



GEE WHIZ

THE APPLES OF

GRADY AUVIL

A Community Heritage Documentary

Teacher's Guide

*Aligned to the
Common Core State Standards*

**for English Language Arts & Literacy in
History/Social Studies, Science and Technical
Subjects**

HOWELL at the **MOON**

productions

All contents © 2013 by Howell at the Moon Productions. All rights reserved. No part of this document or the related files may be reproduced or transmitted in any form, by any means (electronic, photocopying, recording, or otherwise) without the prior written permission of the publisher.

Filmmaker's Note

From the Director,

With every documentary film I undertake, I come away with insights and knowledge that I didn't have at the start of the project. To me, the primary motivation behind biographical works of any sort is just that - to glean lessons from the lives of the people who have come before us, to capture their hard-earned wisdom so that we might build on it for our own futures.



I found a great many worthwhile lessons in the life of Grady Auvil - lessons about perseverance, about the power of innovation, about standing for what one believes in even when popular opinion proclaims you an idiot. It is my hope that students in classrooms around the country will find their own lessons in Grady Auvil's life, lessons that will help them shape their own.

This curriculum guide, like the movie itself, is designed to build on the accumulated wisdom of generations. By aligning these lesson plans directly with the Common Core State Standards, they provide a tool for teachers rooted in the most robust, college and career-based set of national education standards ever created. My sincere thanks to Nicole Blake and Kristina Tucker of the Richland School District for their intelligence, expertise and hard work, without any of which this CCSS-aligned teaching aide could not have been created.

It is my hope that this guide will make this movie more accessible to students across the country, for the lessons contained here are applicable well beyond any single industry or career path. These lessons, preserved now through this documentary, represent building blocks from which our generations and the generations ahead may build their futures.

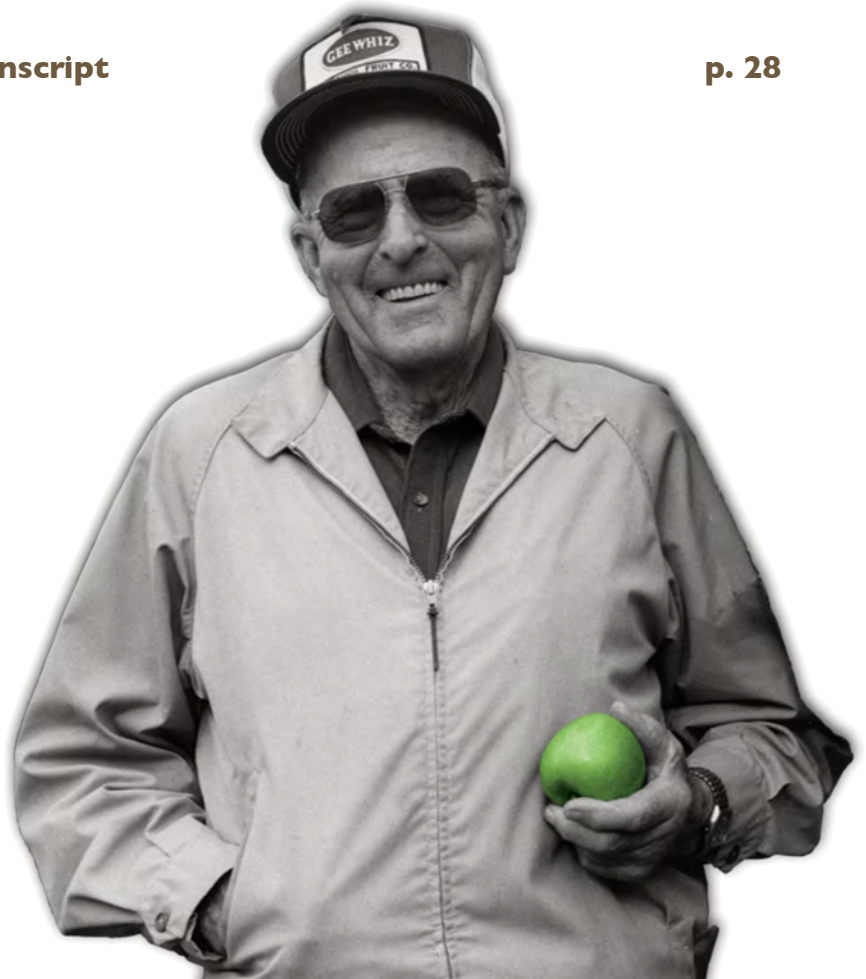
Happy building,

A stylized, handwritten signature in black ink, appearing to read 'J. Howell'.

Jamie Howell is a Washington-based writer and documentary filmmaker. For more information, visit www.howellatthemoon.com.

Table of Contents

Lesson Plan	p. 5
Worksheets	p. 12
Task and Standards Alignment Chart	p. 14
Common Core State Standards (CCSS)	p. 15
CCSS Rubric for Informative/Explanatory Writing	p. 24
CCSS Rubric for Argument Writing	p. 26
Complete documentary transcript	p. 28



Lesson Plan

Introduction

This lesson plan is divided into six tasks, plus a pair of extension learning possibilities. The tasks can be taught as individual, stand-alone lessons or as a series of tasks over multiple days that build upon each other.

Lesson objectives

The students will ...

- Use multiple sources to gather information on a topic
- Read and listen closely and critically to gain knowledge
- Infer the meaning of unknown words
- Cite evidence from first and secondary sources
- Participate in discussion around real world topics
- Present information to an audience
- Research a topic and write an informative/explanatory text and/or argumentative text (*extended learning idea*)

Materials

- Documentary film: **“Gee Whiz: The Apples of Grady Auvil”**
- Complete transcription of **“Gee Whiz: The Apples of Grady Auvil”**
- Computer access to the following articles:
 - “Auvil: The orchard of our eye.” *Raleys.com*. n.p. 10 Feb. 2009. Web. 27 Sept. 2012.
<http://www.raleys.com/www/feature/produce.jsp?featureid=1121821>
 - Warner, Geraldine. “Gee Whiz: The real story behind the fruit-growing legend Grady Auvil.” *Good Fruit Grower*. Washington State Fruit Commission. Web. 27 Sept. 2012
<http://www.goodfruit.com/Good-Fruit-Grower/December-2007/Gee-Whiz/> .
 - “History: Grady Auvil liked the simple life.” *Ancestry.com*. Good Fruit Grower Magazine. 1999. Web. 27 Sept. 2012
http://freepages.genealogy.rootsweb.ancestry.com/~forestforthetrees/branch/auvil/history_gradysimplelife.htm
- Vocabulary Worksheet
- Essential Questions Worksheet
- (Optional) Documentary film: **“Tom Mathison: The Growing Season”** (available at www.howellatthemoon.com - also includes a CCSS-aligned Teacher’s Guide.)

Tasks

Task 1: Anticipatory Set

The purpose of the anticipatory set is to build background knowledge and create motivation prior to a new topic or unit of study.

1. Open the lesson

The world around us is constantly changing. New inventions, ideas, and technological advancements contribute to and redefine our day-to-day lives. Think of some individuals whose ideas and/or inventions have had significant impacts on the goods and services that you encounter in your day to day life.

2. Conduct one or more of the following

- **Student Quick-Write:** This teaching strategy is designed to activate prior knowledge. Give students an opportunity to write briefly and informally on the topic as an introduction to the writing process and/or the new content and material.
- **Student Think-Pair-Share:** This teaching strategy engages students in discussion around the topic presented above. First, invite students to think about the topic on their own for a minute or two. Then, ask the students to share their individual thoughts in pairs. Finally, have each pair share their thoughts and/or ideas with the rest of the class.
- **Student Share Out:** Have students share their initial thoughts on the topic presented above aloud with the class.



Task 2: Vocabulary

For this activity students will use the Vocabulary Worksheet and the documentary transcript.

1. Hand out Vocabulary Worksheet and copies of Transcript (optional).
2. Select several words from the vocabulary list below based on the students' background knowledge.
3. Have students complete the first two columns prior to watching the documentary.
4. Watch "Gee Whiz: The Apples of Grady Auvil" (33 minutes).
5. Have students complete final two columns of worksheet
 - Students may work on this as they watch the video, as well as after reading the transcript.

Vocabulary List

TIER II*	TIER III*
Cantankerous	Horticulture
Pioneering	Clonal Propagation
Methodically	Scion
Reinventing	Growing Season
Forward-looking	Budwood
Subsistence	Controlled Atmosphere Storage (C.A.)
Tinkering	
Commission	Alar
Capabilities	High-Density
Efficient	Planting Systems
Prosperity	
Profit-sharing	
Desolate expanse	

*Note on CCSS Vocabulary Tiers:

Tier Two words (what the Standards refer to as general academic words) are far more likely to appear in written texts than in speech. They appear in all sorts of texts: informational texts (words such as relative, vary, formulate, specificity, and accumulate), technical texts (calibrate, itemize, periphery), and literary texts (misfortune, dignified, faltered, unabashedly). Tier Two words often represent subtle or precise ways to say relatively simple things—saunter instead of walk, for example. Because Tier Two words are found across many types of texts, they are highly generalizable.

Tier Three words (what the Standards refer to as domain-specific words) are specific to a domain or field of study (lava, carburetor, legislature, circumference, aorta) and key to understanding a new concept within a text. Because of their specificity and close ties to content knowledge, Tier Three words are far more common in informational texts than in literature. Recognized as new and "hard" words for most readers (particularly student readers), they are often explicitly defined by the author of a text, repeatedly used, and otherwise heavily scaffolded (e.g., made a part of a glossary).

-from Appendix A of the CCSS in ELA

Task 3: Critical Note-taking focused on Essential Questions

For this activity it is recommended that you, or your students, choose four or five of the Essential Questions to focus on from the list of possible questions below. The key element here is that students not only critically view the documentary, but begin to cite outside sources.

1. **Select yourself, or involve your students in selecting four or five of the Essential Questions listed below.**
2. **Hand out copies of the note-taking sheets with the chosen Essential Questions.**
3. **Explain that students will be learning about Grady Auvil, an innovator in the tree-fruit industry, and that information will be presented in the form of a documentary and online informative texts.**
4. **Divide students into four (or five) groups. Each group will focus and take notes on one Essential Question.**
5. **Explain procedure for two-column note-taking.**
 - The right side is where students will record notes, explanations, problems, and diagrams. The left side is where students will record questions that arise while reading or listening. The bottom of the page is for students to write a short summary of notes. This note-taking tool should be used when viewing the documentary and when reading any informational text.
6. **Watch “Gee Whiz: The Apples of Grady Auvil” (33 minutes).**
7. **After the documentary, have students meet with their group members.**
8. **Have students work in pairs to read three additional articles on the life of Grady Auvil and the complete transcript from the documentary.**
 - Students should continue to focus on their Essential Question and add to their note-taking sheets.
9. **Rejoin Essential Question groups to discuss and share information they obtained from the documentary and readings.**
 - Students should build on each other's ideas and express their own, using the note-taking sheets as a guide. Encourage your students to take additional notes as group members share what they have discovered.
10. **JIGSAW: Form new groups with one person representing each Essential Question. Students will “Jigsaw” and share the answers to their respective questions.**
 - “Jigsaw” is a group learning strategy in which individual students each read/study different aspects of a topic or text, thus becoming “experts” in their area of focus. They then come together as experts to share with the rest of the group the main ideas or claims from the focus of their Essential Question.



Essential Questions

Select 4-5 questions from this list to focus your student groups around:

- 1. Grady Auvil took risks following the Great Depression and World War II. What were the impacts of this approach on his business and on economics in the U.S.?**
- 2. In what ways did Grady Auvil display perseverance and persistence in his life and business?**
- 3. In what ways did Grady Auvil contribute to the tree-fruit industry and how do those contributions impact the tree-fruit industry today?**
- 4. How do government regulations positively and negatively impact entrepreneurs?**
- 5. Grady believed in sharing his information with others, when he could have kept his new discoveries a secret. What are the benefits as well as the dangers of handling business information this way?**
- 6. Grady didn't do well in school, yet he became one of the most knowledgeable fruit growers on the planet. Why was he able to do this?**
- 7. Former Auvil employee Mike Robinson says Grady "just turned his head loose." What does he mean by this and what impact did doing so have on Grady Auvil's life and career?**
- 8. Professor John Fellman says of Grady Auvil that, "He knew knowledge beget further knowledge." What does he mean by this and what did this belief motivate Grady Auvil to do?**
- 9. Grady Auvil had a specific philosophy in dealing with his employees. How would you describe this philosophy and what were the upsides and downsides of Grady's approach to his workers?**
- 10. Grady Auvil was fixated on constant improvement and efficiency. How did this manifest itself and what was the impact on his business?**
- 11. One of Grady Auvil's former employees admits that Grady was breaking the law by smuggling budwood into the country. What arguments can be made for or against Auvil's actions?**
- 12. Why do you think Grady Auvil gave away so much of his personal fortune to charity and the tree-fruit industry?**
- 13. FILMMAKER'S EXTRA CREDIT: What do you notice about the way the documentary interviews are shot and presented visually? What is effective and what is not about this approach?**

Task 4: Presentations

Encourage creativity. Presentations may be developed in a wide array of formats - PowerPoint, interviews, speeches, graphic organizers, posters, song.

1. Have Essential Question groups work together to create a presentation that answers their Essential Question.
2. Each group will share their completed presentation with the class.

**Task 5: Writing Extension**

The length of the final written response is not important here. Rather you should work to see that students are reading closely to determine what is explicitly stated in the text and video materials and are making logical inferences from it, citing specific textual and visual evidence in the writing that supports their conclusions.

1. **EXPLANATORY/INFORMATIVE:** Have students continue with further research independently and write an individual explanatory/informative paper. (See attached rubric.)

OR

2. **ARGUMENTATIVE:** Have students continue with further research independently and write an argumentative paper with the following two-part prompt:

“Grady Auvil ignored certain government regulations when he smuggled budwood samples into the United States to develop the Granny Smith and Fuji apples. What were the outcomes of his disregard for the law? In business, is breaking the law ever justifiable?”

Task 6: Compare and Contrast

This task involves watching a second, related documentary entitled “**Tom Mathison: The Growing Season**” which is also available through www.howellatthemoon.com and has its own CCSS-aligned Teacher’s Guide. Here are some suggested activities for comparing and contrasting the lives of Grady Auvil and Tom Mathison.

1. Watch both “Gee Whiz: The Apples of Grady Auvil” (33 min.) and “Tom Mathison: The Growing Season” (34 min.).
2. Have students create a Venn Diagram.
3. Have students write a Compare and Contrast paper.
4. Create two interview panels, one with experts on Grady Auvil and the other with experts on Tom Mathison. Have the students create a series of questions and then pose them to each of the panels.

Extension Tasks

A few more creative activities your students might enjoy:

1. **MOCK SMUGGLING TRIAL:** Set up a role-playing exercise in which students take on the roles of judge, jury, prosecuting attorney, defense attorney, witnesses and Grady Auvil himself as he stands trial on charges of violating FDA restrictions and international trade agreements by smuggling apple tree budwood into the United States.

OR

2. **ELEMENTARY PICTURE BOOK PROJECT:** Student groups will create a picture book on the life of Grady Auvil that can be shared with elementary school students.



Essential Question: _____

QUESTIONS	NOTES, EXPLANATIONS, PROBLEMS, DIAGRAMS, ETC.

VOCABULARY WORKSHEET

Word/ Part of Speech	Predicted meaning of word	Inferred meaning after encountering word in context	Evidence from text and/or documentary	Precise meaning from reference materials/ synonyms
EXAMPLE: Pioneering (verb)	Exploring	Result of a cause	“Grady was always pioneering something.” And, “it wasn’t always his idea, but he made it work.”	Experiment with or develop something new. Synonyms: founding, forging, initiating, establishing

TASK AND STANDARD ALIGNMENT CHART

TASK	COMMON CORE STATE STANDARDS STRANDS					
	RI	W	SL	L	RH	WHST
TASK 1	N/A	W.9-10.10 W.11-12.10	SL.9-10.1, SL.9-10.1b SL.9-10.1c, SL.9-10.1d, SL.11-12.1, SL.11-12.1b SL.11-12.1c, SL.11-12.1d	N/A	N/A	WHST.9-10.10 WHST.11-12.10
TASK 2	N/A	N/A	N/A	L.9-10.4, L.9-10.4a L.9-10.4c, L.9-10.4d L.11-12.4, L.11-12.4a L.11-12.4c, L.11-12.4d	RH.9-10.4 RH.11-12.4	N/A
TASK 3	RI.9-10.7 RI.11-12.7	W.9-10.10 W.11-12.10	SL.9-10.1, SL.9-10.1b SL.9-10.1c, SL.9-10.1d, SL.9-10.2, SL.9-10.4, SL.11-12.1, SL.11-12.1b SL.11-12.1c, SL.11-12.1d SL.11-12.2, SL.11-12.4	L.9-10.1 L.9-10.1b L.11-12.1	RH.9-10.1 RH.9-10.2 RH.9-10.9 RH.11-12.1 RH.11-12.2 RH.11-12.9	WHST.9-10.10 WHST.11-12.10
TASK 4	N/A	N/A	SL.9-10.1, SL.9-10.1a SL.9-10.1b, SL.9-10.1c SL.9-10.1c, SL.9-10.2 SL.9-10.4, SL.11-12.1 SL.11-12.1a, SL.11-12.1b SL.11-12.1c, SL.11-12.1d SL.11-12.2, SL.11-12.4	L.9-10.1 L.9-10.1b L.11-12.1	N/A	N/A
TASK 5	N/A	W.9-10.1, W.9-10.1a-e W.9-10.2, W.9-10.2a-f W.9-10.7, W.9-10.10 W.11-12.1a-e, W.11-12.2 W.11-12.2a-f, W.11-12.7 W.11-12.10	N/A	L.9-10.1, L.9-10.1a L.9-10.1b, L.9-10.2 L.9-10.2, L.9-10.2c L.11-12.1, L.11-12.1a-b L.11-12.2, L.11-12.2a-c	N/A	WHST.9-10.1, WHST.9-10.1a-e WHST.9-10.2a-f, WHST.9-10.7 WHST.9-10.8, WHST.9-10.8 WHST.9-10.9, WHST.9-10.10 WHST.11-12.1, WHST.11-12.1a-e WHST.11-12.2, WHST.11-12.2a-e WHST.11-12.7, WHST.11-12.8 WHST.11-12.9, WHST.11-12.10
TASK 6	RI.9-10.7 RI.11-12.7	N/A	N/A	N/A	RH.9-10.2 RH.9-10.9 RH.11-12.2 RH.11-12.9	N/A

STRANDS KEY: RI = Reading Standards for Informational Text; W = Writing Standards; SL = Speaking and Listening Standards; L = Language Standards; RH = Reading Standards for Literacy in History/Social Studies; WHST = Writing Standards for Literacy in History/Social Studies, Science and Technical Subjects.

Common Core State Standards

The standards listed below will be met if all of the Tasks (1-6) are taught within this Teacher's Guide. For a breakdown of the specific standards aligned to each Task, see the Task and Standards Alignment Chart.

Alignment for 9-10 Grade Band

Reading Standards for Informational Text

RI.9-10.7 Analyze various accounts of a subject told in different mediums (e.g., a person's life story in both print and multimedia), determining which details are emphasized in each account.

Writing Standards

W.9-10.1 Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

- a.** Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence.
- b.** Develop claim(s) and counterclaims fairly, supplying evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level and concerns.
- c.** Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.
- d.** Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
- e.** Provide a concluding statement or section that follows from and supports the argument presented.

W.9-10.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

- a.** Introduce a topic; organize complex ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
- b.** Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

- c.** Use appropriate and varied transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.
- d.** Use precise language and domain-specific vocabulary to manage the complexity of the topic.
- e.** Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
- f.** Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).

W.9-10.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

W.9-10.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

Speaking and Listening Standards

SL.9-10.1 Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

- a.** Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas.
- b.** Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed.
- c.** Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions.
- d.** Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented.

SL.9-10.2 Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.

SL.9-10.4 Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

Language Standards

L.9-10.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

- a. Use parallel structure.
- b. Use various types of phrases (noun, verb, adjectival, adverbial, participial, prepositional, absolute) and clauses (independent, dependent; noun, relative, adverbial) to convey specific meanings and add variety and interest to writing or presentations.

L.9-10.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

- a. Use a semicolon (and perhaps a conjunctive adverb) to link two or more closely related independent clauses.
- b. Use a colon to introduce a list or quotation.
- c. Spell correctly.

L.9-10.4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 9–10 reading and content, choosing flexibly from a range of strategies.

- a. Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.
- b. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, or its etymology.
- c. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).

Reading Standards for Literacy in History/Social Studies

RH.9-10.1 Cite specific textual evidence to support analysis of primary and secondary sources, attending to such features as the date and origin of the information.

RH.9-10.2: Determine the central ideas or information of a primary or secondary source; provide an accurate summary of how key events or ideas develop over the course of the text.

RH.9-10.4 Determine the meaning of words and phrases as they are used in a text, including vocabulary describing political, social, or economic aspects of history/social studies.

RH.9-10.9 Compare and contrast treatments of the same topic in several primary and secondary sources.

Writing Standards for Literacy in History/Social Studies, Science and Technical Subjects

WHST.9-10.1 Write arguments focused on discipline-specific content.

- a.** Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.
- b.** Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.
- c.** Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.
- d.** Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
- e.** Provide a concluding statement or section that follows from or supports the argument presented.

WHST.9-10.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

- a.** Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
- b.** Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.
- c.** Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.
- d.** Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers.
- e.** Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
- f.** Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).

WHST.9-10.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

WHST.9-10.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.

WHST.9-10.9 Draw evidence from informational texts to support analysis, reflection, and research.

WHST.9-10.10 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Alignment for I I-CCR Grade Band

Reading Standards for Informational Text

RI.11-12.7 Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.

Writing Standards

W.11-12.1 Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

- a.** Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences claim(s), counterclaims, reasons, and evidence.
- b.** Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level, concerns, values, and possible biases.
- c.** Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.
- d.** Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
- e.** Provide a concluding statement or section that follows from and supports the argument presented.

W.11-12.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

- a.** Introduce a topic; organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

- b.** Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.
- c.** Use appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.
- d.** Use precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic.
- e.** Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
- f.** Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).

W.11-12.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

W.11-12.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

Speaking and Listening Standards

SL.11-12.1 Initiate and participate effectively in a range of collaborative discussions (one on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

- a.** Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas.
- b.** Work with peers to promote civil, democratic discussions and decision making, set clear goals and deadlines, and establish individual roles as needed.
- c.** Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives.
- d.** Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task.

SL.11-12.2 Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.

SL.11-12.4 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.

Language Standards

L.11-12.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

- a.** Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contested.
- b.** Resolve issues of complex or contested usage, consulting references (e.g., Merriam-Webster's Dictionary of English Usage, Garner's Modern American Usage) as needed.

L.11-12.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

- a.** Observe hyphenation conventions.
- b.** Spell correctly.

L.11-12.4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 11–12 reading and content, choosing flexibly from a range of strategies.

- a.** Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.
- c.** Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its standard usage.
- d.** Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).

Reading Standards for Literacy in History/Social Studies

RH.11-12.1 Cite specific textual evidence to support analysis of primary and secondary sources, connecting insights gained from specific details to an understanding of the text as a whole.

RH.11-12.2 Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas.

RH.11-12.4 Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text (e.g., how Madison defines faction in Federalist No. 10).

RH.11-12.9 Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.

Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects

WHST.11-12.1 Write arguments focused on discipline-specific content.

- a.** Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.
- b.** Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases.
- c.** Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.
- d.** Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.
- e.** Provide a concluding statement or section that follows from or supports the argument presented.

WHST.11-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

- a.** Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.
- b.** Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.
- c.** Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.
- d.** Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.
- e.** Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic).

WHST.11-12.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and over-reliance on any one source and following a standard format for citation.

WHST.11-12.9 Draw evidence from informational texts to support analysis, reflection, and research.

WHST.11-12.10 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

CCSS Rubric for Informative/Explanatory Writing - Grades 9-10

Score	Statement of purpose/ Focus	Organization	Elaboration of evidence	Language and Vocabulary
4	<p>The response is fully sustained and consistently and purposefully focused:</p> <ul style="list-style-type: none"> controlling idea or main idea of a topic is focused, clearly stated, and strongly maintained controlling idea or main idea of a topic is introduced and communicated clearly within the context 	<p>The response has a clear and effective organizational structure creating unity and completeness:</p> <ul style="list-style-type: none"> use of a variety of transitional strategies logical progression of ideas from beginning to end effective introduction and conclusion for audience and purpose strong connections among ideas, with some syntactic variety 	<p>The response provides thorough and convincing support/evidence for the controlling idea or main idea that includes the effective use of sources, facts, and details. The response achieves substantial depth that is specific and relevant:</p> <ul style="list-style-type: none"> use of evidence from sources is smoothly integrated, comprehensive, and concrete effective use of a variety of elaborative techniques 	<p>The response clearly and effectively expresses ideas, using precise language:</p> <ul style="list-style-type: none"> use of academic and domain-specific vocabulary is clearly appropriate for the audience and purpose
3	<p>The response is adequately sustained and generally focused:</p> <ul style="list-style-type: none"> focus is clear and for the most part maintained, though some loosely related material may be present some context for the controlling idea or main idea of the topic is adequate 	<p>The response has an evident organizational structure and a sense of completeness, though there may be minor flaws and some ideas may be loosely connected:</p> <ul style="list-style-type: none"> adequate use of transitional strategies with some variety adequate progression of ideas from beginning to end adequate introduction and conclusion adequate, if slightly inconsistent, connection among ideas 	<p>The response provides adequate support/evidence for the controlling idea or main idea that includes the use of sources, facts, and details:</p> <ul style="list-style-type: none"> some evidence from sources is integrated, though citations may be general or imprecise adequate use of some elaborative techniques 	<p>The response adequately expresses ideas, employing a mix of precise with more general language</p> <ul style="list-style-type: none"> use of domain-specific vocabulary is generally appropriate for the audience and purpose

Score	Statement of purpose/ Focus	Organization	Elaboration of evidence	Language and Vocabulary
2	<p>The response is somewhat sustained and may have a minor drift in focus:</p> <ul style="list-style-type: none"> • may be clearly focused on the controlling or main idea, but is insufficiently sustained • controlling idea or main idea may be unclear and somewhat unfocused 	<p>The response has an inconsistent organizational structure, and flaws are evident:</p> <ul style="list-style-type: none"> • inconsistent use of transitional strategies with little variety • uneven progression of ideas from beginning to end • conclusion and introduction, if present, are weak • weak connection among ideas 	<p>The response provides uneven, cursory support/evidence for the controlling idea or main idea that includes partial or uneven use of sources, facts, and details:</p> <ul style="list-style-type: none"> • evidence from sources is weakly integrated, and citations, if present, are uneven • weak or uneven use of elaborative techniques 	<p>The response expresses ideas unevenly, using simplistic language:</p> <ul style="list-style-type: none"> • use of domain-specific vocabulary that may at times be inappropriate for the audience and purpose
1	<p>The response may be related to the topic but may provide little or no focus:</p> <ul style="list-style-type: none"> • may be very brief • may have a major drift • focus may be confusing or ambiguous 	<p>The response has little or no discernible organizational structure:</p> <ul style="list-style-type: none"> • few or no transitional strategies are evident • frequent extraneous ideas may intrude 	<p>The response provides minimal support/evidence for the controlling idea or main idea that includes little or no use of sources, facts, and details:</p> <ul style="list-style-type: none"> • use of evidence from the source material is minimal, absent, in error, or irrelevant 	<p>The response expression of ideas is vague, lacks clarity, or is confusing:</p> <ul style="list-style-type: none"> • uses limited language or domain-specific vocabulary • may have little sense of audience and purpose

Rubric adapted from Smarter Balanced Assessment Coalition website:

<http://www.smarterbalanced.org/wordpress/wp-content/uploads/2012/05/TaskItemSpecifications/EnglishLanguageArtsLiteracy/ELARubrics.pdf>

CCSS Rubric for Argument Writing - Grades 9-10 and 11-12

Score	Statement of purpose/Focus	Organization	Elaboration of evidence	Language and Vocabulary	Conventions
4	<p>The response is fully sustained and consistently and purposefully focused:</p> <ul style="list-style-type: none"> claim is clearly stated, focused and strongly maintained alternate or opposing claims are clearly addressed* claim is introduced and communicated clearly within the context 	<p>The response has a clear and effective organizational structure creating unity and completeness:</p> <ul style="list-style-type: none"> effective, consistent use of a variety of transitional strategies logical progression of ideas from beginning to end effective introduction and conclusion for audience and purpose strong connections among ideas, with some syntactic variety 	<p>The response provides thorough and convincing support/evidence for the writer's claim that includes the effective use of sources, facts, and details. The response achieves substantial depth that is specific and relevant:</p> <ul style="list-style-type: none"> use of evidence from sources is smoothly integrated, comprehensive, relevant, and concrete effective use of a variety of elaborative techniques 	<p>The response clearly and effectively expresses ideas, using precise language:</p> <ul style="list-style-type: none"> use of academic and domain-specific vocabulary is clearly appropriate for the audience and purpose 	<p>The response demonstrates a strong command of conventions:</p> <ul style="list-style-type: none"> few, if any, errors are present in usage and sentence formation effective and consistent use of punctuation, capitalization, and spelling
3	<p>The response is adequately sustained and generally focused:</p> <ul style="list-style-type: none"> claim is clear and for the most part maintained, though some loosely related material may be present context provided for the claim is adequate 	<p>The response has an evident organizational structure and a sense of completeness, though there may be minor flaws and some ideas may be loosely connected:</p> <ul style="list-style-type: none"> adequate use of transitional strategies with some variety adequate progression of ideas from beginning to end adequate introduction and conclusion adequate, if slightly inconsistent, connection among ideas 	<p>The response provides adequate support/evidence for writer's claim that includes the use of sources, facts, and details. The response achieves some depth and specificity but is predominantly general:</p> <ul style="list-style-type: none"> some evidence from sources is integrated, though citations may be general or imprecise adequate use of some elaborative techniques 	<p>The response adequately expresses ideas, employing a mix of precise with more general language</p> <ul style="list-style-type: none"> use of domain-specific vocabulary is generally appropriate for the audience and purpose 	<p>The response demonstrates an adequate command of conventions:</p> <ul style="list-style-type: none"> some errors in usage and sentence formation may be present, but no systematic pattern of errors is displayed adequate use of punctuation, capitalization, and spelling

Score	Statement of purpose/Focus	Organization	Elaboration of evidence	Language and Vocabulary	Conventions
2	<p>The response is somewhat sustained and may have a minor drift in focus:</p> <ul style="list-style-type: none"> • may be clearly focused on the claim but is insufficiently sustained • claim on the issue may be somewhat unclear and unfocused 	<p>The response has an inconsistent organizational structure, and flaws are evident:</p> <ul style="list-style-type: none"> • inconsistent use of basic transitional strategies with little variety • uneven progression of ideas from beginning to end • conclusion and introduction, if present, are weak • weak connection among ideas 	<p>The response provides uneven, cursory support/evidence for the writer's claim that includes partial or uneven use of sources, facts, and details, and achieves little depth:</p> <ul style="list-style-type: none"> • evidence from sources is weakly integrated, and citations, if present, are uneven • weak or uneven use of elaborative techniques 	<p>The response expresses ideas unevenly, using simplistic language:</p> <ul style="list-style-type: none"> • use of domain-specific vocabulary may at times be inappropriate for the audience and purpose 	<p>The response demonstrates a partial command of conventions:</p> <ul style="list-style-type: none"> • frequent errors in usage may obscure meaning • inconsistent use of punctuation, capitalization, and spelling
1	<p>The response may be related to the purpose but may offer little relevant detail:</p> <ul style="list-style-type: none"> • may be very brief • may have a major drift • claim may be confusing or ambiguous 	<p>The response has little or no discernible organizational structure:</p> <ul style="list-style-type: none"> • few or no transitional strategies are evident • frequent extraneous ideas may intrude 	<p>The response provides minimal support/evidence for the writer's claim that includes little or no use of sources, facts, and details:</p> <ul style="list-style-type: none"> • use of evidence from sources is minimal, absent, in error, or irrelevant 	<p>The response expression of ideas is vague, lacks clarity, or is confusing:</p> <ul style="list-style-type: none"> • uses limited language or domain-specific vocabulary • may have little sense of audience and purpose 	<p>The response demonstrates a lack of command of conventions:</p> <ul style="list-style-type: none"> • errors are frequent and severe and meaning is often obscure

Rubric adapted from Smarter Balanced Assessment Coalition website:

<http://www.smarterbalanced.org/wordpress/wp-content/uploads/2012/05/TaskItemSpecifications/EnglishLanguageArtsLiteracy/ELARubrics.pdf>



Transcript

Narrator: A lot of young men set out to see the world, I was no different.

It was 1967, I was the son of an apple farmer from New Zealand, and I had just finished up my degree in horticulture. Anxious to jumpstart my career I boarded a plane for America bound for Washington State, the largest apple growing region in the world. It was there I met a man who grew apples in a way that would change the world. And the world was already starting to take notice. His name was Grady Auvil.

Some days the Auvil ranch seemed more like a tourist destination than a farm. By the time I arrived, farmers from every corner of the globe had begun to train their attention on this tiny hamlet on the banks of the Columbia River.

Don Heinicke: We all look over the fence to see what our neighbors are doing. Grady's fence extended very far. People were watching from all over the world.

Narrator: When this small town farmer had something to say, the world appeared to be listening. I had the good fortune to hear much of it first hand. This is the story of Grady Auvil.

Grady Todd Auvil: He was 19 years old and he just said, "I'm going to be an apple farmer and I'm gonna be the best."

Robert Brody: This was a giant. This was a giant in the industry.

Jim McFerson: You did it his way and he was cantankerous He was a great guy but he was a real *[bleeped out]*.

Tom Mathison: Grady was always pioneering something,

Bert Navone: It wasn't always his idea, but he made it work.

John McCliskie: Other people said, "No, it couldn't work and it won't work." He proved them wrong almost 100 percent of the time.

Don Heinicke: He just planted a tree and made everything in it work.

Jim McFerson: It's like saying how good was Bach or Beethoven? I think he's that good.

Mike Walker: There are a lot of growers that are doing things today that they wouldn't be doing if it wasn't for Grady.

Narrator: Grady Auvil spent most of his life right here, along the banks of the Columbia River in Washington state, tending his garden and his fruit trees, and methodically reinventing the American orchard.

Grady Auvil: Been on a fruit ranch all my life after I was two years old. It'd be 86 years now.

Grady Auvil: The whole family got here in 1908, well they were just beginning to plant the Wenatchee Valley Area. ... I was a lousy student.

Geraldine Warner: One thing that's interesting is that he went to Washington State University and he didn't graduate. He was so forward-looking that he felt that his teachers were behind the times and he was not going to waste time listening to them.

Grady Auvil: I just went home and went to work.

Narrator: In 1928, Grady with his father and two brothers scraped together enough money for a patch of land near Orondo, Washington. They set to work clearing and planting 25 acres of fruit trees and the Auvil Fruit Company was born. Unfortunately, it was born right into the Great Depression.

John Auvil: I mean things were bad. I mean really really bad.

Grady Todd Auvil: I recall him telling a story about going over to Seattle and selling apples on the sidewalk.

Narrator: Grady and his brothers were barely eking out a subsistence wage. But Grady found riches of another sort.

Grady Auvil: She was a school teacher when I met her. We seemed to suit each other.

Lillie Auvil: Well, we came back from our honeymoon, there I was. I had to cook dinner for four men. And I didn't know what to do really.

Narrator: Lillie cooked and kept up after Grady and his brothers and, to keep the farm afloat, she gave them the \$2,000 she had saved from teaching. It was enough. The farm and the family were on their way.

Paul King: She was the glue that held everything together, you know. And Grady coulda never done what he did if it hadn't been for somebody like Lillie.

Grady Todd Auvil: His most favorite part about what he did was he loved to get his hands on new things and ... tinker.

Narrator: Grady had “green fingers,” as we say back home. The trees did things for him they didn't seem to do for anybody else.

Mike Robinson: That guy was a dang genius. You know, he could drive through and just smell a problem. He didn't have to much see it. He could drive down the road and he'd stop at a point, get out and walk down a row and everybody'd troop after him down the the row and Grady would find whatever it was that had disturbed him from the road. He was looking for solutions to problems and, he saw a problem, he didn't care what the coffee shop thought, he didn't care what they said at the Hort Convention, he just turned his head loose, looked at the logical solution, and went that way.

John Auvil: We always had a block of fruit where we were trying new stuff.

Bert Navone: He would have funny looking trees and funny looking fruit. He had apples that grew on a vine. And those apples were that big. I'm not lying to you, it was big as a cantaloupe. He was not a slave to any trees, he was not going to allow that. They were going to be working for him and that's the way it went.

Narrator: Apple trees, it turns out, are not the most cooperative of plants. Every seed wants to do its own thing.

Onscreen Title: The Unruly Apple - In Technicolor

Old film narrator: Just like you and me, every seed in every apple is a mixture of its mother and its father. Each seed shares certain traits with its parents. But every seed will grow up to be a unique individual. To rein in the unruly apple, for thousands of years, farmers have been using a process known as Clonal Propagation. Buds are taken from from, say, a Red Delicious tree and then grafted onto a rootstock. A scion results will be an identical copy of that original Red Delicious tree. Yes, every apple orchard you have ever seen is grown in this way.

Narrator: Grady began to hit a stride as a farmer in the Forties and Fifties with some early success in peaches and nectarines.

Tom Mathison: I can remember how they'd take samples around. "Tom try these. Don't you think that's the most wonderful thing?" And his enthusiasm and excitement and zest for life was just contagious.

Letter narrator: “Dear Mr. Auvil. As chairman of the judges, it is my pleasure to announce that you were chosen as Grower of the year for 1954.”

Grady Auvil: As you know, the human mind is a wonderful thing. It begins to work the minute you're born and never stops until you have to speak in public.

Narrator: But it was the apple trees that truly captivated Grady. As Washington's apple industry continued to grow, most apple farmers were focused largely on the two most popular

varieties - Red Delicious and Golden Delicious. Grady had begun tinkering with something entirely different.

John Auvil: He knew that there had to be another apple. And he felt it would be a green apple.

Narrator: The apple that had caught Grady's eye was a tart green apple that was already popular back home in New Zealand. But it had been dismissed by America's farmers - all except one that is.

Larry Schrader: The industry laughed at him at the time. They said, "Grady, nobody will buy a green apple."

Danny Gebbers: They said you couldn't raise Granny on account of there wasn't a long enough growing season here.

Narrator: Grady Auvil ignored them all and continued with his experiments.

Mike Robinson: He'd get stuff in, put in the orchard, and watch it for 5 years or 10 years. How does it look? Did it grow? What did he think of it? Taste it, eat it, bring it down. He always had a fruit. He was always cutting it for ya, always having ya eat some.

Narrator: Grady was not a traveling man. But in this case, he decided to make an exception. He hopped on a plane and came to visit me in New Zealand to see the Granny Smith for himself. Over a period of eight days he must have visited every single tree in the country, pounding us with questions. He came away more certain than ever that he was on the right track. When he boarded the plane for home, the Granny Smith was coming to America.

Narrator: The first thing Grady needed in order to start testing the Granny were bud sticks from existing trees that he could graft into his own orchard in Orondo. To facilitate this, Grady developed a global network of farmers willing to share their budwood with each other.

JoAnn Walker: I said, "Grady how do you get these? I thought you had to go through the FDA to get them." And he said, "I got a friend Pierre in France that just ships me the wood." And it would come in a Ziplock bag all sealed up, and he'd come home so excited. "Look what came today!"

Don Heinicke: You can roll 'em up in magazines and ship 'em around the world, and roll 'em up in newspapers and shipping 'em around. He was a great pirate of budwood.

Jim Fleming: We cut down some of the Winesap trees that were just outside the warehouse and we put as many sticks in it as we could. It looked like a porcupine when we got done with it. And they grew like mad and so every year those were harvested for scion wood and then budded into the nursery. Next thing you know, you've got a lot of trees.

Tom Mathison: Truth of the matter is he struggled for a while.

Paul King: I remember we used to take boxes of Grannies to the coast and try to sell 'em. But they just hadn't hit the states. Then all of a sudden, Safeway started stocking 'em, and everybody in the country wanted 'em.

Rick Steigmeyer: He poured a lot of his resources into the Granny Smith, developing it. Took him ten years to do so, but he made a fortune.

Jim McFerson: Another great idea he had was the Washington Tree Fruit Research Commission.

Narrator: Grady Auvil believed that knowledge and, more specifically, science held the keys to the future of fruit. And in 1967, he set out to convince his fellow growers to pitch in for industry research.

Letter narrator: Gentlemen, there are more things to discover than have ever been found.

Narrator: In its first year, the new commission was able to put \$70,000 into orchard research. A good start, but nothing compared to what it would one day generate.

Jim McFerson: Currently our commission receives around three and a half million, four million dollars a years to invest in research on behalf of our industry.

John Fellman: He knew that knowledge begat further knowledge and, as a scientist, to me, somebody with that kind of vision, he was growing fruit up in Orondo, we owe him all a great deal.

Narrator: But perhaps the single largest scientific breakthrough to which Grady contributed, was the advent of Controlled Atmosphere Storage, or CA.

Onscreen Title: The Magic Refrigerator - In Technicolor

Old film narrator: As an apple ripens, it breathes in the same way a person does. Taking in oxygen and releasing carbon dioxide. But in the 1920's, a pair of English scientists discovered they could slow down the breathing of an apple by putting it in a chamber and changing the ratio of oxygen to carbon dioxide. Slower breathing meant slower ripening and controlled atmosphere storage was born, allowing the general public to enjoy apples year-round, not just at harvest time.

Narrator: Grady saw incredible promise in CA storage. But it still wasn't being widely used by the fruit industry. In fact, research about it at the nearby Washington State University had fizzled some 20 years earlier.

Max Patterson: Grady called one Friday night and he said, "Well, I'd kinda like to see what you're doing. How would it be if I came over tomorrow morning?" I said, "Sure, come on over." We toured the facilities that we have and ended up where the CA rooms were to be and I said, "Well, it's too bad these were never finished here because of lack of money." So he asked me,

“Well, what would it take?” And I said, “Well, we could have a world class facility here for 100,000 dollars.” He said, “Well, I think I could handle that.” And he did. Whoopieee!

John Fellman: Well, he pretty much made sure that we had the capabilities to do any and all type of apple storage work there ever needed to be done.

Bert Navone: At WSU, they got to the point of where they kept a Granny Smith apple for three years and it was still edible. And that's the things that he used to get excited about.

Narrator: With his green apple succeeding beyond his wildest dreams, Grady next turned his attention to a yellow cherry.

Bob Parlette: What's interesting about that is the cherry had been around years, but people stayed away from it because if you touched it or bruised it in any way, a bruise would show up on the skin in two or three days and it would look unattractive and so people thought, “Well, we don't want to fuss with this.”

Rick Steigmeyer: At that time everything was a red, sweet, firm, cherry. Of course you realize that is was not a simple cherry to grow. So he developed a whole series of techniques and growing styles around the Rainier cherry.

John Fellman: He would bring them in these five-gallon buckets that had holes drilled, and so you could immerse them in hydro-cooling water onto this packing line flume that would gently elevate them out of the water for everybody to sort. And this was after they stayed overnight in the refrigerator to see where the bruised ones would develop bruises. That took a lot of extra time and effort but the rewards were pretty fabulous.

Narrator: In Japan, where the Rainier is served as delicacy, a two-pound box began to sell for as much as \$70, or 85 cents per cherry.

Tom Mathison: Of course, now Rainier cherries are a mainline item, succeeding in the market beyond anybody's expectations.

Mike Robinson: Grady had a lot of ideas. The ones you heard about were the good ones. He had a lot of bad ideas, too, and that's the nature of having ideas right.

John Auvil: Tidemans. A Red that was early, and that's what he was trying to do is get an apple that was early and red. But it'd get soft quick. And we dumped thousands of boxes. Thousands. Couldn't get out of em, quick enough. Mistake!

Jack Snyder: Yeah that came out with the Granny spur- called it Granspur. But as it developed we found out and could see that the fruit was not the same quality as a Granny Smith. So the Granspur didn't end up being a success.

Onscreen headlines: “Out on a Limb”

Gene Sharratt: He was willing to take risks and fail and pick himself up and go forward. And I think that's a great attribute that he had.

Onscreen headlines: "Grady Auvil: Fruit innovator extraordinaire"; "Auvil predicts better-tasting fruit"

Don Heinicke: I don't think I could have worked for Grady. I think he would be a very tough taskmaster.

Sandy Fleming: I don't even remember the story or why it was. But he was doing something and I says, "You're nothing but a dirty dictator!" He turned around, looked at me and laughed. "And what's the matter with that?"

Paul King: Back in those days, we was thinnin' or pickin' something seven days a week. You gotta be pretty committed to do that. Later in years, you know, he told me, "I just didn't have time to always stop and explain everything to everybody. I wanted everybody to follow my orders." That's about the way it was.

Mike Robinson: There was a morning meeting that was, you know, just drinking coffee but if you weren't there you got crucified, you know. And so regularly he'd ask to see your pocketknife and if it wasn't sharp as a razor it was kinda like you weren't a man. And the point was that you needed to keep your tools sharp and ready to work.

Narrator: Grady was quick to run off anybody he thought was a slacker. But if you were on his A-team, you were well taken care of.

John Auvil: If you worked hard, you never had a problem with my father.

Don Heinicke: I always remembered that he was probably one of the first people that provided health insurance for his employees.

John Auvil: We bought braces for hundreds of kids that never would have had braces. Then there's the profit sharing. If the company shows a profit, everybody gets a bonus. Everybody.

Paul King: He wasn't a religious man, but he believed in casting his bread on the water. He said it'll come back. And I think it always did to him.

Onscreen text: "It is not necessary for business to abuse people to succeed." - from the journal of Grady Auvil

Grady Auvil: In the regard of handling people, anyone that shows a desire to progress and develop, you give them an opportunity.

Narrator: But just because Grady prized his employees, didn't mean he couldn't still have a little fun with them.

Todd Drescher: He'd call you up at two o'clock in the morning to run frost water and he'd speak just gibberish.

Grady Todd Auvil: Well you know, he'd answer the phone, hello? "ALSKGALFKJGgadlksblaa!" I mean that's, that's how he would call.

Tammy Sully: He loved to scare people.

Sandy Fleming: Oh, come up behind you when you're concentrating and clap right in your ear, when you didn't know he was there.

John Auvil: When I was a kid there was a certain way we had to tie our shoes. Taught us how to hold the rope so we could go like that up our shoe and one knot and they were tied. The way we put on clothes, the way we did everything, you know, there was always an efficient way to do it.

Geraldine Warner: He used to take the doors off his cars because he didn't want to waste time opening and closing the door, he wanted to be able to jump in and jump out.

Narrator: Grady Auvil's fixation on constant improvement didn't just challenge his employees, it challenged the entire apple industry.

Bob Parlette: In the early 90's I read the quote in the paper.

Onscreen headlines: "A Tart Controversy Grips the Apple World"; "Glory of the Red Delicious is fading, grower says"

Grady Auvil: The Red Delicious as such is dead. Probably be 20 years before they bury it.

Geraldine Warner: That was a bold prediction at the time because it was more than 70 percent of the Washington apple crop.

Jim McFerson: He was considered insane and probably should have been. What he was doing was not just running against the grain, it was screaming against the grain.

Bert Navone: We've gotta do something about these apples because, he says, the box tastes better than the apple.

Onscreen headlines: "The Washington Red Potato"; "The Washington Red Not-So-Delicious"

John Auvil: Trouble was they found ways to make it more red. Nobody bothered to make it taste good at the same time. Basically what he's trying to tell 'em is you're beating a dead horse here and eventually it's gonna gitcha. And sure enough, it did.

News report (Ed Bradley): The most potent cancer causing agent in our food supply is a substance sprayed on apples to keep them on the trees longer and make them look better. That's the conclusion...

Bob Parlette: They were attacking Washington apples and Grady was extremely upset.

Bob Brody: The impact was horrendous. It was hundreds of millions of dollars that were lost by growers.

Grady Auvil: We don't understand a bad scientist from a good scientist, and there's a lot of people out there with Ph.D.'s that are stupid. Plain stupid.

Bob Brody: About three months later, I get a call from Grady. He says, "I hear you're going to sue CBS for the Alar thing. I wanna join your group." "Well. why Grady?" "Because what they did was wrong, dammit!" That's how Grady got involved.

Rick Steigmeyer: He contributed I think 100,000 dollars, early on, when there was no chance of him ever recovering that.

Onscreen headlines: "Apple Farmers' Suit Against CBS Is Dismissed"; "Supreme Court declines appeal"; "Reporters need not be scientists, a judge rules after the Alar scare."

Narrator: The growers fought CBS but lost their day in court. But the same farmer who wouldn't hesitate to challenge his industry had shown he stood just a ready to defend it.

News Reporter: Three years after that report, the scientific consensus is that Alar never posed a risk of cancer to adults or children.

Laura Navone: I remember he said, "Let's go. Let's go for a ride, Red." He pulled up to this gate, and he opened the gate and he said, "Honey, this is ours as far as you can see."

Mike Robinson: The Vantage ranch was probably one of the bigger gambles that Grady Auvil ever took.

Peter Spadoni: Ultimately, it may have turned out to be one of the best things that ever happened to the family and to the organization.

John Auvil: All that we had learned about Granny Smith and everything that he worked on all of his life. we just dumped it right there. That's been our crowning achievement.

Narrator: Grady Auvil and his company took that desolate expanse alongside the Columbia river at Vantage and began filling it with some of the most advanced, high-density planting systems ever attempted.

Onscreen title: "The Modern High Density Apple Orchard - In Technicolor"

Old film narrator: Early apple farmers often planted as few as 27 trees to the acre, but modern high density orchards have taken that number into the thousands. The wide rows of old have given way to elaborate trellis systems designed to make sure that each young apple receives the proper mix of sun and shade and new dwarfing trees are much easier to pick and much faster to grow.

Mike Robinson: Grady was after density only as it related to rapid production. It was, "How could I grow the most apples the fastest?"

Rick Steigmeyer: That had a profound effect on the whole industry. Almost everyone uses some kind of trellis system or higher density planting today.

Jim McFerson: He wasn't satisfied with the way things were and he always had a better idea and he'd be happy to tell ya about it, too, ya know.

Narrator: Auvil Fruit Company was now a large and profitable concern. Grady Auvil - a millionaire farmer who could have easily settled into a comfortable retirement. Instead, Grady Auvil was just getting near somewhere near top gear.

Bert Navone: I'll never know what it was. There was something about that apple - he was going out after 'em.

Rick Steigmeyer: The Fuji, I mean, it was called the Green Dragon. They couldn't get any color out of it at all. It was just ugly.

Larry Schrader: Nobody had had much experience with it and so, you know, he set out on mission I think to learn how to grow it.

Onscreen headline: "Auvil tries Fuji systems"

Grady Todd Auvil: I remember him showing me some Fuji budwood that he had smuggled in through Canada.

Bert Navone: You know, it's lucky that I got through with that because we were breaking the law there.

John Auvil: We had probably 40 or 50 different strains of Fujis at one time.

Jim Fleming: Just stick 'em in, try 'em, see if they work in your location. If they don't, cut 'em down and throw 'em away.

John Auvil: And we finally picked ones that we thought had good characteristics and - pyoo! - away we went.

Grady Auvil: You know, I've worked on Fuji for about, must be about 50 years now. Here's an apple, the first apple I've ever known and as far as I know the only one in the world that if you

do your job right, it would guarantee delivery to the consumer the same quality you put in the box.

Mike Robinson: There's two ways to take the information he got. One is, you figure out it's very profitable, keep your mouth shut and sell as many as you can. All these things he figured out, he wanted to tell everybody.

Onscreen headlines: "Auvil Talks Fruit with Rep. Ballard"; "'The Fui is going to be no. 1, ...' he says" - Wall Street Journal

Bert Navone: If you found something, you shared it. If you didn't share it, you got in a lot of trouble.

Mike Robinson: It's kinda like the computer guys have done writing the shareware and the free stuff and giving things away, and getting enough people doing it, and then you win, right?

Danny Gebbers: And everybody by then knew, if Grady started a new variety, ya had to get aboard or you missed the train. See?

Geraldine Warner: He made himself open, he made his orchard open to anybody who wanted to come.

Bert Navone: I thought it was a real wonderful philosophy he had and I think that's what made him the man he was.

Narrator: A great many farmers did follow Grady in planting the Fuji until it became, just as Grady had predicted, the number one apple in the country. ... With more success came more money, but not more than Grady knew what to do with.

Bob Parlette: He had more fun giving it away than he had making it, I think.

Tom Mathison: I don't know how many times Grady would come to me and say, "Look, Tom. here's what we need to do." Truth of the matter is Grady's appetite for projects became larger and larger and the dollar numbers always kept going up.

Gene Sharratt: Anything that had to do with raising funds for kids, you could always count on the Auvils for enthusiastic support.

JoAnn Walker: Because making money isn't about what you can buy for yourself, it's about what you can do for others. And he emanated that.

Clyde Ballard: It is my pleasure to introduce one of Washington State's 1998 Medal of Merit Recipients, Grady Auvil.

Grady Auvil: Since I've grown fruit all my life, I'd like to talk a little about food ...

Narrator: He had been honored time and again, beyond all expectations, and I think he was quite humbled by that in his heart of hearts.

Funeral officiant: A light went out in Orondo this week.

Geraldine Warner: That was kind of a shock to the industry when he died because he just acted like he was going to be around forever and you believed it.

Danny Gebbers: There's no taking away what he did. Can't be done, see?

Jim McFerson: He saw the future and guess what? Here's the future right now.

Funeral officiant: The late Jack Batjer once paid tribute to Grady by stating that, "Grady has the unique ability to make plants do what he wants them to do."

Tammy Sully: I think it was his gift, really honestly, and that's why he was here.

Allan Auvil: I think my dad would go out in the early mornings in the orchard, that was church.

Deanna (Auvil) White: Whatever he felt spiritually, he found it there in the orchard.

Allan Auvil: He talked to the trees in a sense.

Grady Auvil: Now we were always trying things, and a lot of them didn't turn out too well.
(*laughing*)

I see tremendous prosperity for anyone that gets out in the front and does the thing that are obvious to do, the best things to do. If you put out some fruit, see that it's something you'd like to eat yourself. And I've never stopped trying to improve myself or those around me.

So, anyway that's the way it went.

END OF TRANSCRIPT

Credits

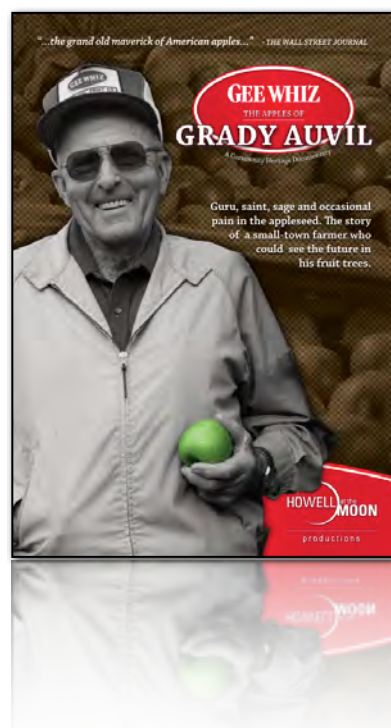
About the authors

This Teacher's Guide was written by **Nicole Blake** and **Kristina Tucker** of the Richland School District. It was edited and produced by **Jamie Howell** of Howell at the Moon Productions.

We welcome your suggestions and feedback. For more information about this and other projects, send an email to info@howellatthemoon.com

Also available now ...

“Gee Whiz: The Apples of Grady Auvil” is a companion documentary to “**Tom Mathison: The Growing Season**”, both with CCSS-aligned Teacher's Guides. These and other documentaries are available now through www.howellatthemoon.com.



© Copyright 2013, Howell at the Moon Productions