



EXPEDITIONARY
LEARNING

Grade 7: Module 4A: Unit 2: Lesson 4

Finding Relevant Information and Asking Research Questions: The Benefits of Video Games



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can conduct short research projects to answer a question. (W.7.7)

I can generate additional questions for further research. (W.7.7)

Supporting Learning Targets

- I can generate strong supporting research questions.
- I can gather relevant evidence from “The Many Benefits, for Kids, of Playing Video Games.”

Ongoing Assessment

- Thinking Log from Lesson 3 (from homework)
- Researcher’s notebook, section 1 (completed for homework)



Agenda	Teaching Notes
<ol style="list-style-type: none"> 1. Opening <ol style="list-style-type: none"> A. Thinking Log: Personal Reflection on Video Game Use (5 minutes) 2. Work Time <ol style="list-style-type: none"> A. Introducing the Overarching Research Question: Reviewing the Researcher’s Roadmap and Notebook (10 minutes) B. “The Many Benefits, for Kids, of Playing Video Games” (17 minutes) C. Supporting Research Questions (8 minutes) 3. Closing and Assessment <ol style="list-style-type: none"> A. Adding to the Brain Development Anchor Chart (5 minutes) 4. Homework <ol style="list-style-type: none"> A. Complete Section 1 of the researcher’s notebook. 	<ul style="list-style-type: none"> • Today’s lesson is students’ formal introduction to the overarching research question of the unit: “What are the potential benefits and risks of entertainment screen time, particularly to the development of teenagers?” The overarching research question serves as the “big idea” for students’ research; it will serve as the lens through which the research is focused, as the focus questions have done in previous writing assignments. The overarching research question should be referred to regularly throughout instruction as a means of anchoring students’ work. • In turn, students are responsible for generating original supporting research questions. These are specific, smaller questions that will direct their inquiry, and later their position paper and presentation. • The researcher’s roadmap and researcher’s notebook build from those used in Modules 2A and 2B, and the lesson is written as a review of their use. However, if this is the first time your students have seen these materials, consider how the lesson might be adapted to become a full introduction to the roadmap and notebook. • For the first few lessons in the research arc, students will work specifically with pro-screen time argumentative texts as their source as they hone their research skills. Later, they will do the same with anti-screen time texts. Finally, they will have an opportunity to find and use other sources in their research. • Encourage students to return to the original texts at any point for any clarification they require. Returning to the text consistently is a “habit of mind” that should be emphasized. • Note that at this point, students are using the researcher’s notebook to develop a background level of knowledge, as they learn and capture information about the issue. They are not yet gathering information to answer specific questions. • The “Questions I Now Have” section does not necessarily relate specifically to this text; the questions are sparked in some way by this reading and can be used for future research but are not necessarily answerable by this specific reading. • For text selections in the researcher’s notebooks, a teacher guide has been provided for you in the supporting materials of this lesson. Once students transition to finding their own research texts, informally assess students’ notebooks to be sure they are taking accurate notes.



Agenda	Teaching Notes (continued)
	<ul style="list-style-type: none">• In advance:<ul style="list-style-type: none">– Review the researcher’s roadmap and researcher’s notebook, especially if your students are being introduced to these materials for the first time. Consider how the researcher’s notebook should be stored—in a binder, a folder, or other means of keeping multiple pages connected and organized.– At your discretion, assign specific students to read these three sections of the text:<ul style="list-style-type: none">• “Computers are the most important tools of modern society ...”• “Research refutes the frightening myths ...”• “Video games have been shown to have many positive effects ...”– Review the GoGoMo protocol (see Appendix) for Work Time B.• Post:<ul style="list-style-type: none">– Learning targets– Researcher’s roadmap chart– Overarching Research Question anchor chart



Lesson Vocabulary	Materials
overarching research question, supporting research questions	<ul style="list-style-type: none"> • Thinking Logs (from Unit 1, Lesson 2) • Overarching Research Question anchor chart (new; teacher-created) • Researcher’s roadmap (one per student and one to display as an anchor chart) • Researcher’s notebook (one per student and one to display) • Teacher Guide: Researcher’s notebook (answers, for teacher reference) • Sticky notes • “The Many Benefits, for Kids, of Playing Video Games” (one per student and one to display) • Document camera • Research Questions Selected Response (one to display) • Brain Development anchor chart (begun in Unit 1, Lesson 2) • Model Brain Development anchor chart (for teacher reference)

Opening	Meeting Students’ Needs
<p>A. Thinking Log: Personal Reflection on Video Game Use (5 minutes)</p> <ul style="list-style-type: none"> • Have students take out their Thinking Logs. • Cold call two or three students to briefly share their answers from the homework in Lesson 3. • Then, have students answer the Questions for Unit 2, Lesson 4: <ul style="list-style-type: none"> * “What role do video games play in your life? How often do you play them? With whom? What in your view are the benefits of playing video games?” • Ask for students to volunteer their answers. Conduct a brief whole-class discussion based on their responses. • Wrap up by letting students know they will read about video games today and asking them to be mindful of how the reading supports, or perhaps contradicts, their personal experience with video games. 	



Work Time	Meeting Students' Needs
<p>A. Introducing the Overarching Research Question: Reviewing the Researcher's Roadmap and Notebook (10 minutes)</p> <ul style="list-style-type: none">• Direct students' attention to the Overarching Research Question anchor chart posted in the classroom and read it aloud. Distribute the researcher's roadmap, researcher's notebook, and sticky notes. Remind students that these materials should look familiar to them, as they used them during Module 2. Give them 3 or 4 minutes to look over the materials to refresh their memories, using sticky note codes to flag places where they have questions or observations they want to share with the class.• Share out questions and observations.• Invite students to look at the researcher's roadmap (use the poster-size roadmap as a visual reference). Say:<ul style="list-style-type: none">* "You'll remember that the roadmap gives researchers specific steps to follow. What steps have we already accomplished as a class so far? Where do you think we need to go next?"• Listen for students to identify that the class has set a purpose for the research through the overarching research question and that the class as a whole has been working on Step 2, using the brain science articles they read in Unit 1. Clarify, if needed, that Step 3 is yet to arrive, but that soon students will be branching out into finding and using other resources.	<ul style="list-style-type: none">• Think about how you might shape the brief presentation of the overarching research question to generate engagement and excitement. Students could rise and recite the question dramatically; technology may be used to create a visually engaging PowerPoint slide for display during the research; or you may have established classroom chants or response protocols that would work here.• Sticky note codes are a way to mark up the text without obscuring the text itself with handwriting. Places where students have questions can be marked with a "?"; observations can be marked with a "!" or with a drawing of an eye or asterisk.• Questions during Work Time A that the students want to discuss should serve to elucidate or clarify the materials only. Students can place larger questions about the project itself on a Parking Lot chart for future reference, or you may address them individually after class or during independent work time.



Work Time (continued)	Meeting Students' Needs
<p>B. “The Many Benefits, for Kids, of Playing Video Games” (17 minutes)</p> <ul style="list-style-type: none"> • Distribute “The Many Benefits, for Kids, of Playing Video Games” and display a copy under the document camera. Ask students to open their researcher’s notebook to Section 1. • Let them know you’ll read the first four paragraphs together in class, and then split off to read the next three sections independently. • Read the first paragraph aloud, having students read along silently in their heads as you do so. As you read, briefly define any words that you feel may be confusing to your students. Have them jot down those definitions on their texts. • Ask students to underline the sentence that seems to capture the gist of the paragraph. They may confer with a partner while they do this. • Have students share out their answers. Correct answers may vary; listen for any sentence that captures the idea that children naturally and independently make good choices in how they spend their leisure time. • Repeat the read-aloud and gist underline for the second paragraph. • Have students share out their answers. Listen for: “Children are suffering from too much adult control over their lives.” • Repeat the read-aloud and gist underline for the third paragraph. • Have students share out their answers. Listen for: “Kids who are free really know what’s best for them.” • Repeat the read-aloud and gist underline for the fourth and final paragraph. • Have students share out their answers. Listen for answers that capture the idea that self-chosen activities, such as computer time, are more valuable to the students’ learning than forced activities. • Display the researcher’s notebook under the document camera. Note that the heading information for this text has been filled in for them this time, and briefly review it. Later, students will be expected to do this on their own. • Tell students that you are now going to give them a challenge: to take the four gist sentences and synthesize them into one note to place in their researcher’s notebook. Give them the option to work in pairs or triads as they do this. • As they work, circulate and offer assistance where necessary. Note the strongest examples and ask for permission to share them under the document camera. Look for answers that summarize the claim that children who are given freedom in their choice of leisure time, such as on computers, will naturally find meaningful learning in it; students may need assistance in making this specific connection. 	<ul style="list-style-type: none"> • “The Many Benefits, for Kids, of Playing Video Games” is quite long but generally very accessible in terms of vocabulary and syntax. Work Time B is intended to facilitate a common sharing of the information found in the article that is efficient and accurate. Consider assigning smaller or less complex sections to students with emergent literacy. Of the three assigned to students in this work time, “Video games have been shown to have many positive effects ...” is the shortest; the first paragraph of “Computers are the most important tools of modern society ...” has the least complex vocabulary and syntax.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none"> • Share the strongest student work under the document camera. Have students correct or modify their own answers if need be. Confirm that this summarized statement is the claim of the text. • Ask students to read their assigned sections independently. Point out that the title of each section is a separate reason that supports the claim. (Alternatively, have students identify this pattern on their own.) • Due to time constraints, students will skim their sections and find <i>one</i> supporting piece of evidence for the claim in the title. Once found, they should write it in their researcher's notebooks. • Have the students stand, bringing a writing utensil and their researcher's notebooks, and engage in the Give One, Get One, Move On protocol until everyone has had a chance to write down one or two more key ideas from the text. • As students work with the researcher's notebook in this lesson and future ones, use the Teacher Guide: Researcher's Notebook as a reference guide. (Note that students may provide different, but still accurate answers; the teacher's version is meant as a guide only). 	
<p>C. Supporting Research Questions (8 minutes)</p> <ul style="list-style-type: none"> • Congratulate students on their hard work up to this point. • Inform them that they are now going to draft some supporting research questions. Display the Research Questions Selected Response on the document camera. Ask which criteria they would choose. Listen for: "a, c, and e." Lead a brief whole-class discussion on why b and d are not appropriate answers. Listen for: "Long and/or complicated questions actually bog the research process down and make it harder." • Cold call two or three students: <ul style="list-style-type: none"> * "Let us know the most interesting or important fact you came across in the article we read today." • Choose one of these answers to model writing a supporting research question under the document camera. For example: <ul style="list-style-type: none"> * "I see that the author says that people claim that video games can contribute to violence, but he doesn't give any specific evidence about that. I want to look into that more. So I write: 'What research has been done on the link between video games and violence?' Then, I check: 'Is my question specific? Is it relevant? Is it answerable?'" • Have students complete drafts of at least one supporting research question individually, based on their notes. Circulate and offer assistance where needed. 	



Closing and Assessment	Meeting Students' Needs
<p>A. Adding to the Brain Development Anchor Chart (5 minutes)</p> <ul style="list-style-type: none"> • Direct students' attention to the class Brain Development anchor chart and let them know that together the class will connect the thinking in the lesson text to the brain science they learned in Unit 1. Tell them that when they do this, now and in future lessons, they will record their connections in the researcher's notebook as you record them on the anchor chart, using the "if/then" format. • Discuss how the "if/then" format works in reverse in Unit 2. Instead of starting with the brain science and connecting it to its results in the real world, the texts begin with real-world arguments about screen time; students must think about how those arguments might connect to teen brain science. • Model (using the Model Brain Development anchor chart as a guide for yourself): <ul style="list-style-type: none"> * "<u>If</u> it is true that children learn more from self-chosen learning, such as on computers, <u>then</u> this might be because of the bigger shot of dopamine the teen brain gets in rewarding situations." * "<u>If</u> teens play video games, <u>then</u> their working memory and visuospatial skills (or neurons) increase, according to studies." 	<ul style="list-style-type: none"> • The modeling of these connections will be very straightforward for the first few lessons; then, in a gradual release model, students will eventually create "if/then" connections independently in their researcher's notebooks.
Homework	Meeting Students' Needs
<ul style="list-style-type: none"> • Complete Section 1 of the researcher's notebook. 	



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Grade 7: Module 4A: Unit 2: Lesson 4

Supporting Materials



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Overarching Research Question Anchor Chart

What are the potential benefits and risks of entertainment screen time, particularly to the development of teenagers?



Researcher's Roadmap

Name: _____

Date: _____

Good researchers stop often to look around and see where they are, check their maps, and set their course toward their final destination. They sometimes take side trips, but they use their route-finding tools to reach their destinations.

INITIATING INQUIRY
Step 1: Set a purpose for research: What is the overarching research question? What information do you need to find? Why does this inquiry matter?
Step 2: Gather background information about your topic from a reliable source and generate supporting research questions.

- Relevant
- Specific
- Answerable

GATHERING SOURCES
Step 3: Gather a variety of reliable and relevant sources.

ANALYZING SOURCES
Step 4: Use your sources. For each source:

- Skim the source to see if it is useful for you.
- If it is useful, read it and mark parts of the text that are relevant to your research.
- On your note-taking sheet, record the source information and take notes in your own words on ideas and information that are relevant.

EVALUATING RESEARCH
Step 5: After you are done reading a source, step back and evaluate:

- Which of my supporting research questions have I answered, either partially or completely?
- What additional supporting research questions did I generate?
- How thorough is my answer to the overarching research question?
- Which source might I use next?

DEVELOPING AN EVIDENCE-BASED PERSPECTIVE
Step 6: When you have enough information, synthesize and share your findings.



Researcher's Notebook

This is your place to gather information, generate questions, and keep track of your findings as you complete this research project. This will help you practice for and write your position paper and demonstrate your progress toward the following learning targets:

- I can conduct short research projects to answer a question. (W.7.7)
- I can generate additional questions for further research. (W.7.7)
- I can gather relevant information from a variety of sources. (W.7.8)
- I can evaluate the credibility and accuracy of each source. (W.7.8)
- I can quote or paraphrase others' work while avoiding plagiarism. (W.7.8)
- I can use a variety of strategies to determine the meaning of unknown words or phrases. (L.7.4)

RESEARCH QUESTION(S): What are the potential benefits and risks of entertainment screen time, particularly to the development of teenagers?

The following pages will help you organize your notes on your sources and your ideas about them.



Section 1

This text will help you learn information about screen time. This will help you begin to generate relevant questions about your topic.

Track the bibliographic information for this source. The first entry has been mostly filled out for you:

Title: “The Many Benefits, for Kids, of Playing Video Games”

Author: Peter Gray

Print or Digital: Digital

Source Type: *Psychology Today* (magazine, online)

Credible? Yes

Page #(s): n/a

My notes from this source:

-
-
-
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Brain Connections:

Remember to write connections in the “if/then” format.

-
-
-
-

Vocabulary:

Identify a word from the text that is new to you: _____

What is your initial idea of its meaning? _____

What strategy did you use to determine an initial meaning for this word? _____

Look this word up in a reference (dictionary, thesaurus, glossary). What is the definition of this word? _____



Paragraph to sum up new information from this text about the benefits of video games:

Questions I now have (keep these relevant, specific, and answerable):



Section 2		
Name of Text: "Gaming Can Make a Better World"		
Author/Speaker's Name: Jane McGonigal		
Claim:		
Supporting Evidence 1	Supporting Evidence 2	Supporting Evidence 3
<p><i>What type of evidence is this? (Circle one)</i></p> <p>anecdote</p> <p>analogy/metaphor</p> <p>fact/statistic</p> <p>testimony</p>	<p><i>What type of evidence is this? (Circle one)</i></p> <p>anecdote</p> <p>analogy/metaphor</p> <p>fact/statistic</p> <p>testimony</p>	<p><i>What type of evidence is this? (Circle one)</i></p> <p>anecdote</p> <p>analogy/metaphor</p> <p>fact/statistic</p> <p>testimony</p>



Researcher's Notebook

Supporting Evidence 4	Supporting Evidence 5	Supporting Evidence 6
<p><i>What type of evidence is this?</i> (Circle one)</p> <p>anecdote</p> <p>analogy/metaphor</p> <p>fact/statistic</p> <p>testimony</p>	<p><i>What type of evidence is this?</i> (Circle one)</p> <p>anecdote</p> <p>analogy/metaphor</p> <p>fact/statistic</p> <p>testimony</p>	<p><i>What type of evidence is this?</i> (Circle one)</p> <p>anecdote</p> <p>analogy/metaphor</p> <p>fact/statistic</p> <p>testimony</p>



Section 3		
Name of Text/Excerpt/Clip: "Video Games Benefit Children, Study Finds."		
Author/ Speaker's Name: <i>Medical Xpress</i>		
Claim:		
Reason:	Reason:	Reason:
Supporting Evidence	Supporting Evidence	Supporting Evidence



Researcher's Notebook

<p>Is this evidence relevant?</p> <p>Yes / No</p> <p>Explain why this evidence is or is not relevant to the claim:</p> <p>If ...</p> <p>Then ...</p>	<p>Is this evidence relevant?</p> <p>Yes / No</p> <p>Explain why this evidence is or is not relevant to the claim:</p> <p>If ...</p> <p>Then ...</p>	<p>Is this evidence relevant?</p> <p>Yes / No</p> <p>Explain why this evidence is or is not relevant to the claim:</p> <p>If ...</p> <p>Then ...</p>
--	--	--



1. **Read for gist.** Is this a source that is relevant to your topic and questions?
2. **Reread the text** to find **key vocabulary** (enter below) and **information about the effects of screen time**. While you read, text-code important passages.
3. After you've read, **paraphrase the excerpt** by using one of these sentence stems:

According to +	source	+ paraphrased fact
Source +	writes illustrates notes observes states reports claims	+ paraphrased fact

Example:

According to the New York Times, the ways we currently use technology are unhealthy.

According to the interview with Peter Gray, we need to think more about how we use video games.



Section 4

This text will help you learn information about screen time. This will help you begin to generate relevant questions about your topic.

Track the bibliographic information for this source:

Title: _____

Author: _____

Print or Digital: _____

Source Type: _____

Credible? _____

Page #(s): _____

Use the steps on page 19 to help you paraphrase this source.

Paraphrased information from this text about screen time:

-
-
-
-
-



Brain Connections:

Remember to write connections in the “if/then” format.

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-
-
-

Vocabulary:

Identify a word from the text that is new to you: _____

What is your initial idea of its meaning? _____

What strategy did you use to determine an initial meaning for this word? _____

Look this word up in a reference (dictionary, thesaurus, glossary). What is the definition of this word? _____



Questions that will guide my further research (remember to keep these relevant, specific, and answerable):

-
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-



Section 5

This text will help you learn information about screen time. This will help you begin to generate relevant questions about your topic.

Track the bibliographic information for this source:

Title: _____

Author: _____

Print or Digital: _____

Source Type: _____

Credible? _____

Page #(s): _____

Use the steps on page 19 to help you paraphrase this source.

Paraphrased information from this text about screen time:

-
-
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-
-



Brain Connections:

Remember to write connections in the “if/then” format.

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-
-
-

Vocabulary:

Identify a word from the text that is new to you: virtual

What is your initial idea of its meaning? _____

What strategy did you use to determine an initial meaning for this word? _____

Look this word up in a reference (dictionary, thesaurus, glossary). What is the definition of this word? _____



Questions that will guide my further research (remember to keep these relevant, specific, and answerable):

-
-
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Section 6

This text will help you learn information about screen time. This will help you begin to generate relevant questions about your topic.

Track the bibliographic information for this source:

Title: _____

Author: _____

Print or Digital: _____

Source Type: _____

Credible? _____

Page #(s): _____

Use the steps on page 19 to help you paraphrase this source.

Paraphrased information from this text about screen time:

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-
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-
-



Brain Connections:

Remember to write connections in the “if/then” format.

-
-
-
-

Vocabulary:

Identify a word from the text that is new to you: _____

What is your initial idea of its meaning? _____

What strategy did you use to determine an initial meaning for this word? _____

Look this word up in a reference (dictionary, thesaurus, glossary). What is the definition of this word? _____



Questions that will guide my further research (remember to keep these relevant, specific, and answerable):

-
-
-
-



Section 7—Internet Research

This text will help you learn information about screen time. This will help you begin to generate relevant questions about your topic.

Track the bibliographic information for this source:

Title: _____

Author: _____

Title of Web Site Where Found: _____

Name of Sponsoring Institution (if any): _____

Date of Publication: _____

Date of Access: _____

URL: _____

Credible? _____

Use the steps on page 19 to help you paraphrase this source.



Paraphrased information from this text about screen time:

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Brain Connections:

Remember to write connections in the “if/then” format.

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-



Vocabulary:

Identify a word from the text that is new to you: _____

What is your initial idea of its meaning? _____

What strategy did you use to determine an initial meaning for this word? _____

Look this word up in a reference (dictionary, thesaurus, glossary). What is the definition of this word? _____

Questions that will guide my further research (remember to keep these relevant, specific, and answerable):

-
-
-
-



Section 8—Internet Research

This text will help you learn information about screen time. This will help you begin to generate relevant questions about your topic.

Track the bibliographic information for this source:

Title: _____

Author: _____

Title of Web Site Where Found: _____

Name of Sponsoring Institution (if any): _____

Date of Publication: _____

Date of Access: _____

URL: _____

Credible? _____

Use the steps on page 19 to help you paraphrase this source.



Paraphrased information from this text about screen time:

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-

Brain Connections:

Remember to write connections in the “if/then” format.

-
-
-
-



Vocabulary:

Identify a word from the text that is new to you: _____

What is your initial idea of its meaning? _____

What strategy did you use to determine an initial meaning for this word? _____

Look this word up in a reference (dictionary, thesaurus, glossary). What is the definition of this word? _____

Questions that will guide my further research (remember to keep these relevant, specific, and answerable):

-
-
-
-



Section 9—Internet Research

This text will help you learn information about screen time. This will help you begin to generate relevant questions about your topic.

Track the bibliographic information for this source:

Title: _____

Author: _____

Title of Web Site Where Found: _____

Name of Sponsoring Institution (if any): _____

Date of Publication: _____

Date of Access: _____

URL: _____

Credible? _____

Use the steps on page 19 to help you paraphrase this source.



Paraphrased information from this text about screen time:

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-

Brain Connections:

Remember to write connections in the “if/then” format.

-
-
-
-



Vocabulary:

Identify a word from the text that is new to you: _____

What is your initial idea of its meaning? _____

What strategy did you use to determine an initial meaning for this word? _____

Look this word up in a reference (dictionary, thesaurus, glossary). What is the definition of this word? _____

Questions that will guide my further research (remember to keep these relevant, specific, and answerable):

-
-
-
-



This is your place to gather information, generate questions, and keep track of your findings as you complete this research project. This will help you practice for and write your position paper and demonstrate your progress toward the following learning targets:

- I can conduct short research projects to answer a question. (W.7.7)
- I can generate additional questions for further research. (W.7.7)
- I can gather relevant information from a variety of sources. (W.7.8)
- I can evaluate the credibility and accuracy of each source. (W.7.8)
- I can quote or paraphrase others' work while avoiding plagiarism. (W.7.8)
- I can use a variety of strategies to determine the meaning of unknown words or phrases. (L.7.4)

RESEARCH QUESTION(S): What are the potential benefits and risks of entertainment screen time, particularly to the development of teenagers?

The following pages will help you organize your notes on your sources and your ideas about them.



Section 1

This text will help you learn information about screen time. This will help you begin to generate relevant questions about your topic.

Track the bibliographic information for this source. The first entry has been mostly filled out for you:

Title: “The Many Benefits, for Kids, of Playing Video Games”

Author: Peter Gray

Print or Digital: Digital

Source Type: Psychology Today (magazine, online)

Credible? Yes

Page #(s): n/a

My notes from this source:

- ***Kids will naturally make good decisions about how to spend their time, if given good choices online.***
- ***Computers are the most important tool of the future.***
- ***The “scary” research on the effect of computer games is an overreaction.***
- ***Games have positive effects on brain power.***
- ***Role-playing games are especially positive.***



Brain Connections:

Remember to write connections in the “if/then” format.

- ***“If teens play video games, then their working memory and visuospatial skills increase, according to studies.”***
- ***“If it is true that children learn more from self-chosen learning, such as on computers, then this might be because of the bigger shot of dopamine the teen brain gets in rewarding situations.”***

Vocabulary:

Identify a word from the text that is new to you: **advisability**

What is your initial idea of its meaning? **wisdom or goodness**

What strategy did you use to determine an initial meaning for this word? **put another word into the sentence that would**

 make sense

Look this word up in a reference (dictionary, thesaurus, glossary). What is the definition of this word? **wisdom**



Paragraph to sum up new information from this text about the benefits of video games:

We need to trust kids more to spend their time doing things that benefit them and help them learn. Video games could be one of those things. They have benefits for brain power and learning that we need to acknowledge, and the negative press around them is exaggerated.

Questions I now have (keep these relevant, specific, and answerable):

- ***Are there specific role-playing games that have learning benefits?***
- ***Where is some research that backs up the idea that self-directed learning on computers is effective?***



Section 2		
Name of Text: "Gaming Can Make a Better World"		
Author/Speaker's Name: Jane McGonigal		
Claim: <i>We need to play more games in order to solve the world's problems.</i>		
Reason:	Reason:	Reason:
<i>Our young people, who are experts at games, are incredible resources for problem-solving.</i>	<i>Gamers are experts at skills we need to solve the world's problems.</i>	<i>Gamers are experts at skills we need to solve the world's problems.</i> (Note: This reason is repeated only to give room on the organizer for the supporting evidence.)
Supporting Evidence 1	Supporting Evidence 2	Supporting Evidence 3
<i>10,000 hours of gaming by age 21</i>	<i>Urgent optimism: Gamers believe an epic win is possible.</i> <i>Tight social fabric: Research indicates that we like people better when we play a game with someone. Gaming builds trust.</i>	<i>Blissful productivity: World of Warcraft gamers play 22 hours a week. Gamers work hard and are happier doing it.</i> <i>Epic meaning: Gamers want to be attached to meaningful stories. An example: World of Warcraft has the largest wiki in the world.</i>



<p>Is this evidence relevant?</p> <p>Yes / No</p> <p>Explain why this evidence is or is not relevant to the claim:</p> <p><i>If ... gamers play 10,000 hours of games by the time they are 21 ...</i></p> <p>Then ... we have a resource that can solve the world's problems.</p>	<p>Is this evidence relevant?</p> <p>Yes / No</p> <p>Explain why this evidence is or is not relevant to the claim:</p> <p><i>If ... gamers are experts at urgent optimism and weaving tight social fabric ...</i></p> <p>Then ... they have the skills to solve the world's problems.</p>	<p>Is this evidence relevant?</p> <p>Yes / No</p> <p>Explain why this evidence is or is not relevant to the claim:</p> <p><i>If ... gamers are blissfully productive and want meaning in their lives ...</i></p> <p>Then ... they have the skills to solve the world's problems.</p>
---	---	--



Section 3		
Name of Text/Excerpt/Clip: "Video Games Benefit Children, Study Finds."		
Author/ Speaker's Name: <i>Medical Xpress</i>		
Claim: <i>Children receive benefits from active screen time.</i>		
Reason:	Reason:	Reason:
<i>Playing video games is interactive.</i>	<i>Active screen time is different from passive screen time (example: television).</i>	
Supporting Evidence	Supporting Evidence	Supporting Evidence
<i>Video and computer games are interactive, with research showing they boost children's self-esteem, cognitive skills such as problem-solving, and, in some cases, physical activity levels.</i>	<i>Active screen time involves cognitively or physically engaging screen-based activities, such as playing video games or completing homework on a computer.</i>	



<p>Is this evidence relevant?</p> <p style="text-align: center;">Yes / No</p> <p>Explain why this evidence is or is not relevant to the claim:</p> <p><i>If ... interactive time on screens has benefits versus passive time ...</i></p> <p>Then ... <i>children receive benefits from screen time.</i></p>	<p>Is this evidence relevant?</p> <p style="text-align: center;">Yes / No</p> <p>Explain why this evidence is or is not relevant to the claim:</p> <p><i>If ... active screen time has specific benefits such as cognitive or physical engagement ...</i></p> <p>Then ... <i>children receive benefits from screen time.</i></p>	<p>Is this evidence relevant?</p> <p style="text-align: center;">Yes / No</p> <p>Explain why this evidence is or is not relevant to the claim:</p> <p>If ...</p> <p>Then ...</p>
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1. **Read for gist.** Is this a source that is relevant to your topic and questions?
2. **Reread the text** to find **key vocabulary** (enter below) and **information about the effects of screen time.** While you read, text-code important passages.
3. After you've read, **paraphrase the excerpt** by using one of these sentence stems:

According to +	source	+ paraphrased fact
Source +	writes illustrates notes observes states reports claims	+ paraphrased fact

Example:

According to the New York Times, the ways we currently use technology are unhealthy.

According to the interview with Peter Gray, we need to think more about how we use video games.



Section 4

This text will help you learn information about screen time. This will help you begin to generate relevant questions about your topic.

Track the bibliographic information for this source:

Title: “Facebook Could Actually Be Good for Your Health”

Author: Sy Mukherjee

Print or Digital: digital

Source Type: magazine

Credible? yes

Page #(s): n/a

Use the steps on page 19 to help you paraphrase this source.

Paraphrased information from this text about screen time:

- *According to Mukherjee, going through old Facebook notifications is like flipping through favorite photographs.*
- *Remembering connections with friends and family boosts the user's sense of well-being, according to the article “Facebook Could Be Good for Your Health.”*
- *According to Mukherjee, going through Facebook feeds, however, has been demonstrated to depress users.*



Brain Connections:

Remember to write connections in the “if/then” format.

- ***If old Facebook notifications help boost well-being, then it might increase the dopamine in a teen brain.***
- ***If Facebook feeds make people feel depressed, then they might stay on Facebook longer to seek the dopamine high.***

Vocabulary:

Identify a word from the text that is new to you: ***reminiscent***

What is your initial idea of its meaning? ***having to do with memory***

What strategy did you use to determine an initial meaning for this word? ***Context of the sentence***

Look this word up in a reference (dictionary, thesaurus, glossary). What is the definition of this word? _____

 reminding one of someone or something else



Questions that will guide my further research (remember to keep these relevant, specific, and answerable):

- **Are there other aspects of Facebook that result in positive mental health?**
- ***Why specifically do people get depressed when looking at Facebook feeds?***
- ***How much time do teens spend on Facebook on average?***



Section 5

This text will help you learn information about screen time. This will help you begin to generate relevant questions about your topic.

Track the bibliographic information for this source:

Title: The ONLINE EDUCA Debate (Part 2 of 10)

Author: Aric Sigman

Print or Digital: digital

Source Type: video (YouTube)

Credible? yes

Page #(s): n/a

Use the steps on page 19 to help you paraphrase this source.

Paraphrased information from this text about screen time:

- ***According to Aric Sigman, cultures all around the world are suffering from a decrease of face-to-face time when screens are introduced to their societies.***
- ***According to the video, over the last 20 years, face-to-face interactions have decreased as social technology has increased.***
- ***According to the video, a study at Stanford University confirmed the correlation between social technology and decreased face-to-face interaction.***



Brain Connections:

Remember to write connections in the “if/then” format.

- ***If young people spend too much time on screens, then it might be because of the limbic system’s role in risk and reward.***
- ***If young people spend too much time on screens, then neurons might prune themselves to not emphasize face-to-face skills.***

Vocabulary:

Identify a word from the text that is new to you: **virtual**

What is your initial idea of its meaning? **something to do with “virtue”**

What strategy did you use to determine an initial meaning for this word? **I see the same root of “virtue” in “virtual”**

Look this word up in a reference (dictionary, thesaurus, glossary). What is the definition of this word? **being similar to**

 something, but not that thing in fact.



Questions that will guide my further research (remember to keep these relevant, specific, and answerable):

- **What social media is Aric Sigman talking about specifically?**
- ***Have any other studies made a strong connection between screen time and lack of social skills?***



Section 6

This text will help you learn information about screen time. This will help you begin to generate relevant questions about your topic.

Track the bibliographic information for this source:

Title: Attached to Technology and Paying a Price

Author: Matt Richtel

Print or Digital: print

Source Type: newspaper

Credible? yes

Page #(s): n/a

Use the steps on page 19 to help you paraphrase this source.

Paraphrased information from this text about screen time:

- **According to Matt Richtel, technology can be very distracting for the son, Connor, and his sister.**
- **According to “Attached to Technology and Paying the Price,” screens are central to the family’s leisure time together.**
- **According to Richtel, researchers worry about the distracting impact of technology on the brain.**



Brain Connections:

Remember to write connections in the “if/then” format.

- ***If the prefrontal cortex is not completely developed in teens, then maybe it would contribute to making poor decisions, like spending more time online than on homework***

Vocabulary:

Identify a word from the text that is new to you: ***relentless***

What is your initial idea of its meaning? ***huge, unstoppable***

What strategy did you use to determine an initial meaning for this word? ***tried substituting a word that made***

sense into the sentence

Look this word up in a reference (dictionary, thesaurus, glossary). What is the definition of this word? ***not lessening in***

severity, intensity, strength, or pace



Questions that will guide my further research (remember to keep these relevant, specific, and answerable):

- **What does the rest of the article discuss in terms of screen time?**
- ***Is there any research being done on the impact of social technology on school?***
- ***What's the average age in America for kids to start having significant screen time?***



Section 7—Internet Research

This text will help you learn information about screen time. This will help you begin to generate relevant questions about your topic.

Track the bibliographic information for this source:

Title: _____

Author: _____

Title of Web Site Where Found: _____

Name of Sponsoring Institution (if any): _____

Date of Publication: _____

Date of Access: _____

URL: _____

Credible? _____

Use the steps on page 19 to help you paraphrase this source.



Paraphrased information from this text about screen time:

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Brain Connections:

Remember to write connections in the “if/then” format.

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-
-
-



Vocabulary:

Identify a word from the text that is new to you: _____

What is your initial idea of its meaning? _____

What strategy did you use to determine an initial meaning for this word? _____

Look this word up in a reference (dictionary, thesaurus, glossary). What is the definition of this word? _____

Questions that will guide my further research (remember to keep these relevant, specific, and answerable):

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-
-
-



Section 8—Internet Research

This text will help you learn information about screen time. This will help you begin to generate relevant questions about your topic.

Track the bibliographic information for this source:

Title: _____

Author: _____

Title of Web Site Where Found: _____

Name of Sponsoring Institution (if any): _____

Date of Publication: _____

Date of Access: _____

URL: _____

Credible? _____

Use the steps on page 19 to help you paraphrase this source.



Paraphrased information from this text about screen time:

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Brain Connections:

Remember to write connections in the “if/then” format.

-
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-
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Vocabulary:

Identify a word from the text that is new to you: _____

What is your initial idea of its meaning? _____

What strategy did you use to determine an initial meaning for this word? _____

Look this word up in a reference (dictionary, thesaurus, glossary). What is the definition of this word? _____

Questions that will guide my further research (remember to keep these relevant, specific, and answerable):

-
-
-
-



Section 9—Internet Research

This text will help you learn information about screen time. This will help you begin to generate relevant questions about your topic.

Track the bibliographic information for this source:

Title: _____

Author: _____

Title of Web Site Where Found: _____

Name of Sponsoring Institution (if any): _____

Date of Publication: _____

Date of Access: _____

URL: _____

Credible? _____

Use the steps on page 19 to help you paraphrase this source.



Paraphrased information from this text about screen time:

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Brain Connections:

Remember to write connections in the “if/then” format.

-
-
-
-



Vocabulary:

Identify a word from the text that is new to you: _____

What is your initial idea of its meaning? _____

What strategy did you use to determine an initial meaning for this word? _____

Look this word up in a reference (dictionary, thesaurus, glossary). What is the definition of this word? _____

Questions that will guide my further research (remember to keep these relevant, specific, and answerable):

-
-
-



The Many Benefits, for Kids, of Playing Video Games

By Peter Gray

Quite a few parents have asked me, at talks I've given, about the advisability of their limiting their kids' computer play. Others have told me that they do limit their kids' computer play, or their total daily "screen time," in a tone that seemed to suggest that any reasonable parent would do that. People who have been reading this blog can probably guess my reaction. I have a very high opinion of children's abilities to make good choices about how to use their free time, as long as they really have choices. Some kids go through long periods of doing what seems like just one thing, and then some adults think there's something wrong, because they (the adults) would not make that choice. But in my experience, if kids are really free to play and explore in lots of different ways, and they end up playing or exploring in what seems to be just one way, then they are doing that because they are getting something really meaningful out of it. For a nice example of this, you might watch the film on the home page of the Sudbury Valley School website, where a young man describes his year of doing almost nothing but computer play.

It is always a mistake, I think, to tell kids what they must or must not do, except in those cases where you are telling them that they must do their share of the chores around the house or must not do things that hurt you or other people. Whenever we prevent our kids from playing or exploring in the ways they prefer, we place another brick in a barrier between them and us. We are saying, in essence, "I don't trust you to control your own life." Children are suffering today not from too much computer play or too much screen time. They are suffering from too much adult control over their lives and not enough freedom (see essay on rise of depression and anxiety).



The Many Benefits, for Kids, of Playing Video Games

By Peter Gray

Kids who are really free know what is best for them, especially concerning how they should spend their free time. Every kid is different, just as every adult is, and we can't get into their heads and find out just what they are getting out of something that we don't understand. I know well a kid who, for years, spent hours per day watching television shows that I thought were really disgustingly dumb; but, over time, I discovered that she was getting a lot out of them. They were making her think in new ways. She understood all the ways in which the shows were dumb, at least as well as I did; but she also saw ways in which they were smart, and she analyzed them and learned from them. They contributed greatly to her abilities as an actress (she eventually had major parts in high-school plays), because she acted out the parts vicariously, in her mind, as she watched. They also contributed to her fascination with certain aspects of human psychology. She now wants to go into clinical psychology as a career.

I've also known kids who spent huge amounts of time reading—just sitting and reading, "doing nothing!" for maybe 10 hours a day. There were always some kids like that, even when I was a kid. I could never understand why they would want to just sit and read when they could go fishing with me instead. What a waste of time. However, I've never known a parent to limit their kids' reading time. Why is it any better to limit TV or computer time than to limit book-reading time? Why do we worry about a kid's spending maybe 4 or 5 hours a day at a computer screen, doing what he wants to do, but don't worry about the same kid sitting at school for 6 hours a day and then doing homework for another couple of hours—doing what others are forcing him to do? I ask you to consider the possibility that the kid is learning more valuable lessons at the computer than at school, in part *because* the computer activity is self-chosen and the school activity is not.



The Many Benefits, for Kids, of Playing Video Games

By Peter Gray

Computers are the most important tools of modern society. Why would we limit kids' opportunities to play with them?

Why would we want to limit a kid's computer time? The computer is, without question, the single most important tool of modern society. Our limiting kids' computer time would be like hunter-gatherer adults limiting their kids' bow-and-arrow time. Children come into the world designed to look around and figure out what they need to know in order to make it in the culture into which they are born. They are much better at that than adults are. That's why they learn language so quickly and learn about the real world around them so much faster than adults do. That's why kids of immigrant families pay more attention to the language spoken by their new peers, in the new culture, than to the old language spoken by their parents. That's also why, whenever there's a new technological innovation, kids learn how to use it more quickly than their parents do. They know, instinctively, what they must learn in order to succeed.

Why do we keep hearing warnings from "authorities"—including the American Academy of Pediatrics—that we must limit kids' computer play? Some of the fear mongering comes, I think, from a general tendency on the part of us older folks to distrust any new media. Plato, in *The Republic*, argued that plays and poetry should be banned because of their harmful effects on the young. When writing came about and became technically easier, and was enthusiastically seized upon by the young, some of their elders warned that this would rot their minds; they would no longer have to exercise their memories. When printed novels became available to the masses, many warned that these would lead the young, especially girls and young women, to moral degeneracy. When televisions began to



The Many Benefits, for Kids, of Playing Video Games

By Peter Gray

appear in people's homes, all sorts of dire warnings were sounded about the physical, psychological, and social damage they would cause.

Video games have been under attack by the fear-mongers ever since they first appeared, and the attacks have not diminished. If you Google around the Internet using *harmful effects of video games* as a search phrase, you will find all sorts of frightening claims. One site warns that video games can cause depression, physical aggression, poor sleep, somatic complaints, obesity, attention disorders, and ... the list went on. The only malady they seemed to have left out was housemaid's knee. The most common complaints about video games are that they (1) are socially isolating, (2) reduce opportunities for outdoor activities and thereby lead to obesity and poor physical health, and (3) promote violence in kids, if the games have violent content. On the face of it, of course, the first two of these claims should be truer of book reading than of video gaming. Concerning the third claim, I don't see any obvious reason why pretend murder of animated characters in video games should be any more likely to provoke real murder than, say, reading Shakespeare's account of Hamlet's murder of his stepfather. Yet we *make* kids read Hamlet in school.

Research refutes the frightening myths about harmful effects of computer games.

If you look into the actual research literature, you find very little if any evidence supporting the fear-mongers claims, and considerable evidence against those claims. In fact, systematic surveys have shown that regular video-game players are, if anything, more physically fit, less likely to be obese, more likely to also enjoy outdoor play, more socially engaged, more socially well-adjusted, and more civic minded than are their non-gaming peers. [1] A large-scale study in four cities in Holland showed—



The Many Benefits, for Kids, of Playing Video Games

By Peter Gray

contrary to what I assume was the initial hypothesis—that kids who had a computer and/or a television set in their own room were significantly *more* likely to play outside than were otherwise similar kids who didn't have such easy and private access to screen play.[2] A study by the Pew Research Center concluded that video games, far from being socially isolating, serve to connect young people with their peers and to society at large.[3] Other research has documented, qualitatively, the many ways that video games promote social interactions and friendships.[4] Kids make friends with other gamers, both in person and online. They talk about their games with one another, teach one another strategies, and often play together, either in the same room or online.

Concerning violence, meta-analyses of the many studies designed to find effects of violent video games on real-world violence have concluded that, taken as a whole, there is precious little or no evidence at all of such effects.[5] It's interesting, also, to note that over the decades in which violent video gaming has been steadily rising, there has been a steady and large decline in real-world violence by youth.[6] I'm not about to claim that the decline in real-world violence is in any significant way caused by the rise in violent video games, but, there is some evidence that playing such games helps people learn how to control their hostility. In one experiment, college students were presented with a frustrating mental task and then were assessed for their feelings both of depression and hostility. The significant finding was that regular players of violent video games felt less depressed and less hostile 45 minutes after the frustrating experience than did otherwise similar students who didn't play such games.[7]



The Many Benefits, for Kids, of Playing Video Games

By Peter Gray

I have to admit that I personally hate graphic depictions of violence, in games or anywhere else, but I claim no moral virtue in that. I'm just squeamish. My wife and step-kids, who are every bit as nonviolent in real life as I am, tease me about it. They talk about screening movies for me, and they have gotten used to going to certain movies without me.

Video games have been shown to have many positive effects on brainpower.

Quite a few well-controlled research studies have documented positive effects of video games on mental development. Repeated experiments have shown that playing fast-paced action video games can quite markedly increase players' scores on tests of visuospatial ability, including tests that are used as components of standard IQ tests.[8] Other studies suggest that, depending on the type of game, video games can also increase scores on measures of working memory (the ability to hold several items of information in mind at once), critical thinking, and problem solving.[9] In addition, there is growing evidence that kids who previously showed little interest in reading and writing are now acquiring advanced literacy skills through the text-based communication in online video games.[10]

When kids are asked, in focus groups and surveys, what they like about video games, they generally talk about freedom, self-direction, and competence.[11] In the game, they make their own decisions and strive to meet challenges that they themselves have chosen. At school and in other adult-dominated contexts they may be treated as idiots who need constant direction, but in the game they



The Many Benefits, for Kids, of Playing Video Games

By Peter Gray

are in charge and can solve difficult problems and exhibit extraordinary skills. In the game, age does not matter, but skill does. In these ways, video games are like all other forms of true play.

The special benefits of MMORPGs

Over time, video games have become increasingly complex and multifaceted. Perhaps the most interesting games today are the so-called Massively Multiplayer Online Role Playing Games (MMORPGs), such as *World of Warcraft*, which are even more social than were previous video games and offer endless opportunities for creativity and problem solving. [12]

In these online games, players create a character (an avatar), which has unique physical and psychological traits and assets, and, with that character, enter a complex and exciting virtual world that is simultaneously occupied by countless other players, who in their real-life forms may be sitting anywhere on the planet. Players go on quests within this virtual world, and along the way they meet other players, who might become friends or foes. Players may start off playing solo, avoiding others, but to advance to the higher levels they have to make friends and join with others in mutual quests. Making friends within the game requires essentially the same skills as making friends in the real world. You can't be rude. You have to understand the etiquette of the culture you are in and abide by that etiquette. You have to learn about the goals of a potential friend and help that individual to achieve those goals. Depending on how you behave, players may put you on their *friends* list or their *ignore* list, and they may communicate positive or negative information about you to other



The Many Benefits, for Kids, of Playing Video Games

By Peter Gray

players. The games offer players endless opportunities to experiment with different personalities and ways of behaving, in a fantasy world where there are no real-life consequences for failing.

Players in these games can also join special-interest groups called guilds. To join a guild, a player (or, more accurately, the player's avatar) must fill out an application form, much like a job application, explaining why he or she would be a valuable member. Guilds generally have structures that are similar to companies in the real world, with leaders, executive boards, and even recruitment personnel. Such games are, in many ways, like the imaginative sociodramatic games of preschool children, but played in a virtual world, with communication by online text, and raised up many notches in sophistication to fit the interests and abilities of the older children, teenagers, and adults who play them. Like all sociodramatic games, they are very much anchored in an understanding of the real world, and they exercise concepts and social skills that are quite relevant to that world. In fact, a study commissioned by the IBM Corporation concluded that the leadership skills exercised within MMORPGs are essentially the same as those required to run a modern company.[13]

Used with permission by Peter Gray.

*Peter Gray is a research professor of psychology at Boston College and author of the recent book *Free to Learn: Why Unleashing the Instinct to Play Will Make Our Children Happier, More Self-Reliant, and Better Students for Life*.

<http://www.psychologytoday.com/blog/freedom-learn/201201/the-many-benefits-kids-playing-video-games>



Research Questions
Selected Response

Which of these criteria describe all good research questions?

- a. relevant
- b. long
- c. specific
- d. answerable
- e. complicated
- f. broad



Model Brain Development Anchor Chart
(For Teacher Reference)

Note: This chart is filled out in different lessons. The bolded items are added in this lesson.

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
<p>The brain needs sleep to take things from your short term memory to your long term memory (Knox)</p> <p>Your brain does not fully develop until the mid-20s (Scholastic)</p>	<p>Also called the “frontal lobe” (Knox)</p> <p>This area helps with insight and understanding the effect of your behavior on someone else (Knox)</p> <p>Matures later than other parts of the brain (Scholastic)</p> <p>Right behind your forehead (Scholastic)</p> <p>Helps with thinking ahead and sizing up risk and reward (Scholastic)</p>	<p>“White matter” is called myelin, and it coats the nerves and makes them “communicate” more effectively (Knox)</p> <p>In order for your brain to make a decision, tiny specialized cells “talk” with each other through a series of neurotransmitters, like a circuit in a computer. Then the whole network puts out a response, which becomes your outward behavior. (Scholastic)</p>	<p>Develops earlier than the PFC (Scholastic)</p> <p>Plays a central role in your emotional response (Scholastic)</p> <p>Associated with decisions made in feeling (Scholastic)</p> <p>When teens make decisions in emotionally charged situations, this one weighs in heavily (Scholastic)</p>	<p>So <u>if</u> the PFC is not as efficient, <u>then</u> teens may make decisions without fully realizing long-term consequences. <u>If</u> they do that, <u>THEN</u> this can be good (they take daring risks) and bad (they take dangerous risks).</p> <p><u>If</u> the PFC is the social hub and it is still developing in teens, <u>then</u> teens may still need practice with social skills.</p>



Model Brain Development Anchor Chart
(For Teacher Reference)

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
	<p>The PFC is the central hub of social circuitry (Giedd)</p>	<p>Information travels from neuron to neuron by way of their axons and dendrites (Scholastic)</p> <p>The space between one neuron's axon and the other neuron's dendrites is called its synapse (Scholastic)</p> <p>To make the connection better, the axons wrap themselves in myelin through a process called myelination (Scholastic)</p>	<p>The limbic system in the teen brain is more sensitive to risk and reward and gets a bigger shot of dopamine in rewarding situations. So it is more biased toward seeking out new information. (Galvan)</p> <p>Dopamine is the main neurotransmitter in the limbic system (Giedd)</p>	<p><u>If</u> there are non-verbal social cues that can only be learned in the physical presence of a person, <u>then</u> someone mostly socializing online may not learn those skills.</p> <p><u>If</u> video games activate dopamine in the brain similarly to addictive behaviors, <u>then</u> a person may become addicted to video games in the same way someone can be addicted to behaviors.</p>



Model Brain Development Anchor Chart
(For Teacher Reference)

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
		<p>Also, if a synapse isn't used often, it is pruned through synaptic pruning. Then that energy is redirected into a more active synapse. (Scholastic)</p> <p>Synaptic pruning occurs based on the choices, the behavior, and the environment of an individual (Scholastic)</p>	<p>The limbic system is activated during basic biological drives, by substance abuse, and addictive behaviors. It is also activated by video games. (Giedd)</p>	<p>"<u>If</u> the brain is branching and pruning in adolescence, <u>then</u> it is highly adaptable." (Giedd)</p> <p><u>If</u> it adapted in the past, <u>then</u> it may adapt today. <u>If</u> it is adaptable, <u>then</u> it may be able to adapt to the digital world.</p>



Model Brain Development Anchor Chart
(For Teacher Reference)

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
				<p>So <u>if</u> synapses are being pruned or strengthened by the activities that teens spend their time on, <u>then</u> teens can shape their brain. And <u>if</u> activities shape one's brain, <u>then</u> one should be mindful about the activities that one is doing. As Dr. Willis says, "Practice makes permanent."</p> <p><u>If</u> we need calm minds to think, <u>then</u> overuse of technology such as Google might cause us to synaptically prune our brains to be distracted, and our thinking will be negatively affected.</p> <p><u>If</u> we are exposed to more, and more diverse, information through Google, <u>then</u> our brains will synaptically prune to use better information to make decisions. This might also counteract the effect of the immature prefrontal cortex.</p>



Model Brain Development Anchor Chart
(For Teacher Reference)

Other developmental information	Prefrontal cortex	Neurons	Limbic system	So what?
				<p><u>If</u> it is true that children learn more from self-chosen learning, such as on computers, <u>then</u> this might be because of the bigger shot of dopamine the teen brain gets in rewarding situations. (Gray)</p> <p><u>If</u> teens play video games, <u>then</u> their working memory and visuospatial skills (or neurons) increase, according to studies. (Gray)</p>