



EXPEDITIONARY
LEARNING

Grade 6: Module 4: Unit 2: Lesson 10

Forming a Research-Based Claim: Cascading Consequences Chart



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Long-Term Target Addressed (Based on NYSP12 ELA CCLS)	
I can use my experience and knowledge of language and logic, as well as culture, to think analytically, address problems creatively, and advocate persuasively. (RI.6.9a)	
Supporting Learning Targets	Ongoing Assessment
<ul style="list-style-type: none"> I can think analytically about my research in order to determine what evidence is important to me. I can use evidence from my research to add to my Cascading Consequences chart. 	<ul style="list-style-type: none"> Researcher's notebook Harmful Consequences Cascading Consequences chart Benefits of DDT Cascading Consequences chart Exit Ticket: Reflecting on My Beliefs about DDT

Agenda	Teaching Notes
<ol style="list-style-type: none"> Opening <ol style="list-style-type: none"> Book Frenzy: Launching an Independent Reading Book (8 minutes) Unpacking Learning Targets (2 minutes) Work Time <ol style="list-style-type: none"> Reflecting on Research: Synthesizing My Learning (12 minutes) Cascading Consequences (18 minutes) Closing and Assessment <ol style="list-style-type: none"> Exit Ticket: Share a Persuasive Piece of Evidence You Found (5 minutes) Homework <ol style="list-style-type: none"> Begin your independent reading book at home. Read for 30 minutes. 	<ul style="list-style-type: none"> This lesson introduces students to a new independent reading book. Students will be introduced to several book titles. If they enjoyed <i>Frightful's Mountain</i> by Jean Craighead George, they may want to consider reading <i>My Side of the Mountain</i> (a Newberry Honor Book) or <i>On the Far Side of the Mountain</i>. Consider inviting the school librarian or a local librarian to join the class to present some current titles to students. This lesson launches the End of Unit 2 assessment in which students present their claim and findings, outlining their position on the use of DDT. Students will use information from articles, videos, and multimedia such as charts, graphs, and tables to present their position to an audience and advocate persuasively during a hosted Gallery Walk. In the first half of Unit 2, students read new information about the use of DDT. Using a researcher's notebook, they collected bibliographic information about each article and paraphrased the author's claims. Supporting evidence was quoted from the articles. After each article was completed, students addressed whether they needed to refocus or refine their research question. Students then compared and contrasted two authors' presentations of events, looking at how each author introduced the article and used types of supporting evidence text features. Students built vocabulary by using context clues, affixes, and root words to help define unfamiliar words. Reference materials such as dictionaries and thesauruses were used to verify initial definitions.



Agenda	Teaching Notes (continued)
	<ul style="list-style-type: none">• In this lesson, students think analytically about the research they collected in their researcher's notebook. They code relevant information into two categories: Benefits of DDT or Harmful Consequences of DDT. The coded information will be added to either of the Cascading Consequences charts from Unit 1. This process allows students to think analytically and begin to determine what evidence is important to them.• Students use part of their Cascading Consequences chart as a visual to support their claim and findings in the End of Unit 2 Assessment.• In Lesson 11, students will be introduced to a Stakeholders Impacts chart, the next step in the decision-making process. Students will weigh the impacts of the use of DDT on stakeholders and apply personal values to each stakeholder affected. The Stakeholders Impacts chart can also be used as a visual to support students' claim in the End of Unit 2 Assessment.• In advance: Locate students' Cascading Consequences charts from Unit 1 so that new information can be added in today's lesson.• Students may not have enough room to add new research to the Unit 1 charts and may need to tape blank sheets of paper onto their charts.• In Lessons 10–14, students may need to reference articles from Unit 1 and Unit 2 to clarify and verify information. Use the routines of your classroom to help students organize and keep these resources.• Read “Learning to Make Systematic Decisions” by Edelson, Tarnoff, Schwille, Bruozas, and Switzer to become familiar with this decision-making process and prepare for Lesson 11.• Post: Learning targets.



Lesson Vocabulary	Materials
claim, evidence, analytically, analyze, relevant	<ul style="list-style-type: none">• Researcher's notebook (one per student; in research folder)• Research folder• Colored pencils (two different colors per student)• Benefits of DDT Cascading Consequences chart (from Unit 1; in research folder)• Harmful Consequences of DDT Cascading Consequences chart (from Unit 1; in research folder)• Cascading Consequences Codes for Text References (one per student)• Tape (one per partner group)• Blank sheets of paper (8½" by 11"; three sheets per student)• Document camera• Harmful Consequences of DDT Cascading Consequences chart example (one for display)• Exit Ticket: Reflecting on My Beliefs about DDT (one per student)



Opening	Meeting Students' Needs
<p>A. Book Frenzy: Launching an Independent Reading Book (8 minutes)</p> <ul style="list-style-type: none"> • Have selected books in specific areas around the classroom. Walk around the room giving short introductions to several books to pique students' interest. If possible, have copies of <i>My Side of the Mountain</i> and <i>On the Far Side of the Mountain</i> and other novels written by Jean Craighead George for students who enjoyed <i>Frightful's Mountain</i>. Remind students how to self-select books at their appropriate level of challenge for their interests and reading ability. • Give students time to select their book. • Invite students to set a goal for their reading. To do this, ask students to begin reading their book. Share that after 1 minute you will ask them to stop. Tell them this is the amount of reading for 1 minute and ask them to set a goal for 30 minutes of reading for their homework. 	<ul style="list-style-type: none"> • Provide book choices from a variety of genres and Lexile ranges.
<p>B. Unpacking Learning Targets (2 minutes)</p> <ul style="list-style-type: none"> • Read aloud the learning targets for today: <ul style="list-style-type: none"> * "I can think analytically about my research in order to determine what evidence is important to me." * "I can use evidence from my research to add to my Cascading Consequences chart." • Ask triads to think back to Unit 1. Say: <ul style="list-style-type: none"> * "What was an example of an author's <i>claim</i> about DDT and an example of supporting <i>evidence</i>?" • Invite triads to share. Listen for examples such as Rachel Carson's book <i>Silent Spring</i>, which made a claim that DDT was killing birds. Supporting evidence was: "There was a strange stillness ... On the mornings that had once throbbed with the dawn chorus of ... (many) bird voices there was now no sound...." • Ask students to discuss in their triads: <ul style="list-style-type: none"> * "What does it mean to think <i>analytically</i>?" * Discuss a time of when you had to <i>analyze</i> something. Share with your triad what you had to do." • Invite triads to share. Listen for: Sometimes science or math data needs to be analyzed. To analyze, we read through the material, identified criteria, and separated or grouped the criteria into areas or categories. 	<ul style="list-style-type: none"> • Learning targets are a research-based strategy that helps all students, especially challenged learners. • Posting learning targets allows students to reference them throughout the lesson to check their understanding. The learning targets also provide a reminder to students and teachers about the intended learning behind a given lesson or activity. • Discussing and clarifying the language of learning targets helps build academic vocabulary.



Opening (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Share an example of analyzing with students and say:<ul style="list-style-type: none">* “In Unit 1, you read articles about malaria and DDT. You identified the authors’ claims and supporting evidence and then made decisions about where to place this information on a Cascading Consequences chart. You had a choice of either putting the new information on a Benefits of DDT Cascading Consequences chart or on a Harmful Consequences Cascading chart.”• Ask triads:<ul style="list-style-type: none">* “After reading the learning targets, what do you think we will be doing today?”• Invite volunteers to share. Listen for: “We will be reading our research, identifying criteria or consequences, and adding to our Cascading Consequences charts.”	



Work Time	Meeting Students' Needs
<p>A. Reflecting on Research: Synthesizing My Learning (12 minutes)</p> <ul style="list-style-type: none"> • Invite students to find their researcher's notebook in their research folder. Ask them to find Source 1 and read through the claims and/or central ideas and the evidence and/or details sections to think about what is <i>relevant</i> information. Explain that information is considered relevant if it identifies a benefit or a harmful consequence of DDT. Pause to give students time to read. • Reconvene the class after students have read their information. • Explain that you would like them to analyze and code their Source 1 research. Ask them to choose two different colored pencils. Invite students to reread to find relevant information. Share that if a claim supports the use of DDT or is a benefit of DDT, they should make a plus sign in front of the sentence with one of their colored pencils. Explain they should make a minus sign with the other colored pencil in front of a sentence identifying information that would not support the use of DDT and would be a harmful consequence. • Pause to give students time. • Circulate to support those who help identifying “relevant” information. • Refocus the class. Invite volunteers to share something coded with a minus sign identifying a harmful consequence. • Listen for examples such as: “Pesticides had gotten into the water, air, and soil and were killing or sickening all sorts of creatures—including humans.” • Share that students will have 10 minutes to read Sources 2 through 4 and code each claim and supporting evidence with a plus or minus sign. Suggest students make a key on the cover to help remind them which colors represent benefits and harmful consequences. • Circulate and support students in analyzing and coding their research. Encourage and appreciate students for coding their information correctly. Consider using a document camera to model more student examples for struggling students. • Refocus the class and invite students to share information. Say: <ul style="list-style-type: none"> * “Who can share an example of research, coded with a plus sign, supporting the use of DDT and is a benefit of using DDT?” * “Who can share an example of research, coded with a minus sign, not supporting the use of DDT and is a harmful consequence of DDT?” • Praise students for thinking analytically and coding their research. Tell them that reading and coding relevant information is <i>analyzing</i>. Explain that organizing their information is an important step and will help them think about what evidence is most important and meaningful to them. 	<ul style="list-style-type: none"> • Consider partnering ELLs who speak the same home language when discussion of complex content or multistep directions is required. This lets students follow the lesson and have more meaningful discussions and clarify points in their native language. • Many students will benefit from seeing questions or examples posted on an interactive whiteboard or via a document camera.



Work Time (continued)	Meeting Students' Needs
<p>B. Cascading Consequences (18 minutes)</p> <ul style="list-style-type: none"> Form student partnerships. Ask students to retrieve their Benefits of DDT Cascading Consequences chart and Harmful Consequences of DDT Cascading Consequences chart from their research folders. Distribute the Cascading Consequences Codes for Text References handout. Share that students will be adding to their charts, and ask if they need to tape some blank sheets of paper to their charts to add new research. Ask students to read through the consequences on each chart. Point out that claims can be identified in ovals and supporting evidence can be identified in boxes. Pause to give students time to read through their research. Next, invite partners to think of possible claims and supporting evidence to add to their charts from <i>Frightful's Mountain</i>. Ask them to Think-Pair Share: <ul style="list-style-type: none"> * "Did you read about any benefits of DDT or any harmful consequences of DDT in <i>Frightful's Mountain</i>?" Ask partners to share their thinking. Listen for: Drum's mate was affected by bioaccumulation. Because the falcon migrated to areas of the world where DDT was sprayed, DDT had built up in her tissues, causing her death. Page 246, Paragraph 2 in <i>Frightful's Mountain</i> supports this claim with evidence. Using a document camera, model how to add new information and display the Harmful Consequences of DDT Cascading Consequences chart example. Point out that as new information is added, the source should also be cited. Remind students to refer to the Cascading Consequences Codes for Text References handout to code their text source. When adding new information, remind students first to check for a claim, an oval, saying DDT builds up in the tissues of peregrine falcons. If they do not have this as a claim, ask them to add this claim. Ask students to add as evidence that Drum's mate died because DDT had built up in her tissues. Explain bioaccumulation had occurred over several years of migration. Tell students they could add new evidence stating that DDT caused eggshells to thin and crack under the falcon's weight, resulting in no new births. Another piece of evidence could be without new chicks being born, the population of the peregrine falcons would be affected. Ask students to add this new information to their chart, pausing to give them time and circulating to support students. Tell partners they will now add more information to their charts using research from their researcher's notebook Sources 1 through 4. Remind them if the information has a plus sign, it will be added to the Benefits of DDT Cascading Consequences chart, and if the information has a minus sign, it will be added to the Harmful Consequences of DDT chart. Remind students to first determine if the new information is a claim or a new piece of evidence. 	<ul style="list-style-type: none"> When reviewing the graphic organizers or recording forms, consider using a document camera to display the document for students who struggle with auditory processing. Providing models of expected work supports all students, especially challenged learners. During Work Time B, you may want to pull a small group of students to support in finding claims and evidence. Some students will need more guided practice before they are ready for independent work.



Work Time (continued)	Meeting Students' Needs
<ul style="list-style-type: none">• Invite partners to find a claim and a supporting piece of evidence from Source 1, "Rachel Carson: Environmentalist and Writer." Pause to give partners time.• Cold call partners to share a claim and supporting evidence.• Listen for an example such as a claim is that pesticides had gotten into the soil, water, and air. Supporting evidence would be this pollution resulted in sickness and death in plants, sickness and death in animals, and sickness and death in birds.• Using a document camera, model writing the claim and its supporting evidence, and display the Harmful Consequences Cascading Consequences chart example.• Ask students to finish adding claims and evidence to their charts from Source 1. Remind students to add only relevant information. After all of the information from Source 1 is added, explain they have 10 minutes to should continue with this same process, adding information from Sources 2, 3, and 4.• Circulate to support students in determining how to add information to their charts. Encourage students to use the time to add all of their research to the appropriate chart.• Commend partnerships for supporting each other in identifying claims and evidence and in determining if the information was relevant.	



Closing and Assessment	Meeting Students' Needs
<p>A. Exit Ticket: Share a Persuasive Piece of Evidence You Found (5 minutes)</p> <ul style="list-style-type: none">• Invite students to think about the claims and evidence they added to their Cascading Consequences charts. Give students time to remember a particularly persuasive piece of evidence that affected them.• Ask them to briefly share with their partner the piece of evidence that caused them to pause and think more deeply about the use of DDT.• Distribute the Exit Ticket: Reflecting on My Beliefs about DDT.• Refocus the group.• Give students 1 minute to read the questions on the exit ticket. Then invite them to record their thoughts on the exit ticket.	<ul style="list-style-type: none">• Using an exit ticket allows students to reflect on their values and beliefs about DDT and provide you with a quick check for understanding of the learning target about evidence that is personally important to them.
Homework	Meeting Students' Needs
<ul style="list-style-type: none">• Begin your independent reading book at home. Read for 30 minutes.	



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Supporting Materials



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Cascading Consequences Codes for Text References

Name: _____

Date: _____

Please refer to the codes in parentheses to reference the article, video, graph, chart, table, diagram, or world map. Add this code to the Cascading Consequences chart to cite the source of the evidence.

Resources	Benefits of DDT Cascading Consequences Chart	Harmful Consequences of DDT Cascading Consequences Chart
Article:	“The Exterminator” (EX)	“Welcome Back” (WB)
	“Double Whammy” (EX/D.W.)	“Rachel Carson: Sounding the Alarm on Pollution” (R.C.)
	“Public Fear” (EX/P.F)	
	“Seriously Sick” (EX/S.S.)	
	“Killer Genes” (EX/K.G.)	
Video:	John Stossel DDT (V- J.S. DDT)	DDT dichlorodiphenyl-trichloroethane (V-DDT)
Graphs and Charts: (G&C)	DDT Bad, Malaria Much Worse—(world map)	Lake Kariba, Africa DDT Levels (diagram)
	Malaria Trends in South Africa—(graph)	DDT in Human Body Fat in U.S. (table)
	Increases in Malaria for South American Countries—(graph)	DDT in Breast Milk (graph)
	DDT and Malaria in Ceylon—(graph)	Changes in Thickness of Egg Shells (graph)

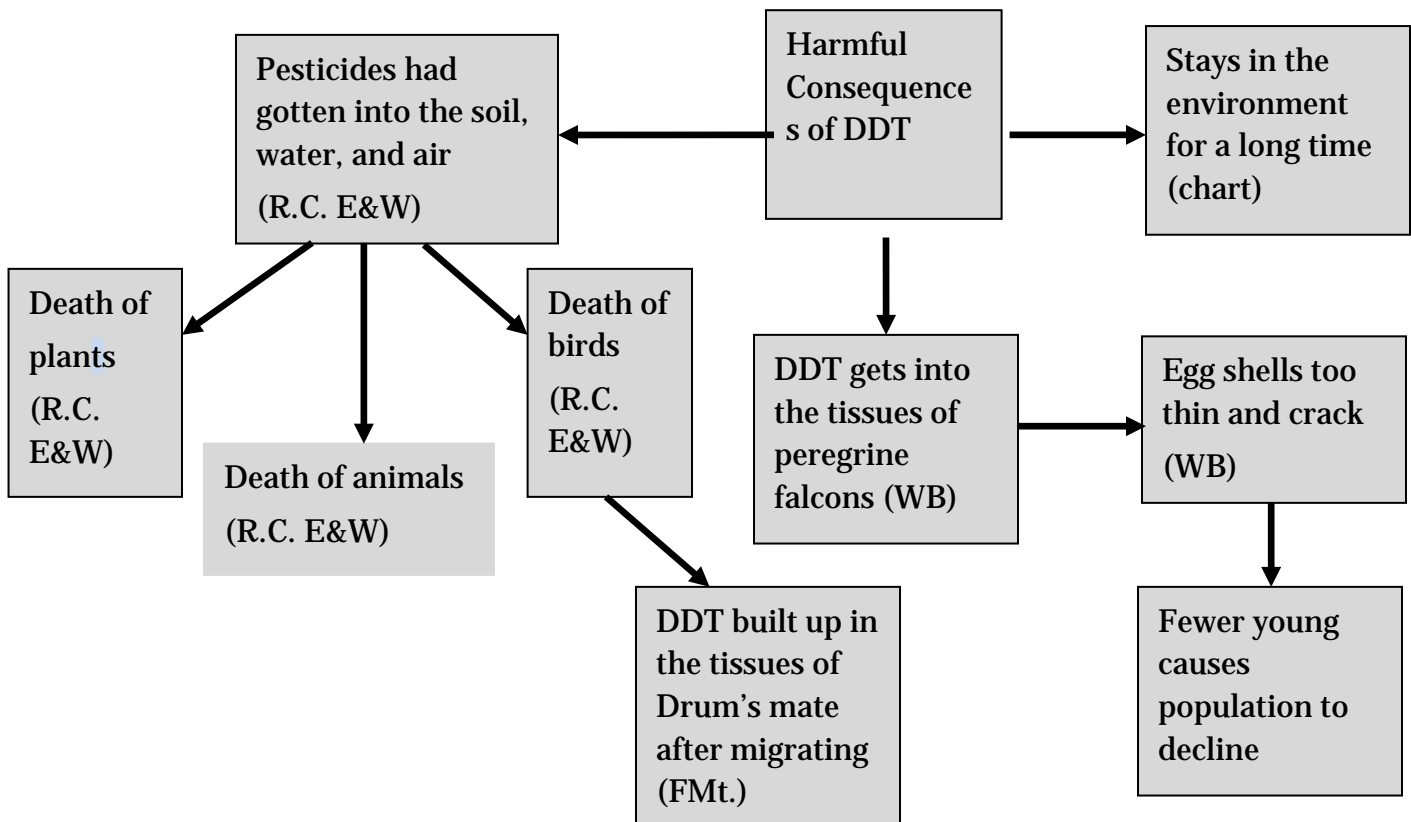


Harmful Consequences of DDT Cascading Consequences Chart Example

Name: _____

Date: _____

Unit 1	Unit 2
"Welcome Back" (WB)	"Rachel Carson: Environmentalist and Writer" (R.C. E&W)
"Rachel Carson: Sounding the Alarm on Pollution" (R.C. SA)	Paul Müller (PM)
	"Biological Energy—Here, Let Me Fix It!" (BE)
	"How DDT Harmed Hawks and Eagles" (DDTH&E)





Exit Ticket: Reflecting on My Beliefs about DDT

.....
Name:

.....
Date:

1. What was a particularly *persuasive* piece of evidence you reflected on today? This evidence probably caused you to pause and think more deeply about what you were reading about and the impact it may have on our environment or people. Share your thoughts about this piece of evidence.

2. Should the world rethink the ban on DDT? Explain why or why not.
