

the Gov

“The Future of Communication:
Broadband Expansion and New
Technology”
Social Studies Lesson Plan

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



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**“The Future of Communication: Broadband Expansion
and New Technology”
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Winter, 2010

Dear Educator,

the.News online video reports for *the.Gov* provide middle and high school students with a valuable exercise in social studies, language arts, and science with this **7:40** minute video report on “The Future of Communication: Broadband Expansion and New Technology” www.pbs.org/newshour/thenews/thegov.* Correspondent, Eileen Wu, reports on the the FCC’s new broadband plan and the potential impact on new technology and communication in the U.S. Lesson plans for social studies and language arts are available to support this video in the “For Educators” section of the website. All videos and curricula have been informed by *the.News* instructional design that can be found on the website www.pbs.org/newshour/thenews. 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 and to augment the instruction of media literacy and multimedia production. All of this material is presented as options to fit teachers’ instructional needs.

References to Larry Bell’s “The 12 Powerful Words” are highlighted in **bold** in the lesson plans, in the “thought starter” questions on the home page and educator’s page, and in the transcript (to denote where they are used in the video segment).

We have also added general topics to correlate to the lessons and video as well as concept based curriculum examples.

We welcome our partners at the Omaha Public Schools who have joined *the.News* in a special pilot project during the 09-10 school year. We are also developing a new authoring tool for students called *YOU.edit*, to launch in spring 2010. It will give students an online tool to remix the content of *the.News* reports, 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. * (this video and lesson plans can also be found at *the.Sci*)

Answers to student “**thought starter**” questions listed below the video.

#1. FCC

#2. health, education, public safety, environmental protection, access to government (are some examples referenced in the segment)

#3. (to be invented by the student)

Sincerely,

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The Future of Communication: Broadband Expansion and New Technology

This lesson was designed to support *the.News* video “The Future of Communication: Broadband Expansion and New Technology.” The video can be found online at www.pbs.org/newshour/thenews/thegov

Grade Level: 7-12

Concept Areas: Social Studies, Language Arts, Government/Civics; AP classes

Key Concept(s)

This lesson contains a series of activities that examine the impact of broadband technology on work, life, and school. It focuses on the expansion of broadband Internet service and the Federal Communication Commission’s (FCC) plan to extend broadband coverage across the country. Students will review the FCC plan and make presentations highlighting the need, the benefits of expansion, and the Commission’s recommendations. As an extension activity, students may examine their school’s access to broadband Internet through interviews and a survey and then make recommendations on what improvements could be made.



Key Objectives:

The student will:

- **Describe** the how they use digital technology information in their work, life, and school.
- **Analyze** how the expansion of broadband technology will affect different aspects of their lives.
- **Explain** how the Federal Communications Commission National Broadband Plan will help improve Internet communications throughout the country.
- **Summarize** the FCC plan and explain its application to their lives.
- **Formulate** a brief oral presentation the FCC plan.

Omaha Public Schools Standards:

<http://www.ops.org/District/LinkClick.aspx?fileticket=Hbqyrrg2ydM%3d&tabid=912&mid=2006>

Language Arts Grade 8

Reading

Standard 01: Students will read a variety of grade level texts fluently with accuracy, appropriate pace, phrasing and expression.

Standard 03: Students will extract and construct meaning using prior knowledge, applying text information, and monitoring comprehension while reading grade level text.

Multiple Literacies

Standard 09: Students will research, analyze, and communicate information in a variety of media and formats (textual, visual, and digital).

Conceptual Lens: Adversity

Enduring Understanding: Technology changes the manner in which we face adversity, impacting problem-solving strategies and the relationships of those involved.



Omaha Public Schools Standards:

<http://www.ops.org/District/LinkClick.aspx?fileticket=Hbqyrrg2ydM%3d&tabid=912&mid=2006>

**Language Arts Grade 12
Reading**

Standard 01: Students will read a variety of grade level texts fluently with accuracy, appropriate pace, phrasing and expression.

Standard 03: Students will extract and construct meaning using prior knowledge, applying text information, and monitoring comprehension while reading grade level text.

Multiple Literacies

Standard 09: Students will research, analyze, and communicate information in a variety of media and formats (textual, visual, and digital).

Key Vocabulary:

Apps: technology term for a computer software application

Broadband: a high-speed data transmission in which the bandwidth is shared by more than one simultaneous signal.

***Digital Native:** a person who has grown up in a world with digital technology such as the Internet and mobile phones

Kilobytes: a unit of computer memory or data storage equal to slightly more than 1,000 bytes.

Megabytes: a unit of computer memory or data storage equal to slightly more than 1,000,000 bytes.

Proliferation: a rapid and often excessive spread or increase of something.

Website: A set of interconnected webpages, usually including a homepage, generally located on the same server, and prepared and maintained as a collection of information by a person, group, or organization.

Web address: Also known as URL (Uniform Resource Locator) the location on the Internet of a certain company, service, or file.

Web 2.0: the second generation of the World Wide Web in which content is user-generated and dynamic, and software is offered that mimics desktop programs.

Wireless broadband: broadband service transmitted through radio or microwaves.

World Wide Web: a system of extensively interlinked hypertext documents on part of the Internet.
Source: Dictionary.com, *MacMillan Dictionary.com

Omaha Public Schools Standards:

<http://www.ops.org/District/LinkClick.aspx?fileticket=Hbqyrrg2ydM%3d&tabid=912&mid=2006>

Social Studies World Cultures Grade 8

Standard 01: Culture: Identify and describe the elements of culture, the factors that shape it, and its influence on society.

Social Studies Government Grade 12

Standard 04: Describe the factors that influence government policy and decisions.

Information Technology Grade 8

Standard 04: Use technology resources to locate, review, and collect information from a variety of sources.

Information Technology Grade 9-12

Introduction to Information Technology

Standard 01: Understand the evolution of computer systems and the Internet from its inception to the present and into the future.



Lesson Topics: broadband technology, digital information technologies, personal media, social networking, civic participation, data collection and analysis, policy recommendations

Materials:

- “The Future of Communication: Broadband Expansion and New Technology”
www.pbs.org/newshour/thenews/thegov
- Federal Communication Commission Broadband Policy Outline
http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-296353A1.pdf
- Student Handouts
 - Review questions *the.News* news segment on Broadband.
 - The FCC National Broadband Plan Outline



- Student Handouts
 - Note Taker: Looking into the Future—How technology will shape the next decade
 - How far we’ve come... where we’re going
 - Developing Recommendations for the School’s Internet User Policy

Time Frame

- Opening Activity: 20 minutes
- Activity 1: 40 minutes
- Activity 2: one to two class periods
- Activity 3: one to two class periods

McRel (www.mcrel.org)
Civics
Standard 1: Understands ideas about civic life, politics, and government.
Level III (Grades 6-8)

- Understands how politics enables people with differing ideas to reach binding agreements (e.g., presenting information and evidence, stating arguments, negotiating, compromising, voting)

Level IV (Grades 9-12)

- Understands how politics enables a group of people with varying opinions and/or interests to reach collective decisions, influence decisions, and accomplish goals that they could not reach as individuals (e.g., managing the distribution of resources, allocating benefits and burdens, managing conflicts)
- Knows formal institutions that have the authority to make and implement binding decisions (e.g., tribal councils, courts, monarchies, democratic legislatures)



Background

The development of one technology can spur on the expansion of another. During the 1920s, much of the western world saw an explosion of electronic gadgets such as coffee makers, irons, radios, hot plates, refrigerators, and washers. This **proliferation** of new devices drove the expansion of electricity service to many areas in the United States. If you lived in town in the 1930s, your house probably had electricity. Nearly 90 percent of urban dwellers did. However, if you lived in a rural area, you probably did not. In the 1930s, only 13 percent of the farms had electricity. Through the efforts of the United States government in programs like the Rural Electrification Administration, electricity was brought to many farm areas like the Tennessee Valley. By the 1970s nearly 98 percent of the farms in the United States had electric service.

Fast-forward to the 1980s. Cable and satellite television were being brought into people's homes throughout America. Again, much of this was taking place in the urban areas of the country where customers were living in dense settled areas and transmission distances were shorter. The cable lines and satellite transmissions could carry more data than conventional telephone lines. Example: Dial-up connections through telephone lines can send data at a maximum of 56 **kilobytes** per second (kbps). With traffic, more than one user on the same line, the speed is more like 48kbps. Cable and satellite connections known as broadband can generally send data at speeds ranging from 256kbps to 2.0 mbps (that's **megabytes** per second. A megabyte is 1000 times more than a kilobyte). This is analogous to sending water through a soda straw or sending it through a 6-foot diameter pipe. This technology allowed users to transmit more complex forms of communication such as pictures, voice, and video data.

In a short time, the Internet connections expanded into a "**world wide web**" that was capable of sending large amounts of information in the form text, graphics, and videos on "**websites**" that could be accessed by a "**web address**." We moved from sending information on telephone lines to **broadband** channels of glass fiber and later radio and micro-waves. Broadband was fast, always on, and you send and receive large "packages" of data. The growth of websites across the world exploded with millions of sites being developed each year.

McRel (www.mcrel.org)
Civics

Standard 21: Understands the formation and implementation of public policy

Level III (Grades 6-8)

- Understands what public policy is and knows examples at local, state, and national levels
- Knows how public policies are formed and implemented, and understands how citizens can monitor and influence policies

Level IV (Grades 9-12)

- Knows how public policies are formed and implemented, and understands how citizens can monitor and influence policies
- Understands the processes by which public policy concerning a local, state, or national issue is formed and carried out



McRel (www.mcrel.org)

Civics

Standard 27: Understands how certain character traits enhance citizens' ability to fulfill personal and civic responsibilities

Level III (Grades 6-8)

- Understands the importance for individuals and society of commonly held civic responsibilities such as paying taxes, being informed and attentive to public issues, monitoring political leaders and governmental agencies and taking appropriate action if their adherence to constitutional principles is lacking, deciding whether and how to vote, participating in civic groups, performing public service, serving as a juror, and serving in the armed forces

Not only did the Internet explode with information sites of all kinds, our ability to access the Internet with more personal tools increased too. Laptop computers with **wireless broadband** communication allowed people to access the internet anywhere there was an Internet signal. Users could now access the Internet away from home or work as all types of businesses and public areas made Internet access available, often for free. Cell phones expanded their capabilities to access email and the World Wide Web. You could also transmit and receive text messages, pictures, and videos. Cell phone software applications (known as “**apps**”) were soon developed to make this process

easier. Music, movies and games became accessible through all types of devices—the computer, the cell phone, and the **PDA** (personal digital assistant) like I-pods. We were now entering a new version of the World Wide Web... **Web 2.0**

Where is all this taking us? It is becoming more evident that Web 2.0 is not just expanding the way we communicate, but changing how we *think* about communicating. It’s not just about using the Internet to engage in activities we’ve done in the past, but creating entire new ways and methods to do what we do. It is moving so fast that even the “experts” say they don’t know where this will all take us in the next five to ten years. The Federal Communications Commission (FCC) has developed a plan that it hopes will help direct the country in the future use of information technology. It presents a roadmap of expanding broadband Internet connectivity to most Americans by 2017.

McRel (www.mcrel.org)

Technology

Standard 3: Understands the relationship among science, technology, society, and the individual

Level III (Grades 6-8)

- Observes common courtesies and acceptable use policies while telecomputing
- Knows ways in which technology has influenced the course of history (e.g., revolutions in agriculture, manufacturing, sanitation, medicine, warfare, transportation, information processing, communication)

Level IV (Grades 9-12)

- Knows examples of advanced and emerging technologies (e.g., virtual environment, personal digital assistants, voice recognition software) and how they could impact society



Lesson Plan

To better facilitate this lesson, distribute the background essay above before you start this unit. That way, students will have read the content and be prepared for the activities below.

Opening Activity

At the beginning of class, ask students to form small groups and discuss the following questions:

- How much do you use the Internet as it relates to school, work, social activities, and leisure?
- How important is having quick access to information on the Internet? Give some examples as it pertains to school, work, social activities, and leisure.
- What are some new digital-information-technologies that you know about or might use now that weren't in use 10 years ago? What benefits and challenges do you find with these new technologies?

Discuss students' responses and place some of their ideas on the front board or overhead.

Partnership for 21st Century Skills (<http://www.21stcenturyskills.org/>)

Civic Literacy

- Participating effectively in civic life through knowing how to stay informed and understanding governmental processes

Critical Thinking and Problem Solving

Reason Effectively:

- Use various types of reasoning (inductive, deductive, etc.) as appropriate to the situation

Make Judgments and Decisions:

- Effectively analyze and evaluate evidence, arguments, claims and beliefs
- Analyze and evaluate major alternative points of view
- Interpret information and draw conclusions based on the best analysis

Communication and Collaboration

- Articulating thoughts and ideas clearly and effectively through speaking and writing
- Listen effectively to decipher meaning, including knowledge, values, attitudes and intentions
- Utilize multiple media and technologies, and know how to judge their effectiveness a priori as well as assess their impact



Activity 1: View the News Segment

1. Divide the class into small viewing groups of 3-4 students.
2. Distribute the student handout “Review Questions for The Future of Communication: Broadband Expansion and New Technology.”
3. Show the video “The Future of Communication: Broadband Expansion and New Technology” www.pbs.org/newshour/thenews/thegov or have students watch the video as homework and answer the questions on the handout.
4. Then have students discuss the information they found in the news segment in their small groups
5. As a full class, discuss the following questions:
 - How did the comments by students in the news segment compare to the comments your class made in the opening activity about the value of the Internet to your work at school?
 - What is “broadband?” In general, how will greater access to broadband change people’s lives?
 - What does increased broadband access mean to the user in terms of getting information, communicating with others, and the tools they use to do these things?
 - What do you think will be some of the problems or challenges generated by this increased access?

Activity 2: The Federal Communication Commission’s National Broadband Plan outline

In this activity, students will explore the FCC National Broadband Plan Outline.* They will access the plan online and work in groups to explain its provisions and explain its application to their lives. *(final plan to be presented to Congress on 3/17/10)

1. Divide the class into six groups
2. Distribute the student handout, “The FCC National Broadband Plan Outline.”
3. Assign one area of the plan to each group and review the directions with students.
4. When students have completed their research, have each group present their findings.

Extension Activity

Have students find out the status of their school’s Internet connection. Invite the school’s technology coordinator to class to provide students an overview of the school’s or district’s Internet connection. Have students develop questions on the extent of broadband coverage at the school, what plans exist for expanding connectivity, what needs they foresee in the future, and what plans they have to meet these needs. Then have students conduct a survey of students and faculty on their use of the Internet school, its strengths and weaknesses, and what they would like to see improved. Students can then use this information to make recommendations on the school’s Internet connection to the administration.

Assessment

- For Activity 1, students can turn in their notes from their viewing of *the.News* segment. They could also write short essays on any of the discussion questions.



- For Activity 2, evaluate students' FCC National Broadband Plan Outline presentations based on the content requirements listed in the student handout.

Resources

Television Programs

Digital Nation: Life on the Virtual Frontier In *Digital Nation: Life on the Virtual Frontier*, FRONTLINE presents an in-depth exploration of what it means to be human in a 21st-century digital world.

http://www.pbs.org/wgbh/pages/frontline/digitalnation/?utm_campaign=homepage&utm_medium=proglis&utm_source=proglis

Growing Up Online

Growing Up Online, FRONTLINE takes viewers inside the very public private worlds that kids are creating online, raising important questions about how the Internet is transforming childhood.

<http://www.pbs.org/wgbh/pages/frontline/kidsonline/etc/synopsis.html>

Education Technology Websites

Edutopia <http://www.edutopia.org/> From the George Lucas Educational Foundation, this website provides a place where kids and parents, teachers and administrators, policy makers and the people they serve, all are empowered to change education for the better

School Center

<http://schoolcenter.com/education/components/scrapbook/default.php?sectionid=1>

School Center is a "Web solutions company in the education market," developing social-networking tools marketed specially to schools.

National Education Technology Plan 2010, U.S. Department of Education

<http://www.ed.gov/technology/netp-2010>

FCC National Broadband Plan Preview (from FCC Commission Meeting of 2/18/10)

Check back with FCC after 3/17/10 when full plan is released

http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-296353A1.pdf

Articles

Need for High-Speed Broadband in Schools

<http://www.nationaltechcenter.org/index.php/2008/06/19/need-for-broadband-in-schools/> This article stresses the need for high speed **broadband** to Maximize the potential of technology for student achievement and the 21st Century global economy.

Education Week—Schools' Broadband Needs Grow as Ed-Tech Evolves

<http://www.edweek.org/dd/articles/2008/09/30/01broadband.h02.html> With the rise in popularity



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of YouTube and other video-streaming Web resources, many school districts are struggling to provide enough broadband to handle those bandwidth-heavy applications, and experts say the demand will only increase as new technologies are revealed.

Activity Designer:

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



Student Handout 1: Review questions for *the.News* news segment “The Future of Communications: Broadband Expansion and New Technology”

Directions: Answer the questions below from the news segment “The Future of Communication: Broadband Expansion and New Technology” on *the.News* website at www.pbs.org/newshour/thenews/thegov

1. Were you surprised to find out how many American households don't have Internet access? Where do you think most of this lack of access is in the United States?
2. What is the FCC and what do you think it has to do with the Internet?
3. **Compare** and **contrast** the development and use of the Internet in the late 20th century to the use and development of electricity in the early 20th century.
4. The FCC wants to expand the use of the Internet in areas of health care, education, government access, and public safety. Identify and **explain** the benefits will this provide American citizens.
5. Review the National Education Technology Plan 2010 from the U.S. Department of Education <http://www.ed.gov/technology/netp-2010>. If you like you can share your own recommendations online. Follow the prompts
6. **Describe** how the use of social networking sites might help organize information for people.
7. **Explain** how FCC Chairman Julius Genachowski feels Broadband will benefit the American economy and democracy.



Student Handout 2: The FCC National Broadband Plan

Directions: In this activity you will work in your group to prepare a brief presentation on the FCC's new broadband plan outline for the country. Go to the FCC report on line at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-296353A1.pdf. The final plan will be presented to Congress on 3/17/10.

1. Review the overview of the broadband plan (slides 1-5). **Summarize** its purpose.
2. Go to the section you've been assigned and take notes on the following questions:
 - **Describe** how the images in your topic's title page relate to the access to broadband for our topic area?
 - What are some of the benefits by expanding broadband in your topic area?
 - What are some of the gaps that prevent people from accessing information in your topic area?
 - What are some of the FCC recommendations for improving broadband access to Americans in your topic area?
3. **Describe** how and present several examples of how the FCC's recommendations in your topic area might help improve your access to information on the Internet?
4. **Formulate** a brief oral presentation on the information you gathered to share with the class.