Stage 1 – Desired Results

OVERARCHING CONCEPT/BIG IDEA:

Species on the Edge of Extinction in New Jersey

Next Generation Science Standards:

5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water.

- LS1.C: Organization for Matter and Energy Flow in Organisms Plants acquire their material for growth chiefly from air and water. (Builds upon 5-LS1-1)

5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

- LS2.A: Interdependent Relationships in Ecosystems: The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as "decomposers." Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem. (Builds upon 5-LS2-1)
- LS2.B: Cycles of Matter and Energy Transfer in Ecosystems: Matter cycles between the air and soil and among plants, animals, and microbes as these organisms live and die. Organisms obtain gases, and water, from the environment, and release waste matter (gas, liquid, or solid) back into the environment. (Builds upon 5-LS2-1)

English/Language Arts Common Core Standards:

RI.5.3: Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.

W.5.2: Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

    a.   Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.

    b.   Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.

    c.   Link ideas within and across categories of information using words, phrases, and clauses (e.g., *in contrast*, *especially*).

    d.   Use precise language and domain-specific vocabulary to inform about or explain the topic.

    e.   Provide a concluding statement or section related to the information or explanation presented.

W.5.4: Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience

W.5.5: With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.

W.5.6: With some guidance and support from adults, use technology, including the Internet, to produce and publish a minimum of two pages of writing (using the keyboard) as well as to interact and collaborate with others.

W.5.7: Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.

W.5.8: Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.

W.5.9: Draw evidence from literary or informational texts to support analysis, reflection, and research.

a.   Apply *grade 5 Reading standards* to literature (e.g., ―Compare and contrast two or more characters, settings, or events in a story or a drama, drawing on specific details in the textǁ).

Apply *grade 5 Reading standards* to informational texts (e.g., ―Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence supports which point[s]).

SL.5.1: Engage effectively in a range of collaborative discussions (one-on-one and in groups) on *grade 5 topics and texts*, building on others' ideas and expressing their own clearly.

    a.   Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

    b.   Follow agreed-upon rules for discussions and carry out assigned roles.

    c.   Pose and respond to specific questions by making comments that contribute to the discussion and elaborate on the remarks of others.

    d. Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

SL.5.4: Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

SL.5.5: Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.

L.5.4: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on *grade 5 reading and content*, choosing flexibly from a range of strategies.

L.5.6: Acquire and use accurately grade-appropriate general academic and domain-specific vocabulary, including words and phrases that signal contrast, addition, and other logical relationships

Prior Knowledge:
Students should come into the lesson with a basic understanding of how sentences are formed and how those sentences come together to make meaning in paragraphs and essays.

Understandings:	Essential Question:
Students will understand that: • human actions have caused species in New Jersey to become threatened, endangered, or extinct • writing and art can contribute to the conservation of these species by convincing its audience to care about endangered and threatened species • strong writing requires revision and critical thinking	Why should people in New Jersey care about the survival of endangered and threatened species? **Questions students will be able to answer:** 1. Where do the lives of humans intersect with those of other animals animals? 2. How do humans disrupt animals' habitats, food, etc?

Students will know:
 • how to define and use the following words:
   • Habitat
   • Range
   • Species
   • Endangered
   • Threatened
   • Extinct
   • Rare
   • Extirpated
   • Ecosystem
	Students will be able to:
	 • write persuasively about the need for environmental stewardship within their own community
	 • explain the relationship between human activity and animals becoming endangered/threatened in New Jersey

Stage 2 – Assessment Evidence

Performance Task:
Species on the Edge Contest Entry Essay and Poster

Summative Assessments	Formative Assessments
• Kahoot! Vocab Review • Species on the Edge Contest Entry Essay and Poster	• Exit tickets • Verbal response/class discussion • Do-now • Poll Everywhere

Stage 3 – Learning Plan

Suggested Procedures:
The five day Species on the Edge Contest unit is designed to integrate science, writing, reading, technology, and art in one engaging, interdisciplinary experience. Collaborating with teachers from each discipline will give students the opportunity to see the how the real world application of what they create extends into many parts of life and society. The unit combines language arts and science instruction, so feel free to use the time allotted for reading, writing, and science

in your general education classroom to deliver the lessons below.

Day 1 (60-80 minutes)

- To begin the lesson, the teacher will have Day 1 of the Species on the Edge Content Unit Google Slides presentation pulled up on the screen.
- The teacher will instruct students to access a device with which they can respond to the formative pre-assessment Poll Everywhere questions (in one-to-one schools, students can use their assigned device; in other districts, acquire access to a computer cart).
- Students will answer Poll Everywhere questions embedded in the presentation; the teacher will pause between questions to discuss the correct answers and to check for understanding, reminding students frequently that they likely will not know the answers to the questions. This exercise will allow students and teachers to see measurable growth by the end of the week.
- Assign students (on Google Classroom, if using, or on paper handouts) to watch the flipped classroom video and take notes using the worksheet. If students do not have access to computers at home, show the video during class or take them through the Google Slides Presentation titled "Species on the Edge Vocabulary Flipped Video"
- Show students BrainPop video on food chains.
- Have students turn to an assigned partner and take turns telling that partner everything they learned from the video.
- Call on students to explain what **their partner** learned from the video, listing the information they provide on the board. Be sure to address the terms producer, consumer, decomposer, food web, and food chain.
    - Potential guiding questions for the discussion:
        - Why is each animal in the food web important?
        - Why are plants called "producers"? What do they produce?
        - Why are decomposers important? What would happen to the world without them?
- For the "ticket out" formative assessment, use the Poll Everywhere question on the Google Slides Presentation to allow students to list one thing they learned during the lesson. Student answers will appear as a word cloud, which provides students the chance to see what other students learned, and gives the teacher feedback as to which points were most salient.

Homework: Watch Species on the Edge Flipped Classroom Video and complete note-taking sheet

Day 2 (60-120 minutes)

- To begin the lesson, the teacher will have Day 2 of the Species on the Edge Unit Google Slides presentation pulled up on the screen and ask for volunteers to hand out the Species on the Edge Contest instructions, rubric, and list of endangered/threatened New Jersey Species. Ask students to have the homework up on their computer or, if on paper, out on their desk.
- Call on volunteers to read the instruction sheet aloud. Use Poll Everywhere to allow students to ask questions about the instructions anonymously. Answer questions and go over expectations and due dates with students.
- To make clear the connection between the homework (and previous day's lesson) to the contest, put students in groups of three (one student should be the notetaker, one should be the timekeeper, and one should keep the team on task --call him/her the Focus King/Queen) and project the slide with this question: Now you know about the contest and have the list of endangered animals in front of you. How will your notes from last night and what you learned in the BrainPop video help you explain the value of endangered species in New Jersey?
- Have students take informal notes on a 10 minute conversation about how the contest and lesson are connected. Circulate the room actively and ask scaffolding questions to keep the groups on task. Provide support to groups that struggle and ask groups that have ideas you would like to discuss with the whole class to draw a star next to their notes and share during the whole class discussion.
- Conduct the whole class discussion by calling on each group to share their ideas. Focus the discussion on how their understanding of the homework terms and concepts from the BrainPop video will help students complete the writing and art performance task.
- Discuss as a class what causes animals to become endangered or extinct. Brainstorm a few ways humans can change their habits to help these animals.
- Have students turn to the list of animals. Have them spend 5 minutes "Googling" the animals to find one that

interests them. Remind them that they will have to draw and write persuasively about this animal.

- Once students have selected an animal, review the three potential essay questions with the class and give students time to select which one they would like to write about for their essay.
- Distribute pre-writing worksheets (either online, via Google Classroom, or on paper handouts) and have students begin recording information and brainstorming ideas. Circulate the room and provide students with feedback on their brainstorming session. Make sure ideas are clear and specific, and that research is cited on the sheet for later reference.
- Remind students that whatever they do not finish of their pre-writing will become homework, due the following day. Have students work on their pre-writing until the end of the period.

Homework: Complete pre-writing sheet.

Day 3 (60-80 minutes)
- To begin the lesson, the teacher will have Day 3 of the Species on the Edge Unit Google Slides presentation pulled up on the screen.
- As a Do Now, break students into pairs and have the look at their pre-writing sheet, which they completed for homework, and think about how their animal fits into the food web. Questions will be projected and they will discuss with a partner: Is the animal a consumer, producer, or decomposer? How would the rest of the food chain be affected if this animal went extinct?
- Call on 3-4 diads to share what they discussed with the whole class.
- Have students take out the contest packet and rubric.
- Pull up the rubric on the projector. Go over each section, explaining how to achieve all elements of the project.
- Have students begin typing their essay. Allow students the majority of the period to work on their essay. Circulate the room and meet with each student for at least 2-3 minutes. Provide students the appropriate level of support. Model for students as necessary.
- For the ticket out at the end of the period, project the Poll Everywhere question: What did you learn about WRITING today? (Think about individual conversations you had with your teacher).

Homework: Complete at least half a page of their essay.

Day 4 (60-80 minutes)
- To begin the lesson, the teacher will have Day 4 of the Species on the Edge Unit Google Slides presentation pulled up on the screen.
- Ask students to take out their draft of their essay and pull up the rubric on the screen once more; students should have their physical essay and rubric handed out earlier in the week in front of them. Give students time to read over their essay and mark specific sections of the rubric they think they are doing well on and sections where they can improve.
- Provide students with art supplies and appropriately sized poster paper and let them know that they will be afforded time to begin their artwork as soon as they finish their essay. *If it is possible to collaborate with the art teacher and have the poster/artwork portion occur during art class, students will see the interdisciplinary value of the project --and will free up more of your time for one-to-one writing instruction.
- Have students work on their essays and circulate the room. Show students specifics aspects of the rubric that they are doing well on and sections where they still need work. Provide models where verbal explanations fail.

Homework: Optional work on essay, a draft of which will be due at the end of the period the following school day.

Day 5 (60-80 minutes)
- To begin the lesson, the teacher will have Day 5 of the Species on the Edge Unit Google Slides presentation pulled up on the screen.

*If your students do not have access to their own devices, play a game of jeopardy with the terms instead.

- The teacher will access the Kahoot! gameshow quiz link in the Google Slides Presentation. Make sure each student has his/her own device and that they select an appropriate name (usually first name and last initial are best, especially if you intend to use the data at the end of the game). Read each question as students play the game. If at the end of the game, you would like to use the student results for a grade or as a formative

assessment, download the data.

- Students will then be allotted time to work on their essays. If they finish a draft, they may begin working on the poster aspect of the project.
- If possible, the project should be due one week from the last day of this unit plan. Students will then have time to make final revisions to both their essays and posters.

Homework: Complete poster and essay for the beginning of class one week from today.

CRASH COURSE ONE DAY CONTEST INTRODUCTION LESSON

Don't have a week to dedicate? No worries! Follow the steps below to give the students all they will need to enter the contest.

- Distribute contest entry form materials and rubric. Call on volunteers to read the information aloud to the class. Feel free to use the Google Slides Presentation Poll Everywhere questions to ask for questions and feedback from the class.
- Allow students to select an animal and an essay topic. Distribute the appropriate pre-writing worksheets and inform the students that they MAY use them, but are not required. Allow students to begin writing.
- Set a due date and set up a few times along the way for 10 minute progress checks. Collect your entries and move on!

Required Materials

- Student access to computers, Chromebooks, iPads with keyboards, etc. (Essays must be typed for submission; other aspects of unit can be tweaked for paper and pencil completion).
- Classroom access to the Internet
- Projector and teacher computer or SmartBoard
- Handouts, rubrics, videos, and Google Presentations in Species on the Edge Unit Folder
- 11 by 17 inch **OR** 12 by 18 inch poster paper (no more than 1/4th of an inch thick)
- Art supplies: markers, colored pencils, paint, etc.