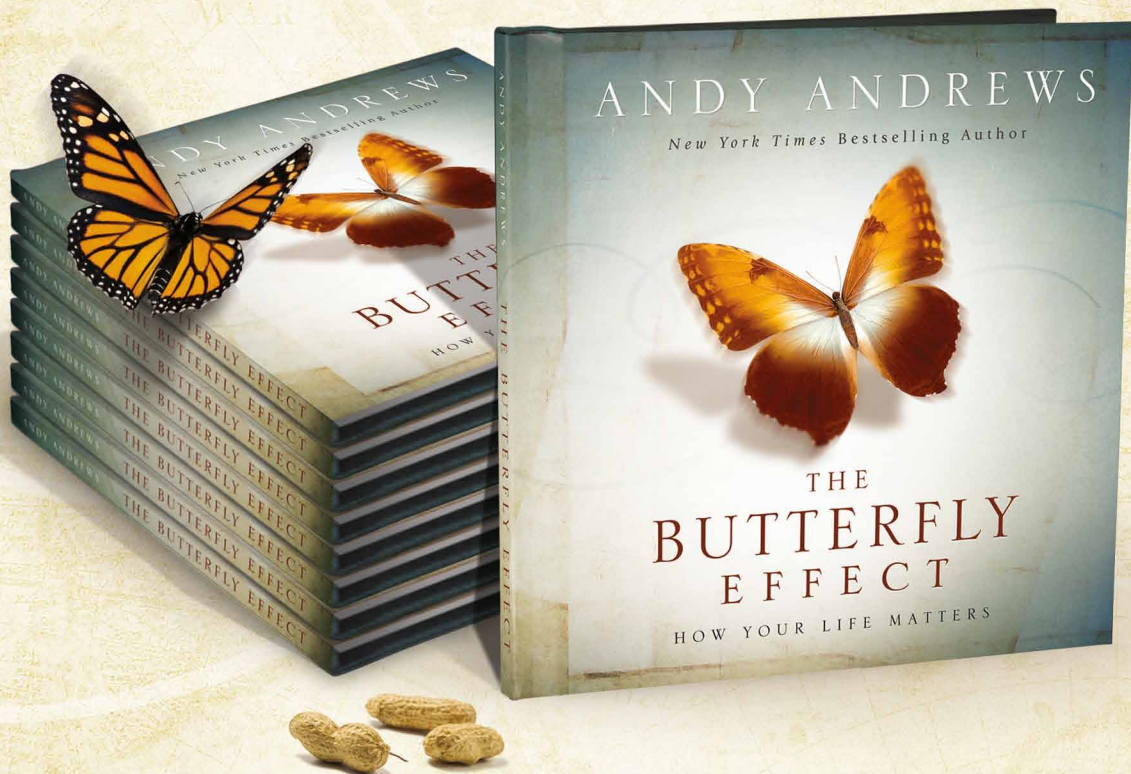


ANDY ANDREWS

New York Times Bestselling Author



THE BUTTERFLY EFFECT

CURRICULUM GUIDE FOR TEACHERS
MIDDLE SCHOOL THROUGH HIGH SCHOOL

THE
BUTTERFLY
EFFECT

by ANDY ANDREWS

Curriculum Guide for Teachers
Middle School — High School

Including Student Reproducible Pages

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Foreword By Peggy Hoekenga

When I first read this book, I wondered how I could get a copy of it into the hands of as many young people as possible. The story is powerful, the truths are life-changing, and the possibilities are endless. There are principles in *The Butterfly Effect* that can empower our young people. If we could help them understand and believe the simple truth in these words, we could start our own butterfly effect across this nation.

This is a book that can be incorporated across the curriculum in multiple ways. Inspiring lessons in history, social studies, character education, and citizenship can all be taken from its pages. Any classroom teacher, counselor, or administrator can use this book to challenge our students to live lives that matter and encourage them to make a difference in their schools and communities.

While this curriculum guide is geared more for students in fifth to ninth grades, there are also sections for high school, and it can be adapted for younger students, older students, college students, and adults as well. I hope you will be inspired to use this book to make a difference in the lives of the students you touch every day. As teachers, we have an awesome responsibility. These young minds are like sponges, and they look to us for guidance, acceptance, and encouragement. Like it or not, we are role models and mentors for these impressionable youths. How will you use this time that you have with them to make a difference? I have given several suggestions on the following pages. You may decide to use one, two, or several of the activities.

It is no accident that this book is in your hands now. Use it to make a difference to one child. It may be the difference between success and failure for them. Who knows? You could be the one who inspires them to become the next Norman Borlaug!

Remember, it was a schoolteacher who, against overwhelming odds, led his troops to a victory that changed the course of the Civil War and the history of our great nation. One 34-year-old teacher! You can be that kind of teacher who helps your students believe in themselves and understand that **everything** they do really does matter!

About the Curriculum Guide Author

Peggy Hoekenga is an assistant professor at the University of North Alabama, where she taught first grade at Kilby Laboratory School for seven years and is currently beginning her fifth year as the Alabama Reading Initiative reading coach for grades K-6. She received her Master's Degree in Early Childhood Education from the University of Mississippi. In 2008, the Northwest Alabama Reading Council selected her as Reading Teacher of the Year. She currently lives in Florence, AL, with her husband of 34 years, Paul.

Table of Contents

Summary.....p. 6

About the Author.....p. 7

Before Reading Activities.....p. 8

Build Background Knowledge.....p. 8

Set Purpose for Reading.....p. 9

Introduce Vocabulary.....p. 9

Vocabulary and Word Study Activities for Grades 5-8.....p. 10-16

Vocabulary and Word Study Activities for Grades 9-12.....p. 17-19

During Reading.....p. 20

Comprehension Questions.....p. 20-24

After Reading Activities.....p. 25

Enrichment/Extend the Learning.....p. 25-27

Vocabulary Quizzes.....p. 28-33

Book Test.....p. 34-36

Quiz and Test Answer Keys.....p. 37

Summary

In 1963, Edward Lorenz made a presentation to the New York Academy of Sciences and was literally laughed out of the room. His theory, called the butterfly effect, stated that a butterfly could flap its wings and set air molecules in motion that, in turn, would move other air molecules—which would then move additional air molecules—eventually becoming able to influence weather patterns on the other side of the planet.

For years this theory remained an interesting myth. In the mid 1990s, however, physics professors from several universities, working in tandem, proved that the butterfly effect was accurate, viable, and worked every time.

It has since been accorded the status of a law and is now known in scientific circles as the technical notion of sensitive dependence on initial conditions.

In *The Butterfly Effect*, *New York Times* bestselling author Andy Andrews demonstrates how this amazing concept is illustrated in our own lives by carefully observing history. Take Joshua Chamberlain, a schoolteacher from Maine who made one move 150 years ago that positively impacted an entire nation. By charging the enemy without ammunition—and defeating them—he set off a butterfly effect that lasts to this day.

About the Author

Hailed by a *New York Times* writer as “someone who has quietly become one of the most influential people in America,” ANDY ANDREWS is the author of *New York Times* Bestsellers *The Noticer* and *The Traveler’s Gift*, and is also an in-demand speaker for the world’s largest organizations. *The Noticer* and *The Traveler’s Gift* were featured selections of *ABC’s Good Morning America*, have been translated into nearly 20 languages, and continue to appear on bestseller lists around the world.

Andy has spoken at the request of four different United States presidents and toured military bases around the world, being called upon by the Department of Defense to speak about the principles contained in his books. Arguably, there is no single person on the planet better at weaving subtle yet life-changing lessons into riveting tales of adventure and intrigue—both on paper and on stage.

He lives in Orange Beach, Alabama, with his wife, Polly, and their two sons.

Before Reading Activities

Build Background Knowledge

Ask students the following questions:

- **Do you think the things you do or say really matter?**
- **How do your actions and words affect others?**

Ask one question at a time and allow some time for answers and discussion after each one. After a short discussion, read pages 4 and 5 to your students.

Then, show the students the book, read the title, and ask them the following questions:

- **Does anyone know what the butterfly effect is?**
- **How could it be related to you and your life?**
- **By looking at the cover and thinking about the title and your knowledge of butterflies, what do you think it might be about?**

Read pages 6 – 9 to your students. Have students turn to the student that is sitting next to them (or they can do this in small groups), and explain what the butterfly effect is to each other in their own words. Allow 2 – 3 minutes for this discussion. Then, give students a pre-determined signal to stop talking and turn and face you. Ask one student from each group to explain the butterfly effect to the class. (This type of activity assures that all students are actively engaged in the learning. It also gives them an opportunity to develop an understanding of the concept on their own terms and to clear up any misunderstandings).

Set Purpose for Reading

Tell students that today we are going to read about a famous Civil War battle that took place at Gettysburg. Let them know that you are certain most of them have heard about this battle before, but today you want them to listen and find out why this was such an astonishing victory for the Northern troops. Say that you also want them to find out who was responsible for this victory.

Introduce Vocabulary

Introduce the vocabulary words at any time before reading the selection. This is a vocabulary-rich text for such a short amount of pages. Choose the words best suited for your students and their ages, needs, and abilities. The words are divided into the two sections of the book. There are vocabulary activities on p. 8-18. These activities can be done throughout the reading of the book, at a time of your choosing, with the words you select.

Pages 4-63 • Part One

significant (p. 4)	hypothesis (p. 6)	preposterous (p. 7)	intrigue (p. 7)
encompassing (p. 8)	essence (p. 13)	assault (p. 16)	flank (p. 24)
reinforced (p. 27, 35)	overwhelming (p. 40)	fragmented (p. 49)	populous (p. 53)

Pages 64-109 • Part Two

hybridized (p. 69)	flourished (p. 71)	regenerated (p. 71)	thrived (p. 71)
famine (p. 72)	arid (p. 76)	brilliant (p. 82)	instilled (p. 83)
contemplate (p. 84)	distraught (p. 92)	rarities (p. 104)	hoarded (p. 106)

Vocabulary Activities**For Grades 5-8**

1 Students can play the “I Have” card game. This is a great game to actively engage all your students. They can play it in small groups or as a whole class. It’s a great way to review for a test, too. The templates for the cards are located on the pages that follow. Make a set of cards by copying them onto cardstock. Cut out the cards on the bold lines. Each card has two parts—a vocabulary word and a definition for a different vocabulary word. The student who has the card with the green and red star begins the game by reading what is written beneath the green star. The student who has the word that coincides with the definition that the previous student read stands and reads the word. Then, they read the definition on the bottom half of their card. The student who has the word that matches that definition stands and reads the answer. The game continues until the final definition is read and the person holding the red starred word reads it aloud. The game begins and ends with the same card and person. If you have more cards than students, it is fine for one student to hold multiple cards. If you have more students than cards, make two sets of cards and have two groups play the game.



2 Word Sort activity to identify the parts of speech for the vocabulary words using Word Sort activity sheets that follow.

3 Have students fill out any of the Vocabulary Graphic Organizers that follow.

4 Have students write the vocabulary words that have prefixes and/or suffixes. Then, they should write the base word for each of these words. Next, they should write as many other forms of the word as possible by adding different prefixes and/or suffixes.

5 Have students write a short story or a poem using all the vocabulary words from one section (Part 1 or Part 2 words) of the book.



“I Have” Vocabulary Game Part 1

 I have essence	I have assault	I have hypothesis	I have flank
 This means a theory, possibility, or a guess.	This means something very important.	This means the extreme right or left side of an army.	This means a sudden, violent attack.

I have significant	I have intrigue	I have reinforced	I have populous
This means interesting, or to appeal to	This means strengthened or increased	This means a large number or crowded.	This means surrounding or enclosed.

I have encompassing	I have overwhelming	I have fragmented	I have preposterous
This means overpowering or useless.	This means broken into separate parts.	This means absurd or completely senseless.	This means the true or real nature of something.

“I Have” Vocabulary Game Part 2

 <p>I have hybridized</p>	<p>I have famine</p>	<p>I have instilled</p>	<p>I have arid</p>
 <p>This means an extreme scarcity of food.</p>	<p>This means to be introduced or to put in.</p>	<p>This means very dry, no moisture.</p>	<p>This means to secretly save something for future use or to accumulate something.</p>

<p>I have hoarded</p>	<p>I have brilliant</p>	<p>I have flourished</p>	<p>I have rarities</p>
<p>This means to shine brightly, or someone who is very smart.</p>	<p>This means successful, prospered, increased, or grew.</p>	<p>This means something interesting, very rare, or unusual</p>	<p>This means to think about or consider something very carefully.</p>

<p>I have contemplate</p>	<p>I have thrived</p>	<p>I have distraught</p>	<p>I have regenerated</p>
<p>This means something grew very well, or prospered, or advanced.</p>	<p>This means irritated, very distracted, or agitated.</p>	<p>This means produced, renewed, or made over in a better way.</p>	<p>This means to produce a better quality product by crossing different varieties.</p>

Name _____

Vocabulary Word Sort

Parts of Speech

significant	hypothesis	preposterous	intrigue
encompassing	essence	assault	flank
populous	fragmented	overwhelming	reinforced
hybridized	flourished	regenerated	thrived
famine	arid	brilliant	instilled
contemplate	distraught	rarities	hoarded

Directions for use:

Cut out the above words. Then, sort them and glue them into the appropriate column on the blank grid from the following page. To conserve paper, teachers might choose to post the vocabulary words and have students write them in the appropriate column on their sheet.

Name _____

Vocabulary Word Sort

Parts of Speech

Noun	Verb	Adjective	Adverb	More than One**

**Find the words that can be used as multiple parts of speech in the text and indicate which part of speech it is used as in the book.

Word	Page Number in Book	Part of speech as used in text

Name _____

Vocabulary Word Sort

Answer Key

Parts of Speech

Noun	Verb	Adjective	More than One**
hypothesis	encompassing	significant	reinforced
essence	hybridized	overwhelming	assault
famine	contemplate	preposterous	intrigue
rarities	flourished	fragmented	flank
	thrived	populous	regenerated
	instilled	arid	
	hoarded	distraught	
		brilliant	

**Find the words that can be used as multiple parts of speech in the text and indicate which part of speech it is used as in the book.

Word	Page Number in Book	Part of speech as used in text
reinforced	27 & 35	verb
assault	16	noun
intrigue	7	noun
flank	24	noun
regenerated	71	verb

Name _____

Vocabulary Word Graphic Organizer

Word: _____

Short Definition (in your own words):

Synonyms
1.
2.
3.

Antonyms
1.
2.
3.

Use the word in a sentence.

Vocabulary Activities**For Grades 9-12**

- 1 Have students locate the vocabulary words that you have chosen from the suggested vocabulary lists in the text. Then, have them write the sentence where they appear in the text and compose a definition for the word based on context clues and what they already know about the word. Students could use the graphic organizer that follows this page to complete the activity.
- 2 You could differentiate the vocabulary lists by allowing students to choose their own words. They could choose the words that are new to them, or words that they already know, but are used in a different context in this book. They would make a list of the words and locate their meanings in a dictionary. They could use the graphic organizer on p. 19.
- 3 Students could identify the part(s) of speech of each vocabulary word. For words that have multiple meanings and uses, they would indicate how they are used in the text. They could use the blank “Parts of Speech” word sort on p. 14 to write their answers as they sort the words in the proper category.
- 4 Students may take all the vocabulary words and use them to write a poem, song, or newspaper article about the book.
- 5 Have students locate the base word in words that have prefixes, suffixes, or inflectional endings. Then, have them indicate the language of origin of the base word and its meaning. Next, have them list all the words that they could make with the same base word by using different prefixes, suffixes, and inflectional endings.
- 6 Download the “Concept of Definition” graphic organizer from www.readingquest.org/strat/cdmap.html for students to use to gain a better understanding of the most difficult vocabulary words.

Vocabulary Word Definitions Using context clues

Word: _____ Page # found in text: _____

Sentence used from text:

Your definition based on context clues:

Word: _____ Page # found in text: _____

Sentence used from text:

Your definition based on context clues:

Word: _____ Page # found in text: _____

Sentence used from text:

Your definition based on context clues:

Vocabulary Word Graphic Organizer

Word: _____ Definition: _____

Synonym: _____ Antonym: _____

Source of definition: _____

Word: _____ Definition: _____

Synonym: _____ Antonym: _____

Source of definition: _____

Word: _____ Definition: _____

Synonym: _____ Antonym: _____

Source of definition: _____

Word: _____ Definition: _____

Synonym: _____ Antonym: _____

Source of definition: _____

During Reading Activities

Guided Reading for Discussion and Comprehension, Part One

Pages 10 - 37:

- What was Chamberlain's dilemma? *(He only had about $\frac{3}{4}$ of his soldiers left, there were no reinforcements coming, they had very little ammunition left. Should they press on with the attack or retreat?)*
- What did he decide to do? Why? *(He decided to stay and fight. He was a stubborn man and he said that he could not do nothing, that he had to take action. He was determined and brave. Accept any reasonable answers.)*
- What can you infer about his character by his actions? *(He was brave, strong, determined, courageous, persistent, resourceful...)*
- Can you predict what will happen next? *(Accept any reasonable answers.)*

Pages 38 - 44:

- Despite the odds, Chamberlain gave the command to charge. What happened? *(When he gave the command to charge, his soldiers began to imitate his words and they all advanced forward and over the wall. The Confederate troops stopped in their tracks. When Chamberlain and his men pointed their swords at them, they turned and ran away. Some of the men even threw down their weapons.)*
- Why do you think his soldiers won this battle so quickly? *(The Confederate soldiers didn't believe these could possibly be the same soldiers that they had been fighting. They felt that some fresh reinforcements must have come to help. They were surprised and they were tired and they knew if there were fresh soldiers and more ammunition on the other side, then they would die, so they gave up. They felt defeated at the very beginning of this battle.)*
- What made this an astonishing victory? *(Accept any reasonable answers. Some might include that the Northern soldiers didn't have enough ammunition or soldiers to win this battle and they were exhausted. The South outnumbered them almost 4-1...)*

Pages 45 - 46:

- Ask students if they agree with the statement on p. 46. Have students turn and talk to a partner or small group about whether they agree with it and why or why not. After 2 – 3 minutes, give the pre-determined signal and students should stop talking and turn and face the teacher. As the teacher asks several students to share what their group discussed, she/he will fill in a T Chart to tally the yes/no responses on the board.

YES	NO

- Ask students to presume that the South had won the war. How would that have changed the course of history for the United States as we know it today? (*Accept any reasonable answers.*) List students’ answers on the board or a chart.

Pages 47 - 58:

- Compare the possibilities the students listed on the chart with the outcomes mentioned in the book. Ask students if they agree with historians. Why or why not? (*Accept any reasonable answers.*)

Pages 59 - 63:

- Ask if anyone can explain how Joshua Chamberlain was a human example of the butterfly effect and give examples. (*Accept any reasonable answers.*)
- Do you agree with Mr. Andrews’ statement, “You are no less an example of the butterfly effect than Chamberlain was”? Why or why not? Can anyone give an example from their own life?

Stop reading for today.

Explain that you will finish reading the book tomorrow or at the next class meeting. Tell students that, as they anticipate what it might be about, you want them to do a little research. Ask if anyone has ever heard of Norman Borlaug. If so, have them share what they know about him. Most likely, no one will have heard of him, so tell your students that you want them to see if they can find out who he was and why he is someone that should be famous.

During Reading Activities

Guided Reading for Discussion and Comprehension, Part Two

Ask students, “Who was Norman Borlaug”? Hopefully, you will have some students who took on this assignment. If not, tell them they will find out about him today. If so, tell them that they will find out more about Norman today and what role he played in changing the world.

Pages 64 - 71:

- Tell students that Borlaug developed a seed that could survive where others could not. Ask what was significant about this. *(Answers will vary, but might include: more people could grow their own food, things could grow where they once could not, more food would be available, some poor countries would have more to eat...)*

Pages 72 - 73:

- Repeat, “Not Norman Borlaug, but Henry Wallace.” What does Andy Andrews mean? How could this be? It was Norman who created the seeds, so what did Henry Wallace have to do with this? Have students turn to their neighbors and explain this and/or make predictions about what this means. Allow students 2 – 3 minutes to talk; then, have several share their answers with the whole group. *(Answers will vary.)*

Pages 74 - 79:

- The author said, “It was really Henry Wallace who saved the two billion people.” Do you agree? Why or why not? Explain your answer.

Pages 82 - 87:

- Ask students what the connection was between George Washington Carver, Henry Wallace, and the seed that Norman Borlaug created. *(Henry Wallace’s father was George Washington Carver’s professor in college and he allowed Henry to go on walks with George. It was on these walks where Henry learned so much about plants and developed an interest in them. It was Henry Wallace who later hired Norman Borlaug to create the super seeds.)*

- Why was this connection significant? (*Accept any reasonable answers.*) For older students, you might have them discuss this in small groups and develop a diagram to explain the connection to the rest of the groups.

Pages 88 - 97:

- What do you think would have happened if Moses Carver hadn't rescued and adopted George Washington? (*Answers might include: he might have died, Henry Wallace may not have developed an interest in plants, Norman Borlaug may not have been asked to create the super seeds, there might be more starving people in the world today...*) If time allows, you may want to create a cause and effect chart with your students, or have them do so in small groups. Have older students create a cause and effect chart in small groups or with partners, then explain their logic to the whole group using their chart.
- Do you think Moses' actions mattered? Explain your answer. (*Accept any reasonable answers.*)

Pages 98 - 100:

- What do you think? Is there an end to this story? Explain your answer and give an example to support your thinking. Give students several minutes to think about this and jot down their ideas. Then, have them share their thoughts with a neighbor or small group. Afterwards, ask students if any of them changed their thinking after listening to what some of the other students said, and why it changed their mind. For older students, you might have them do this in the form of a debate. One side defends that there is an end to the story and the other side defends why there isn't an end to the story.

Pages 101 - 105:

- Andy Andrews said, "You have within you the power to change the world." Do you agree? Why? What could you do? Involve your students in a "Quick Write." Have each student write down at least three things they could do that might contribute to changing the world. Give them only two minutes. Then, have them share their answers with a partner. After about 2 – 3 minutes, have several students share their answers with the class.

Pages 106:

- What does it mean to hoard something? (*To hide something and save it for future use.*) Ask students why they think someone would hoard their actions. Allow them a minute or two of think time just to reflect on this question.

- Then, ask them what might have happened if George Washington Carver told his professor that he didn't have time to take young Henry for walks at this time. (*Accept any reasonable answers.*) Ask, "Does it matter if you hoard your actions or save them for later? Explain your answer." (*Accept any reasonable answers.*)

Pages 107 - 109:

- Re-read this quote from p. 109: "Your life...And what you do with it today...MATTERS FOREVER." Tell students that you want them to reflect on this statement and everything we've read and discussed about the butterfly effect. After a minute or two of think time, have them write down what they think they are capable of doing today that could make a difference. They might not see the fruits of their labor today, but one day, their actions could make a difference. Let them know that what they write down will remain confidential between you and them, unless they choose to share it. If some students wish to share what they wrote down, allow them to do so after you collect their responses. During the next few days, try to find some time to chat one-on-one with each student about what they wrote down. Encourage them and support them throughout the year to live a life that matters.

Enrichment/Extend the Learning

- 1 The following could be an on-going project that lasts several weeks, one semester, or an entire school year. Challenge your students to really think about their actions and to look for ways that they can make a difference. Post a picture of a butterfly in an obvious location in your classroom as a reminder. Once a week, set aside a time for students to reflect and write about something they did or plan to do to make a difference. Have them explain what they think the impact was/will be. Also, have they seen any results of their actions yet? If so, explain the outcome. Was it positive or negative?

The students could keep their reflections in a “BE Journal” (BE, meaning Butterfly Effect). They could have BE partners where they can talk about and share their experiences verbally. Make it work in a way that best suits your students, their learning style, and schedule.

At the end of the semester, or whatever time period that you have allotted, have students write a final reflection answering the following questions: What happened? What changes have they seen? Give examples of how everything matters. What have they witnessed in their own lives and in the lives of others?

With older students, you might choose to have them design and create a “BE Newspaper or Newsletter.” You could assign or allow the students to choose their roles as: editors, copy editors, reporters, page designers, photographers, etc...and publish their stories about events and/or people they’ve witnessed making a difference. They might also include examples they have seen of the butterfly effect in action in their school or community.

- 2 Tell students that they are a reporter at Gettysburg. Describe what is happening. Include details about the setting and a description of the soldiers and how they must feel. Older students might discuss the relationship between the setting and the characters. Also, include a good description of Joshua Chamberlain referencing his character by making inferences from the information that is given in the book.
- 3 Tell students to write about what they think would have happened if Joshua Chamberlain had given up, and the South had won the Civil War. How would our world be different?

- 4 Have students pretend they are a soldier in Chamberlain's regiment. Describe what they are thinking about his decision to stay and fight against all the odds. How do they feel? What is it like fighting in this war?
- 5 Write a review of *The Butterfly Effect* for your local newspaper. Would you recommend this book to the readers? Why or why not? Who do you think should read this book? Why?
- 6 Have students choose one of the heroes from the story that they most admire. Then, they should conduct an Internet search and read more about that person. Have them write about what they discover. What were they like? Did they have a family? What kind of education did this person have? What was the most significant information that they found out about their hero? Why do they think this is significant? What was the greatest contribution that this person made to society?
- 7 Have students work with partners or in a small group to write a song about the book or one of the characters in the book.
- 8 Have students "tweet" a summary of the book. Their tweet should be limited to 140 words or less, just like it is on Twitter. It should summarize the main idea and theme of the book.
- 9 Research the work of George Washington Carver and find out more about the many uses he discovered for the peanut. Have them describe some of the uses/products. Do they use any of these products? Were they surprised by some of these products? What do they think was the most important one? Why? For older students, try collaborating with a science or chemistry teacher to plan an opportunity for students to follow up their research on Carver by experimenting and exploring the possibility of developing their own products from peanuts.
- 10 Have students work in small groups to create a mural of the most important events in the story. When the murals are complete, have the students explain why each event they depicted was considered to be one of the most important events in the book.

11 Have students explain why they think Andy Andrews would write this book. What effect could it have on its readers? Why do they think others should read it? If they could ask Mr. Andrews a question, what would it be?

12 There are some excellent graphic organizers available for classroom use by middle school and high school students of various abilities at www.readingquest.org. The history frame, story pyramid, and story map would be excellent tools to use with this book. Also, there is a section that explains the use of a basic story map in history, English, and science.

Vocabulary Part 1 Quiz*Circle the best answer.*

- 1 In the following sentence, which definition is not correct for the word **reinforced**? They **reinforced** the riverbank with sand bags.
- a.) built-up
 - b.) strengthened
 - c.) weakened
 - d.) increased
- 2 A synonym for **intrigue** is:
- a.) fascinate
 - b.) funny
 - c.) change
 - d.) understand
- 3 The book says, "This principle has proven to be a force **encompassing** more than mere butterfly wings." What does **encompassing** mean?
- a.) combining
 - b.) to put into a compass
 - c.) surrounding
 - d.) to pass
- 4 In the following sentence, what is the meaning of the word **populous**? These cities have **populous** areas on both sides of the river.
- a.) very popular
 - b.) having many people
 - c.) having few people
 - d.) very exciting

- 5 Which pair of words are synonyms?
- a.) significant – compelling
 - b.) significant – meaningless
 - c.) significant – happy
 - d.) significant – unimportant
- 6 An antonym for **hypothesis** is:
- a.) guess
 - b.) possibility
 - c.) hyper
 - d.) truth
- 7 If you looked up the word **preposterous** in the dictionary, you would need to look on the page with these guide words:
- a.) prednisolone – prefinished
 - b.) preoperative – prepuce
 - c.) prefix – premature
 - d.) prepupa – presence
- 8 **Overwhelming** is:
- a.) an adjective
 - b.) a preposition
 - c.) a compound word
 - d.) both a and c
 - e.) both b and c
- 9 **Essence** has several meanings. Which one is used in the following sentence? It was fresh and clean with a hint of citrus **essence**.
- a.) real nature of something
 - b.) taste
 - c.) true substance
 - d.) scent

- 10 A synonym for **assault** is:
- a.) salt
 - b.) old
 - c.) invasion
 - d.) none of the above
- 11 The Third Infantry Division attacked the left **flank** of the German Army. In the previous sentence, the word **flank** means:
- a.) fighting vehicles
 - b.) piece of meat
 - c.) extreme left side
 - d.) center
- 12 Which of the following words is an antonym of **fragmented**?
- a.) fragments
 - b.) crumbled
 - c.) split
 - d.) united

Vocabulary Part 2 Quiz*Circle the best answer.*

- 1 Susan Carver was **distraught** when George was taken by bandits. What does **distraught** mean in the previous sentence?
 - a.) not taught
 - b.) very upset
 - c.) untroubled
 - d.) ashamed

- 2 The seeds that Norman Borlaug created **regenerated** where no other seeds had ever survived. **Regenerated** contains the prefix re—. What does **regenerated** mean?
 - a.) possibly produced
 - b.) not produced
 - c.) failed again
 - d.) produce again

- 3 If you looked up the word **instilled** in the dictionary, you would need to look on the page with these guide words:
 - a.) insistent – instantaneous
 - b.) insetary – insist
 - c.) instanter – insubordinate
 - d.) intensifier – intercession

- 4 What is the base word of **hybridized**?
 - a.) ed
 - b.) hybridize
 - c.) ised
 - d.) hybrid

- 5 An antonym for **famine** is:
- a.) hunger
 - b.) feast
 - c.) famous
 - d.) starve
- 6 The plants **flourished** in the bright sun light. In the previous sentence, **flourished** means:
- a.) prospered
 - b.) flowered
 - c.) increased
 - d.) both a and c
- 7 Which pair of words are synonyms?
- a.) mother – daughter
 - b.) biology – plants
 - c.) contemplate – study
 - d.) new – old
- 8 An antonym for **brilliant** is:
- a.) intelligent
 - b.) bright
 - c.) dull
 - d.) smart
- 9 According to the dictionary, **arid** is:
- a.) a noun
 - b.) an adjective
 - c.) a verb
 - d.) both a and b

- 10 The book said, “The **rarities** that make you special are no mere accident or quirk of fate.” The base word for **rarities** is:
- a.) rare
 - b.) les
 - c.) rarity
 - d.) rari
- 11 The corn **thrived** in the fertile soil. **Thrived** means:
- a.) died
 - b.) dried out
 - c.) wilted
 - d.) prospered
- 12 The squirrels **hoarded** the acorns in the tree. **Hoarded** means:
- a.) ate
 - b.) saved
 - c.) watched
 - d.) shared

The Butterfly Effect Test*Circle the best answer.*

- 1 What genre is this book?
 - a.) Tall Tale
 - b.) Historical Fiction
 - c.) Biography
 - d.) Realistic Fiction

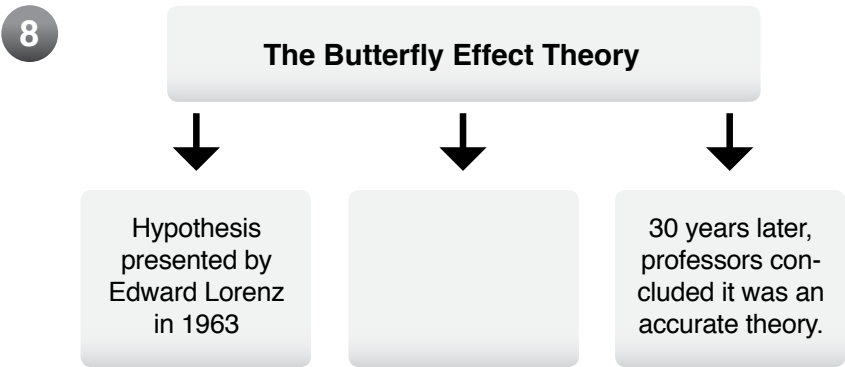
- 2 What do you think the author's purpose was in writing this book?
 - a.) to persuade
 - b.) to inform
 - c.) to entertain
 - d.) to describe

- 3 Which of the following could be another title for this book?
 - a.) "Famous Americans"
 - b.) "Civil War Battles"
 - c.) "You Really Can Make a Difference"
 - d.) "Butterflies and the Weather"

- 4 What is the theme of this book?
 - a.) Helping others can make you feel better.
 - b.) Don't give up trying, even when something is very hard.
 - c.) Inventors can make amazing products.
 - d.) Everything you do matters.

- 5 What character trait did Joshua Chamberlain's actions in the book demonstrate?
 - a.) tolerance
 - b.) honesty
 - c.) perseverance
 - d.) generosity

- 6 Is the following statement a fact or an opinion? The South would have won the Civil War if they had won the battle at Gettysburg.
- a.) fact
 - b.) opinion
- 7 Which of the following statements is not true about Joshua Chamberlain?
- a.) He was a 34-year-old school teacher.
 - b.) He was a professor at Bowdwin College in Maine.
 - c.) He was a colonel in the Confederate Army.
 - d.) He was knocked down by a bullet that hit his belt buckle at Gettysburg.



Which of the following statements could be placed in the empty box?

- a.) The idea was the topic of science fiction and used in comic books and movies.
 - b.) The theory is based on the metamorphosis of a butterfly.
 - c.) A phenomenon that applies only to science and weather.
 - d.) It occurs when butterflies pollinate flowers.
- 9 Which of the following statements is not true about Henry Wallace?
- a.) He hired Norman Borlaug.
 - b.) He was Vice President under Franklin Roosevelt.
 - c.) He was Secretary of Agriculture.
 - d.) He won the Nobel Prize.

- 10 What does the author use in the following sentence? “He flapped his wings with the sweet potato...”
- a.) a metaphor
 - b.) hyperbole
 - c.) a simile
 - d.) personification
- 11 Which of the following statements is true about George Washington Carver?
- a.) He developed 266 products from the peanut.
 - b.) He attended Iowa State University.
 - c.) He took Henry Wallace on “botanical expeditions.”
 - d.) both a and c
 - e.) a, b, and c
- 12 By his actions in the story, the reader can infer that Moses Carver was:
- a.) a selfish person
 - b.) a brave man
 - c.) a lazy man
 - d.) a gifted inventor

Answer the following questions on the back of this page.

- 13 Use a graphic organizer of your choosing (Venn Diagram, T Chart, etc...) to compare and contrast George Washington Carver and Joshua Chamberlain.
- 14 Explain the connections between the lives of Moses Carver, Henry Wallace, and George Washington Carver, to that of Norman Borlaug. You may use a “Cause and Effect” chart or diagram, if you choose. Tell how the actions of each of these men really mattered and led to the saving of 2 billion people from starvation.
- 15 Toward the end of the book, Andy Andrews asks the following questions: “Is there an ending to this story? Exactly who was it that saved the 2 billion lives? Is there a specific person to whom we could point? How far back would we have to go?” Write a paragraph to explain what point he was trying to make by asking these questions. Explain how this all relates to the butterfly effect.

Answer Keys**Vocabulary Quiz, Part 1**

- | | |
|------|-------|
| 1. c | 7. b |
| 2. a | 8. d |
| 3. c | 9. d |
| 4. b | 10. c |
| 5. a | 11. c |
| 6. d | 12. d |

Vocabulary Quiz, Part 2

- | | |
|------|-------|
| 1. b | 7. c |
| 2. d | 8. c |
| 3. c | 9. b |
| 4. d | 10. a |
| 5. b | 11. d |
| 6. d | 12. b |

The Butterfly Effect Test

- | | |
|------|-------|
| 1. b | 7. c |
| 2. a | 8. a |
| 3. c | 9. d |
| 4. d | 10. a |
| 5. c | 11. e |
| 6. b | 12. b |

Essay Questions: 13, 14, 15 Answers will vary. Accept any reasonable answers.