Unit 5

Title: from *The Road Ahead*

Suggested Time: 5 days (45 minutes per day)

Common Core ELA Standards: RI.9-10.1, RI.9-10.2, RI.9-10.3, RI.9-10.4, RI.9-10.10; W.9-10.1, W.9-10.2, W.9-10.4, W.9-10.7, W.9-10.9; SL. 9-10.1; L.9-10.1, L.9-10.2, L. 9-10.4, L.9-10.6

Teacher Instructions

*Refer to the Introduction for further details.*

**Before Teaching**

1. Read the Big Ideas and Key Understandings and the Synopsis. Please do **not** read this to the students. This is a description for teachers, about the big ideas and key understanding that students should take away **after** completing this task.

Big Ideas and Key Understandings

Technology advances to meet the needs and wants of society. This works two ways, as the advance of technology changes the needs and wants of society.

Synopsis

The cofounder of Microsoft Corporation makes predictions about the future as he chronicles communication innovations from the past and their impact on society. Gates expresses his belief that “the road ahead” is the “information superhighway” of computer technology and that these future innovations will become the norms in our society.

1. Read entire main selection text, keeping in mind the Big Ideas and Key Understandings.
2. Re-read the main selection text while noting the stopping points for the Text Dependent Questions and teaching Vocabulary.

**During Teaching**

1. Students read the entire main selection text independently.
2. If class has struggling readers, teacher reads the main selection text aloud with students following along.
3. Students and teacher re-read the text while stopping to respond to and discussthe questions and returning to the text. A variety of methods can be used to structure the reading and discussion (i.e.: whole class discussion, think-pair-share, independent written response, group work, etc.)

Text Dependent Questions

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| **Text Dependent Questions** | **Answers** |
| The Latin root simul means “same.” What does **simultaneously** refer to in the first paragraph of this excerpt? (Pg. 447) | Gates explains that a guy on an episode of the Ed Sullivan Show spun plates on the tops of ten dogs’ noses at the same time. The plates were simultaneously spinning. |
| The definition of synchronous means “at the same time; simultaneous.” According to Gates, why is conventional television synchronous? Use an example provided in the text to explain your answer. (Pg. 447) | Thirty years prior to Gates writing this article, conventional television allowed “Viewers . . . to synchronize their schedules with the time of the broadcast.” When Gates was a kid he had to synchronize his watching of the Ed Sullivan Show with the time the show was broadcasted if he wanted to view acts or artists that interested him, like Elvis Presley. |
| What was the 1980s invention and how did it change the way people watched television? According to Gates what was the impact of this invention? Cite specific details from page 447 that support his assertion. | Gates explains that television viewing prior to the invention of the videocassette recorder was dictated by the television broadcaster and therefore synchronous viewing. The videocassette recorder allowed for limited, “if you cared enough about a program to fuss with the timers and tapes in advance…” asynchronous viewing. Viewers could watch a previously taped show whenever they wanted giving them “more flexibility.” Gates explains, “You could claim from the broadcasters the freedom and luxury to serve as your own program scheduler. “ |
| On pages 447 – 448, reread paragraphs 3 through 5. Note the shift from synchronous to asynchronous communication. What was the impact of the invention of the written word on society? (Pgs. 447- 448) | First there was spoken word where a listener had to be in the presence of the speaker. Then the invention of writing allowed for messages to be stored and read at a time more convenient for the reader. |
| What makes video-on-demand “an obvious development” to Gates? What arguments does he use to substantiate his claim? (Pg. 449) | Since television watchers have become accustomed to paying to watch movies at their convenience, they will want video-on- demand which is more advanced than taping shows or renting and then playing video cassettes on the video cassette recorder. Gates stated, “there won’t be any intermediary VCR.” |
| Since the invention of writing 5,000 years ago, what is the driving force behind the communication revolution? (Pgs. 447-448) | “It is human nature to find ways to become more asynchronous.” As human beings in an effort to control our schedules and thereby our lives, we strive for asynchronous communication this need to be in control is why the communication revolution occurred and continues to ever evolve. |
| What does Gates predict will occur after the initial synchronous consumption of television shows? (Pg. 449) | After the initial airing of a program or movie, the public will be able to view whatever they want whenever they want however they want. “If a new episode of Seinfeld is on at 9:00 pm on Thursday night, you will be able to see it at 9:13 pm, 9:45 pm, or 11:00 am on Saturday.” The broadcast will then become asynchronous. |
| Capacious means the ability to hold much; roomy. Why is the capacious feature of servers essential to their usage? Cite the various purposes of servers. (Pg. 449) | It is essential for servers to be capacious because they store enormous amounts of information that must be available for use anywhere on the network. Movies, TV shows, and other kinds of digital information are stored on servers. “If you ask to see a particular movie, check a fact, or retrieve your electronic mail, your request will be routed by switches to the server or servers storing that information.” Since servers have to accommodate various requests of individuals seeking to watch a wide array of movies, listen to diverse music, and access multiple emails of varying sizes, they must be expansive enough to hold all of the previously stated information. |
| What is a “killer application”? Why does Gates think that video-on-demand has the potential to become a “killer application?” | In computer language a “killer application” is the, “use of technology so attractive to consumers that it fuels market forces,” and makes the core technological invention, “indispensable.” The invention of computers has changed society. Unlike the word processors, they are not solely for business applications, but have expanded into everyday residential use; thereby making their developers rich as more consumers pay to use the applications. |

Tier II Academic Vocabulary

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|  | **These words require less time to learn**  (They are concrete or describe an object/event/  process/characteristic that is familiar to students) | **These words require more time to learn**  (They are abstract, have multiple meanings, are a part  of a word family, or are likely to appear again in future texts) |
| **Meaning can be learned from context** | Page 447—Synchronous  Page 447—Asynchronous  Page 447—Simultaneously  Page 447—Broadcast  Page 449 - Consumption  Page 449 – Capacious  Page 449 – Servers  Page 450 – “killer application”  Page 450 – Indispensable  Page 450 – “market forces” | Page 447—Flexibility  Page 448—Revolution  Page 449 – Intermediary  Page 449 – Bandwidth  Page 449 – Bits  Page 450 – Infrared |
| **Meaning needs to be provided** | Page 447—Conventional  Page 448 – Broadband  Page 449 – Digitized  Page 450 – Analog | Page 448—Enhancement  Page 449—Query  Page 449—Appliance  Page 450—Precursor  Page 450—Parlance |

Culminating Task

* Prompt
  + *Bill Gates places a high value on an asynchronous society and believes that the society will as well. He speculates that the road ahead will afford consumers the ability to be truly self-determining. Based on the information that Bill Gates provides in this article, what is the evolution of communication and technology from synchronous to asynchronous communication? How does this meet the needs and wants of society? Cite specific details from The Road Ahead to support your answer.*
* Teacher Instructions

1. Students identify their writing task from the prompt provided.
2. Students complete an evidence chart as a pre-writing activity. Teachers should remind students to use any relevant notes they compiled while reading and answering the text-dependent questions.

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| ***Evidence***  ***Quote or paraphrase*** | ***Page number*** | ***Elaboration / explanation of how this evidence supports ideas or argument*** |
| “Conventional television allows us to decide what we watch but not when we watch it. The technical term for this sort of broadcasting is ‘synchronous.’ Viewers have to synchronize their schedules with the time of broadcast that’s sent to everybody at the same time.” | 447 | In the beginning, Gates states the way that conventional television was available to all viewers: in a synchronous way. This sets the stage for how television viewing has changed already or how it will change in the future. |
| Humans have been converting synchronous communication into asynchronous communication for a long time. | 447 – 448 | When there was only spoken word, humans had to be in the presence of the speaker in order to hear the message. With written word, communication became asynchronous: one could hear the message at one’s convenience. Gates states that this, “gives us more control over our schedules.” Television began with synchronous viewing; over time, different forms of asynchronous viewing have evolved. |
| Our society is used to paying for asynchronous entertainment. | 448 - 449 | From recording television programs, to renting movies, people are used to paying for asynchronous entertainment. Either buying a videocassette recorder to tape shows or renting movies made paying for this form of entertainment acceptable and ordinary. |
| “Because consumers already understand the value of movies and are used to paying to watch them, video-on-demand is an obvious development.” | 449 | Because of the new available technology for video-on-demand and the normalcy of asynchronous entertainment, video-on-demand will become more and more popular. |
| “Most viewers can appreciate the benefits of video-on-demand and will welcome the convenience it gives them. Once the costs to build a broadband network are low enough, video-on-demand has the potential to be what in computer parlance is called a ‘killer application,’ or just ‘killer app’ . . .” | 450 | When increased broadband capabilities and decreased costs make video-on-demand more widely available, then this new technology has the potential to become a necessary and essential part of our society. This is the ultimate asynchronous form of entertainment to provide the utmost convenience for the viewer. |

1. Once students have completed the evidence chart, they should look back at the writing prompt in order to remind themselves what kind of response they are writing (i.e. expository, analytical, argumentative) and think about the evidence they found. (Depending on the grade level, teachers may want to review students’ evidence charts in some way to ensure accuracy.) From here, students should develop a specific thesis statement. This could be done independently, with a partner, small group, or the entire class. Consider directing students to the following sites to learn more about thesis statements: http://owl.english.purdue.edu/owl/resource/545/01/ OR http://www.indiana.edu/~wts/pamphlets/ thesis\_statement.shtml.
2. Students compose a rough draft. With regard to grade level and student ability, teachers should decide how much scaffolding they will provide during this process (i.e. modeling, showing example pieces, sharing work as students go).
3. Students complete final draft.

Sample Answer:

In this excerpt from *The Road Ahead*, Bill Gates explains the evolution of communication. On pages 447 and 448, he tracks the spoken word to the written word. Gates explains that generating, receiving and responding to others at our own convenience benefits society since it will bring us “more control over our schedules” and subsequently more control over our lives. Synchronous broadcasting is when the viewer decides what they want to watch but not when they want to view it, which is determined by the broadcaster. Gates claims that to truly be in control of our own schedules such communication should be more asynchronous, where the viewer controls when, where, and how the broadcast will be viewed. The invention of the VCR started the movement toward more asynchronous technology. If viewers could operate the VCR and were willing to pay for rentals, they were afforded the asynchronous experience. Gates explains that by utilizing “servers” and other “digital devices” to move digitized data consumers of information will “be in absolute control.” The decreased costs of broadband networks and killer applications, “a use of technology so attractive to consumers that it fuels market forces and makes the underlying invention on which it depends all but indispensable,” will change technological advances from wonderings and amazements to necessities that become profitable. The more access to information on demand the more individuals will seek to increase the ability to access even more information on demand. According to Gates those who can exploit this basic fact will change society and become rich.

Additional Tasks

* Bill Gates wrote The Road Ahead in 1995, research if and how his predictions have come true by identifying three “killer applications” in the last 18 years. In a 15 slide PowerPoint presentation (1- slide opening, 4-slides per application, 1-slide closing, 1-slide Works Cited) explain
  + the purpose and function of each application
  + how each “killer application” has been become both a necessity and profitable
  + how the application exemplifies Gates prediction that society will value more asynchronous communication
* Conduct a survey of your classmates/school identifying 3 highly used “killer applications” and the frequency of their use. Using the data collected, write a position paper to affirm or contradict Gates’ assertions that asynchronous communication has become the “way” of life. Be sure to explain Gates’ position and how each of the applications selected are asynchronous.
  + Determine the best method to conduct the survey to determine the three most used “killer applications” and the frequency by which each is used.
  + Use the data to support your position.

Supports for English Language Learners (ELLs) to use with Anthology Alignment Lessons

When teaching any lesson, it is important to make sure you are including supports to help all students. We have prepared some examples of different types of supports that you can use in conjunction with our Anthology Alignment Lessons to ensure ELLs can engage fully with the lesson. While these supports reflect research in how to support ELLs, these activities can help ALL students engage more deeply with these lessons. Note that some strategies should be used at multiple points within a lesson; we’ll point these out. It is also important to understand that these scaffolds represent options for teachers to select based on students’ needs; it is not the intention that teachers should do *all* of these things at every lesson.

**Before reading:**

* Read passages, watch videos, view photographs, discuss topics (e.g., using the [four corners strategy](http://www.theteachertoolkit.com/index.php/tool/four-corners)), or research topics that help provide context for what your students will be reading. This is especially true if the setting (e.g., 18th Century England) or topic (e.g., boats) is one that is unfamiliar to the students.
* Provide explicit instruction, using multiple modalities, on selected vocabulary words that are *central to understanding the text*. When looking at the lesson plan, you should note the Tier 2 words, particularly those words with high conceptual complexity (i.e., they are difficult to visualize, learn from context clues, and are abstract), and consider introducing them ahead of reading. For more information on selecting such words, go [here](https://achievethecore.org/page/3167/selecting-and-using-academic-vocabulary-in-instruction). **You should plan to continue to reinforce these words, and additional vocabulary, in the context of reading and working with the text. (See additional activities in the During Reading and After Reading sections.)**

**Examples of Activities:**

* Provide students with the definition of the words and then have students work together to create [Frayer models](http://www.theteachertoolkit.com/index.php/tool/frayer-model) or other kinds of word maps for the words.
* When a word contains a prefix or suffix that has been introduced before, highlight how the word part can be used to help determine word meaning.
* Keep a word wall or word bank where these new words can be added and that students can access later.
* Have students create visual glossaries for whenever they encounter new words. Then have your students add these words to their visual glossaries.
* Create pictures using the word. These can even be added to your word wall!
* Create lists of synonyms and antonyms for the word.
* Have students practice using the words in conversation. For newcomers, consider providing them with [sentence frames](https://achievethecore.org/page/3159/ell-supports-for-writing-and-discussion) to ensure they can participate in the conversation.
* Use graphic organizers to help introduce content.

**Examples of Activities:**

* Complete a [Know, Want to Learn, Learned (KWL) graphic organizer](http://www.nea.org/tools/k-w-l-know-want-to-know-learned.html) about the text.
* Have students research the setting or topic and fill in a chart about it. You could even have students work in groups where each group is assigned part of the topic.
* Fill in a bubble map where they write down anything that they find interesting about the topic while watching a video or reading a passage about the topic. Then students can discuss why they picked the information.

**During reading:**

* Allow ELLs to collaborate in their home languages to process content before participating in whole class discussions in English. Consider giving them the discussion questions to look over in advance (perhaps during the first read) and having them work with a partner to prepare.
* Allow ELLs to use English language that is still under development. Students should not be scored lower because of incorrect spelling or grammar (unless the goal of the assignment is to assess spelling or grammar skills specifically). When grading, be sure to focus on scoring your students only for that objective.
* Scaffold questions for discussions so that questioning sequences include a mix of factual and inferential questions and a mix of shorter and more extended responses. Questions should build on each other and toward inferential and higher order thinking questions. There are not many factual questions already listed in the lesson instructions, so you will need to build some in as you see fit. More information on this strategy can be found [here](https://achievethecore.org/aligned/creating-sequencing-text-dependent-questions-support-english-language-learners/).
* Provide explicit instruction, using multiple modalities, on selected vocabulary words (e.g., 5–8 for a given text) that are central to understanding the text. During reading, you should continue to draw attention to and discuss the words that you taught before the reading.

**Examples of Activities:**

* Have students include the example from the text in a student-created glossary.
* Create pictures that represent how the word was used in the passage.
* Create sentences using the word in the way it was used in the passage.
* Have students discuss the author’s word choice.
* Examine important sentences in the text that contribute to the overall meaning of the text.
* Examine sentence structure of a particular sentence. Break down the sentence to determine its meaning. Then determine how this sentence contributes to the overall meaning of the passage. Determine if there is any figurative language in the sentence and have students use context clues to determine the meaning of the figurative language.
* Use graphic organizers to help organize content and thinking.

**Examples of Activities:**

* While reading the text, have students fill in a story map to help summarize what has happened.
* Have students fill in an evidence chart while they read to use with the culminating writing activity. Make sure to model with the students how to fill in the evidence chart by filling in the first couple of rows together as a class. Go over the prompt that the evidence should support, making sure to break down what the prompt means before having the students get to work. If some of your students frequently struggle to understand directions, have the students explain the directions back to you.
* Provide somewhere for students to store new words that they encounter. Students could use a chart to keep track of these new words and their meanings as they read.
* If you had students start a KWL before reading, have them fill in the “L” section as they read the passage.

**After reading:**

* Reinforce new vocabulary using multiple modalities.

**Examples of activities:**

* Using the words that you had students work with before the reading, require students to include the words in the culminating writing task.
* Create Frayer models with the words. Then cut up the Frayer models and have the students put the Frayer models back together by matching the pieces for each word.
* After reading the passage, continue to examine important sentences (1–2) in the text that contribute to the overall meaning of the text. Guide students to break apart these sentences, analyze different elements, and determine meaning. More information on how to do this, including models of sentence deconstruction, can be found [here](https://achievethecore.org/page/3160/juicy-sentence-protocol).
* When completing the writing assignments after reading, consider using these scaffolds to support students depending on their English proficiency.

**Examples of Activities:**

* For all students, go over the prompt in detail making sure to break down what the prompt means before having the students get to work. Then have the students explain the directions back to you.
* Have students create an evidence tracking chart during reading, then direct them to look back over their evidence chart and work with a group to see if their evidence matches what the rest of the class wrote down. If some of the chart does not match, students should have a discussion about why.
* For students who need more support, model the proper writing format for your students and provide them with a properly formatted example for reference.
* For newcomers, you may consider creating sentence or paragraph frames to help them to write out their ideas.