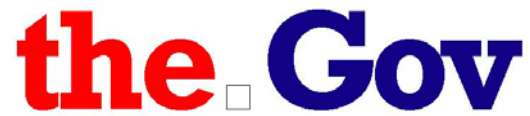


**Segment 8:**  
**“Digital Conversion”**  
Social Studies, Science, and  
Language Arts Curriculum

**the Gov**  
is a feature of

**the News**

**A daily news broadcast for High School and Middle School students  
now under development by MacNeil/Lehrer Productions**



# Segment 8: “Digital Conversion” Social Studies, Science, and Language Arts Curriculum

## Table of Contents

Letter to the Educator.....	1
“Digital Conversion” Social Studies, Science, and L.A. Curriculum .....	2



Winter 2008

Dear Educator,

*the.Gov* is the newest feature of *the.News*. After Election Day, leading up to the Inauguration, the series evolved from *the.Vote* to *the.Gov* and is now looking at the process of forming a new government as well as identifying key issues for the new administration and new Congress. These online video reports provide middle and high school students with a valuable exercise in democracy. This video report on the “Digital Conversion” (running 6 minutes, 13 seconds) is the eighth in the series.

Each video report is supported by a social studies and language arts curriculum. All videos and curricula have been informed by *the.News* instructional design that can be found on the website [www.pbs.org/newshour/thenews](http://www.pbs.org/newshour/thenews). *the.Gov* is open-captioned. The curriculum includes content-based standards, discussion questions, student activities, vocabulary and primary reference sources. A complete transcript of each video report includes time codes to assist in isolating specific segments of the video. This material is presented as options to fit teachers’ instructional needs.

*YOU.edit*, to launch early in 2009, gives students an online tool to remix the content of *the.Gov* reports (as well as all the other *the.News* videos), so they can create their own multimedia presentations. This editing tool will reside on our website so that it will be available to all students with an internet connection. It will be password protected so that it can serve as a viable educational asset that allows classroom teachers to assign multimedia projects within the security and content safety of *the.News* website.

A companion multimedia feature, *YOU.report*, will provide an online home for student-generated content. The *YOU.report* feature will include a student competition. Details about the *YOU.report* competition are on the website at <http://www.pbs.org/newshour/thenews/youreport/index.php>. **The deadline for entries is March 31, 2009.**

Funding for *the.Gov* has been provided by Adobe through the PBS Foundation.

For more information and questions about this material contact Lisa Denny at [ldenny@newshour.org](mailto:ldenny@newshour.org).

Sincerely,

Karen W. Jaffe  
Manager, Education Projects, *the.News*  
MacNeil/Lehrer Productions  
2700 S. Quincy St., Suite 250  
Arlington, VA 22206



# “Transitioning to Digital Television”

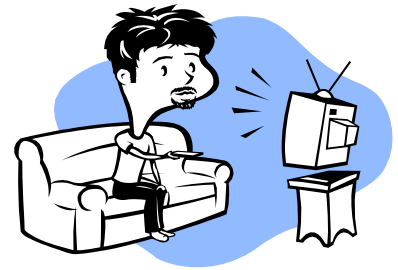
## Social Studies, Science, and Language Arts Curriculum

This lesson was designed to support *the.News* video “Digital Conversion.” The video can be found online at <http://www.pbs.org/newshour/thenews/thevote/> and clicking on “Digital Conversion” on the left side of the page.

**Grade Level:** Middle School/High School

**Content Areas:** Social Studies, Science, and Language Arts

**Key Concept:** Students will gain a fundamental understanding of the transition from analog television to digital with a scientific and policy perspective. They will then develop a presentation to inform consumers of the upcoming digital TV transition.



### Key Vocabulary:

- **Analog:** The technology in use for more than 50 years to transmit conventional TV signals. Information transmitted in analog comes in radio waves. Vinyl recordings and audio cassettes are also examples of analog technology.
- **Bandwidth:** The amount of spectrum available to each communications licensee. For digital conversion, the FCC has allocated 6 MHz (megahertz) of the broadcast spectrum for each television broadcaster. That channel will carry 19.4 Mb/s of data. It can be used

for one HDTV signal, or four multicast digital signals, and/or data transmission.

- **Datacasting:** The broadcast of information services through a television channel. Because digital broadcasters can send more data over the airwaves, viewers get a lot more than just television. Broadcasters can use their bandwidth to offer additional data or services.

- **Digital Television (DTV):** Refers to transmitting a broadcast signal by encoding it as 0s and 1s - the digital binary code used in computers. DTV can provide high quality programming (HDTV) or provide four, five, or more channels in the same bandwidth required for one channel of the current analog television. Calculators, computers, compact discs, and the Internet are examples of digital technology.

- **Federal Communications Commission (FCC):** Independent US government agency, directly responsible to Congress and charged with regulating local, interstate, and

**McRel Learning Objectives [www.mcrel.org](http://www.mcrel.org) -  
Science: Standard 9 - Understands the sources  
and properties of energy**

#### Level IV (Grades 9-12)

- Understands that waves have characteristic properties (e.g. wavelength, frequency, amplitude, speed) and behaviors (e.g. reflection, refraction, transmission, interference)



international communications by radio, television, wire, satellite, and cable. The FCC's jurisdiction covers the 50 states, the District of Columbia, and U.S. Possessions.

- **High Definition Television (HDTV):** Offers approximately twice the vertical and horizontal resolution (clarity) of NTSC television. Provides crystal-clear widescreen pictures with compact disc-quality surround sound. The aspect ratio of HDTV pictures is 16:9, similar to a movie screen's dimensions, as opposed to the 4:3 format of today's television. HDTV approaches movie theater display quality. The HDTV standard can also use 5.1 channels of CD-quality sound plus additional SAP channels.
- **Interactive Television:** A combination of television with interactive content and enhancements. Interactive television provides better, richer entertainment and information, blending traditional TV-watching with the interactivity of a personal computer. Programming can include graphics; one-click access to Web sites through TV crossover links, electronic mail, and chats; and online commerce through a back channel. Some applications may be displayed on TVs, others on computers.
- **Multicasting:** Broadcasting several DTV programs at once on a single channel. A KQED-DT viewer might be able to receive *Sesame Street* and *Nova* at the same time, and choose the program s/he prefers by selecting that "channel" from our digital bouquet.
- **Set-Top Converter Box (STB):** A box which decodes or otherwise translates the signals coming to it so they can be used by the customer's TV set.
- The set top box may provide functionality of translating HD signals to analog, may allow interactivity, may allow tuning of other channels, may allow reception of VOD, reception of pay-per-view channels, may contain a hard-disc to provide storage of data or time-shifting of programs (e.g. DVRs). The STB may contain a modem for connection via telephone line for ordering services or other upstream communication.
- **Video On Demand (VOD):** A service which allows viewers to receive and play programs (usually movies) at their convenience from cable. May allow viewer to stop, pause, play, rewind, etc.

\* Source: *KQED Public Television Station, San Francisco*, "Digital TV Glossary"  
<http://www.kqed.org/tv/help/dtv-glossary.jsp>

### Learning and Innovation Skills - Critical Thinking and Problem Solving Skills (Literacy for the 21<sup>st</sup> Century [www.21stcenturyskills.org](http://www.21stcenturyskills.org))

- Understanding the interconnections among systems
- Framing, analyzing, and synthesizing information in order to solve problems and answer questions.

### Communication and Collaboration (Literacy for the 21<sup>st</sup> Century [www.21stcenturyskills.org](http://www.21stcenturyskills.org))

- Articulate thoughts and ideas clearly and effectively through speaking and writing
- Demonstrating ability to work effectively with diverse teams
- Exercising flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal
- Assuming shared responsibility for collaborative work



## Materials:

- Internet connection
- Segment 8 of *the.Gov* titled “Digital Conversion”
- Vocabulary Activity Sheet (p.8-9)
- Student Handout: Primer on Digital Television w/discussion questions (p.10-13)
- Two letter-size envelopes for each group of 3-5 students
- Rubric (p.14)

**Time Frame:** Two to three class periods

**Background:** On February 17, 2009 all American homes will be receiving digital television. This long-awaited event is the culmination of a process that began over two decades ago. Digital technology, which was first developed in the 1930s, has revolutionized the way humans communicate. Influencing everything from music and video art to personal communication, digital technology is being used in just about every industry and profession. As multiple communication devices have become common place for so many Americans, there grew a need to set aside bandwidth on the broadcast spectrum for emergency communications such as police, fire, ambulance, and other safety responders.



Before digital technology, radio and television signals were sent via analog technology, which is radio waves carrying signals from one point to another. Analog transmission of information can be sent via wire or broadcast through the air. Because the signal is continuous, it is susceptible to distortion and interference and takes up a large amount of bandwidth. In contrast, digital technology is based on a series of “1”s and “0”s, similar to Morse code. Because the digital read speeds are so much faster than analog, information can be sent in greater detail and in a much smaller bandwidth.

In 2005, Congress passed the Digital Transmission and Public Safety Act, which called for the transition in broadcasting from analog to digital. The final date for this transition is February 17, 2009. Consumers of cable and satellite television most likely already receive their signals in digital format. For those who have an analog television and use a roof top or set top antenna, they won’t be able to receive the digital signal unless they

have a converter box that converts the digital signal. To address this, Congress provided a \$40 subsidy for consumers to purchase a set-top converter box that would convert the digital signal for analog television sets.

The potential for digital television is great. Picture and sound quality will be greatly enhanced and more information can be transmitted, allowing for interactive video and data services. Digital technology can also provide



**McRel Learning Objectives [www.mcrel.org](http://www.mcrel.org)**  
**- Civics: Standard 21: Understands the formation and implementation of public policy**

**Level IV (Grades 9-12)**

- Understands the processes by which public policy concerning a local, state, or national issue is formed and carried out





consumers with more services from their television such as movies and games on demand, customized viewing, and computer integration. But there are also some concerns with privacy. Because consumers can also communicate back to the television signal providers, information on their programming choices can be gathered, analyzed, and a consumer profile can be created for advertisers. The television industry has pledged it will respect consumers' privacy, but many consumer advocates are still concerned.

## Lesson Plan

**Opening Activity:** This opening activity will help students become familiar with some key terms regarding digital television and television technology in general. Before beginning this activity, make enough copies of the Key Vocabulary (p.8-9) for each group of 3-5 students in your class. The definitions and terms should be cut apart with the terms placed in one envelope (A) and the definitions in another (B).

1. Divide the class into groups of 3-5 students and provide each group with envelopes A and B.
2. Ask students to open Envelope A first and spread out the terms on their desk or table.
3. Then ask them to open Envelope B and spread out the definitions on the table beside the terms.
4. Have students match the definitions to the terms. You can set this up as a contest to see which group can match the terms and definitions the quickest and most accurate.
5. Discuss the terms for a review.

### Activity One: "A Primer on Digital Television"

1. Have students remain in their groups or establish new groups.
2. Distribute the

#### **McRel Learning Objectives [www.mcrel.org](http://www.mcrel.org) - Listening and Speaking: Standard 8 - Uses listening and speaking strategies for different purposes**

##### Level III (Grades 6-8)

- Makes oral presentations to the class (e.g. uses notes and outlines; uses organizational pattern that includes preview, introduction, body, transitions, conclusion; uses a clear point of view; uses evidence and arguments to support opinions; uses visual media)
- Uses appropriate verbal and nonverbal techniques for oral presentations (e.g. inflection/modulation of voice, tempo, word choice, grammar, feeling, expression, tone, volume, enunciation, physical gestures, body movement, eye contact, posture)

##### Level IV (Grades 9-12)

- Makes formal presentations to the class (e.g. includes definitions for clarity; supports main ideas using anecdotes, examples, statistics, analogies, and other evidence; uses visual aids or technology, such as transparencies, slides, electronic media; cites information sources)
- Makes multimedia presentations using text, images, and sound (e.g. selects the appropriate medium, such as television broadcast, videos, web pages, films, newspapers, magazines, CD-ROMS, Internet, computer-media-generated images; edits and monitors for quality; organizes, writes, and designs media messages for specific purposes)
- Uses a variety of verbal and nonverbal techniques for presentations (e.g. modulation of voice; varied inflection; tempo; enunciation; physical gestures; rhetorical questions; word choice, including figurative language, standard English, informal usage, technical language) and demonstrates poise and self-control while presenting



Student Handout, “A Primer on Digital Television” (p.10-13) and have them read the article. This can also be done as homework the night before.

3. Working in their groups, have students discuss the questions at the end of the article. Then have them report their findings to the class.

**Activity Two: A Guide to the Digital Television Transition:** In this activity, students are to synthesize the information they have acquired from the previous activities and develop a presentation to inform consumers of the upcoming digital TV transition.

1. Divide students into small groups of 2-3 students.
2. Have students review *the.Gov* story “Digital Conversion” on the transition to digital television and discuss some of the main points of the newscast.
3. Students can also review the Federal Communication Commission’s website <http://www.dtv.gov/> to get ideas for what consumers want to know about the transition to digital television.
4. Have the group members brainstorm topics on what information is important for consumers to understand regarding the transition.
5. Then each group member should do deeper research on the topic gathering information from this lesson and additional information from news articles and the Internet.
6. Then have each group determine how they will present this information from the list of delivery methods listed here:
  - a. Hard copy brochure or pamphlet to be sent in the mail.
  - b. “Live” skit that depicts uninformed consumers who have just discovered the digital change is going to occur and doesn’t know what resources to access to help them. Skit should provide the needed information.
  - c. A webpage that presents the information consumers need to know.
  - d. A video presentation that presents useful information on the digital transition.
7. All the guides, regardless of presentation format, should contain the following information (Refer to handout “A Primer on Digital Television” (p.10-13) and resources at the end of lesson plan for more background info) :
  - a. The history of the government action to implement a transition from analog to digital television and the reasons for this action.

**McRel Learning Objectives [www.mcrel.org](http://www.mcrel.org) - Language Arts:  
Standard 1 - Uses the general skills and strategies of the writing  
process**

Level III (Grades 6-8)

- Uses content, style, and structure (e.g., formal or informal language, genre, organization) appropriate for specific audiences (e.g. public, private) and purposes (e.g. to entertain, to influence, to inform).

Level IV (Grades 9-12)

- Uses strategies to adapt writing for different purposes (e.g. to explain, inform, analyze, entertain, reflect, persuade)

**McRel Learning Objectives [www.mcrel.org](http://www.mcrel.org) -  
Language Arts: Standard 4 - Gathers and uses  
information for research purposes**

Level III (Grades 6-8)

- Organizes information and ideas from multiple sources in systematic ways (e.g. time lines, outlines, notes, graphic representations)





- b. Information on analog and digital technology and the difference between the two.
  - c. Common applications of digital technology and the potential of digital television.
  - d. Consumer concerns about transitioning from analog to digital television and concerns about privacy.
  - e. Students should use visual aids and images as appropriate.
8. When students have completed their projects, have them present to the class.

**Extension Assignment:** Develop a *You.Report* entry. See <http://www.pbs.org/newshour/thenews/youreport/index.php> for details.

**Assessment:** Assess student performance using the rubric (p.14) or your own assessment method.

**Learning Skills linked to Information and Communication Technology Literacy K-12** (Literacy for the 21<sup>st</sup> Century [www.21stcenturyskills.org](http://www.21stcenturyskills.org))

- Using digital technology, communication tools and/or networks appropriately to access, manage, integrate, evaluate, and create information in order to function in a knowledge economy.

**Resources:** The following websites are recommended for further information:

- *Congressional Research Service*, “Digital Television: An Overview” (<http://italy.usembassy.gov/pdf/other/RL31260.pdf>). Government report provides detailed information on the science of digital television, government regulation, and Congressional action to implement the transition from analog to digital television.
- *Digital Revolution Timeline*, (<http://history.sandiego.edu/gen/recording/digital.html>). Compiled by the History Department at the University of San Diego.
- *Federal Communications Commission*, “The Digital TV Transition” (<http://www.dtv.gov>). This government website has complete information for consumers on the transition from analog to digital television.
- *Hello Direct*, “Analog. Digital. What’s the Difference?” (<http://telecom.hellodirect.com/docs/Tutorials/AnalogVsDigital.1.051501.asp>). Provides useful information on the difference between digital and analog signals and television.
- *How Stuff Works*, “How Digital Television Works” (<http://electronics.howstuffworks.com/dtv.htm/printable>). This site provides good not-so-technical information on DTV and how it compares with analog TV.
- *Newshour Segment*, “TV on Demand Technology” ([http://www.pbs.org/newshour/bb/media/july-dec05/tv\\_12-29.html#](http://www.pbs.org/newshour/bb/media/july-dec05/tv_12-29.html#)). Informative news segment on how digital television technology can give viewers control over watching television programs on their schedule.
- *PBS*, “The Transition to DTV” (<http://www.pbs.org/digitaltv>). Information on how DTV will affect public broadcasting and information for the consumer on becoming ready for the transition.

**Activity Designer: Greg Timmons,**

Greg Timmons is a former social studies teacher now freelance writer and educational consultant.



## Vocabulary Activity Sheet

Cut along dotted line and place vocabulary words in envelope A and definitions in envelope B.  
Each group of 3-5 students should have an envelope A and an envelope B.

<b>Analog</b>	The technology in use for more than 50 years to transmit conventional TV signals. Information transmitted in analog comes in radio waves. Vinyl recordings and audio cassettes are also examples of analog technology.
<b>Bandwidth</b>	The amount of spectrum available to each communications licensee. For digital conversion, the FCC has allocated 6 MHz (megahertz) of the broadcast spectrum for each television broadcaster. That channel will carry 19.4 Mb/s of data. It can be used for one HDTV signal, or four multicast digital signals, and/or data transmission.
<b>Datacasting</b>	The broadcast of information services through a television channel. Because digital broadcasters can send more data over the airwaves, viewers get a lot more than just television. Broadcasters can use their bandwidth to offer additional data or services.
<b>Digital Television (DTV)</b>	Refers to transmitting a broadcast signal by encoding it as 0s and 1s - the digital binary code used in computers. DTV can provide high quality programming (HDTV) or provide four, five or more channels in the same bandwidth required for one channel of the current analog television. Calculators, computers, compact discs, and the Internet are examples of digital technology.
<b>Federal Communications Commission (FCC)</b>	Independent US government agency, directly responsible to Congress and charged with regulating local, interstate, and international communications by radio, television, wire, satellite, and cable. The FCC's jurisdiction covers the 50 states, the District of Columbia, and U.S. Possessions



## High Definition Television (HDTV)

Offers approximately twice the vertical and horizontal resolution (clarity) of NTSC television. Provides crystal-clear widescreen pictures with compact disc-quality surround sound. The aspect ratio of HDTV pictures is 16:9, similar to a movie screen's dimensions, as opposed to the 4:3 format of today's television. HDTV approaches movie theater display quality. The HDTV standard can also use 5.1 channels of CD-quality sound plus additional SAP channels.

## Interactive Television

A combination of television with interactive content and enhancements. Interactive television provides better, richer entertainment and information, blending traditional TV-watching with the interactivity of a personal computer. Programming can include graphics; one-click access to Web sites through TV crossover links, electronic mail, and chats; and online commerce through a back channel. Some applications may be displayed on TVs, others on computers.

## Multicasting

Broadcasting several DTV programs at once on a single channel. A KQED-DT viewer might be able to receive *Sesame Street* and *Nova* at the same time, and choose the program s/he prefers by selecting that "channel" from our digital bouquet.

## Set-Top Converter Box (STB)

A box which decodes or otherwise translates the signals coming to it so they can be used by the customer's TV set. The set top box may provide functionality of translating HD signals to analog, may allow interactivity, may allow tuning of other channels, may allow reception of VOD, reception of pay-per-view channels, may contain a hard-disc to provide storage of data or time-shifting of programs (e.g. DVRs). The STB may contain a modem for connection via telephone line for ordering services or other upstream communication.

## Video On Demand (VOD)

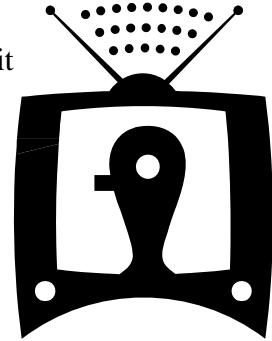
A service which allows viewers to receive and play programs (usually movies) at their convenience from cable. May allow viewer to stop, pause, play, rewind, etc.



## A Primer on Digital Television

### Digital Television Comes to America!

It has been anticipated for years. Television like we've never experienced it before. The end of "picture ghosts and snow," raspy sound quality, and rabbit ear antenna... a bigger event than changing from black-and-white to color... television broadcasting that will be more dynamic and flexible, interactive and responsive to the needs and interests of the American people. And what if we're not prepared for this change? What if we don't have the right equipment? Will we miss the next *American Idol* or the newest reality show? Will we even be able to watch television at all? These are just some of the questions haunting the American public as we march toward "D-Day", February 17, 2009, the day analog television dies and digital television is born!



Well, it's not quite *that* dramatic. For decades, the U.S. government had been trying to get the television and broadcast industries to move from analog signal transmission to digital. By late-1996, Congress passed the Telecommunications Act and the Federal Communication Commission (FCC) approved the digital television standard. At first, this was seen as just an enhancement for television viewing with improved sound and picture. But with the explosion of wireless communication like cell phones and pagers speeding to send more and more sophisticated forms of information, experts worried that there would be little bandwidth left if something didn't change soon. After the attacks of September 11, 2001, there was an increasing concern that emergency communications such as police, fire, ambulance, and other public safety responders who rely on the analog spectrum would be crowded out by the new technology.

In 2005, after years of delay, Congress passed the Digital Transition and Public Safety Act which called for cessation of broadcasting television signals in analog and a complete move to digital. Congress required that all televisions manufactured and sold in the United States by 2007 had to be digital. In addition, Congress set the official date for complete conversion to digital signal on February 17, 2009. All of the logistics and enforcement would be handled by the Federal Communications Commission (FCC). Much of the transition has already occurred with cable and satellite television broadcasting in digital technology. The big concern was for consumers who had analog television sets and rooftop or "rabbit ear" antenna. They would not be able to receive the new digital signal from their older televisions. To address this issue, Congress passed a \$40 subsidy for consumers to purchase a set-top converter box that would convert the digital signal for analog television sets.

### Digital vs. Analog Television

The development of digital signals to transmit information has been around since the mid-1930s. By the 1950s, information was being stored on magnetic disks and integrated circuits were moving large amounts of information along at the speed of light. In the 1960s, digital audio



recording was revolutionizing popular music with the Moog synthesizer and the Mellotron music sampler used by rock groups like the Beatles, Pink Floyd, and Led Zeppelin. By the 1970s, digital technology helped develop the personal computer and digital storage of information on a “floppy disk” soon followed by computer games and digital recording of audio and video programs. In the late 1980s and 1990s high definition television was developed along with satellite transmission of digital television signals.



So, what’s the difference between analog and digital television? Analog technology is a continuous wave signal that is electronically transmitted in its original form. An analog television camera scans the objects it is recording and displays these scans at 50Hz or 50 cycles per second. The analog television signals are then sent electronically to transmitters and broadcast through the air as analog waves or recorded on magnetic tape. The wave on the tape can be read by an analog television or video tape-player to produce the sound and picture. Because the analog signal is continuous, it is difficult to remove noise and wave distortions during transmission without negatively affecting the signal itself. The wave takes up a large amount of space so the amount of information that can be transmitted is limited.

Digital technology works differently. The information is broken up into a binary format where audio or video data is represented by a series of “1”s and “0”s. Digital signals are similar to Morse code. A series of the 1s and 0s represents different numbers, letters, colors, or sounds. These sets of digital signals are created and read by digital equipment at high rates of speed, for example, CD reads information at 44,000Hz or 44,000 samples per second. Because the digital read speeds are so much faster than analog, information can be sent in greater detail in a much smaller bandwidth. So, digital television (DTV) offers television with better picture and sound quality, multiple programming choices and interactive capabilities.

There are three levels of DTV –

- Standard Definition TV (SDTV) basic level of quality display and resolution. Transmission may be in either the traditional (4:3) format or widescreen (19:9). Picture quality is much like analog TV.
- Enhanced Definition TV (EDTV) a step up from analog television EDTV comes in both the traditional (4:3) and widescreen (19:9) format. Better picture quality than SDTV but not as high as HDTV
- High Definition TV (HDTV) in wide screen format (16:9) HDTV provides the highest resolution and picture quality of all digital broadcast formats.

Standard-definition television only takes up about 3 or 4 megabits per second of broadcast bandwidth. An HDTV broadcast takes up to about 11 megabits per second. This allows broadcasters to break up a single channel into different sub-channels allowing for more information to be sent... or received... allowing for two-way interactive communication and multicasting. Multicasting allows viewers to receive two or more programs at once on a single channel and choose which ones they want to watch. It would also allow for programs to be sent





with additional content such as statistics, highlights, and shots from different angles in sporting events.

### **Digital Television in the Home**

So what does all this mean for you the consumer? The potential is great, but so far the promise has not been fully realized. Digital technology will transmit pictures and sound with higher resolution and quality than analog television. More information can be transmitted allowing interactive video and data services to combine with computer and television technology into a single package of datacasting. This technology allows the viewer to interact with the television to customize their viewing, like ordering movies, playing games, or customizing programs to access additional information. In essence, all the interactivity of a computer can be integrated into the television and it was originally believed that television technology would eventually incorporate computer interactivity and be the main mechanism to access the Internet.

But it didn't quite happen that way. Computer and Internet technology moved toward interactivity much more quickly while television stayed with its traditional format of offering prepackaged programming presented in one-way transmissions. The result is that the dominant information transmission devices are the cell phone, PDA, and computer all of which can retrieve television programs when and where the consumer wants them.



### **Privacy Concerns Over Digital Television**

As with computers and the Internet, interactive television has also spawned concerns about privacy and security. Interactive television devices such as ordering programs on demand or TiVo keep a record of what is ordered. Marketers will be able to track and collect consumer data allowing for the creation of detailed profiles about consumers' preferences and buying habits. Most of these companies say that only anonymous information will be sold to advertisers, but some consumer advocacy groups are concerned that the interactive devices will send detailed information about individual consumers' viewing habits to marketers.

Right now the biggest concerns some consumers face are will they still be able to receive their favorite programs on their current television and will this transition cost them anything. Understanding that not all consumers are fully informed of the transition and that problems are likely to occur, the Federal Communications Commission has set up a website called "The Digital TV Transition" (<http://www.dtv.gov/>) complete with explanations of the reasons for the transition, explanations on digital television, and whether consumers are prepared for the transition from analog to digital television with their current television equipment.





### **Discussion Questions:**

1. Why did the government want the television industry to move from analog to digital broadcast?
2. Explain what is to happen on February 18, 2009.
3. How do you know if you are ready for the transition?
4. How does digital transmission of information differ from analog?
5. What are some of the benefits of digital television over analog?
6. What is the relationship between computers and digital television? At this stage, which do you think is more advanced in its applications for the consumer?
7. What are some of the concerns about digital television?
8. Do you think the government has made the right decision in moving from analog to digital broadcasting in television? Explain your answer.
9. What is the situation at your home? What will you need to do to receive digital television signals?



### Rubric

Category	4	3	2	1
Cooperative Learning	You consistently and actively helped your group achieve its goals by communicating well with other team members, encouraging the team to work together, and by willingly accepting and completing all of the necessary work of your role.	You usually helped your group achieve its goals by communicating with other team members, encouraging your team to work together, and by accepting and completing most the necessary work of your role.	You sometimes helped your group achieve its goals, communicated with team members, encouraged team members to work together, and accepted and completed some of the necessary work of your role.	You did very little to help your group achieve its goals. You communicated with team members and encouraged team members to work together infrequently and accepted and completed only a small portion of the necessary work of your role.
Consumer Guide Materials	Your transition guide demonstrates a thorough, well-developed presentation that addresses all the requirements. Your guide is well organized and contains few, if any, errors in grammar or spelling.	Your transition guide demonstrates a general, adequately-developed presentation that addresses most of the requirements. Your guide is organized and contains a few errors in grammar or spelling.	Your transition guide demonstrates a limited, partially-developed presentation that addresses some of the requirements. Your guide is somewhat organized but contains several errors in grammar or spelling.	Your transition guide demonstrates a minimal, undeveloped presentation that addresses few of the requirements. Your guide is disorganized and contains many errors in grammar or spelling.
Digital Television Transition Presentation	Your presentation demonstrates a thorough, well-developed understanding of the transition to digital television. You use ample details and examples to clearly support your statements. Your presentation is well organized.	Your presentation demonstrates a general, adequately-developed understanding of the transition to digital television. You use some details and examples to support your statements. Your presentation is organized with only a few errors.	Your presentation demonstrates a limited, partially-developed understanding of the transition to digital television. You use a few details and examples to support your statements but more is needed. Your presentation is somewhat organized but contains several errors.	Your presentation demonstrates a minimal, undeveloped understanding of the transition to digital television. You used few, if any, details and examples to support your statements. Your presentation is disorganized and contains many errors.