continues to grow, and eventually the people of Tent City become the largest block of voters in the city. They want programs to help them get back into their homes. City Council, however, is strongly influenced by Zone Bank, which wants the houses vacant. What happens next?
- Ivan and his family are still living in Tent City when he graduates from high school. Does he have any regrets? What will he do after high school?
- After Mr. X fell into the city's water supply, things happened just the way the president of InkaZone planned: there was an epidemic, and the company made billions of dollars selling the only available cure. Did the company get away with it?
- Someone fished Mr. X out of the reservoir and repaired and re-activated him. What happened next?

Suggested Assessments

Teachers may wish to use one of the following sites to assist in developing a rubric to assess student work:

Evaluating Multimedia Presentations
http://www.learnnc.org/lp/pages/647

Kathy Schrock's Guide for Educators: Multimedia
http://school.discoveryeducation.com/schrockguide/assess.html#multimedia

Overview of Evaluating Projects
http://www.digitales.us/evaluating/index.php

Additional Resources

Other titles that use the frame story device:

- *The Panchatantra* (collection of short stories from India)
- *The Canterbury Tales* by Chaucer
- "The Celebrated Jumping Frog of Calaveras County" by Mark Twain
- "Alice's Restaurant" (song) by Arlo Guthrie
- *The Princess Bride* by William Goldman

Viewing Guide

Tent City is an example of a frame story, an ancient narrative device (storytelling technique). Typically a frame story starts with the "outer" story, which establishes a reason to tell the "inner" story.

Use this viewing guide to compare and contrast the characters in the inner and outer stories. First, watch the film without taking notes in order to understand what is happening. The second time you watch the film, take notes to help you with analysis.

	Matthew	Robot
Where does he live? (Include details.)		
Who does he work for?		
Describe his family.		
How are oranges involved?		
What is the company's plan?		
Which is more important to the boss, people or money?		
How does he feel about his job?		
How does Ivan feel about the job?		
Explain the final irony.		

Viewing Guide (Teacher's Edition)

Tent City is an example of a frame story, an ancient narrative device (storytelling technique). Typically a frame story starts with the "outer" story, which establishes a reason to tell the "inner" story.

Use this viewing guide to compare and contrast the characters in the inner and outer stories. First, watch the film without taking notes in order to understand what is happening. The second time you watch the film, take notes to help you with analysis.

	Matthew	Robot
Where does he live? (Include details.)	**The city contains many empty homes and fenced-off areas. It used to be nice but has fallen on hard times.**	**The Gleaming City is described as "amazing" and "beautiful," with parks, outdoor cafes, and great people.**
Who does he work for?	**Zone Valley Bank**	**InkaZone**
Describe his family.	**He has a wife and a son.**	**He has a wife and a son.**
How are oranges involved?	**Matthew brings a bag of oranges home, a rare treat.**	**The robot mispronounces "orange" when he orders some juice.**
What is the company's plan?	**The bank's plan appears to be to evict all the people and leave the houses vacant.**	**The robot will unleash a deadly virus. After a few weeks, the company will release the only cure and make millions of dollars.**
Which is more important to the boss, people or money?	**Money**	**Money**
How does he feel about his job?	**He doesn't like it, but he doesn't think he has a choice. He wants to provide for his family.**	**He is horrified. He tries to avoid unleashing the virus.**
How does Ivan feel about the job?	**He doesn't like it because the kids at school won't talk to him. He thinks his father should quit.**	**He thinks the robot should take a stand rather than just give up and kill himself.**
Explain the final irony.	**Matthew's family ends up at the place he told the other families about: Tent City.**	**The robot's suicide causes the epidemic he hoped to avoid.**

Post-viewing Discussion Questions

A good narrative will accomplish each of the following tasks. As you watch the film, your job is to determine how it accomplishes each task.

When Matthew said that he had no choice, was he making excuses, like Ivan said, or was he seeing a bigger picture than a child can see?

Do you agree with the family's decision? Why or why not?

Would you have made the same decision for your family?

At what point did you guess that the story would end the way it did?

The director chose to use black-and-white photographs for the inner story. How does this affect the telling of the inner story? What does this add to the overall narrative?

What elements of the inner story highlighted or emphasized the conflicts that were present in the outer story?

Post-viewing Discussion Questions
(Teacher's Edition)

A good narrative will accomplish each of the following tasks. As you watch the film, your job is to determine how it accomplishes each task.

When Matthew said that he had no choice, was he making excuses, like Ivan said, or was he seeing a bigger picture than a child can see?
Answers will vary. Matthew is a sympathetic character and is certainly seeing a bigger picture. When he says the bank will just replace him if he quits, he is not wrong. However, by choosing to move to Tent City, he seems to agree with Ivan.

Do you agree with the family's decision? Why or why not?
Answers will vary. The important part of the response is the reason given.

Would you have made the same decision for your family?
Answers will vary. The important part of the response is the reason given.

At what point did you guess that the story would end the way it did?
Answers will vary. The important part of the response is the clue the student cites.

The director chose to use black-and-white photographs for the inner story. How does this affect the telling of the inner story? What does this add to the overall narrative?
Answers will vary. By using black-and-white stills, the director makes a clear distinction between the two stories, making it possible for the same actors to appear in both stories without confusing the audience. This makes it possible to emphasize that the inner story is in a way about Matthew and his struggle to reconcile himself to his job. Black-and-white stills also parallel the black-and-white drawings hanging on Ivan's bedroom wall – possibly Matthew's work. Stills are also more like the graphic novels that Matthew used to create, so they are appropriate for a story that Matthew tells.

What elements of the inner story highlighted or emphasized the conflicts that were present in the outer story?
The writer/director adds emphasis by using the same actors in both stories and by giving their characters comparable issues to deal with.
When Matthew and the robot make different choices, the contrast highlights the importance of the choice.
When Matthew later changes his mind and makes a choice comparable to the robot's, the respect that accompanies the robot's motives (if not his result) transfers to Matthew.

Extension Activity: Predict-O-Meter

Objectives

- Investigate and analyze predictions for *Tent City* as posted on the FUTURESTATES Predict-O-Meter.
- Formulate and post their prediction on the FUTURESTATES Predict-O-Meter site.

Beginning (5-7 minutes)
Reactivate prior knowledge by reviewing discussions related to the film.

Middle (30-35 minutes)
Students will investigate predictions as presented on the Predict-O-Meter located on the FUTURESTATES website. After selecting and evaluating three of the predictions using the evaluation rubric, students will develop at least one prediction to post on the website. The proposed prediction will be evaluated by a peer and approved by the instructor before posting. The predictions may alter the course projected in the Predict-O-Meter predictions. Students may require an example of a valid prediction. Using the rubric to instruct the students, prepare a sample prediction and lead the class in an analysis of the statement. The following is an example of a proposed prediction and the evaluation of it using the prepared rubric.

Proposed prediction: "In 2030, census data reveals that 50% of the urban population lives in tent cities."

- *Is the prediction based on realistic possibilities?*
  Yes. Tent cities are growing, and the economic recovery is very slow.

- *Do the consequences of the prediction support the film?*
  Yes. The tent city is growing in the film.

- *Do known events in the past support the prediction?*
  Yes. We can look to the Hoovervilles of the Great Depression as support.

- *Is this prediction plausible?*
  This is the evaluator's opinion based on the evidence presented in defense of the prediction.

FUTURESTATES Predict-O-Meter Activity Instructions

Log on to www.futurestates.tv. Go to the Predict-O-Meter. There are three rows of predictions. The row on the far left contains the predictions based on the FUTURESTATES films, including *Tent City*. The center row consists of predictions submitted by viewers. The far right row contains dates of known events. For this activity, click on the green FUTURESTATES predictions. The number that appears in each green square is the number of predictions related to the specified year. Be certain to scroll down to see all predictions for a given year. At the end of each prediction is the tag for the film associated with each prediction. Find as many predictions as you can for the *Tent City* film. Choose three predictions to evaluate using the rubric below. When the assigned evaluations are finished, create at least one prediction of your own. Your prediction will be evaluated by another student. If the evaluation is at least a "3", you may post it on the FUTURESTATES website.

Film:_____ **Year:** _____

Prediction: _____

	No 1	**Somewhat 2**	**Yes 3**	**Don't know 0**
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: $\frac{\text{Overall Total}}{5}$ = _____

Film:_____ **Year:** _____

Prediction: _____

	No 1	**Somewhat 2**	**Yes 3**	**Don't know 0**
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: $\frac{\text{Overall Total}}{5}$ = _____

Film:_____ **Year:** _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total / 5 = _____

Personal prediction for _____ **(film name)**

Name: _____ **Evaluator:** _____

Year: _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: Overall Total / 5 = _____

Should this prediction be posted to the website? _____

Teacher's approval _____

Date posted _____

If not posted, explain the reason for declining.

LESSON PLAN CREDITS

CURRICULA WRITER

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About FUTURESTATES:
Imagining tomorrow's America today, FUTURESTATES is a series of independent mini-features – short narrative films created by experienced filmmakers and emerging talents transforming today's complex social issues into visions about what life in America will be like in decades to come. The first season of FUTURESTATES debuted in March 2010, and is available online at futurestates.tv.

About ITVS:
The Independent Television Service (ITVS) funds and presents award-winning documentaries and dramas on public television, innovative new media projects on the Web and the Emmy Award-winning weekly series *Independent Lens* on Tuesday nights at 10 PM on PBS. ITVS is a miracle of public policy created by media activists, citizens and politicians seeking to foster plurality and diversity in public television. ITVS was established by a historic mandate of Congress to champion independently produced programs that take creative risks, spark public dialogue and serve underserved audiences. Since its inception in 1991, ITVS programs have revitalized the relationship between the public and public television, bringing TV audiences face-to-face with the lives and concerns of their fellow Americans. More information about ITVS can be obtained by visiting itvs.org. ITVS is funded by the Corporation for Public Broadcasting, a private corporation funded by the American people.


TIA AND MARCO
LESSON PLAN
FUTURESTATES
COMMUNITY CLASSROOM
ENGAGING STUDENTS AND EDUCATORS THROUGH FILM
PRESENTED BY:
cpb
ITVS
FUTURESTATES.TV

COMMUNITY CLASSROOM
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COMMUNITY CLASSROOM is an innovative education resource providing short documentary video content and accompanying curricular materials, lesson plans, and homework assignments to high school and community college instructors and youth-serving community-based organizations. Film modules are drawn from documentaries scheduled for broadcast on the Emmy Award-winning PBS series *Independent Lens*. Content is grouped into subject specific segments that correspond to lesson plans and educational activities. All COMMUNITY CLASSROOM lesson plans are designed with key education standards in mind, and are available free of charge online, along with the film modules.

COMMUNITY CLASSROOM is a program of the Independent Television Service, created with support from the Corporation for Public Broadcasting. Lesson plans were developed with guidance from the American Association of Community Colleges, KQED Education Network, National Association for Media Literacy Education, National Council for the Social Studies, National State Teachers of the Year, and PBS Teachers.

Developing Empathy for Others
Lesson Plan Overview

A controversial issue, by definition, is one in which both sides have a legitimate argument – the problem is finding common ground. While the film *Tia and Marco* uses the controversy of illegal immigration as part of its setting, the film does not take a side in the argument. The film does, however, point to another issue that deserves exploration: how we deal with people we perceive as different from us. Students are especially sensitive to issues of stereotyping and prejudice, so this contemporary film should be very engaging.

Plot summary: Her year of mandatory service has caused Tia, an African American woman, to lose respect for many of the people she calls "illegals." When her boyfriend encourages her to "have empathy," she snaps back, "You have no idea what it's like here." As a result of her interaction with Marco, a young Latino migrant, and with a prejudiced border patrol agent, however, Tia comes to regret Marco's treatment at the hands of her colleagues and his final capture.

In this lesson, students will analyze *Tia and Marco*, focusing on the development of empathy. They will discuss the impact of empathy (or its absence) in their own lives and produce a story that models empathy. This lesson develops skills in drawing inferences and character analysis.

Target Audience
This lesson is designed for high school students of all ability levels.

Total Duration
This lesson will take about 2 days.

Educational Standards:
This lesson addresses Writing Core Standard 3:

For grades 9-10:
Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

For grades 11-12:
Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

Procedures

Teacher Preparation

- The teacher needs to preview *Tia and Marco*, just over 14 minutes long.
- The teacher will also find it helpful to watch "The Making of *Tia and Marco*" (about 8½ minutes).
- Make sure a projector is available so that all students can watch the film together.
- Bring copies of the Viewing Guide and Predict-O-Meter evauation sheet.

Objective for the Lesson

Students will analyze the details that move the narrative forward and that reveal changes in a character.

Lesson Structure

Beginning (5-10 minutes)
Invite students to consider their own stereotypes by having them complete the following sentences, either individually or as a whole class.

1. Teachers fall into two categories: ___ and ___.
2. Joe knows a lot about computers. His social life must be ___.
3. When they drive, old people ___.
4. Women drivers are ___.
5. Rednecks are ___.
6. French people are ___.
7. Televangelists are ___.
8. Teens are considered bad drivers because ___.
9. A few homeless people are mentally ill. The rest of them are ___.
10. Rich people are ___.

Discuss briefly: we all know that stereotypes aren't true. Somehow, though, they continue to exist. Have you ever been on the receiving end of a stereotype? What happened?

Middle (60-75 minutes)
Announce that students will be watching a film in which one person initially clings to her prejudice, but then changes her mind. Ask students to watch for the moment when she starts to change her mind. Then show the film (just over 14 minutes long).

Afterwards, have students gather in groups of about five to share their impressions of when empathy starts to appear in the film. Compile answers, working toward consensus. (Tia is a no-nonsense, effective border patrol officer at the beginning of the film. She has also, however, lost her sense of empathy for Mexicans attempting to cross the border into the United States. By the end, however, she has connected on a human level with Marco and tries to help him escape. She gains her empathy – slowly – while watching over him one night, feeding him, considering herself as a new mother-to-be, and finally witnessing that the racist border patrol officer has harmed him. In this, she feels his humanity even more deeply and begins to understand people as individuals, not as part of an "offending" group.)

Distribute the Viewing Guide and ask students to watch the film again, this time as writers. How has the writer of *Tia and Marco* made this conflict realistic and vivid for the audience? Encourage students to take notes as they watch the second time.

Play the film again. Because it can be difficult to take notes while viewing, allow students to share their observations informally for a few minutes before compiling them into a master list at the front of the room. Discuss the power details have in conveying a message in everyday life.

End
Point out that Tia didn't understand her prejudice against Marco until she witnessed the racist border patrol officer causing him harm and began to respect him as an individual. Ask students if there are any other ways to fight prejudice. Ask them to identify the strategies that they use themselves.

Suggested Follow-up Activities

Depending on the quality of the closing discussion, students might establish a plan of action leading to a campaign against prejudice in their school. This could include posters, films, and/or guest speakers.

Invite someone who has been a victim of prejudice to speak about how to combat it. This might include a Holocaust survivor, someone who worked for civil rights in the Sixties, a gay rights activist, a member of an ethnic minority, or a Muslim cleric.

Students could produce a digital story on the life of someone who demonstrated empathy for others. (For more information on digital storytelling, visit: http://digitalstorytelling.coe.uh.edu.)

Viewing Guide (Teachers Edition)

A good narrative will accomplish each of the following tasks. As you watch the film, your job is to determine how it accomplishes each task.

Task One

Engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events.

How do we know what the conflict/problem is? How do we meet the characters?

Task Two

Use narrative techniques such as dialogue, pacing, description, and reflection to develop experiences, events, and/or characters.

What is Tia like at the beginning? What is she like at the end? What causes her to change?

Is Marco a likeable character? Why or why not?

Viewing Guide (Teachers Edition) cont.

Task Three

Use a variety of techniques to sequence events so that they build on one another to create a coherent whole.

What examples of cause and effect do we see in this film?

Task Four

Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters.

What details in the film (dialogue and images) stand out?

Task Five

Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.

Does the ending make sense? Why or why not?

Viewing Guide (Teachers Edition)

A good narrative will accomplish each of the following tasks. As you watch the film, your job is to determine how it accomplishes each task.

Task One

Engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events.

How do we know what the conflict/problem is? How do we meet the characters?

We know what the conflict/problem is because of Tia's words and actions, by listening to the TV news report, and by noting the cover of Tia's manual. We also hear John refer to torture, which Tia denies weakly. Marco offers an insight when he says, "You're just not used to communicating with us." When Marco escapes, Tia decides to chase him, even though she is no longer a border patrol officer.

We meet Tia at work, capturing an "illegal." We meet Marco when he asks for help. We meet John as he talks to Tia and watch him at work. We meet the border patrol guard when he stops Tia. We learn the reason for the delay from the communication device.

Task Two

Use narrative techniques such as dialogue, pacing, description, and reflection to develop experiences, events, and/or characters.

What is Tia like at the beginning? What is she like at the end? What causes her to change?

Tia is a no-nonsense, effective border patrol officer at the beginning of the film. She has also, however, lost her sense of empathy for Mexicans attempting to cross the border into the United States. By the end, however, she has connected on a human level with Marco and tries to help him escape. She gains her empathy – slowly – while watching over him one night, feeding him, considering herself as a new mother-to-be, and finally witnessing that the racist border patrol officer has harmed him. In this, she feels his humanity even more deeply and begins to understand people as individuals, not as part of an "offending" group.

Is Marco a likeable character? Why or why not?

Marco is likeable. He treats Tia like a person even when, at the beginning, she treats him like an "illegal" (not a person). He asks her about her baby and makes no effort to harm her, even when she is asleep. When they are caught, he even offers her some lines to try on the border guard.

Viewing Guide (Teachers Edition) cont.

Task Three

Use a variety of techniques to sequence events so that they build on one another to create a coherent whole.

What examples of cause and effect do we see in this film?

Because it is her year of mandatory service, Tia is patrolling the border.
Because the alarm goes off, Tia catches Marco.
Because she captures Marco, Tia handcuffs him.
Because she feels guilty, Tia shares her meal with Marco.
Because the border patrolman abuses Marco, Tia feels empathy for Marco as an individual.
Because Tia surrenders, Marco is taken away.
(Many more answers are possible.)

Task Four

Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters.

What details in the film (dialogue and images) stand out?

In the opening scene, the man's face is pushed into the dirt.
A newscaster encourages people to conserve power and water, but Tia's house has all the lights on, and she draws a bath.
Marco asks, "Lady, can you just help me?"
A brilliant moon explains the later report of "high activity" that night.
When the border patrolman refers to Tia's unborn child as an "it," she responds with "Him. It's a 'him,' not an 'it.' His name is Marco." She might also be referring to the character Marco.
(Many more answers are possible.)

Task Five

Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.

Does the ending make sense? Why or why not?

It is disappointing but logical that Tia gives up trying to escape the border patrol. She knows what they are capable of, after all. Her anguish at seeing Marco taken away seems genuine and believable.

Extension Activity: Predict-O-Meter

Objectives

- Investigate and analyze predictions for *Tia and Marco* as posted on the FUTURESTATES Predict-O-Meter.
- Formulate and post their prediction on the Predict-O-Meter site.

Beginning (5-7 minutes)
Reactivate prior knowledge by reviewing discussions related to the film.

Middle (30-35 minutes)
Students will investigate predictions as presented on the Predict-O-Meter located on the FUTURESTATES website. After selecting and evaluating three of the predictions using the evaluation rubric, students will develop at least one prediction to post on the website. The proposed prediction will be evaluated by a peer and approved by the instructor before posting. The predictions may alter the course projected in the Predict-O-Meter predictions. Students may require an example of a valid prediction. Using the rubric to instruct the students, prepare a sample prediction and lead the class in an analysis of the statement. The following is an example of a proposed prediction and the evaluation of it using the prepared rubric.

Proposed prediction: "In 2025, Tia, plagued by memories of Marco, writes a best-selling book about her Year of Service and about how she was trained to think about illegal immigrants as not quite human. She starts a non-profit organization to fight prejudice and spread empathy."

- *Is the prediction based on realistic possibilities?*
  Yes. People often write about events in their lives.

- *Do the consequences of the prediction support the film?*
  Yes. Tia seems genuinely sorry when Marco is taken away.

- *Do known events in the past support the prediction?*
  Yes. Many nonprofit organizations exist to improve society.

- *Is this prediction plausible?*
  This is the evaluator's opinion based on the evidence presented in defense of the prediction.

End (Time Varies)
FUTURESTATES Predict-O-Meter Activity
Distribute the FUTURESTATES Predict-O-Meter Evaluation Sheet and go over the instructions with the students before directing them to complete the activity.

Predict-O-Meter Evaluation Form

FUTURESTATES Predict-O-Meter Activity
Log on to www.futurestates.tv. Go to the Predict-O-Meter. There are three rows of predictions. The row on the far left contains the predictions based on the FUTURESTATES films, including *Tia and Marco*. The center row consists of predictions submitted by viewers. The far right row contains dates of known events. For this activity, click on the green FUTURESTATES predictions. The number that appears in each green square is the number of predictions related to the specified year. Be certain to scroll down to see all predictions for a given year. At the end of each prediction is the tag for the film associated with each prediction. Find as many predictions as you can for the *Tia and Marco* film. Choose three predictions to evaluate using the rubric below. When the assigned evaluations are finished, create at least one prediction of your own. Your prediction will be evaluated by another student. If the evaluation is at least a "3", you may post it on the FUTURESTATES website.

Film:_____ **Year:** _____

Prediction: _____

	No 1	**Somewhat 2**	**Yes 3**	**Don't know 0**
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: $\frac{\text{Overall Total}}{5}$ = _____

Film:_____ **Year:** _____

Prediction: _____

	No 1	**Somewhat 2**	**Yes 3**	**Don't know 0**
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: $\frac{\text{Overall Total}}{5}$ = _____

Film:_____ **Year:** _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: $\frac{\text{Overall Total}}{5}$ = _____

Personal prediction for _____ **(film name)**

Name: _____ **Evaluator:** _____

Year: _____

Prediction: _____

	No 1	Somewhat 2	Yes 3	Don't know 0
Is the prediction based on scientific possibilities?				
Do the consequences of the prediction support the film?				
Does the prediction directly lead to the next prediction?				
Do known events in the past support the prediction?				
Is this prediction plausible? (This is your opinion.)				
Total: (add column)				

Overall Total: (Add totals for each column together) _____ Score: $\frac{\text{Overall Total}}{5}$ = _____

Should this prediction be posted to the website? _____

Teacher's approval _____

Date posted _____

If not posted, explain the reason for declining.

LESSON PLAN CREDITS

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Carla Beard teaches high school English in Indiana. She often presents at NCTE and has served as Teacher in Residence for the Indiana Department of Education, where she helped teachers integrate technology into their classrooms. She maintains Web English Teacher, a web-based resource for English Language Arts teachers.

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About FUTURESTATES:
Imagining tomorrow's America today, FUTURESTATES is a series of independent mini-features – short narrative films created by experienced filmmakers and emerging talents transforming today's complex social issues into visions about what life in America will be like in decades to come. The first season of FUTURESTATES debuted in March 2010, and is available online at futurestates.tv.

About ITVS:
The Independent Television Service (ITVS) funds and presents award-winning documentaries and dramas on public television, innovative new media projects on the Web and the Emmy Award-winning weekly series *Independent Lens* on Tuesday nights at 10 PM on PBS. ITVS is a miracle of public policy created by media activists, citizens and politicians seeking to foster plurality and diversity in public television. ITVS was established by a historic mandate of Congress to champion independently produced programs that take creative risks, spark public dialogue and serve underserved audiences. Since its inception in 1991, ITVS programs have revitalized the relationship between the public and public television, bringing TV audiences face-to-face with the lives and concerns of their fellow Americans. More information about ITVS can be obtained by visiting itvs.org. ITVS is funded by the Corporation for Public Broadcasting, a private corporation funded by the American people.