Writing Across Disciplines:
An Expansion of Composition in the Classroom

Writing to Learn: Fall 2022
Writing to Demonstrate Learning: Spring 2023
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What is Writing Across Disciplines?

What does “Writing Across Disciplines” mean?

Defining “Writing Across Disciplines,” requires clarity around the terms “Writing” and “Across Disciplines.” Most simply, writing is communicating. Student writers communicate with themselves, peers, teachers and others. Writing in the classroom can have many purposes and audiences and may be formal or informal. In the academic setting, writing can serve as a tool to promote student learning, to allow students to demonstrate their thinking and understanding of the content and/or concepts taught, and/or to share with others in a real-world setting. These types of writing are called Writing to Learn, Writing to Demonstrate Learning and Writing for Publication. “Across Disciplines” refers to using the types of writing—as defined here—in English/language arts as well as other disciplines, such as social studies, science, math and visual and performing arts.

What is Writing Across Disciplines, and what is its purpose?

Writing Across Disciplines is an expansion of Composition in the Classroom, a resource developed by reading and writing teachers to help Kentucky educators provide students with opportunities to develop into confident, independent and proficient writers. Composition in the Classroom and its expansions support teachers implementing existing High-Quality Instructional Resources (HQIRs) adopted by school districts as well as educators teaching in districts that have not yet adopted a primary HQIR in reading and writing. The tips, suggestions and tasks in Composition in the Classroom and its expansions should not replace adopted HQIR but should serve to supplement instruction towards the full depth and rigor of the Kentucky Academic Standards. For more information regarding high-quality literacy curricula, districts and school leaders may access The Reading and Writing Instructional Resources Consumer Guide, a tool for evaluating and selecting instructional resources for alignment to the Kentucky Academic Standards (KAS) for Reading and Writing.

Composition in the Classroom is organized around three modes of writing in the Kentucky Academic Standards (KAS) for Reading and Writing, including information regarding standards instruction through Writing to Learn, Writing to Demonstrate Learning and Writing for Publication. Writing Across Disciplines, however, contains sample discipline-specific writing tasks, organized by each of the three types of writing mentioned above. This resource is grounded in the KAS for Reading and Writing, which includes the Interdisciplinary Literacy Practices as well as each discipline’s content specific standards. The ten Interdisciplinary Literacy Practices are part of the KAS for Reading and Writing, appearing on every page of the standards document but should not be confused as additional standards. They should guide teachers in providing intentional opportunities for students to engage in deeper learning by practicing the behaviors of a literate citizen. The student practices serve as the overarching goals for literacy instruction for each student across the state. These practices are further clarified by possible teacher and student actions. These actions do not define curriculum, but rather they demonstrate how teachers can provide opportunities for students to experience
the literacy practices and how students will apply these practices, so they may become an innate part of life across the disciplines and beyond school. This resource aims to bring more clarity around what these practices look like in action.

While *Composition in the Classroom* primarily serves English/language arts teachers and their students, *Writing Across Disciplines* attends to the needs of all teachers and their students. Because of its widespread classroom use already, the developers chose to begin the expansion with a focus on Writing to Learn, a professional learning space that will hopefully both affirm and stretch educators' practices. The second release added Writing to Demonstrate Learning and the final release will include Writing for Publication.

Writing Across Disciplines is created to provide what *Composition in the Classroom*, alone, does not. While *Composition in the Classroom* provides general characteristics of each type of writing (Writing to Learn, Writing to Demonstrate Learning and Writing for Publication) and examples of strategies teachers can implement to engage students in each of the types of writing, this expansion includes a more disciplinary, or specialized, look at writing. *Writing Across Disciplines* intends to show more precisely how to ensure opportunities for students to engage in discipline-specific literacies or learning that uses reading and writing skills specific to each field to teach or demonstrate content knowledge and for publication purposes as well. The sample tasks in *Writing Across Disciplines* represent some of the types of reading and writing experts in each field (e.g., economists, biologists, literary scholars, mathematicians, etc.) might authentically engage in to deepen their own expertise.

**Writing TO LEARN Across Disciplines**

*Writing to Learn*, as previously described, is an instructional strategy used to promote student learning. Teachers utilize this instructional strategy to help deepen students' understanding of the subjects they are studying, to engage students in thinking, to provide opportunities for applying, extending and developing skills, and to help students reflect on their learning. Typically, Writing to Learn is informal writing with the student as the primary audience. Rather than emphasizing formal composition skills, Writing to Learn helps students obtain content knowledge and build capacity to analyze, synthesize, comprehend and express their thinking in writing. Most simply stated, Writing to Learn is any writing students engage in that promotes learning. Therefore, Writing to Learn Across Disciplines refers to using Writing to Learn in English/language arts as well as other disciplines, such as math, science, social studies and visual and performing Arts. The first section of this expansion, Writing to Learn Across Disciplines, provides samples of Writing to Learn tasks for each discipline. Explicit reading-writing connections are intentionally present throughout the sample tasks, requiring students to read and think deeply about text, or “anything that communicates a message,” as defined by the KAS for Reading and Writing. Throughout the sample tasks, readers engage in passages, videos, graphs, data sets, experiments or other forms of communication while processing and documenting their learning through writing.

**Writing TO DEMONSTRATE LEARNING Across Disciplines**

*Writing to Demonstrate Learning*, as previously described, is necessary in every classroom for teachers to ascertain how well students are understanding the content, skills or concepts taught. Teachers use this type of writing to provide students opportunities for applying and demonstrating the skills they have learned in class and for assessing students' understanding of the subjects they are studying.

Regularly asking students to think and write about text at the higher levels of Bloom's Taxonomy (i.e., analysis, synthesis, evaluation) can help students not only think through the content but also reveal the depth of their knowledge. Though this kind of writing certainly can promote
learning, it is especially used to help teachers understand how well students are learning. Typically, Writing to Demonstrate Learning takes the form of an academic exercise with the teacher as the primary audience and, thus, would not be suitable for publication. When students Write to Demonstrate Learning, their responses will be graded, marked or scored with a rubric to provide feedback to both the teacher and the student on their progress towards mastery. While feedback may focus on compositional or technical skills as a writer, teacher feedback usually focuses on content and conceptual understandings. Most simply stated, Writing to Demonstrate Learning is any composition intended to serve as a measurement of the student’s depth of learning.

While students may demonstrate their learning through paragraphs or essays, at all ages, student composition should not be limited to traditional formats or restricted to writing on paper or drafting in a word processing document. Instead, students should have numerous opportunities to use digital resources to create, publish, research and update individual or shared products and to take advantage of technology’s capacity to link to other information and to display information flexibly and dynamically. This may even require students to incorporate a variety of communication methods into one Writing to Demonstrate Learning composition.

Like Writing to Learn, Writing to Demonstrate Learning Across Disciplines refers to using Writing to Demonstrate Learning in English/language arts as well as other disciplines such as math, science, social studies, and visual and performing arts. The first section of this expansion, Writing to Learn Across Disciplines, provides samples of Writing to Learn tasks for each discipline. The Writing to Demonstration Learning section is the second of three sections that will make up the complete expansion and provides samples of Writing to Demonstrate Learning. Explicit reading-writing connections are intentionally present throughout the sample tasks, requiring students to read and think deeply about text, or “anything that communicates a message,” as defined by the KAS for Reading and Writing. Throughout the sample tasks, readers engage in passages, videos, graphs, data sets, experiments or other forms of communication while processing and documenting their learning through Writing to Demonstrate Learning.

**How to Read the Writing Across Disciplines Templates**

Each content area template begins broadly with a compilation of possible Writing to Learn or Writing to Demonstrate Learning strategies that experts in the field deem especially applicable to learning that discipline's content. The remainder of each template provides authentic content-specific sample tasks, organized into elementary and secondary levels. These sample tasks can help educators recognize the presence or absence of Writing to Learn or Writing to Demonstrate Learning instructional strategies within their curricula, equipping them with the knowledge to identify when the curriculum does not include adequate opportunities for students to engage in both types of writing. Because the types of texts involved in reading and writing vary across disciplines, each sample contains discipline-specific approaches to Writing to Learn and Writing to Demonstrate Learning.
Implementing Writing to Learn, Demonstrate Learning and for Publication is a springboard of ideas intended to launch further knowledge building of each type of writing. Disciplinary experts offer several strategies educators can consider implementing in their content-specific classrooms.

About the Writing to Learn, Demonstrate Learning and for Publication Tasks provides background for the sample tasks. The sequence of the tasks within the larger context is described.

Content Specific Standards Alignment lists the discipline-specific standards alignment. Because each content area's standards are organized differently, some templates include more boxes for standards alignment than others. In this example, there are two standards boxes because Social Studies standards include Disciplinary Strand Standards and Inquiry Practices Standards.

Reading and Writing Standards Alignment shows how the tasks align with at least one reading and one composition standard in the Kentucky Academic Standards for Reading and Writing.

Teacher Notes is a section for additional information the teacher may need to know regarding the Writing to Learn, Demonstrate Learning and for Publication tasks within their curricula. “Extra” details they may need to know in order to fully understand how the task aligns with standards, how to access and/or utilize accompanying resources as well as explicit explanations for how the tasks fit in the sequence of a larger unit are located here.

Interdisciplinary Literacy Connections identifies two to three Interdisciplinary Literacy Practices that are intentionally embedded in the task to provide opportunities for students to practice the behaviors of literate citizens across disciplines.
Writing is an expectation of English/language arts classrooms beginning in kindergarten and becoming progressively more sophisticated as the grade levels increase. Some Writing to Learn strategies may work just as well for kindergarteners as they do high schoolers while others may not be as appropriate for five- and six-year-old learners as they are for teenagers. Writing to Learn strategies should be selected with attention to the learners’ developmental levels and the intended learning goals. This resource provides a clearer picture of what implementing Writing to Learn strategies in reading and writing classrooms may look like across grade levels.

Teachers must intentionally provide opportunities for students to write daily and in all content areas. Some educators may think Writing to Learn is not appropriate for kindergarten students since this age group is still learning to write; however, this is a misconception. Young children are often enthusiastic writers, so the more opportunities they are given to write, the better. Conrad (2008)\(^1\) emphasizes that, at the word level, writing can reinforce phonological, orthographic and morphological awareness and promotes higher quality word representations in memory, improving both spelling and reading skills. The Institute for Education Sciences What Works Clearinghouse Practice Guide for Teaching Elementary Students to Be Effective Writers\(^2\) recommends devoting 30 minutes of kindergarten instructional time to writing and developing writing skills. For older students, the Institute for Education Sciences What Works Clearinghouse Practice Guide for Teaching Secondary Students to Write Effectively\(^3\) recommends engaging students in Writing to Learn to promote intentional, strategic thinking that ultimately improves writing. For elementary students, Writing to Learn builds the foundation for reading, spelling and communicating in writing, while secondary students can leverage Writing to Learn to improve their strategic thinking and, in turn, their ability to communicate effectively.

Writing in kindergarten and first grades may be drawing and/or forming letters to make words, even if the spelling is invented (words have extra or omitted vowels and consonants). Early in kindergarten, Writing to Learn may begin with prewriting motor skills such as large arm movements in the air or on the carpet and tracing or drawing shapes. These types of activities build spatial awareness and directionality, skills that help young writers produce and remember letter forms. Writing at this level also includes whole class writing experiences led by the teacher for the purpose of learning letter formation or writer’s craft, followed by instances of varying combinations of teacher and students and peers sharing the responsibility and then, finally, students independently Writing to Learn (e.g. forming letters, forming words, crafting text). This process continues into first and second grades with the teacher typically being able to release more responsibility to students and

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sooner than was possible in the previous grade. Some Writing to Learn strategies that may work well in the earliest years, even kindergarten, include, but are not limited to:

- Drawing shapes to reinforce letter formation (early kindergarten)
- Tracing letters in trays of sand, in whipped cream, or on sandpaper (early kindergarten)
- Handwriting:
  - Printing all upper and lowercase letters and numerals (kindergarten)
  - Legibly printing all upper and lowercase letters and numerals with correct form (grade 1)
  - Introductory formation of all upper and lowercase cursive letters (grade 2)
  - Legibly forming cursive letters, words and sentences with accepted norms (grade 3)
- Reading response journals
- Lists
- Simple Graphic Organizers
- Cloze writing

Other suggested Writing to Learn strategies for reading and writing classrooms across all grade levels include:

- Learning Journal, Learning Log, Class Journal
- Double-Entry Journal/Split-Page Journal
- Reading Response Journal or Reading Responses to text-dependent questions
- Bellringers and Exit Slips either handwritten or digital via a survey or forms tool such as Google Forms
- Annotations on documents or texts (on paper and via digital forms)
- Graphic organizers on paper and via digital forms
- Answering questions on traditional paper or through digital means such as PearDeck, NearPod, Padlet, or shared Google Docs or Slides
- Collaborative writing or documentation of thinking
About the Writing to Learn in Tasks in This Resource

The sample elementary and secondary tasks have Writing to Learn embedded in each and address RL.2 (determining theme) and C.2 (supporting an informative or explanatory claim with evidence). Reading Literature Standard 2 is intentionally chosen as the aligned reading standard for these sample tasks in order to demonstrate how Writing to Learn is one way to address the language of the standard in grades K-3, “…from a summary…”.

In the kindergarten example below, Writing to Learn occurs after the students have heard a story read aloud, seen the story’s pictures and heard a summary of the story read aloud two to three times. The teacher leads students through an oral discussion of the story’s lesson and prompts them to recognize the key details within the summary that support the story’s lesson. Once students engage in the oral discussion, they are prepared to use Writing to Learn to capture their thinking and deepen their understanding. Teachers are encouraged to implement the pre-work before jumping into the sample kindergarten task. The purpose of this task is to give kindergarten students an opportunity to practice the skill of determining theme and citing textual evidence through explanation with an informal writing experience.

In the grade 3 example further provided here, the text summary is provided to students. Students do not need to be familiar with the full text because the summary alone has enough implicit and explicit details to determine a possible theme. In other instructional settings, the summary may be written by the class, in collaboration with the teacher or peers or even independently. Of course, in those cases, students would need to be familiar with the full text. In any case, allowing students to experience a variety of opportunities to create and respond to summaries (some written by them and some not) with special attention to theme is encouraged. The built-in scaffolds embedded in Reading Literature Standard 2 through grade three are intended to prepare students for the demands of the standard in fourth grade and beyond when there is an intentional shift for students to analyze theme using a text rather than from a summary of the text.

The grade 8 sample task also models built-in scaffolds for determining theme based on concrete textual evidence. The task guides students through analyzing the positive and negative traits of character relationships and determining a theme supported by their analysis.

Sample Task Featuring Writing to Learn: Kindergarten Reading and Writing

<table>
<thead>
<tr>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RL.K.2</strong> With prompting and support, orally recognize key details from a summary to demonstrate understanding of the lesson learned in the story.</td>
<td><strong>ILP 4</strong>: Utilize receptive and expressive language arts to better understand self, others and the world.</td>
</tr>
<tr>
<td><strong>C.K.2</strong> Compose informative and/or explanatory texts, using a combination of drawing, dictating, writing and digital resources, to establish a topic and supply information about the topic.</td>
<td><strong>ILP 5</strong>: Apply strategic practices, with scaffolding and then independently, to approach new literacy tasks.</td>
</tr>
</tbody>
</table>
The Task

After leading students through the pre-work for this task, the teacher will review the summary provided below either orally, without showing the written text, or with the text visible as the summary is read aloud.

Summary of Oh, How I Wished I Could Read! by John Gile

Oh, How I Wished I Could Read! is a book about a young boy who has a dream that he can’t read. In his dream, he faces many dangers and problems because he can’t read the signs. He ends up getting chased by dogs, sits on wet paint, gets poison ivy and almost gets hit by two cars and a bus! He wakes up from the nightmare to realize it was all just a dream, and he can pick up a book and read!

Say, “We discovered this book teaches us that it is important to know how to read. You are going to answer questions about the lesson we and the character learned. You will use drawing or writing in the boxes to show your answers to the questions.” Give each student a copy of the thinking paper, a tool for them to record their reflections (Writing to Learn). Say, “I am going to read each question to you, but I do not want you to answer any of the questions yet. Just listen and point to the box where you will write or draw your answer. I’m going to read the questions to you and you point to the box under the question. In a few minutes, I will read the questions again and you will have time to answer them. The first question on your paper is, ‘What is the lesson learned in the story?’ The next question is, ‘Which sign do you think is most important to be able to read?’ After you write or draw the sign, you will have one more question to answer about the sign. The question is, ‘Why is the sign you chose the most important?’ WHY means you get to say what you think. What you think about something is called your opinion. There are two boxes to answer this question in because the question asks you to give two reasons why you think the sign is the most important one. You will draw or write one reason in each box for why you think the dog sign or the paint sign (or whichever sign you chose) is the most important to be able to read.

Now, let’s go back to the top of your thinking paper. I will read each question to you again, slowly, and give you time to put your answer in the box. Remember, you may draw or use words to answer each question. You may even choose to use words and pictures. Write the words the best you can. Draw the best you can. Your words and pictures do not have to be perfect. This writing is just for you.” The teacher will read one question at a time and provide time for most students to respond to each question before moving on to the next question.

Teacher Notes

Oh, How I Wished I Could Read! by John Gile is not the only text summary kindergarteners may hear/read to work toward RL.K.2. Students could engage in a similar Writing to Learn task using nearly any grade-appropriate text. A specific text is named in this sample task in order to provide an example text summary for students to work from. Working from a summary is an expectation of RL.K.2, the reading standard to which this task aligns. The pre-work is intended to be used when students are learning to recognize the key details from a summary to demonstrate understanding of the lesson learned in the story and prior to expecting students to engage in this sample Writing to Learn task.
Sample Task Featuring Writing to Learn: Grade 3 Reading and Writing

<table>
<thead>
<tr>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RL.3.2</strong> Identify and cite relevant implicit and explicit information from a summary to determine theme, lesson learned and/or moral, including but not limited to fables, folktales and myths from diverse cultures.</td>
<td><strong>ILP 2</strong>: Employ, develop and refine schema to understand and create text.</td>
</tr>
<tr>
<td><strong>C.3.2</strong> Compose informative and/or explanatory texts, using writing and digital resources, to examine a topic and provide information.</td>
<td><strong>ILP 5</strong>: Apply strategic practices, with scaffolding and then independently, to approach new literacy tasks.</td>
</tr>
</tbody>
</table>

**The Task**

**Summary of My Rotten Redheaded Older Brother by Patricia Polacco**

*My Rotten Redheaded Older Brother* is a story about sibling rivalry. Richard and Patricia are in constant competition. Patricia, the younger sister, can’t stand Richard and is always trying to find ways to outdo him, but it never works. It isn’t until she wishes on a shooting star that she could do something - *anything* - better than Richard, that she finally outdoes him, but more importantly, she realizes how much she and her brother really do care about and love each other even though they are rivals.

Read the summary and then answer the provided questions to help you understand what the summary is telling you about the text’s theme.

- Who are the siblings in the text? *Richard and Patricia*
- What is sibling rivalry? When brothers and sisters *constantly compete and don’t get along*
- What does it mean to ‘outdo’ someone? *Do something better*
- How do you know Patricia and Richard care about each other? *At the end something happens that lets Patricia know how much they really do care about and love each other.*

Now, using the provided summary (above), identify the information from the summary that you think best supports the theme that love exists even during sibling rivalry?

**Sample Graphic Organizer**

<table>
<thead>
<tr>
<th>Write each detail you identify as support for the theme below:</th>
<th>For each detail you identified, why do you think it supports the theme?</th>
<th>Theme:</th>
</tr>
</thead>
</table>
Patricia can’t stand Richard and wants to do something better than him.  

They are siblings that have a rivalry.  

Love exists even during sibling rivalry.  

...she realizes how much she and her brother really do care about and love each other...  

This shows they do love each other even though they usually fight and don’t get along.

Teacher Notes

My Rotten Redheaded Older Brother by Patricia Polacco is not the only text summary third graders may read to work toward RL.3.2. Students could engage in a similar task using nearly any grade-appropriate text. A specific text is named in this sample task in order to provide an example text summary for students to work from. Working from a summary is an expectation of RL.3.2, the reading standard to which this task aligns.

The questioning portion of the task is intended to be used when students are introduced to determining a theme in third grade or when students require more support to determine the theme. This portion of the assignment is not intended to reach the full depth of the standard, but rather serve as an initial steppingstone in the process of attaining the full standard. Writing to Learn is most effective when the task design is intentional as it is here. In this task, text dependent questions have been specifically crafted to direct the reader to the important details (both implicit and explicit) in the summary that relate to the story’s theme. This approach equips the reader with the skills necessary to determine the theme of the text from the summary rather than being left to sort through the details without any structure or guidance.

Without employing intentional, text dependent questions, the reader may not have the schema or disciplinary skills required to identify and cite relevant implicit and explicit information from a summary to determine the theme by the end of third grade. Implementing a Writing to Learn strategy (such as answering text-dependent questions) provides students an opportunity to practice and become comfortable applying the disciplinary skills readers and writers use to make sense of and analyze text. Once students become comfortable reading summaries and answering/discussing theme related text dependent questions that point to both implicit and explicit important details, they are ready to identify the relevant information that supports the theme. In this sample, students Write to Learn using a table format. One column of the table provides the theme for students and then they are asked to identify the information from the summary that best supports the theme. If students have utilized Writing to Learn to answer text dependent questions from the summary, they should be able to identify the information from the summary they think best supports the theme. If they are not able to accurately identify details that support the theme, more time reading the summary for understanding and thinking through text dependent questions may be helpful.
| **RL.8.2:** Determine themes of a text, and analyze how they are developed through relationships of characters, setting and plot, citing textual evidence, paraphrasing or summarizing. | **ILP 4:** Utilize receptive and expressive language arts to better understand self, others, and the world. |
| **C.8.2:** Compose informative and/or explanatory texts to examine a topic and convey ideas, concepts and information through the selection, organization and analysis of relevant content. | **ILP 9:** Apply high level cognitive processes to think deeply and critically about a text. |

### The Task

Complex characters have both good and bad traits that can point to a text’s theme. While independently reading narrative short fiction, a novel or a poem that depicts a relationship between two or more individuals, complete the “**How do character relationships develop a text’s theme?**” graphic organizer. This graphic organizer examines the good and bad traits within a character’s relationship with another. Finally, use this relationship analysis to make a claim about themes developed in the text.

### Teacher Notes

As part instruction towards RL.8.2, this graphic organizer addresses the first part of the standard, “Determine themes of a text, and analyze how they are developed through relationships of characters...” with the understanding that subsequent lessons will address subsequent skills in the standard. This graphic organizer can be used with any literary text and may be customized to suit the needs of any classroom setting. There is also an **expanded version** as an option to use as students strengthen skills in determining theme and composing explanations for literary analysis.

This task relies on the concept of relationship complexity between characters, or that relationships in text—as in real life—can exhibit both positive and negative qualities. Requiring students to look at a relationship through both a positive and negative lens not only promotes critical thinking (ILP 9), but also promotes empathic habits of viewing self, others and the world from two perspectives (ILP 4).

In the final row of the graphic organizer, teachers have the option to select one of two theme-based questions to address the primary content of RL.2. The first question provides more teacher support for students who may struggle with determining themes or who are early in their progress towards mastery of RL.2. In the first question, teachers will determine two themes for students to discuss using evidence from their analysis. The second question provides less teacher support for students who are able to determine themes independently. Teachers may use their discretion and knowledge of their students to select which is most appropriate.
Implementing Writing to Learn in Mathematics Instruction

Writing to Learn in the mathematics classroom should be a regular occurrence. This type of writing provides opportunities for students to think metacognitively and organize their own thoughts with given information, share information with others for feedback and discussion, and continuously revise their thinking as they gain deeper understanding of the task and of mathematics in general.

Writing to Learn can promote student engagement and aid in developing a student’s mathematical identity. Strategies that involve embedding systems and routines, such as Routines for Reasoning, allow students to engage in productive struggle and take ownership of their progress toward intended learning outcomes. While routines may vary across contexts, routines can help foster a sense of predictability and safety for students as they learn mathematics.

Writing to Learn strategies can engage students in learning that develops the voice and perspective necessary to engage with mathematics in the world beyond the classroom. When students Write to Learn, look for opportunities for them to respond to primary source documents, such as graphs or situations that deal with current world events. Consider facilitating Writing to Learn within tasks such as Data Talks or slow reveal graphs (demonstrated here). Writing to Learn strategies can even create a space to promote analysis of information, data and facts to help students make reasoned judgments, resulting in more responsible decision making.

Some additional examples of Writing to Learn strategies in the mathematics classroom could include, but are not limited to, the following:

- I Notice, I Wonder Brainstorming
- Mathematical Language Routines such as:
  - Successive Pair Shares
  - Critique a Partial or Flawed Response
  - Always-Sometimes-Never
  - Co-Craft Questions
  - Co-Craft Situations
  - Numbered Heads Together

(Source: Understanding Language/Stanford Center for Assessment, Learning and Equity at Stanford University, is licensed under a Creative Commons Attribution 4.0 International License. 2017.)
These Writing to Learn sample tasks address Measurement and Data in Grade 2 and Modeling with Geometry in high school. Each sample shows how Writing to Learn is naturally embedded within a common mathematical instructional framework called Three-Act Tasks.

In Three-Act Tasks, Act 1 is a lesson launch, typically presenting a thought-provoking phenomenon for students to observe and pose questions as they ponder the situation. Writing to Learn in this stage helps students collect their noticings and wonderings about the thought-provoking phenomenon. Act 2 is a period of exploration in which students request clarifying data and then answer their own questions about what they observed in the first act. Students use Writing to Learn in Act 2 as they explore ways of answering their questions. Act 3 brings the problem to a conclusion and offers students the opportunity to reflect on their written solutions. (Source: https://mathforall.edc.org/three-act-tasks/).

The purpose of these Writing to Learn tasks is to give students an opportunity to use informal writing exercises to capture their thinking, ultimately sharing through discussion in order to promote individual and collective learning and deepen understanding of content throughout the process of modeling with mathematics.

In both sample tasks, the instructional emphasis remains on the content and practice standards within the KAS for Mathematics. The KAS for Mathematics differs from previous standards in that they intentionally integrate content and practices in such a way that every Kentucky student will benefit mathematically. Put simply, the Standards for Mathematical Content define what students should understand and be able to do. Standards for Mathematical Practice define how students engage in mathematical thinking.

<table>
<thead>
<tr>
<th>Mathematics Content Standard Alignment</th>
<th>Standards for Mathematical Practices Alignment</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cluster:</strong> Relate addition and subtraction to length.</td>
<td>Students calculate the two different lengths based on the paths they will run. Students will make sense of who will win the race and how far they will run (MP.1) using a linear representation (MP.4).</td>
<td>RI.2.1 Ask and answer such questions as who, what, where, when, why, and how, and make support logical inferences to construct meaning from the text.</td>
<td>ILP 1: Recognize that text is anything that communicates a message.</td>
</tr>
<tr>
<td><strong>KY.2.MD.5</strong> Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units by using drawings and equations with a symbol for the unknown number to represent the problem.</td>
<td></td>
<td>C.2.6 Collect information from real world experiences or provided sources to answer or generate questions.</td>
<td>ILP 8: Engage in specialized, discipline specific literacy practices.</td>
</tr>
<tr>
<td><strong>Target of the Standard:</strong> Conceptual Application</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sample Task Featuring Writing to Learn: Grade 2 Mathematics
The Task

Task: The Race

ACT 1: Engage and Perplex
After showing the 7-second video engaging students in a notice and wonder routine, ask, “What do you notice and wonder? Record their noticings and wonderings on chart paper. Some potential noticings and wondering could be:

- There are two girls;
- One girl is taller than the other;
- The girls are running
- Why are the girls running?
- Where are they running to?
- Who will win the race?
- How far did each girl run?

Students record some of these on their Three-Act Task graphic organizer. Graham Fletcher’s Version 3 graphic organizer for Three Act Tasks are suitable for use. Next, the teacher and students discuss and come to a consensus on what they would like to solve. They then estimate solutions, recording these on the graphic organizer. For example, if the class decides to focus on solving how far each girl ran, students would estimate a low and high number and then commit to the estimate on the number line provided on the recording sheet.

ACT 2: Seek Information and Solutions
In Act 2, students work on finding solutions to their problems through Writing to Learn. Provide students with the following directions:
We are trying to solve the question, “Where did they run?” Using the information provided in the Race Route and the additional information below, use strategies that make sense to you to help solve how far each girl ran and who won.

Additional information:
- The race started in the bottom right corner, and the girls started running left.
- The race finished in the same spot.

The Task (continued)
ACT 3: Reveal, Discuss, Extend (Extension Optional)
In Act 3, students share their written work, thinking and solutions with one another. If using the 3 Act Task graphic organizer, the teacher will direct students to sections 6 and 7 of the organizer as this is where they will be sharing their thinking from and also Writing to Learn when confirming or adjusting their arguments. Explain the purpose of Act 3 to the students by saying, “Now it is time to explain your conclusions to each other. You will get to share your thinking with classmates and they will get to share their thinking with you. Listen closely as your classmates explain their arguments (or read their arguments closely) because it is your job to decide whether they make sense and ask useful questions to clarify or improve the arguments. (MP.3) You will confirm or adjust your thinking/arguments based on the discussions you have with your classmates.” Allow time for students to engage in this communication and then reconvene as a whole class to bring conflicting ideas together and reconcile. This is also when the teacher will generalize the math involved and introduce formal mathematical vocabulary. Students continue to use Writing to Learn at this time as they make final adjustments, such as corrections to their math computation or applying a more efficient solution strategy, and additions, such as including formal math vocabulary, to their written work.

Teacher Notes
Implementation Ideas for Act 3:
The student discussion time can be structured in a variety of ways. Consider these ideas below:
- Students might compare their solutions to each other and to the reveal (if the teacher has shared the solution).
• Students might compare their solutions to their estimates and discuss the comparison.
• Students might discuss the assumptions that were made in the work.
• Students might think of other questions they could pursue next.
(Source: https://www.sfusdmath.org/3-act-tasks.html)

For additional insight around the alignment of the selected task to the KAS for Mathematics, access the Annotated Assignment Review Protocol. Designed to guide educators through the process of reviewing a single task/assignment by examining the alignment with the Mathematical Content alignment, engagement in the Mathematical Practices, attention to Relevance and analyzing Student Performance, the Assignment Review Protocol is intended to help teachers, leaders, and other stakeholders answer the question, “Does this task give students the opportunity to meaningfully engage in worthwhile grade-appropriate content?”

Sample Task Featuring Writing to Learn: High School Geometry

<table>
<thead>
<tr>
<th>Mathematics Content Standard Alignment</th>
<th>Standards for Mathematical Practices Alignment</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cluster:</strong> Apply geometric concepts in modeling situations.</td>
<td><strong>MP.1:</strong> Make sense of problems and persevere in solving them. Students start by explaining the meaning of a problem and look for entry points to its solution. They analyze given constraints, relationships and goals.</td>
<td>Supports learning toward:</td>
<td><strong>ILP 2:</strong> Employ, develop and refine schema to understand and create text.</td>
</tr>
<tr>
<td><strong>KY.HS.G.30</strong> Apply concepts of density based on area and volume in modeling situations, using appropriate units of measurement.</td>
<td><strong>MP.4:</strong> Model with mathematics. Students are able to identify important quantities in a practical situation. They can analyze relationships mathematically to draw conclusions.</td>
<td><strong>RI.9-10.1</strong> Cite relevant and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.</td>
<td><strong>ILP 6:</strong> Collaborate with others to create new meaning.</td>
</tr>
<tr>
<td><strong>Target of the Standard:</strong> Application</td>
<td><strong>MP.6:</strong> Attend to precision. Students calculate accurately and efficiently and express answers</td>
<td><strong>C.9-10.6</strong> 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.</td>
<td><strong>ILP 8:</strong> Engage in specialized, discipline specific literacy practices.</td>
</tr>
<tr>
<td>For additional insight on standard KY.HS.G.30, access the Annotated Breaking Down a Standard Sample.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Task: **World’s Largest Hot Coffee**

**ACT 1: Engage and Perplex**

In Act 1, the teacher shares the 57-second video with the students.

The teacher poses questions to the class: “What do you notice? What do you wonder?” Students are encouraged to record their observations (perhaps using a graphic organizer) and generate questions to ask about the situation. The situation for this task is: The Gourmet Gift Baskets team wants to break the record for the biggest coffee cup. Once students have had the opportunity to independently consider the situation, students collectively decide on a question to focus on answering as a class and make estimates about the likely solution. In this example, the class asks, “How many gallons of coffee do you think will fit inside?” Below are suggested prompts to guide the process of making estimates:

- Guess as close as you can. Write your guess down.
- Write down a guess you know is too high.
- Write down a guess you know is too low.
- How long do you think it’ll take them to fill up the cup?
- How many regular-size cups of coffee would fit inside that super-size cup of coffee?

**ACT 2: Seek Information and Solutions**

In Act 2, students work on finding solutions to their problems. Students use information they have and ask for more information as needed.

The task suggests asking students:
- What information would help solve this problem?

Resources provided that the teacher may share to support thinking:
- An image containing the dimensions of the cup
- A link to the news story about the old record
- An image conveying the rate at which the cup is filling up
ACT 3: Reveal, Discuss, Extend (Extension Optional)

In Act 3, students share their work, thinking and solutions. Once students have had the opportunity to formulate their thinking, allowing students to have discussion about their strategies can deepen understanding of content. The discussion can be structured in a variety of ways, such as

- Students might compare their solutions to each other’s and to the reveal (if the teacher has shared the solution).
- Students might compare their solutions to their estimates and discuss the comparison.
- Students might discuss the assumptions that were made in the work.
- Students might think of other questions they could pursue next


Teacher Notes

ACT 1: Engage and Perplex

Engaging students in tasks that promote mathematical reasoning and problem solving is a critical element of effective mathematics teaching. Teachers should consider how to offer all students an entry point into mathematics. In this case, Act 1 attempts to lower barriers to entry. It’s visual. It requires very little literacy from the student. As an additional strategy, educators can utilize routines, such as I Notice, I Wonder.

Noticing and wondering is a tool to help students:

- Understand the story, the quantities and the relationships in the problem.
- Understand what the problem is asking and what the answer will look like.
- Have some ideas to begin to solve the problem.

Utilizing a graphic organizer provides a brief, informal way to capture student thinking and learning. Allowing students the opportunity to jot down their ideas, inviting student sharing and discussion can promote learning and understanding of content. Once a class list of noticings and wonderings has been developed, decide on a question to focus on answering as a class and make estimates about the likely solution.

At the end of a noticing and wondering sessions, students should be able to:

- A link to the conversion from cubic feet to gallons
- A file containing the Guinness World Record guidelines
• Tell the story of the problem in their own words.
• Give a reasonable estimate or high and low boundaries for the answer.
• Work independently on carrying out steps or generating more data toward solving the problem.

Teacher Notes (continued)

ACT 2: Seek Information and Solutions
During Act 2, students may use different ways to communicate and understand, such as objects, drawings, diagrams, charts, lists, graphic organizers, visual representations, etc. Within the graphic organizer, there is space for students to construct a viable argument (Standard for Mathematical Practice 3). Students understand and use stated assumptions, definitions and previously established results in constructing arguments.

ACT 3: Reveal, Discuss, Extend (Extension Optional)
Students justify their conclusions, communicate them to others and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Students at all grades can listen or read the arguments of others, decide whether they make sense and ask useful questions to clarify or improve the arguments. (MP.3)

Ultimately, Act 3 is where the math is formalized and consolidated. Conflicting ideas are brought together and reconciled. Formal mathematical vocabulary is introduced.

For additional insight around the alignment of the selected task to the KAS for Mathematics, access the Annotated Assignment Review Protocol. Designed to guide educators through the process of reviewing a single task/assignment by examining the alignment with the Mathematical Content alignment, engagement in the Mathematical Practices, attention to Relevance and analyzing Student Performance, the Assignment Review Protocol is intended to help teachers, leaders, and other stakeholders answer the question, “Does this task give students the opportunity to meaningfully engage in worthwhile grade-appropriate content?”
## Writing to Learn in Science Instruction

### Implementing Writing to Learn in Science Instruction

Writing to Learn in the science classroom should be a regular occurrence as this type of writing allows students to formulate ideas, organize thoughts and share information with others for feedback and discussion, continuously revising as they gain deeper understanding of the phenomenon and/or problem. While there are many more Writing to Learn strategies that fit well in science classrooms, some examples include, but are not limited to, the following:

- Organizing information into a table
- Representing data on a chart
- Developing models
  - Images
  - Flowcharts
  - Analogies
  - Mathematical Equations
- Designing Solutions
- Critiquing Arguments

Science teachers implement Writing to Learn strategies when their students engage in the science and engineering practice (SEP), a dimension of the Kentucky Academic Standards for Science. These practices define the “doing” of science; that is, how students come to understand the natural and designed world. Writing to Learn supports students as they engage in the “doing” and can help advance their understanding of the disciplinary core ideas. These eight practices are the science literacy skills students use that will lead them to being scientifically literate citizens. To generate more ideas for how to utilize Writing to Learn in a science classroom, review the components of the practices found in the tables at the end of each practice description in Appendix F: Science and Engineering Practices. Through the regular use of these practices, students gain a deeper understanding of the core ideas of science.

The SEPs interact with one another and are not used in a linear way. This provides numerous opportunities for writing to learn to occur in the science classroom. The task descriptions for these samples incorporate writing to learn opportunities that support the sample writing to learn tasks.
About the Writing to Learn in Science Tasks in the Resource

The second-grade unit on plant growth begins with students exploring the mystery of their harvest corn, something they initially saw as decoration, beginning to sprout what appears to be leaves and roots. As students made observations of the dried corn, this led to the question, “Why is our corn changing?” Leading up to this task, the students were actively engaged in collaborative planning and carrying out investigations and making independent observations in order to see patterns. From the previous investigation the students have questioned the needs of plants and noticed that the plant structures are bending toward the window to get light. They design another investigation to answer, “Does corn need light to keep growing?” The students place some of their plants in the dark and some in the light.

The sixth-grade task is part of a unit exploring the phenomenon of a change in height of Mt. Everest after an earthquake has occurred. As students begin to investigate this phenomenon, they relate this change to mountain ranges around the world, leading to the question, “Why do some mountains grow higher while other mountains are losing height?”

Sample Task Featuring Writing to Learn: Grade 2 Science

<table>
<thead>
<tr>
<th>Disciplinary Core Idea Alignment</th>
<th>Science and Engineering Practices Alignment</th>
<th>Crosscutting Concepts Alignment</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supports learning towards LS2.A Interdependent Relationships in Ecosystems:</td>
<td>Planning and Carrying Out Investigations</td>
<td>Patterns: Patterns in the natural world can be observed.</td>
<td>RI.2.3 Describe the connection between individuals, historical events, scientific ideas or concepts or steps in technical procedures over the course of a text.</td>
<td>ILP 1: Recognize that text is anything that communicates a message.</td>
</tr>
<tr>
<td>Plants depend on light and water to grow.</td>
<td>Make observations (firsthand or from media) and/or measurements to collect data that can be used to make comparisons.</td>
<td>Cause and Effect: Events have causes that generate observable patterns.</td>
<td>C.2.6 Collect information from real-world experiences or provided sources to answer or generate questions</td>
<td>ILP 8: Engage in specialized, discipline-specific literacy practices.</td>
</tr>
<tr>
<td></td>
<td>Engaging in Argument from Evidence</td>
<td></td>
<td>C.2.2 Compose informative and/or explanatory text, using writing and digital resources, to establish a</td>
<td></td>
</tr>
</tbody>
</table>
The Task

Writing to Learn Task:

Students will use Writing to Learn to guide and synthesize their learning as they investigate the question, “Does corn need light to keep growing?” Students will engage in Writing to Learn experiences throughout the investigation in order to build knowledge and answer the question. During the plant observation period, students will collect data through drawings and descriptions or measurement data such as height of the plants in light and dark environments. They will look for patterns across all the data samples, keeping focused on the purpose of the investigation, to answer, “Does corn need light to keep growing?” Students will write a claim, with evidence, in response to the question, “Does light cause plants to grow and remain healthy?”

Data collection is the first Writing to Learn task within this investigation. Provide students with this language to begin the investigation: Use your science notebook to collect observational data (drawings or descriptions) or measurement data (height) of the plants in the light and the plants in the dark for two weeks. During the observation period, facilitate thinking/learning by asking students what they notice about the data they are collecting. Ask how the data for plants in the dark are different from data collected for plants in the light. After two weeks, prompt students to process their thinking/learning through Writing to Learn using language such as: Now that we have collected data for two weeks, what patterns do you notice across all the samples? Using Writing to Learn at this stage of the learning process engages students in data analysis and interpretation. Look for patterns that will help you answer the investigation question, “Does light cause plants to grow and remain healthy?” Think: What do these patterns help me discover about what plants need to grow and remain healthy? Students will draft a written response to the investigation question after orally describing the patterns/connections between sunlight and plant growth and health, using their observation data as evidence to support their thinking. Provide students with this language to initiate another opportunity for Writing to Learn: Does light cause plants to grow and remain healthy? Write a claim supported by evidence from the data you collected. You may use the following sentence starter to begin your claim.

Light (does not cause/causes) plants to grow and remain healthy. I know this because...

Teacher Notes

Writing to Learn is illustrated in this through the collection of data, a component of carrying out the investigation (SEP: Planning and Carrying Out an Investigation) in order to identify trends (CCC: Patterns) across all the samples that can help answer the question being investigated. As they begin to think about the relationship (CCC: Cause and Effect) between light and plant growth (DCI: LS2.A Interdependent Relationships in Ecosystems), the students use their data as evidence to support their thinking (SEP: Engaging in Argument from Evidence).
Sample Task Featuring Writing to Learn: Grade 6 Science

<table>
<thead>
<tr>
<th>Disciplinary Core Idea Alignment</th>
<th>Science and Engineering Practices Alignment</th>
<th>Crosscutting Concepts Alignment</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supports learning towards MS-ESS2.A Earth’s materials and Systems</td>
<td>Analyzing and Interpreting Data</td>
<td>Patterns</td>
<td>RI.6.1 Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.</td>
<td>ILP 1: Recognize that text is anything that communicates a message.</td>
</tr>
<tr>
<td>The planet’s systems interact over scales that range from microscopic to global in size and they operate over fractions of a second to billions of years. These interactions have shaped Earth’s history and will determine its future.</td>
<td>Use graphical displays (e.g., maps, charts, graphs and/or tables) of large data sets to identify temporal and spatial relationships.</td>
<td>Patterns can be used to identify cause and effect relationships.</td>
<td>C.6.2 Compose informative and/or explanatory texts to examine a topic and convey ideas, concepts and information through the selection, organization, and analysis of relevant content.</td>
<td>ILP 8: Engage in specialized, discipline-specific literacy practices.</td>
</tr>
</tbody>
</table>

The Task

Writing to Learn Task:
As a class, students are asked to identify the types of data that would be needed to help determine how mountains change over time. Once the class comes to an agreement on a type of datum, the teacher will write it on the board. Students will use the agreed upon information to develop their data table. Students are then provided a set of six data cards describing the characteristics of six different mountains including maps of their locations.

The teacher will initiate students' first opportunity to Write to Learn using oral or written directions such as, “Using your science journal, design a table, individually or collaboratively, to organize the data determined by the class that will help us in answering our question.” Once the data tables have been designed, the data cards will be distributed, and the teacher will set students up for another Writing to Learn
opportunity. The teacher will explain, “The data cards contain information about the various mountains and may include more information than we identified as a class. **Record the appropriate information in your table. You may add the information to your data table if it is relevant to the question being answered. You may also wish to annotate the cards as you read through them.**”

---

**Teacher Notes**

Writing to Learn is illustrated in this through the organization of the information from the data cards (SEP: Analyze and Interpret Data) into a form that will allow them to identify trends (CCC: Patterns) that can help answer the question being investigated, as they begin to think about potential causal (CCC: Cause and Effect) mechanisms for changes in mountain height (DCI: ESS2.A Earth materials and systems).

For guidance in assisting students in determining appropriate data and organization of their table, access **Lesson 1: What is causing Mt. Everest and other mountains to move, grow or shrink?** of the OpenSciEd 6th grade unit: What causes Earth’s surface to change?
## Writing to Learn in Social Studies Instruction

### Implementing Writing to Learn in Social Studies Instruction

While there are many more Writing to Learn strategies that fit well in social studies classrooms, some examples include, but are not limited to, the following:

- Graphic organizers
- Graffiti boards
- Annotating texts
- Mind mapping
- Think, Write, Pair, Share
- Source Analysis sheets
- Note taking strategies (Cornell notes, etc.)
- Active reading strategies

### About the Writing to Learn in Social Studies Tasks in This Resource

The Grade 2 task requires students to identify cultural elements of the Maya through the creation of a graffiti board. Identifying the cultural elements of the Maya supports students in their investigation of the supporting question (2.I.Q.2) “How did cultural groups connect and interact in the past and today to shape the culture of modern Mexico?” as they begin to compare this group with other diverse North American cultural groups in Mexico from the past and today.

In Grade 5 the purpose of the task is to give students an opportunity to utilize Writing to Learn, recording on a graphic organizer and organizing their thinking as they analyze primary and/or secondary sources that will support them when answering the supporting question, “Why did the colonists demand no taxation without representation?”

The Grade 8 Writing to Learn task is aligned to both the disciplinary strands and inquiry practices of the Kentucky Academic Standards (KAS) for Social Studies. The purpose of this task is to give students an opportunity to analyze a primary source by using a graphic organizer to record and organize their thinking. Students will use the information learned in this Writing to Learn task to answer the supporting question, “How did the Missouri Compromise temporarily save the Union?”

World History for Grades 9-10 is a task aligned to both the disciplinary strands and inquiry practices of the Kentucky Academic Standards (KAS) for Social Studies. The purpose of this task is to provide students an opportunity to corroborate sources to understand how continuities in the desire for cheap labor led to chattel slavery within the Atlantic System. Students will Write to Learn as they gather information and evidence from credible sources, corroborate these sources and organize their thinking by creating a Mind Map. Students will use the information learned through the Writing to Learn used in this task to answer the supporting question, “What incentives caused individuals, organizations and governments to use slavery and other systems of forced labor for the purpose of production across the globe between 1300-1888?”
Sample Task Featuring Writing to Learn: Grade 2 Social Studies

<table>
<thead>
<tr>
<th>Social Studies Disciplinary Strand Standards Alignment</th>
<th>Inquiry Practices Alignment</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2.H.CH.1</strong> Identify and compare the diverse North American cultural groups of the past and today.</td>
<td><strong>2.I.Q.2</strong> Identify supporting questions that help answer compelling questions about communities found in North America.</td>
<td><strong>RI.2.1</strong> Ask and answer such questions as who, what, where, when, why, and how, and make and support logical inferences to construct meaning from the text.</td>
<td><strong>ILP 2</strong>: Employ, develop and refine schema to understand and create text.</td>
</tr>
<tr>
<td><em>In this task, students are identifying cultural elements of the Maya, which will help them later to compare this group in Mexico from the past and today.</em></td>
<td><em>Students are working toward 2.I.Q.2 by gathering evidence from multiple sources that will help them answer the supporting question.</em></td>
<td><strong>C.2.5</strong> Conduct shared research and writing projects that build knowledge about a topic.</td>
<td><strong>ILP 3</strong>: View literacy experiences as transactional, interdisciplinary and transformational.</td>
</tr>
</tbody>
</table>

Sample Task Featuring Writing to Learn

In small groups, create a [graffiti board](#) representing Mayan culture using information you have gathered from the sources provided below:

- NoticiasMVS. (n.d.). *Pueblos Indígenas en México* [infographic]. [http://noticiasmysfotos.blob.core.windows.net/media/infografias/8a206f5d5c58f9e85b3774ff6fd05a2b.jpg](http://noticiasmysfotos.blob.core.windows.net/media/infografias/8a206f5d5c58f9e85b3774ff6fd05a2b.jpg).

You may use a poster, chart paper or whiteboard and collectively write words, phrases and sentences and draw pictures that represent Mayan culture.
This Writing to Learn task is a part of the Grade 2 Strongly Aligned Assignment with Teacher Notes from the Social Studies Student Assignment Library.

The graffiti board strategy allows students to organize the information they learn from the sources about the Mayan culture in text and images, allowing students to process their learning through both linguistic and non-linguistic means. Because Writing to Learn is informal writing, this strategy supports students in synthesizing information from the sources and expressing their thinking through text and images. Organizing elements of Mayan culture, one example of Writing to Learn, will support students’ learning as they gather evidence to prepare for responding to the supporting question, “How did cultural groups connect and interact in the past and today to shape the culture of modern Mexico?”

Student Examples:
### Sample Task Featuring Writing to Learn: Grade 5 Social Studies

<table>
<thead>
<tr>
<th>Social Studies Disciplinary Strand Standards Alignment</th>
<th>Inquiry Practices Alignment</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5.H.CO.1</strong> Analyze the role conflict and collaboration played in the founding of the United States.</td>
<td><strong>5.I.UE.2</strong> Analyze primary and secondary sources on the same event or topic, noting key similarities and differences in the perspective they represent.</td>
<td><strong>RI.5.6</strong> Analyze multiple accounts of the same event or topic, noting important similarities and differences in the perspective they represent.</td>
<td><strong>ILP 8</strong>: Engage in specialized, discipline specific literacy practices.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>RI.5.7</strong> Analyze information from multiple print and non-print formats, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.</td>
<td><strong>ILP 9</strong>: Apply high level cognitive processes to think deeply and critically about text.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>RI.5.9</strong> Integrate information from several texts on the same theme or topic.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>C.5.5</strong> Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>C.5.6</strong> Summarize relevant information from experiences, or gather relevant information from multiple print and digital sources; summarize or paraphrase applicable information in notes and finished work and provide a list of sources.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>See Teacher Notes for an explanation of the KAS for Reading and Writing reading strand and how these standards align to the task.</em></td>
<td></td>
</tr>
</tbody>
</table>
The Task

With a partner, you will examine the Stamp Act from both the British and Colonists’ perspectives. The sources you will utilize are listed below:


Read and analyze these sources with your partner. As you work, use the graphic organizer below to guide you as you compare the British and American Colonist perspective:

<table>
<thead>
<tr>
<th>Stamp Act Summary</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(Include who created it, who it impacted, what it did, and what caused it)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>British Perspective</th>
<th>Colonists’ Perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do the British have the right to tax the colonists?</td>
<td>Do the British have the right to tax the colonists?</td>
</tr>
<tr>
<td>Cite evidence from the sources.</td>
<td>Cite evidence from the sources.</td>
</tr>
<tr>
<td>Do the British believe the colonies have the obligation to help the British?</td>
<td>Do the colonists believe the British are entitled to the colonists’ help?</td>
</tr>
<tr>
<td>Cite evidence from the sources.</td>
<td>Cite evidence from the sources.</td>
</tr>
<tr>
<td>Summarize in detail the OVERALL feelings of the British on the Stamp Act.</td>
<td>Summarizes in detail the OVERALL feelings of the colonists on the Stamp Act.</td>
</tr>
</tbody>
</table>

Compare the British and American Colonist perspective on the Stamp Act by analyzing the similarities and differences in their positions.
This Writing to Learn task is a part of the Grade 5 Strongly Aligned Assignment with Teacher Notes from the Social Studies Student Assignment Library.

A note about the Kentucky Academic Standards for Reading and Writing: Guiding Principles 1-6 give students an opportunity to practice skills in analyzing Key Ideas and Details and Craft and Structure. Guiding Principles 7-9 require readings of multiple texts and assume integrated engagement in Standards 1-6.

This graphic organizer offers multiple Writing to Learn opportunities. Each component requires students to focus on a different aspect of the content and would likely take place over multiple settings/days. For instance, students crafting a summary in the first box is Writing to Learn. Answering each set of perspective questions is also Writing to Learn. Students using what they learned about each group’s perspective to analyze the similarities and differences is Writing to Learn as well. Each of these Writing to Learn tasks requires increasingly complex reading, writing and thinking skills and works together to comprise the full graphic organizer. Because this task carries a heavier cognitive load for students, teachers need a firm understanding of the reading strand within the Kentucky Academic Standards for Reading and Writing. This knowledge reduces over-identification and misalignment of standards. Seen in the Reading and Writing Standards Alignment box above, the standards in this task focus on integration of knowledge and ideas (Standards 7-9) even though students are responding to questions that require them to explain what the text says explicitly and from inferences (RI.5.1), citing evidence from texts that supports the central ideas (RI.5.2), and thinking about relationships or interactions between the British and Colonists (RI.5.3). These standards require students to analyze a single text at a time, which is happening in this sample Writing to Learn task; however, they are also required to go beyond single texts, aligning more closely to Guiding Principles 7-9. Standards 7-9 require readings of multiple texts, expecting the reader to apply Standards 1-6 as needed in each singular text to then integrate knowledge and ideas across multiple texts.

In short, this task requires both analysis (required by all reading standards) and synthesis (required by Standards 7-9, Integration of Knowledge and Ideas). When a task such as this one demonstrates this level of complexity, teachers should recognize the task as synthesis and align instruction to the appropriate Integration of Knowledge and Ideas standard.

Student example:
### Sample Task Featuring Writing to Learn: Grade 8 Social Studies

<table>
<thead>
<tr>
<th>Social Studies Disciplinary Strand Standards Alignment</th>
<th>Inquiry Practices Alignment</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>8.H.CO.2</strong> Describe the conflicts and compromises that shaped the development of the U.S. government between 1783-1877.</td>
<td><strong>8.I.UE.3</strong> Gather relevant information from multiple sources while using the origin, authority, structure, context and corroborative value of the sources to guide the selection to</td>
<td><strong>RI.8.1</strong> Cite relevant textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.</td>
<td><strong>ILP 8:</strong> Engage in specialized, discipline specific literacy practices. <strong>ILP 9:</strong> Apply high level cognitive processes to think deeply and critically about text.</td>
</tr>
</tbody>
</table>

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**Stamp Act Summary**

(Include who created it, who it impacted, what it did, and what caused it)

The stamp act was created in 1765 by British Parliament. It was a tax put upon the American Colonies. The tax was on legal paper goods like marriage licences, and other documents. This caused the colonies to be upset and started a boycott.

<table>
<thead>
<tr>
<th>British Perspective</th>
<th>Colonist Perspective</th>
</tr>
</thead>
</table>
| **Do the British have the right to tax the colonists?**  
Yes because they are under the rule of the king. The king had the right to tax and make laws however he wanted. | **Do the British have the right to tax the colonists?**  
Yes, the British had a right to tax them, but the colonists wanted to be represented. |
| **Do the British believe the colonies have the obligation to help the British?**  
Yes because they got the same rights as the British people under the rule of the king. | **Do the colonists believe the British are entitled to the colonists' help?**  
Yes because the understand that they are under the rule of the king. |
| **Summarize in detail the overall feelings of the British on the Stamp Act.**  
They feel like they had the right to tax them on whatever they wanted. | **Summarize in detail the overall feelings of the colonists on the Stamp Act.**  
The said they would pay the tax but they needed representation. |

They both had a government that taxed them. The British had representation in Parliament, but the Colonies did not. They were both under the the rule of the king.
<table>
<thead>
<tr>
<th>The Task</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The Task</td>
<td>The Task</td>
</tr>
<tr>
<td>Examine the <a href="https://example.com">Missouri Compromise of 1820</a> using</td>
<td>Examine the <a href="https://example.com">Missouri Compromise of 1820</a></td>
</tr>
<tr>
<td>the <a href="https://example.com">Analyze a Written Document</a> tool. You may</td>
<td>the <a href="https://example.com">Analyze a Written Document</a> tool. You</td>
</tr>
<tr>
<td>work independently or in small groups to answer the questions provided</td>
<td>work independently or in small groups to answer the questions</td>
</tr>
<tr>
<td>provided on the tool.</td>
<td>provided on the tool.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Teacher Notes</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Teacher Notes</td>
<td>Teacher Notes</td>
</tr>
<tr>
<td>This Writing to Learn task is a part of the [Grade 8 Strongly Aligned</td>
<td>This Writing to Learn task is a part of the [Grade 8 Strongly</td>
</tr>
<tr>
<td>Assignment with Teacher Notes](<a href="https://example.com">https://example.com</a>) from the [Social</td>
<td>Assigned Assignment with Teacher Notes](<a href="https://example.com">https://example.com</a>)</td>
</tr>
<tr>
<td>Studies Student Assignment Library.</td>
<td>from the <a href="https://example.com">Social Studies Student Assignment Library.</a></td>
</tr>
<tr>
<td>In this task, students use Writing to Learn to gather information</td>
<td>In this task, students use Writing to Learn to gather information</td>
</tr>
<tr>
<td>from a primary source document. Students are asked to observe the</td>
<td>from a primary source document. Students are asked to observe</td>
</tr>
<tr>
<td>parts of the document, make sense of it and determine how to use it</td>
<td>the parts of the document, make sense of it and determine how</td>
</tr>
<tr>
<td>as historical evidence. Sourcing the Missouri Compromise and</td>
<td>to use it as historical evidence. Sourcing the Missouri</td>
</tr>
<tr>
<td>recording their analysis will support students in comprehending the</td>
<td>Compromise and recording their analysis will support students</td>
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<tr>
<td>document and understanding its purpose and significance. This</td>
<td>in comprehending the document and understanding its purpose</td>
</tr>
<tr>
<td>knowledge will support students as they investigate the supporting</td>
<td>and significance. This knowledge will support students as they</td>
</tr>
<tr>
<td>question, “How did the Missouri Compromise temporarily save the Union?”</td>
<td>as they investigate the supporting question, “How did the</td>
</tr>
<tr>
<td></td>
<td>Missouri Compromise temporarily save the Union?”</td>
</tr>
</tbody>
</table>

| Student example:                                                      | Student example:                                                 |
|                                                                      | Student example:                                                 |
Analyze a Written Document

Meet the document.

Type (check all that apply):
- Letter
- Speech
- Patent
- Telegram
- Court document
- Chart
- Newspaper
- Advertisement
- Press Release
- Memorandum
- Report
- Email
- Identification document
- Congressional document
- Other

Describe it as if you were explaining to someone who can’t see it.

Think about: Is it handwritten or typed? Is it all by the same person? Are there stamps or paper clips? What else do you see on it?

Who wrote it? [Sixteenth Congress]
Who read or received it? [一封信 from the Missouri territory]
When is it from? [March 4th, 1820]
Where is it from? [Columbus]

Observe its parts.

Try to make sense of it.

What is it talking about? [That Missouri would become a slave state and Maine become a free state and no slavery being a big issue]
Write one sentence summarizing the document. [There would be boundaries on where slave territory can go and where free territory can go.]
Why did the author write it? [The author wrote it to inform the reader about the Missouri Compromise.]
Quote evidence from the document that tells you this: [parallel of thirty-six degrees of north latitude, only parallel of land on which slavery was allowed out thirty minutes]
What was happening at the time in history this document was created? [There was a trial going on for a slave who was a free man for forty years then went back to a slave state but he was free for some reason]

Use it as historical evidence.

What did you find out from this document that you might not learn anywhere else?

I learned more about what the Missouri Compromise was about.
What other documents or historical evidence are you going to use to help you understand this event or topic? I would use books because I feel re-read it for me.
Sample Task Featuring Writing to Learn: High School World History

<table>
<thead>
<tr>
<th>Social Studies Disciplinary Strand Standards Alignment</th>
<th>Inquiry Practices Alignment</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HS.WH.CH.5</strong> Analyze how continuities in the desire for cheap labor led to slavery and other systems of forced labor across the globe between 1300-1888.</td>
<td><strong>HS.WH.I.U.E.2</strong> Gather information and evidence from credible sources representing a variety of perspectives relevant to compelling/supporting questions in world history.</td>
<td><strong>RI.9-10.7</strong> Analyze various accounts of a subject presented in different print and non-print formats, determining which details are emphasized in each account.</td>
<td><strong>ILP 6:</strong> Collaborate with others to make new meaning.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>C.9-10.6</strong> 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.</td>
<td><strong>ILP 7:</strong> Utilize digital resources to share and learn with others.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>See Teacher Notes for an explanation of the KAS for Reading and Writing reading strand and how these standards align to the task.</em></td>
<td><strong>ILP 8:</strong> Engage in specialized, discipline specific literacy practices.</td>
</tr>
</tbody>
</table>

**The Task**

Examine the [Missouri Compromise of 1820](#) using the [Analyze a Written Document](#) tool. You may work independently or in small groups to answer the questions provided on the tool.
Teacher Notes

To investigate how continuities in the desire for cheap labor led to chattel slavery within the Atlantic System, students will gather information and evidence from the following sources:


As students engage with the sources, they should corroborate the sources. The Stanford History Education Group (SHEG) states that “Corroboration asks students to consider details across multiple sources to determine points of agreement and disagreement.” According to SHEG, a student who engages in corroboration asks the following questions of the sources:

- What do other documents say?
- Do the documents agree? If not, why?
- What are other possible documents?
- What documents are most reliable?

As students are corroborating these sources, have them create a Mind Map to visually organize their information. Mind mapping is a non-linear, graphic way of organizing information that allows students to focus on the relationships between ideas. For more information on Mind Mapping, watch this Mind Mapping video or visit the Mind Mapping website. For the purposes of this assignment, students would identify sugar as their main topic of study. Students would then complete the following:

- Have students identify sugar as the main topic of their map by placing it in the center and drawing a circle around it.
- Have students write down the main ideas that stem from sugar based on the information students read in the sources.
- Have students provide evidence for the main ideas that stem from sugar based on the information students read in the sources.
- Have students be creative and add visual interest by having students use both printed and sketched images to support their exploration of the main topic.
Student example:

Cheap labor leads to cheap products as seen throughout all of history.

The adoption of slave labor in sugar colonies cheapened the commercial value of sugar because of a cheap labor system.

Sugar was once a luxury good because it could only be produced in certain areas.

Sugar became essential to British society and went from a delicacy to a household item.

Sugar was used in tea and many everyday commodities.

The paired developments of the sugar and slave trades changed the economic and ethical landscape of the British Empire.

As the desire for sugar increased the search for colonies and slaves ramped up.

The sugar trade directly fueled and encouraged the fire that was the slave trade.

The KAS for Visual and Performing Arts emphasizes four arts processes universal across all five disciplines: Creating, Performing/Producing/Presenting, Responding and Connecting. Writing to Learn happens most often in the arts process of Creating, as this is
a continuous process when students conceive and develop artistic ideas and work, which may require space for thinking and reflecting throughout the artistic process. Writing to Learn when Creating may include:

- Outlining the elements of a specific arts discipline
- Documenting the development of a piece of artistic work
- Detailing how history influenced art or vice versa

The arts process of Performing is limited to the performing arts of music, dance and theatre. Producing is the process of sharing work in the area of media arts and will often utilize “product” as its final form. Presenting is often associated with sharing in more formal settings such as exhibitions in the visual arts. Writing to Learn can be an important aid to students as they plan their performances, products or presentations. Using Writing to Learn as a vehicle to drive these processes may mean students:

- Maintaining planning journals
- Recording notes about details they want to include in performances, products or presentations

Writing to Learn is an effective strategy for engaging Visual and Performing Arts students in Connecting, or relating artistic ideas and work with personal meaning and external context. Some Writing to Learn ideas for Connecting include, but are not limited to:

- Comparing and contrasting two or more arts disciplines
- Quick writing about how an artistic piece relates to the student

Responding as an artistic process of Visual and Performing Arts addresses students as audience members. This provides authentic opportunities for students to respond to their own art and the art of others. Writing to Learn may also serve as students reflect or respond on their work as artists as well as audience members. Writing to Learn for this purpose may look like:

- Responding to their own work or the work of others at any point in the artistic process
- Critiquing their own work or the work of others to set goals for improvement of their future work

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**About the Writing to Learn in Visual and Performing Arts Tasks in This Resource**

The *Kentucky Academic Standards (KAS) for Visual and Performing Arts* include five contrasting arts disciplines connected through Anchor Standards. The elementary and secondary sample Writing to Learn tasks below both work towards mastery of Anchor Standard 2: Organize and develop artistic ideas and work. Students also interact with Performing, Responding and Connecting (relating artistic ideas and work with personal meaning and external context) in these tasks, allowing for connection to multiple areas outside of the discipline presented. Some connections to other content areas are included, but educators may make connections to other disciplines and contexts when possible.
### The Task

<table>
<thead>
<tr>
<th>Visual and Performing Arts Standards Alignment</th>
<th>Artistic Process Alignment</th>
<th>Additional Standards Connections: Physical Education</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA:Cr2.2.1 Choose movements that express an idea or emotion, or follow a musical phrase.</td>
<td>Artistic Processes Connection: Creating</td>
<td>Standard 1: Demonstrate competency in a variety of motor skills and movement patterns.</td>
<td>RL.1.3 Describe characters, settings and major events in a story, using key details in order to make meaning of the story development.</td>
<td>ILP 1: Recognize that text is anything that communicates a message.</td>
</tr>
<tr>
<td><strong>Extension of Learning</strong></td>
<td>Process Component: Plan</td>
<td>Locomotor: 1.1.L1. Perform a variety of locomotor movements using different body parts.</td>
<td>C.1.6 With guidance and support, collect information from real-world experiences or provided sources to answer or generate questions.</td>
<td>ILP 4: Utilize receptive and expressive language arts to better understand self, others and the world.</td>
</tr>
<tr>
<td>DA:Pr5.1.1 (Perform)</td>
<td>Anchor Standard 2: Organize and develop artistic ideas and work.</td>
<td>Non-Locomotor: 1.1NL1. Perform a variety of non-locomotor skills, using different body parts at different levels.</td>
<td></td>
<td>ILP 6: Collaborate with others to create new meaning.</td>
</tr>
<tr>
<td>DA: Re9.1.1 (Respond)</td>
<td></td>
<td>Body Management: 1.1.BM1. Perform a variety of balances using different body parts.</td>
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</tr>
<tr>
<td>Da: Cn10.1.1 (Connecting)</td>
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</tbody>
</table>
In preparation for students to respond to a whole-class read aloud, students will be divided into two groups: "Character 1" note-takers and "Character 2" note-takers. The teacher will read the text at least one time without interruptions to ensure comprehension of the overall story prior to a deeper analysis of the characters. On subsequent reads, each group will be told to focus on key details that will help them make sense of their assigned character’s feelings. The teacher will pause at predetermined points to allow time for students to identify Character 1 and Character 2’s feelings as the story develops and to Write to Learn, or record their character’s feelings on a graphic organizer.

More Writing to Learn takes place when the teacher allows time for students to also think about and record what is happening in the story when the character experiences that feeling. After recording the character’s feelings and documenting how they know the character is feeling that way, Character 1 and Character 2 note-takers will be paired up to choreograph, or translate, their character’s feelings into movements. They will use their graphic organizer to help them plan the order of the choreography they design and later perform. After choreographing and rehearsing their movements, students will perform the dance for each contrasting character, allowing the audience of classmates to compare the movements of each character. Audience members should be able to recognize the feelings, experiences or adventures of the characters in the text from the choreography presented.

**Teacher Notes**

For this task, the teacher will select a text with at least two characters who exhibit contrasting or changing feelings at various points in the text. Depending on student familiarity with the text, the teacher may need to review the story sequence (beginning/middle/end) to assist students in remembering the story well enough to choreograph their character’s feelings throughout the entire story. Teachers may choose to focus each character’s movement on either locomotor or non-locomotor to emphasize contrasting movements. Example: character 1 uses only locomotor movement (i.e. jumping or skipping when excited) while character 2 uses only non-locomotor movement (i.e. bouncing or twisting when excited). Students may also require instruction on locomotor and non-locomotor movements and time to practice designing choreography prior to engaging in this task.

**Questioning Opportunities:**
- How do you know your character was experiencing that feeling?
- What does that movement communicate about your character?
- When you perform that movement, what are you hoping the audience will understand about your character?
- How can your partner’s character help you understand your character and their movement?

**Potential Classroom Settings for this Task:**
- General elementary music
- Physical education
- Elementary dance or theatre
- As an expansion of reading & writing instruction in a self-contained classroom
### Sample Task Featuring Writing to Learn: High School Media Arts

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>MA:Cr2.1</strong></td>
<td><strong>Artistic Processes</strong></td>
<td><strong>Anchor Standard 4:</strong></td>
<td><strong>RL.9-10.3</strong></td>
<td><strong>ILP 1:</strong> Recognize that text is anything that communicates a message.</td>
</tr>
<tr>
<td><strong>HS Proficient: MA:Cr2.1.I</strong></td>
<td><strong>Connection: Creating</strong></td>
<td><strong>Select, analyze, and interpret artistic work for presentation</strong></td>
<td></td>
<td><strong>ILP 4:</strong> Utilize receptive and expressive language arts to better understand self, others and the world.</td>
</tr>
<tr>
<td><strong>HS Accomplished MA:Cr2.1.II</strong></td>
<td><strong>Process Component: Develop</strong></td>
<td><strong>Artistic Process: performing</strong></td>
<td></td>
<td><strong>ILP 7:</strong> Utilize digital resources to learn and share with others.</td>
</tr>
<tr>
<td><strong>HS Advanced MA:Cr2.1.III</strong></td>
<td><strong>Anchor Standard 2:</strong></td>
<td><strong>TH:Pr4.1.I.</strong></td>
<td><strong>C.9-10.4</strong> Use digital resources to create, publish and update individual or shared products, taking advantage of technology’s capacity to link to other information and to display information flexibly and dynamically. Use a variety of formats to cite sources.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Organize and develop artistic ideas and work.</strong></td>
<td><strong>b. Shape character choices using given circumstances in a drama/theatre work.</strong></td>
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<td><strong>TH:Pr4.1.II.</strong></td>
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<td></td>
<td></td>
<td><strong>b. Identify essential text information, research from various sources, and the director’s concept that influence character choices in a drama/theatre work.</strong></td>
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<td><strong>TH:Pr4.1.III.</strong></td>
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<tr>
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<td></td>
<td><strong>b. Apply a variety of researched acting techniques as an approach to character choices in a drama/theatre work.</strong></td>
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</tbody>
</table>

### The Task
While reading an excerpt from a drama or dialogue students will make notes about the characters’ changing emotions or moods throughout the text on a T-chart. Students should identify at least 3 moods from the scene and cite page numbers to support their ideas.

Using their notes, students will develop voicing for each character to match their personalities and changing moods throughout the story.

Students will then record the voice over for the scene and share the final product as an opportunity to Respond to the arts.

Teacher Notes

Rather than providing Performance Standards for grades 9-12 within each arts discipline, the KAS for Visual and Performing Arts includes high school proficiency levels—Proficient, Accomplished and Advanced—to illustrate what mastery might look like for students at various stages of learning. These proficiency levels address the reality that secondary VPA courses often have students of varying grade levels within one class. Additionally, within those mixed-grade level courses, students may have a variety of ability levels or experiences with the arts inside or outside of their school arts programs. The expectation for the proficiency level obtained by each student is dependent upon their current mastery of each standard.

For this task, the teacher will choose a text that contains dialogue between multiple characters. Teachers can select a scene from a play, a narrative poem or fiction that includes dialogue. Teachers may also choose to partner with an elementary school requesting recordings of books read aloud and select a children’s book with substantial dialogue. While students are developing their character voice, circulate the room and allow students to brainstorm openly, listening to the voice they are trying for their character. Give feedback on their voicing and encourage students to continue developing their artistic ideas based on their story notes. This sample may be used as an opportunity to partner with a local elementary school to record read aloud materials for their classrooms.

Questioning Opportunities:

- What does vocal inflection communicate about your character?
- How does the vocal inflection you’re using point to the excerpt’s theme that you wrote down?
- When you add that emphasis to the text, what are you hoping the audience will understand about your character?
- When you record your lines, how can you use cadence to convey character?

Potential Classroom Settings for This Task:

- Media Arts
- Theatre
- Visual and Performing Arts (Survey Course)
- English/language arts
## Writing to Demonstrate Learning in Reading and Writing Instruction

**Implementing Writing to Demonstrate Learning in Reading and Writing Instruction**

Writing in conjunction with reading is an expectation of English/language arts classrooms beginning in kindergarten and becoming progressively more sophisticated as the grade levels increase. Teachers must intentionally provide opportunities for students of all ages to write daily about what they are reading and learning with ample opportunities to employ Writing to Demonstrate Learning. The learners’ developmental levels and intended learning goals, particularly what content or skills the assignment intends to assess, are key to selecting how students will engage in Writing to Demonstrate Learning. Understanding that the *Kentucky Academic Standards for Reading and Writing* defines text as anything that communicates a message remains important as well. While traditional print may often be an appropriate medium for Writing to Demonstrate Learning, particularly in English/language arts classrooms, and is certainly one that students should be well versed in, students should also be exposed to and have opportunities to demonstrate their learning using a variety of formats, including but not limited to verbal and visual representations.

The Composition strand (formerly named Writing strand) supports text as anything that communicates a message. To reiterate from the introductory section, at all ages, student composition should not be limited to writing on paper or drafting in a word processing document; instead, students should use digital resources to create, publish, research and update individual or shared products and to take advantage of technology’s capacity to link to other information and to display information flexibly and dynamically. This may even require students to incorporate a variety of communication methods into one text.

Because Kindergarten and first grade students are not yet writing full paragraphs, students may combine a variety of communication methods in their compositions. Their writing typically consists of drawing and/or forming letters to make words using paper and pencil and digital platforms (spelling may be invented, having words with extra or omitted vowels and consonants). More intentional and sophisticated multimodal writing is common in the upper grades as students express more complex ideas and content when they Write to Demonstrate Learning. At any age this writing may take the form of composing auditory and video recordings as well as dramatizations or other visual representations. While these and other compositions may not always include written text, they are often developed from written text – such as prewriting notes – and tend to communicate more clearly to audiences when accompanied by written text. Most importantly, students’ Writing to Demonstrate Learning should incorporate age-appropriate and sufficient forms of text to clearly communicate the content or skills they’ve learned.

Once students reach the intermediate grades and certainly for middle and high school students, the goal of instruction goes beyond learning to read and write and towards using reading and writing as tools for learning and demonstrating learning. *Composition in the Classroom* emphasizes text-based and evidence-based writing experiences. Text-based writing greatly benefits reading comprehension by encouraging students to review and reflect on what they have read. Reading and writing should be viewed as complementary learning rather than
Implementing Writing to Demonstrate Learning in Reading and Writing Instruction

as separate subjects. According to Graham, Harris and Herbert (2010)\(^4\), writing practices that strengthen students’ reading include having students write about the text they read, teaching students the writing skills and processes that go into creating text, and increasing how much students write. Students should have opportunities to engage in sustained, independent grade-level reading and writing in response to their reading. Though some adolescent students are proficient readers who may complete literacy tasks with relative independence, the Institute for Education Sciences What Works Clearinghouse Practice Guide for *Teaching Secondary Students to Write Effectively*\(^5\) recommends explicit instruction of reading and writing skills for adolescent students. Therefore, middle and high school reading instruction should also explicitly model the academic vocabulary, dispositions, strategies and patterns of thinking typically applied when analyzing increasingly complex literature and informational text. Consider providing middle and high school students opportunities to develop and demonstrate reading and thinking skills with frequent feedback from peers and instructors to refine skills.

This resource provides three samples of Writing to Demonstrate Learning to clarify what implementing Writing to Demonstrate Learning in reading and writing classrooms may look like across grade levels. As described above, writing that demonstrates learning in the reading and writing classroom takes many forms as there are many ways in which students can communicate their comprehension and analysis of text. Some examples include, but are not limited to, the following:

- Short answer responses to Text-Dependent Questions (TDQs)
- Extended responses to Text-Dependent Questions (TDQs)
- On-demand prompts
- Exit slips
- Reflective writing
- Student-created text
  - Posters
  - Slides
  - Pamphlets
  - Websites
  - Infographics
- Quick Writes
- Mind Maps and other graphic organizers

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Implementing Writing to Demonstrate Learning
in Reading and Writing Instruction

- Discussion board posts
- Lab Report

Teachers are also encouraged to leverage writing as a tool for deeper learning using Writing to Learn tasks described in Writing to Learning in Reading and Writing.

About the Writing to Demonstrate Learning Tasks in This Resource

In the previously released Writing to Learn tasks, aligning to the same standards across grade levels was an intentional decision to highlight the standard progression of Reading Literature Standard 2 from kindergarten to grade 8. The Writing to Learn publication clarifies what it may look like in the primary grades to work from a summary to determine theme and then gradually build towards summarizing to analyze the development of theme in later grades.

In contrast, these Writing to Demonstrate Learning Tasks do not represent one Reading Literature standard across multiple grade levels. Instead, the developers chose to publish tasks aligned to Reading Informational standards. Offering standard balance was more important than standard progression. Grade level needs were considered when selecting to which reading informational standards the tasks would align. Both the grade 5 and 9-10 tasks align to RI.8 while the kindergarten task aligns to RI.7. Often, ELA classrooms are reported as spending more time reading and analyzing literature than informational texts. Grades 5 and 10 align to RI.8 to bring awareness to this standard since Guiding Principle 8 is not applicable to literature standards. While standard 8 is equally important in kindergarten, the kindergarten task aligns to RI.7 as this standard has students describe the relationship between visuals and text. Providing a sample task focused on the relationship between visuals and text at an early grade is an opportunity to model instruction around how visuals and text work together while not depending on visuals alone to make meaning, which may be a tendency for some early readers if not intentionally taught to rely on decoding primarily and visuals secondarily.

The Writing to Demonstrate Learning Task for kindergarten is part of a series of lessons focusing on how authors use pictures and printed text to help their readers understand what they are writing about. In the example below, students create their own poster to demonstrate the relationship between visuals and text.

In the grade 5 Writing to Demonstrate Learning sample, students closely read an informational text about Pittsburgh’s famous Hispanic baseball player, Roberto Clemente. Then, students analyze the authors’ claims in a short answer response. Before students are expected to demonstrate their understanding of how the author uses evidence and reasons to support claims, they practice identifying the reasons and evidence found in the article using a coding system to mark the evidence and reasons.

The task for grade 10 represents an example of Writing to Demonstrate Learning as students read Martin Luther King, Jr.’s “Letter from a Birmingham Jail” as a part of a text set also including three thematically related poems. The sample below comes from a unit requiring...
Implementing Writing to Demonstrate Learning in Reading and Writing Instruction

students to closely read 2-3 paragraphs per day. Students practice one specific standards skill each day, and the unit culminates in a longer analytical essay requiring students to integrate skills and ideas from each of the four texts. The Writing to Demonstrate Learning task below is a quick write for students to demonstrate their ability to delineate an argument and provide an explanation of the validity of a writer’s claims.

Sample Task Featuring Writing to Demonstrate Learning: Kindergarten Reading and Writing

<table>
<thead>
<tr>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>RI.K.7 With prompting and support, describe the relationship between visuals and the text.</td>
<td>ILP 1: Recognize that text is anything that communicates a message.</td>
</tr>
<tr>
<td>C.K.2 Compose informative and/or explanatory texts, using a combination of drawing, dictating, writing and digital resources, to establish a topic and supply information about the topic.</td>
<td>ILP 2: Employ, develop and refine schema to understand and create text.</td>
</tr>
</tbody>
</table>

The Task

After reading an informational text such as *From Caterpillar to Butterfly* by Deborah Heligman, students will create a poster, using pictures and words, to explain the journey from an egg to a butterfly. The task will require students to make decisions about usage and placement of pictures and words and demonstrate understanding of the relationship between the visuals and the text. Each student will share their poster with their teacher and peers, focusing on describing why they used certain pictures and words together or in certain places to teach the process of metamorphosis.

Present the Writing to Demonstrate Learning task using language such as, “I am going to give you paper to make your own poster. Your job will be to use pictures and words to make a poster that teaches others how a caterpillar changes into a butterfly. I will give you an envelope with pictures inside of it and an envelope with words inside of it. You may use the pictures and words in the envelopes to help you or you may choose to draw and write your own words. The important part is that you choose pictures and words that work together to explain how a caterpillar becomes a butterfly and that you choose the best spots on your poster to place the pictures and words in a way that makes it easy for readers to understand what happens on the journey from an egg to a butterfly.”

Teacher Notes

This task is suitable for kindergarteners who may not have any letter recognition all the way to students who recognize every letter in the alphabet and are able to read some words. The task works well for varying abilities because students are able to demonstrate their understanding of the relationship between visuals and words without being able to read or write independently. Students may use the
pictures and words from the envelopes with or without the support of a reader or scribe to complete the task or they may choose to draw and/or write words of their choosing on their own. Whatever the case, in addition to assessing student understanding of the relationship between visuals and text, this task offers an opportunity for teachers to assess a student’s orthographic processing skills, too.

The teacher may consider asking questions like the ones below to probe students’ thinking as they describe why they used certain pictures and words together or in certain places to teach the process of metamorphosis.

**Questioning Opportunities:** Why do you think this picture is a good choice to show that part of the butterfly’s journey? How does the picture you chose help show the idea you’re sharing on your poster? How do the words and pictures you chose help show the butterfly’s journey?

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### Sample Task Featuring Writing to Demonstrate Learning: Grade 5 Reading and Writing

<table>
<thead>
<tr>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RI.5.8</strong> Explain how an author uses reasons and evidence to support particular claims in a text, identifying which reasons and evidence support which claim(s).</td>
<td><strong>ILP 5:</strong> Apply strategic practices, with scaffolding and then independently, to approach new literacy tasks.</td>
</tr>
<tr>
<td><strong>C.5.2</strong> Compose informative and/or explanatory texts, using writing and digital resources, to examine a topic and convey ideas and information clearly.</td>
<td><strong>ILP 8:</strong> Engage in specialized, discipline-specific literacy practices.</td>
</tr>
</tbody>
</table>

---

### The Task

You read about how Roberto Clemente overcame “barriers” and built a “legacy” for himself. Explain how the author used evidence and reasons to support the claims that Clemente overcame “barriers” and left a “legacy.”

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### Teacher Notes

This task is adapted from a grade five ELA EngageNY unit that has students read and analyze informational text about the importance of sports in American culture, answering evidence-based selected response and short answer text-dependent questions. EngageNY is a free, online high-quality instructional resource (HQIR) for reading and writing available to all educators. Many districts in Kentucky have adopted HQIRs for reading and writing and may consider using a resource such as EngageNY to address gaps in their existing curriculum. EngageNY is a helpful resource also for districts that have not yet adopted HQIRs.

For access to the article, “Roberto Clemente’s Gifts from the Heart,” open Grade 5: Module 3A: Unit 3: Lesson 2. The lesson link includes step-by-step directions for using annotation tools (a form of Writing to Learn) to help students understand the Roberto Clemente article. There are also questions for students to analyze the article in small groups. Some students may be able to read and respond to this type of task.
independently or with little instructional support. However, explicit instruction of literacy skills remains best practice to support all learners, even if they are proficient readers and writers. The annotation tools students are taught to use as they read the Roberto Clemente article and identify various barriers and legacies of his life, is explicit instruction of the analysis skills required in RI.5.8.

Sample Task Featuring Writing to Demonstrate Learning: Grade 10 Reading and Writing

<table>
<thead>
<tr>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RI.9-10.8</strong> Evaluate the argument, specific claims and evidence in a text, assessing the validity, reasoning, relevancy and sufficiency of the evidence; identify false statements and fallacious reasoning.</td>
<td><strong>ILP 5</strong>: Apply strategic practices, with scaffolding and then independently, to approach new literacy tasks.</td>
</tr>
<tr>
<td><strong>C.9-10.2</strong> Compose informative and/or explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization and analysis of content.</td>
<td><strong>ILP 8</strong>: Engage in specialized, discipline-specific literacy practices.</td>
</tr>
</tbody>
</table>

The Task

Using your annotations on “Letter from a Birmingham Jail,” compose a paragraph delineating the argument and specific claims in paragraphs 10–11. Assess whether King’s evidence is relevant and sufficient.

Teacher Notes

This task is adapted from an EngageNY unit that leverages a text set including Martin Luther King, Jr.’s “Letter from a Birmingham Jail” and three short poems. EngageNY is a free, online high-quality instructional resource (HQIR) for reading and writing available to all educators. Many districts in Kentucky have adopted HQIRs for reading and writing, and EngageNY is a helpful resource for districts that have not yet adopted an HQIR.

EngageNY’s [Grade 10 Module 2, Unit 1: How Do Authors Use Rhetoric and Word Choice to Develop Ideas and Claims?](https://www.engageny.org/resource/grade-10-module-2-unit-1-how-do-authors-use-rhetoric-and-word-choice-to-develop-ideas-and-claims) details the entire learning sequence for this unit, while [Lesson 5](https://www.engageny.org/resource/grade-10-lesson-5-how-do-authors-use-rhetoric-and-word-choice-to-develop-ideas-and-claims) specifically addresses instruction and assessment of **RI.9-10.8** and **C.9-10.2**.

Tools to Support Teacher and Student Content Knowledge

Some students may be able to write a response to this task independently or with little instructional support. However, explicit instruction of literacy skills remains best practice to support all learners, even if they are proficient readers and writers. Below are tools to provide explicit instruction of the analysis skills required in RI.9-10.8. Notice how Writing to Learn can support Writing to Demonstrate Learning:

1. **Argument Delineation Tool**: An example of Writing to Learn that demonstrates to teachers and students how to delineate an argument with grade 10 standards expectations in any informational text.
2. **Central Ideas Tracker:** Another example of Writing to Learn that demonstrates to teachers and students not only how to determine a central idea but how to analyze how specific textual details can shape and refine a central idea over the course of a text (RI.9-10.2).

3. **Short Response Rubric and Checklist:** An assessment tool that helps teachers and students follow grade 10 standards expectations for reading informational text and responding to the task above. This tool helps teachers and students answer the questions, “How well am I applying the skills I learned in this lesson? To what level am I demonstrating my learning?”
## Writing to Demonstrate Learning in Mathematics Instruction

### Implementing Writing to Demonstrate Learning in Mathematics Instruction

Writing to Demonstrate Learning in the mathematics classroom should be a regular occurrence. This type of writing provides opportunities for students to employ critical thinking, analytical skills and logical reasoning to reveal the depth of their knowledge.

Writing to Demonstrate Learning can cultivate opportunities for students to analyze situations by breaking them into cases or looking for generalizations, using counterexamples and clarifying misconceptions when appropriate. Writing to Demonstrate Learning in mathematics may invite students to explain or analyze a process. For example, the four-step investigative process students experience in middle school provides a foundation for students as they continue to model increasingly complex real-world situations with mathematics. When making mathematical models, students can use technology to visualize the results of varying assumptions, explore consequences and compare predictions with data. Writing to Demonstrate Learning may invite students to justify their conclusions, communicate them to others and critique the conclusions of others.

These and other Writing to Demonstrate Learning opportunities help teachers understand how well students are learning. In mathematics, Writing to Demonstrate Learning opportunities might assist teachers in determining whether students can explain correspondences between equations, verbal descriptions, tables and graphs, or draw diagrams of important features and relationships, graph data and search for regularity or trends. This type of writing may also be used to evaluate students’ abilities to apply the mathematics they know to solve problems that arise in everyday life, including providing opportunities for students to routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

Some additional examples of Writing to Demonstrate Learning in the mathematics classroom could include, but are not limited to, the following:

- **Which One Doesn’t Belong** or **Would You Rather Math** prompts which engage students in explaining their approach to a problem, critiquing the solutions of others and comparing the different approaches in terms of whether they are accurate and efficient.
- **Mathematical Language Routines**, such as:
  - **Stronger and Clearer Each Time**: Students write individually about a response and slowly refine their writing through conversation and questioning. Subsequent drafts should show evidence of incorporating new evidence or reasoning to demonstrate learning in communicative precision as well as mathematical concepts.
  - **Convince Yourself, a Friend, a Skeptic**: Students demonstrate learning by writing three versions of a mathematical argument or justification for three different audiences.

(Source: Understanding Language/Stanford Center for Assessment, Learning and Equity at Stanford University, is licensed under a Creative Commons Attribution 4.0 International License. 2017.)

Teachers are also encouraged to leverage writing as a tool for deeper learning using Writing to Learn tasks described in **Writing to Learn in Mathematics**.
These Writing to Demonstrate learning sample tasks engage students in Standard for Mathematical Practice 3, construct viable arguments and critique the reasoning of others. These tasks also teach content in the Grade 3 domain “Number and Operations – Fractions” and in the high school conceptual category “Functions.” Each sample shows how Writing to Demonstrate Learning can be a tool to assess student mastery by inviting students to justify their conclusions, communicate them to others and respond to the arguments of others. Mathematically proficient students also compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed and—if there is a flaw in an argument—explain what it is.

Elementary students engage in Writing to Demonstrate Learning when they construct arguments using concrete referents such as objects, drawings, diagrams and actions. This can be seen in part B of the Fractions and Rectangles task. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Students at all grades can listen to or read the arguments of others, decide whether they make sense and ask useful questions to clarify or improve the arguments.

As high school students build on middle school understanding about functions, students might analyze cases to look for generalizations to determine the effects of transformations on the graph of a function. Within the What’s My Transformation Desmos activity, students use technology to explore how changing the value of a constant impacts the graph of the function and use graphical representations to create plausible arguments about the effects of transformations, instead of relying on computational rules.

The purpose of these Writing to Demonstrate Learning tasks is to give students an opportunity to apply conceptual understanding to demonstrate mastery, ultimately receiving more formal feedback about long term growth towards mastery of mathematics.

In both sample tasks, the instructional emphasis remains on the content and practice standards within the KAS for Mathematics. The KAS for Mathematics differs from previous standards in that they intentionally integrate content and practices in such a way that every Kentucky student will benefit mathematically. Put simply, the Standards for Mathematical Content define what students should understand and be able to do. Standards for Mathematical Practice define how students engage in mathematical thinking.

### Sample Task Featuring Writing to Demonstrate Learning: Grade 4 Mathematics

<table>
<thead>
<tr>
<th>Mathematics Content Standard Alignment</th>
<th>Standards for Mathematical Practices Alignment</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cluster:</strong> Extend understanding of fraction equivalence and ordering.</td>
<td><strong>MP.3 Construct viable arguments and critique the reasoning of others.</strong> Students</td>
<td><strong>RI.4.8 Explain how an author uses reasons and evidence to</strong></td>
<td><strong>ILP 1: Recognize that text is anything that communicates a message.</strong></td>
</tr>
</tbody>
</table>

---

**RI.4.8 Explain how an author uses reasons and evidence to support particular points in a text, distinguishing claims from irrelevant evidence.**
<table>
<thead>
<tr>
<th>KY.4.NF.1 Understand and generate equivalent fractions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Use visual fraction models to recognize and generate equivalent fractions that have different numerators/ denominators even though they are the same size.</td>
</tr>
<tr>
<td>b. Explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $\frac{n \times a}{n \times b}$.</td>
</tr>
</tbody>
</table>

**Target of the standard:**
Conceptual Understanding

For additional insight on standard KY.4.NF.1, access the Annotated Breaking Down a Standard Protocol.

**The Task**

engage with MP.3 by critiquing the reasoning of Laura and justifying why she is correct.

**MP.6 Attend to precision.**
Students have to attend to precision in the way they partition and see that $\frac{3}{12}$ is equivalent to $\frac{1}{4}$.

**C.4.2 Compose informative and/or explanatory texts, using writing and digital resources, to examine a topic and convey ideas and information clearly.**

*See Teacher Notes for an explanation of the KAS for Reading and Writing reading strand and clarification of RI.4.8.*

**ILP 8: Engage in specialized, discipline-specific literacy practices.**
Task: Fractions and Rectangles By: Illustrative Mathematics

Student View

Task

a. What fraction of the rectangle below is shaded?

b. Laura says that $\frac{1}{4}$ of the rectangle is shaded. Do you think she is correct? Explain why or why not by using the picture.

Teacher Notes

A note about the Kentucky Academic Standards for Reading and Writing: RI.4.8 states students will explain how an “author” uses reasons and evidence to support particular claims the author makes in a text. In this task, the author is Laura, the individual – assumed peer – who says that $\frac{1}{4}$ of the rectangle is shaded. The text is the task, including the image in part A of the shaded rectangle and the statement in part B that says Laura claims the shaded portion is equivalent to $\frac{1}{4}$ of the rectangle.
Part A of the task addresses the conceptual understanding of equivalent fractions that KY.4.NF.1 calls for. This task builds conceptual understanding allowing students to connect prior knowledge to new ideas and concepts from KY.3.NF.3. Students conceptually see fraction equivalence by subdividing the whole into smaller equal-sized pieces, or \( \frac{1}{12} \) pieces as seen in the area model. Students realize the shaded amount that represents the fraction has not changed. Students conceptually recognize the equivalencies by seeing the three \( \frac{1}{12} \) pieces of the fraction model partitioned into fourths. This task helps students on the path of understanding that if they divide the numerator and denominator by the same whole number, they get an equivalent fraction. KY.4.NF.1 uses a rectangle model to show the equivalent fractions, just like this task. This is not the only model, but there are lots of connections between the fraction progression and using the area model with rectangles. We can see this by simply re-arranging the shaded parts of the rectangle to form a single row. To clarify, three \( \frac{1}{12} \) pieces is the same amount of the whole as one row of the whole. Since it takes four rows to complete the whole, one row is \( \frac{1}{4} \) of the whole rectangle.

Part B allows students to engage with MP.3 intentionally to justify why Laura is correct using the picture to explain. Mathematically proficient students understand and use stated assumptions, definitions and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They analyze situations by breaking them into cases or looking for generalizations, using counterexamples and clarifying misconceptions when appropriate. They justify their conclusions, communicate them to others and respond to the arguments of others. They reason inductively about data, making plausible arguments that consider the context from which the data arose. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Students at all grades can listen to or read the arguments of others, decide whether they make sense and ask useful questions to clarify or improve the arguments.

For additional insight around the alignment of the selected task to the KAS for Mathematics, access the Annotated Assignment Review Protocol. Designed to guide educators through the process of reviewing a single task/assignment by examining the alignment with the Mathematical Content alignment, engagement in the Mathematical Practices, attention to Relevance and analyzing Student Performance, the Assignment Review Protocol is intended to help teachers, leaders and other stakeholders answer the question, “Does this task give students the opportunity to meaningfully engage in worthwhile grade-appropriate content?”

### Sample Task Featuring Writing to Demonstrate Learning: High School Functions

<table>
<thead>
<tr>
<th>Mathematics Content Standard Alignment</th>
<th>Standards for Mathematical Practices Alignment</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cluster</strong>: Build new functions from existing functions.</td>
<td><strong>MP.3</strong> Construct viable arguments and critique the reasoning of others. Students can make conjectures and build a</td>
<td><strong>RI.9-10.8</strong> Evaluate the argument, specific claims and evidence in a text, assessing the validity, reasoning, relevancy and</td>
<td><strong>ILP 1</strong>: Recognize that text is anything that communicates a message.</td>
</tr>
</tbody>
</table>

56
KY.HS.F.8 Understand the effects of transformations on the graph of a function.

a. Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$ and $f(x + k)$ for specific values of $k$ (both positive and negative); find the value of $k$ given the graphs.

b. Experiment with cases and illustrate an explanation of the effects on the graph using technology.

Target of the Standard: Conceptual Understanding

For additional insight on standard KY.HS.F.8, access the Annotated Breaking Down a Standard Sample.

The Task

Task: What’s My Transformation Desmos Activity

In this activity, students explore the idea that all lines are related to each other, as are all parabolas. They extend this idea to a new function type and manipulate it to gain skill with symbolic representations of function transformations. Students are given a series of fourteen screens, each showing transformations (described below). The final screens, screens 13 and 14, expect students to demonstrate their learning through writing.

Description of Screens leading up to the Writing to Demonstrate Learning Task:

Screens 1-7 offer students the opportunity to engage with visual representations of a variety of functions, beginning with lines (screen 1), parabolas (screen 2) and parangulas (screen 3) before entering a more focused exploration of a variety of transformations of a specific
parangula. Students interact with the graphical representations of the transformations before shifting to look at the algebraic representations using function notation on screen 6.

On screen 7, students look for and express regularity in repeated reasoning by using symbols to move the parangula, paying careful attention to the vertex of the parangula and how that will be evident in the symbolic representation. The graph shows several parangulas: a red one with vertex at (3, 0), an orange one with vertex at (-4, 0), a green one with vertex at (0, -4) and a blue one with vertex at (-6, 0). Students use symbols to match each of the remaining parangulas.

<table>
<thead>
<tr>
<th>Graph</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td></td>
</tr>
<tr>
<td>Green</td>
<td></td>
</tr>
<tr>
<td>Blue</td>
<td></td>
</tr>
</tbody>
</table>

Sample student responses might be:
- Red: \( f(x - 3) \)
- Orange: \( f(x + 4) \)
- Green: \( f(x) - 4 \)
- Blue: \( f(x) + 6 \)

Students are asked to summarize their thoughts about how to transform the graph of a function \( f(x) \) using symbols instead of movable points on screen 8. A sample student response might be: To move a function left or right, subtract a number from \( x \) inside the function definition. To move it up or down, add a number outside the parentheses. So, \( f(x - 1) \) moves it to the right one unit (subtracting positive one). But \( f(x) - 1 \) moves the function down one unit (adding a negative one).

On screens 9-11, students look for and express regularity in repeated reasoning by using symbols to stretch the parangula. Students interact with the graphical representations of the transformations before shifting to look at the algebraic representations using function notation on screens 10 and 11. In a manner similar to screen 7, the graph shows several parangulas, each with vertex at (0, 0). The black parangula's elbow is at (-1, 1). The red parangula's elbow is at (-1, 3), the orange parangula's elbow is at (-1, 0.5), and the blue parangula's elbow is at (-4, 1). Students use symbols to match each of the remaining parangulas.

<table>
<thead>
<tr>
<th>Graph</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td></td>
</tr>
<tr>
<td>Blue</td>
<td></td>
</tr>
</tbody>
</table>
Sample student responses might be:
- Red: $3 \times f(x)$
- Orange: $\frac{1}{2}f(x)$
- Blue: $f\left(\frac{1}{4}x\right)$

Students are asked to summarize their thoughts about how to transform the graph of a function $f(x)$ using symbols instead of movable points on screen 12. A sample student response might be: To stretch a function vertically, multiply the whole function by a constant, such as $2 \times f(x)$ or $\frac{1}{10}f(x)$. To stretch it horizontally, multiply the $x$ inside the function definition by a constant, such as $f(2x)$ or $f\left(\frac{1}{10}x\right)$.

Students are “putting together” their conceptual understandings on screen 13. The graph shows several parangulas. The black parangula has vertex at $(0, 0)$ and elbow at $(1, -1)$. The red parangula has vertex at $(-0.5, 3)$ and elbow at $(-1, 4)$. The orange parangula has vertex at $(5, 0)$ and elbow at $(4, 0.5)$. The blue parangula has vertex at $(-6, -3)$ and elbow at $(-7, -4)$. Students are instructed to use their summaries about moving (Screen 8) or stretching (Screen 12) functions using symbols to match each of the parangulas on this screen.

<table>
<thead>
<tr>
<th>Graph</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>$f(2x + 1) + 3$</td>
</tr>
<tr>
<td>Orange</td>
<td>$\frac{1}{2}f(x - 5)$</td>
</tr>
<tr>
<td>Blue</td>
<td>$-1 \times f(x + 6) - 3$</td>
</tr>
</tbody>
</table>

Students are given one last transformation to look at on screen 14. The graph shows two parangulas, each with vertex at $(0, 0)$. The black parangula's elbow is at $(1, -1)$, while the blue parangula's elbow is at $(-1, -1)$. They have symmetry across the horizontal axis. Malcolm says that the blue parangula is a reflection over the $x$-axis. Jamal says that the blue parangula is a vertical stretch using 1 as the multiplier. Who is correct?

Students are given the option to select Malcolm, Jamal, Both or Neither. Once students select one of the choices, they are asked to “Explain your thinking.” A sample student response might be: Both are correct. I can see the reflection over the $x$-axis visually. I also notice that multiplying each of the $y$-coordinates of the black parangula by -1 gives me the corresponding $y$-coordinates of the blue parangula. Therefore, the blue parangula is a vertical stretch using -1 as the multiplier.
Writing to Demonstrate Learning helps teachers understand how well students are learning. Within this task, screens 8 and 12 offer opportunities for students to engage with Writing to Learn before demonstrating their learning on frames 13 and 14.

This task emphasizes building the understanding that while familiar families of functions may help students get a sense for the transformations, it is important that students understand the ideas for any function.

Throughout the activity teachers can pause the class and lead discussion around whether it is possible to match all the functions on the screen and which is most challenging. During discussion teachers may ask students to describe the necessary transformations in words. Start with informal math language and reasoning, then help them to move towards more formal responses. As teachers use the dashboard to monitor student progress, they can identify and address any typographical errors.

On screens 8, 12, 13 and 14, students formalize their ideas. Consider using teacher pacing to have everyone linger here for a minute or two. Students may find the horizontal translations counterintuitive. When the classes are exploring together, look for strategies that might elevate unique perspectives, such as when students are finding ways to shift the parangula to the left some may use F(x−−4) to match the orange parangula.

The Teacher Guide provided with the activity offers recommendations for ensuring student success.

For additional insight around the alignment of the selected task to the KAS for Mathematics, access the Annotated Assignment Review Protocol. Designed to guide educators through the process of reviewing a single task/assignment by examining the alignment with the Mathematical Content alignment, engagement in the Mathematical Practices, attention to Relevance and analyzing Student Performance, the Assignment Review Protocol is intended to help teachers, leaders, and other stakeholders answer the question, “Does this task give students the opportunity to meaningfully engage in worthwhile grade-appropriate content?”
Writing to Demonstrate Learning in Science Instruction

Implementing Writing to Demonstrate Learning in Science Instruction

Writing to Demonstrate Learning in the science classroom provides students the opportunity to illustrate learning in meaningful ways. In the science field, learning is generally exhibited in peer-reviewed journal articles in which researchers share their findings and understanding about a phenomenon or problem with peers. Students may Write to Demonstrate Learning in the science classroom in many ways, including, but not limited to, the following examples:

- Data analysis
- Developing models images, flowcharts, analogies, mathematical equations
- Designing solutions
- Constructing scientific explanations
- Constructing and/or critiquing scientific arguments

Science teachers engage students in Writing to Demonstrate Learning when they utilize the science and engineering practices (SEPs) as the vehicle for demonstrating understanding of the Disciplinary Core Ideas (DCIs) and Crosscutting Concepts (CCCs). These three dimensions compose the Kentucky Academic Standards for Science. Use of key SEPs not only provides the teacher with information about the students’ understanding of a particular practice but also about their current understanding of the other two dimensions as they move towards mastery.

Teachers are also encouraged to leverage writing as a tool for deeper learning using Writing to Learn tasks described in Writing to Learn in Science.

About the Writing to Demonstrate Learning in Science Tasks in This Resource

The grade 5 unit on Space Systems begins with a phenomenon observed in a video of tree shadows in a forest. When watching this video, students will observe tree shadows changing direction while the sun appears to move in the sky over the course of the day. As students make observations of tree shadows, they will complete a notice and wonder t-chart (a Writing to Learn strategy) leading to the students asking questions related to the phenomenon such as, “Why do shadows move?” Leading up to this task, the students are actively engaged in collecting qualitative and quantitative data of the shadows (another Writing to Learn strategy) at regular intervals during the day from independent observations of the flagpole, sun and the flagpole’s shadow. The students draw models of their observations and use a protractor to measure the altitude of the sun and represent the data in tables and graphs (again, a Writing to Learn strategy). From their data, the students will be able to identify patterns in the movement of the shadow and how the patterns relate to the movement of the sun. Following the collection and analysis of data, students will use Writing to Demonstrate Learning to synthesize and draw conclusions from their data as they look for patterns across all the data samples, keeping focused on the purpose of the observations, to answer, “Why do shadows change?”
In this high school unit on ecosystem dynamics, students are exploring how the population of large herbivores on the Serengeti plain has been changing rapidly since 1960, marked by a rapid increase of herbivores (buffaloes and wildebeests) and then a rapid decline of the buffaloes. Students begin by posing and recording questions to investigate (a Writing to Learn Strategy) related to the rapid increase and decline of the buffalo population in the Serengeti. Students develop an initial model and an initial hypothesis of what could explain the population changes. The students develop a plan to investigate each of their hypotheses and collect data (another Writing to Learn strategy) related to predator-prey relations, migrations, climate, human impacts and disease. Students explore and manipulate a simulation that helps them put together their ideas about the ecosystem dynamics and create models during the learning process as new information is revealed. This Writing to Demonstrate Learning task will allow students to synthesize what they have learned about the mechanisms of the Serengeti ecosystem through the development of a scientific model. More information about scientific models and their role in the instructional design process leading up to this Writing to Demonstrate Learning task are provided in the teacher notes section below.

<table>
<thead>
<tr>
<th>Disciplinary Core Idea Alignment</th>
<th>Science and Engineering Practices Alignment</th>
<th>Crosscutting Concepts Alignment</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESS1.B: Earth and the Solar System</td>
<td>Constructing Explanations and Designing Solutions</td>
<td>Cause and Effect</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The orbits of Earth around the sun and of the moon around Earth, together with the rotation of Earth about an axis between its North and South poles, cause observable patterns. These include day and night; daily changes in the length and direction of shadows; and different positions of the sun, moon, and stars at different times of the day, month, and year</td>
<td>Construct an explanation of observed relationships (e.g., the distribution of plants in the back yard). Use evidence (e.g., measurements, observations, patterns) to construct or support an explanation or design a solution to a problem</td>
<td>RI.5.9 Integrate information from several texts on the same theme or topic. C.5.2 Compose informative and/or explanatory text, using writing and digital resources, to establish a topic and provide information about the topic.</td>
<td>ILP 4: Utilize receptive and expressive language arts to better understand self, others and the world. ILP 8: Engage in specialized, discipline specific literacy practices.</td>
<td></td>
</tr>
</tbody>
</table>
### The Task
Students will construct an explanation using evidence from their observations, angle measurements and noticeable patterns in response to the question, “Why do shadows change direction throughout the day?” Prompt students to demonstrate their learning through writing by assigning a task such as:

**Use the evidence from the observations made over the past few days, patterns you identified, and angle measurements to construct an explanation to answer the question, “Why do shadows change direction throughout the day?”**

### Teacher Notes
Students will engage in Writing to Learn experiences throughout the instructional sequence in order to build knowledge about why shadows change. Writing to Demonstrate Learning is illustrated through the constructing of the scientific explanation as they synthesize information across all the data samples to answer the question. As they begin to think about the relationship (CCC: Cause and Effect) between the sun’s movement across the sky and the movement of the shadows (DCI: ESS1.B Earth and the Solar System), the students use their data as evidence to support their thinking (SEP: Constructing Explanations). Teachers can use this task to formatively assess the students’ ability to construct a scientific explanation as well as the students’ current understanding of how the sun’s movement across the sky causes observable patterns in the direction of shadows.

This learning is a progression of science ideas from the first grade. In the first grade, students learned that patterns of sunrise and sunset can be observed, described and predicted (1-ESS1-2). Students also learn that some materials block the light and form a shadow (1-PS4-3). Both of these ideas are prerequisites for this learning. If students do not have a good understanding of these concepts, teachers may need to build that understanding.

For more guidance on using this phenomenon and instructional moves see [NSTA instructional materials: Tree Shadows Phenomenon](https://www.nsta.org).
Sample Task Featuring Writing to Demonstrate Learning: High School Life Science

<table>
<thead>
<tr>
<th>Disciplinary Core Idea Alignment</th>
<th>Science and Engineering Practices Alignment</th>
<th>Crosscutting Concepts Alignment</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LS2.C: Ecosystem Dynamics, Functioning, and Resilience</strong></td>
<td><strong>Developing and Using Models</strong></td>
<td><strong>Cause and Effect: Mechanism and Prediction</strong></td>
<td><strong>Supports instruction toward:</strong></td>
<td><strong>ILP 1:</strong> Understand that text is anything that communicates a message. <strong>ILP 8:</strong> Engage in specialized, discipline-specific literacy practices.</td>
</tr>
<tr>
<td>A complex set of interactions within an ecosystem can keep its numbers and types of organisms relatively constant over long periods of time under stable conditions. If a mode biological or physical disturbance to an ecosystem occurs, it may return to its more or less original status (i.e., the ecosystem is resilient), as opposed to becoming a very different ecosystem. Extreme fluctuations in conditions or the size of any system or component of a system.</td>
<td>Develop, revise, and/or use a model based on evidence to illustrate and/or predict the relationships between systems or between components of a system.</td>
<td>Empirical evidence is required to differentiate between cause and correlation and make claims about specific causes and effects. <strong>Stability and Change</strong> Much of science deals with constructing explanations of how things change and how they remain stable.</td>
<td><strong>RI.9-10.7</strong> Analyze various accounts of a subject presented in different print and non-print formats, determining which details are emphasized in each account.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Determining which details are emphasized in an account is a prerequisite skill for synthesis. Students synthesize information from various print and non-print accounts in this lesson.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>C.9-10.2</strong> Compose informative and/or explanatory texts to examine and convey complex ideas, concepts,</td>
<td></td>
</tr>
</tbody>
</table>

---

*Determining which details are emphasized in an account is a prerequisite skill for synthesis. Students synthesize information from various print and non-print accounts in this lesson.*
populations, however, can challenge the functioning of ecosystems in terms of resources and habitat availability.

and information clearly and accurately through the effective selection, organization and analysis of content.

---

**The Task**

In this storyline, students are exploring what is happening to the large herbivores in the Serengeti by examining predator-prey relations, migrations, climate, human impacts, and disease. After learning about the decline of water buffalo on the Serengeti via data, videos and reading, students explore possible causal mechanisms for the change in population in both the buffalo and the wildebeest. After completing the series of lessons focused on the Serengeti ecosystem dynamics, prompt students to demonstrate their learning through writing with the task below:

Consider the storyline about what is happening to the large herbivores in the Serengeti and data collected from texts and computer simulations. Use what you have learned to develop a scientific model that demonstrates your understanding of the mechanisms of the Serengeti ecosystem and the possible cause of the population change on the Serengeti. Use images, labels, and words to clearly communicate the possible cause(s) of the population change.

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**Teacher Notes**

Scientific models are sense-making tools that help us predict and explain the world. The scientific model in this task is used to show relationships between components of the system and provide a mechanistic account within that system. Scientists use models to demonstrate their current understanding of a system being studied, to help develop questions and explanations, and to communicate their ideas with others. For students to engage in the Writing to Demonstrate Learning task, they must first engage in learning about the system being studied. Once the students have collected data on the system, they will use their model to explain how the parts of the system are interconnected and communicate their ideas. The written component may be a formal explanation, descriptions of mechanistic factors, or other necessary support to communicate the intended meaning of the scientific model. Finally, in the subsequent lesson, students will use their developed models to consider how they may apply to other ecosystems.

This Writing to Demonstrate Learning task provides the teacher with information not only in students’ ability to model, but, through the model, student understanding of the mechanisms which result in change in the Serengeti ecosystem.
Writing to Demonstrate Learning is illustrated in this task through the development of a model (SEP: Developing and Using Models) to show possible causal mechanisms, and their results (CCC: Cause and Effect) on the Serengeti ecosystem (DCI: Ecosystem Dynamics, Functioning and Resilience).

The Serengeti ecosystem storyline provides an overview of the individual lessons, which includes specific phenomena, what students are figuring out, new questions and next steps. The task above represents what students would complete during Lesson 9 of the storyline. For the full unit, including data, readings and teacher guidance, access Ecosystems Unit Bend 1: Serengeti. For a sample modeling rubric, and student samples, see Modeling Rubric (SLO) (pages 6-8). For more information about scientific modeling, see The Framework for K-12 Science Education.

Writing to Demonstrate Learning in Social Studies Instruction

Implementing Writing to Demonstrate Learning in Social Studies Instruction

In Social Studies, Writing to Demonstrate Learning allows students to showcase their learning and for their teacher to assess their mastery of the Kentucky Academic Standards (KAS) for Social Studies. Within social studies, a student’s ability to effectively communicate their own conclusions and listen carefully to the conclusions of others can be considered a capstone of social studies disciplinary practices. Students may demonstrate their learning through traditional essays, reports, tables, diagrams, graphs and multimedia presentations. In a world of ever-expanding communication opportunities inside and outside their school walls, students should also be able to utilize newer media forms in order to share their conclusions and hear the voices of those whose conclusions may differ from their own.

All valid claims must be based on relevant and logical evidence. For students to construct coherent arguments and explanations in the social studies disciplines, they must understand how to substantiate those claims using evidence. This skill requires students to collect, evaluate and synthesize evidence from primary and secondary sources to develop and support a claim. Writing to Demonstrate Learning provides teachers the opportunity to ascertain whether or not students understand the content and/or concepts being taught. This kind of writing helps teachers understand how well students are learning. Writing to Demonstrate Learning in the social studies classroom is essential in supporting Kentucky students when learning how to develop and substantiate evidence-based claims while considering multiple perspectives.

Writing to Demonstrate Learning can take many forms in the social studies classroom, as there are many ways in which students can communicate their conclusions and the explanations and arguments they construct. Some of these ways include, but are not limited to, the following:

- Quick writes
- Entry or exit slips
Implementing Writing to Demonstrate Learning in Social Studies Instruction

- Multimodal and digital communications
- PowerPoint/Google Slides presentations
- Videos
- Speeches
- Posters
- Essays
- Answers to short answer and extended-response prompts
- Summaries of reading or an activity
- Explanation or analysis of a process, content or text(s) that have been read
- Research papers primarily presenting or explaining information

- Responses to Tasks Aligned to Supporting Questions
  - For more information on supporting questions, visit “Section C: What are Supporting Questions, and how do students ask them?” from the Inquiry Practices of the KAS for Social Studies module.
- Responses to Tasks Aligned to Compelling Questions
  - For more information on compelling questions, visit Section B: “What are Compelling Questions and how do students ask them?” from the Inquiry Practices of the KAS for Social Studies module.

Teachers are also encouraged to leverage writing as a tool for deeper learning using Writing to Learn tasks described in Writing to Learn in Social Studies.

About the Writing to Demonstrate Learning in Social Studies Tasks in This Resource

The elementary task below is designed for Grade 3 students and requires students to answer the supporting question “Why do countries depend on each other to produce products?” To prepare students to answer the supporting question, students explore concepts of economic interdependence and how physical and cultural characteristics impact a region. During their exploration of sources, students discover the connection between the resources available in a region and the products regions produce and trade. At the conclusion of their investigations, students are required to complete the Task Aligned to the Supporting Question. The Task Aligned to the Supporting Question requires students to demonstrate their knowledge of the disciplinary strand standards and the inquiry practice standards to construct their response. Responding to this task requires students to synthesize their understanding of the disciplinary strand standards and inquiry standards because students are required to answer the supporting question while explaining the relationship between two or more sources in their response.

The middle school task below is for Grade 6 students and requires students to answer the supporting question, “What characteristics do River Valley Civilizations have in common?” To prepare students to answer the supporting question, students examine a variety of sources that address the origins, functions and structures of governments in River Valley Civilizations, how they were shaped by their physical
Implementing Writing to Demonstrate Learning in Social Studies Instruction

environments, and how these civilizations compare. At the conclusion of their investigations, students are required to complete the Task Aligned to the Supporting Question. The Task Aligned to the Supporting Question requires students to demonstrate their knowledge of the disciplinary strand standards and the inquiry practice standards to construct their response. Responding to this task requires students to synthesize their understanding of the disciplinary strand standards and inquiry standards because students are required to answer the supporting question while citing relevant evidence and using maps and/or spatial thinking to determine similarities and differences among complex societies.

The high school task below is aligned to US History and requires students to answer the supporting question, “How have global interactions resulting from September 11, 2001, impacted American culture and society from 2001 to the present?” To prepare students to answer the supporting question, students examine multiple sources to investigate how global interactions and legislative, executive and judicial decisions resulting from September 11, 2001, have impacted American culture and society. At the conclusion of their investigations, students are required to complete the Task Aligned to the Supporting Question. The Task Aligned to the Supporting Question requires students to demonstrate their knowledge of the disciplinary strand standards and the inquiry practice standards to construct their response. Responding to this task requires students to synthesize their understanding of the disciplinary strand standards and inquiry standards because students are required to answer the supporting question while using appropriate evidence to construct and revise claims in their responses.

Sample Task Featuring Writing to Demonstrate Learning: Grade 3 Social Studies

<table>
<thead>
<tr>
<th>Social Studies Disciplinary Strand Standards Alignment</th>
<th>Inquiry Practices Alignment</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.E.ST.1 Describe examples of economic interdependence.</td>
<td>3.I.UE.2 Explain the relationship between two or more sources on the same theme or topic.</td>
<td>RI.3.9 Explain the relationship between information from two or more texts on the same theme or topic.</td>
<td>ILP 5: Apply strategic practices, with scaffolding and then independently, to approach new literacy tasks.</td>
</tr>
<tr>
<td>3.G.GR.1 Explain how physical and cultural characteristics of world regions affect people, using a variety of maps, photos and other geographic representations.</td>
<td></td>
<td>C.3.2 Compose informative and/or explanatory texts, using writing and digital resources, to examine a topic and provide information.</td>
<td>ILP 8: Engage in specialized, discipline-specific literacy practices.</td>
</tr>
</tbody>
</table>
## The Task

**Task Aligned to the Supporting Question:**
Using your knowledge of economic interdependence and how physical and cultural characteristics of world regions affect people, answer the supporting question.

Supporting question: **Why do countries depend on each other to produce products?**

Be sure to explain the relationship between two or more sources in your response.

## Teacher Notes

This example of Writing to Demonstrate Learning is a synthesis task intended to occur after students have engaged in numerous learning opportunities and is part of the [Grade 3 Strongly Aligned Assignment with Teacher Notes](#) from the [Social Studies Student Assignment Library](#).

The Assignment with Teacher Notes linked above explains the instructional process and sequence, showing how students engage with both disciplinary strand standards and inquiry standards through a series of tasks to investigate the supporting question: “Why do countries depend on each other to produce products?” To demonstrate students’ mastery of these standards and ability to answer the supporting question with evidence from the sources they analyzed, students are asked to respond to a Task Aligned to the Supporting Question. This task provides students an opportunity to answer the supporting question guiding the investigations, while demonstrating their mastery of the aligned disciplinary strand standards and inquiry standards. For this task, students are asked to demonstrate their knowledge of economic interdependence and how a region is affected by its physical and cultural characteristics. Additionally, students are asked to explain the relationship between two or more sources in their response.

The sample student response below comes from a third grade Kentucky classroom where students were using traditional text, or paragraph composition, to Demonstrate Learning. However, this is not the only way students may Write to Demonstrate Learning. The Kentucky Academic Standards Interdisciplinary Literacy Practice 1 states that, “Text is anything that communicates a message.” This is important for social studies educators to know and consider as they assign Writing to Demonstrate learning. While traditional print may often be an appropriate medium, and even most used writing, when asking students to Write to Demonstrate their Learning, students should be exposed to and have opportunities to demonstrate their learning using a variety of text formats, including but not limited to verbal and visual representations and multiple formats when necessary to communicate more clearly.

In this example, the student responds to the supporting question, “Why do countries depend on each other to produce products?” by explaining that countries have different resources available to them. This student response can be used to assess whether the student has demonstrated mastery of the aligned disciplinary strand standards and inquiry practices. Some questions to consider when evaluating this task include:

- Did the student’s response describe examples of economic interdependence?
Teacher Notes

- Did the student’s response explain how the physical and cultural characteristics of a region affect people?
- Did the student’s response explain the relationship between two or more sources on the same topic?

Student example:

_Countries depend on each other to produce products because certain countries have things that other countries don’t. For example, South America produces a lot of oranges because it is always warm there. So, South America has to trade with other countries that need oranges but can’t grow them. The reason some countries can’t grow oranges is because their weather is not warm all year long, or, even worse, their weather is cold all year long. We rely on South America to give us oranges. However, South America relies on the USA to give them things like oil. That is why countries depend on each other to produce products. Some countries have things that other countries can’t have._

Note that in this example, the student did not demonstrate mastery of 3.I.UE.2, “Explain the relationship between two or more sources on the same theme or topic.” In order to successfully demonstrate mastery of this standard, the response should include two sources to support the claim, such as using a map in conjunction with a chart to explain why countries depend on each other to produce products.
### Sample Task Featuring Writing to Demonstrate Learning: Grade 6 Social Studies

<table>
<thead>
<tr>
<th>Social Studies Disciplinary Strand Standards Alignment</th>
<th>Inquiry Practices Alignment</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>6.C.CP.1</strong> Explain the origins, functions and structures of governments in River Valley Civilizations and Classical Period Empires between 3500 BCE-600 CE.</td>
<td><strong>6.I.UE.1</strong> Develop claims, citing relevant evidence, in response to compelling and supporting questions.</td>
<td><strong>RI.6.7</strong> Integrate information presented in print and non-print formats to develop a coherent understanding of a topic or issue.</td>
<td><strong>ILP 1:</strong> Recognize that text is anything that communicates a message.</td>
</tr>
<tr>
<td><strong>6.G.HE.1</strong> Analyze how physical environments shaped the development of River Valley Civilizations and Classical Empires between 3500 BCE-600 CE.</td>
<td></td>
<td><strong>C.6.2</strong> Compose informative and/or explanatory texts to examine a topic and convey ideas, concepts and information through the selection, organization, and analysis of relevant content.</td>
<td><strong>ILP 4:</strong> Utilize receptive and expressive language arts to better understand self, others and the world.</td>
</tr>
<tr>
<td><strong>6.G.GR.1</strong> Use maps and other geographic representations, geospatial technologies, and spatial thinking to determine similarities and differences among River Valley Civilizations and Classical Empires between 3500 BCE-600 CE.</td>
<td></td>
<td></td>
<td><strong>ILP 8:</strong> Engage in specialized, discipline-specific literacy practices.</td>
</tr>
</tbody>
</table>

### The Task

**Task Aligned to the Supporting Question:**
Using your knowledge of the origins, functions and structures of governments and how physical environments shaped the development of River Valley Civilizations, develop a claim, citing relevant evidence, to answer the following question: “What characteristics do River Valley Civilizations have in common?” Be sure to use maps and/or spatial thinking to determine similarities and differences among complex societies.

### Teacher Notes

This Writing to Demonstrate Learning task is a synthesis task intended to occur after students have engaged in numerous learning opportunities and is part of the [Grade 6 Strongly Aligned Assignment with Teacher Notes](#) from the [Social Studies Student Assignment Library](#).
The assignment with Teacher Notes linked above explains the instructional process and sequence, showing how students will complete a series of tasks to investigate the supporting question: “What characteristics do River Valley Civilizations have in common?” Throughout these tasks, students will be examining the origins, structure and functions of governments of River Valley Civilizations and how the physical environment shaped their development. Additionally, students will utilize maps and other geographic representations to compare these civilizations. The Task Aligned to the Supporting Question asks students to write a claim to respond to this question, citing relevant evidence. Since this task requires students to synthesize their understanding of the disciplinary strand standards and inquiry standards aligned to this task, this response is considered writing to demonstrate learning.

Below is an example from a Kentucky classroom of a student’s response to this task. In their response, they include two common characteristics among River Valley Civilizations: each had a form of monarchy as their government, and they all formed along rivers. The student provides evidence of these commonalities from the sources they investigated. This piece of writing can be used to assess students’ mastery of the disciplinary strand standards and inquiry practices aligned to this task. Some questions to consider when evaluating this task include:

- Does the student’s response explain the origins, functions and structures of governments in River Valley Civilizations?
- Does the student’s response analyze how physical environments shaped the development of River Valley Civilizations?
- Does the student’s response demonstrate that maps or spatial thinking were utilized?
  - Note: According to the KAS for Social Studies Glossary of Terms, “spatial” is defined as the relationships and interactions that occur within a place, anchored in a physical location; arrangement of a phenomenon (such as people or density) across the Earth’s surface. Spatial thinking asks students to use the tools of geographers, such as maps and graphs, to support reasoning and solve problems.
- Does the student’s response include a claim that cites relevant evidence to answer the supporting question?

**Student example:**
All the river valley civilizations had some kind of monarchy. According to source B, Egypt had a theocratic monarchy. Mesopotamia had city states with a king and assembly. China had a dynasty which is a type of monarchy. India had a king that led the three branches of government. This proves that all the river valley civilizations had a type of monarchy.

All the river valley civilizations formed along a river. According to the map, Mesopotamia formed along the Tigris River. Egypt formed along the Nile. India formed along the Indus River. China formed along the Yangtze River. This proves that all the river valley civilizations formed along a river.
**Sample Task Featuring Writing to Demonstrate Learning: High School United States History**

<table>
<thead>
<tr>
<th>Social Studies Disciplinary Strand Standards Alignment</th>
<th>Inquiry Practices Alignment</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS.C.CP.2 Analyze legislative, executive and judicial branch decisions in terms of constitutionality and impact on citizens and states.</td>
<td>HS.UH.I.UE.3 Use appropriate evidence to construct and revise claims and counterclaims relevant to compelling and/or supporting questions in U.S. history.</td>
<td>RI.11-12.7 Integrate and evaluate multiple sources of information presented in different print and non-print formats in order to address a question or solve a problem.</td>
<td>ILP 4: Utilize receptive and expressive language arts to better understand self, others and the world.</td>
</tr>
<tr>
<td><strong>HS.UH.CE.6</strong> Analyze how global interactions impacted American culture and society from 1890-present.</td>
<td>HS.UH.I.CC.2 Engage in disciplinary thinking and construct arguments, explanations or public communications relevant to compelling and/or supporting questions in U.S. history.</td>
<td>C.11-12.2 Compose informative/explanatory texts to examine and/or convey complex ideas, concepts and information clearly and accurately through the effective selection, organization and analysis of content.</td>
<td>ILP 8: Engage in specialized, discipline-specific literacy practices.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ILP 9: Apply high level cognitive processes to think deeply and critically about text.</td>
</tr>
</tbody>
</table>

### The Task

**Task Aligned to the Supporting Question:**
How have global interactions resulting from September 11, 2001, impacted American culture and society from 2001 to the present?

Answer the supporting question, using your understanding of:

- Global interactions and how they impacted American culture and society from 2001 to the present; and
- Legislative, executive and judicial branch decisions in terms of constitutionality and impact on citizens and states.

In your response, analyze legislative, executive and judicial branch decisions due to September 11, 2001, in terms of constitutionality and impact on citizens and states. Be sure to use appropriate evidence to construct and revise claims in your response.

### Teacher Notes
This Writing to Demonstrate Learning task is a synthesis task intended to occur after students have engaged in numerous learning opportunities and is part of the High School Strongly Aligned Assignment 3 with Teacher Notes from the Social Studies Student Assignment Library.

The assignment with Teacher Notes linked above explains the instructional process and sequence, showing how students engage with a series of tasks to investigate the supporting question: “How have global interactions resulting from September 11, 2001, impacted American culture and society from 2001 to the present?” Throughout these tasks, students will investigate multiple sources to analyze the constitutionality of legislative, executive and judicial decisions resulting from the events of September 11, as well as how these events impacted American culture and society. To demonstrate students’ mastery of these standards and ability to use evidence to support a claim, students are asked to construct a response to the Task Aligned to the Supporting Question. Since this task requires students to synthesize their understanding of the disciplinary strand standards and inquiry standards aligned to this task, this response is considered Writing to Demonstrate Learning.

Below is an example of a student response to this task from a Kentucky classroom. In their response, they state the claim that provides several ways the events of September 11, 2001, impacted American culture and society, including ongoing wars, immigration and deportation, the “friendly-ish” skies and big surveillance. The student explains each of these impacts in more detail, providing information from the sources they examined. The teacher can use this piece of writing to determine how well students were able to demonstrate their mastery of the aligned disciplinary strand standards and inquiry practices by assessing this piece. Some questions to consider when evaluating this task include:

- Does the student’s response successfully analyze how the global events of September 11, 2001, impacted American society and culture?
- Does the student’s response analyze how the constitutionality of legislative, executive and judicial decisions resulting from September 11, 2001, impacted citizens and states?
- Does the student’s response include a claim to answer the supporting question using appropriate evidence?
- Does the student’s response demonstrate disciplinary thinking with relevant arguments?

Student example:
Global interactions that have resulted from September 11, 2001, that has impacted American culture and society from then to the present is ongoing wars, immigration and deportation, the terrorist attacks, and big surveillance.

Firstly, the ongoing wars that still impacts us today is how the citizens of America are constantly living their lives to protect America from these ongoing wars. The effects of 9/11 have caused many wars on terror. According to George W. Bush, a former US President, he states that any nation that continues to harbor or support terrorism will be regarded by the United States as a hostile regime.

Secondly, the effects of 9/11 have caused with immigration and deportation. The United States have set up tighter immigration and to keep terrorists out of the country, while this has kept us become a more secure country. This is also social profiling, meaning that not all people that immigrate to look for a better life is a terrorist, they just want a better life.

Thirdly, the friendly-iss skies has impacted us in many different ways to this day because of 9/11. This no reason that our airports have become a lot more secure with full body scans, searches, and sweeps. Which has made us with skies a safe place. It has kept our airports hostile and a lot of trouble just to fly on a plane.

Fourthly, big surveillance has also still affected us in the present. While surveillance across the county has increased significantly since the tragedy of 9/11. You can be checked for weapons just going to school, or even mail. While according to the authors of "How 9/11 Changed America) States that Our Secretive State was a fraction of its current size. So this means that citizens have also less freedom while also losing a lot of freedom with its loss of it all.

All in all, they are many different ways that global interactions have impacted American culture and society from then to the present. These include ongoing wars, immigration and deportation, the terrorist attacks, and big surveillance.
Implementing Writing to Demonstrate Learning in Visual and Performing Arts Instruction

The Kentucky Academic Standards (KAS) for Visual and Performing Arts emphasizes four arts processes universal across all five disciplines: Creating, Performing/Producing/Presenting, Responding and Connecting.

Creating is a continuous process when students conceive and develop artistic ideas and work, which may require space for thinking and reflecting throughout the artistic process. Writing to Demonstrate Learning when Creating may include:

- Generating artistic ideas based on prior knowledge
- Organizing a plan for production
- Refining an artistic work

The arts process of Performing is limited to the performing arts of music, dance and theatre. Producing is the process of sharing work in the area of media arts and will often utilize “product” as its final form. Presenting is often associated with sharing in more formal settings such as exhibitions in the visual arts. Writing to Demonstrate Learning allows students to reflect on previous learning and plan their next steps in Performing, Producing or Presenting. Using Writing to Demonstrate Learning as a vehicle to drive these processes may mean students are regularly:

- Maintaining reflection journals
- Providing peer reviews

Writing to Demonstrate Learning happens most often in the arts process of Responding, as students reflect on their learning as artists and audience members. Due to the cyclical nature of the arts processes, students can demonstrate their learning throughout the artistic process. Writing to Demonstrate Learning for this purpose may look like:

- Engaging in performance reflections
- Creating exhibition texts

Writing to Demonstrate Learning is an effective strategy for engaging Visual and Performing Arts students in Connecting or relating artistic ideas and work with personal meaning and external context. Some Writing to Demonstrate Learning ideas for Connecting include, but are not limited to:

- Comparing and contrasting two or more arts disciplines
- Engaging in a quick write about how an artistic piece relates to the student

The essence of Visual and Performing Arts is for the artist to communicate ideas and experiences to the audience. Similarly, writers also communicate ideas and experiences to the reader. When student artists likewise engage in writing, they can strengthen their understanding of what they learned throughout the artistic process. Just as artists demonstrate their learning through the four arts processes, arts teachers can create opportunities for student artists to demonstrate their learning through the written word.
Implementing Writing to Demonstrate Learning in Visual and Performing Arts Instruction

Writers in the arts contribute to the field professionally in various forms. The examples that follow represent Writing to Demonstrate Learning and may be used by educators to assess student artists’ understanding of content and skills; however, in professional settings, these forms of writing are more representative of Writing for Publication as professional artists are not likely to write very often for the sole sake of demonstrating their learning. Writing for Publication will be addressed in the third section (coming soon) of this resource.

- Artist Statements
- Peer Critiques
- Exhibition reviews
- Artist interviews
- Blogs
- Gallery handouts

About the Writing to Demonstrate Learning in Visual and Performing Arts Tasks in This Resource

The Kentucky Academic Standards (KAS) for Visual and Performing Arts include five contrasting arts disciplines connected through Anchor Standards. The elementary and secondary sample Writing to Demonstrate Learning tasks below both work towards mastery of Anchor Standard 9: Apply criteria to evaluate artistic work. Students also interact with Performing, Responding and Connecting (relating artistic ideas and work with personal meaning and external context) in these tasks, allowing for connection to multiple areas outside of the discipline presented. Educators may make connections to other disciplines and contexts when possible.
### Sample Task Featuring Writing to Demonstrate Learning: Middle School Visual Art

<table>
<thead>
<tr>
<th>Visual and Performing Arts Standards Alignment</th>
<th>Artistic Process Alignment</th>
<th>Additional Standards Connections:</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visual and Performing Arts Standards Connections:</strong></td>
<td><strong>Artistic Process Connections:</strong> Responding</td>
<td><strong>Additional Connections:</strong> The Artistic Process of “Responding” through interpreting this lens can be applied to any of the 5 arts disciplines: Dance Media Arts Music Theatre Visual Arts</td>
<td><strong>C.6.2</strong> Examine a topic and convey ideas, concepts and information through the selection, organization, and analysis of relevant content.</td>
<td><strong>ILP 1:</strong> Recognize that text is anything that communicates a message. <strong>ILP 8:</strong> Engage in specialized, discipline-specific literacy practices.</td>
</tr>
<tr>
<td><strong>VA:Re9.1.6</strong> Develop and apply relevant criteria to evaluate a work of art.</td>
<td><strong>Process Component:</strong> Interpret</td>
<td><strong>Anchor Standard 9:</strong> Apply criteria to evaluate artistic work.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### The Task

**Artwork Artist Statement:**

As students complete an artistic work, they will reflect on the artistic process and the final product by writing an **Artwork Artist Statement**. The practice of including an Artist Statement with a piece of work provides an opportunity for the artist to Write to Demonstrate their Learning and is beneficial to assessing what students have learned throughout the artistic process.

### Teacher Notes

Writing to Learn strategies like weekly exit slips and periodic peer reviews help students work towards a completed Artist Statement by slowly drafting the statement over time and throughout the process of creating. Exit slips prompting students to consider how they have grown as an artist throughout the creative process allows students to think beyond what they have accomplished each week and gain more understanding of their own learning. These prompts may also ask students to consider their artistic choices and what elements of art impact the work they are doing.

Visual and Performing Arts teachers are encouraged to leverage writing as a tool for deeper learning through Writing to Learn described in **Writing to Learn in Visual and Performing Arts**.

Opportunities for students to Write to Learn can prepare students to Write to Demonstrate Learning via Artwork Artist Statements. Similarly, peer critiques provide an aspect of self-reflection to support students' demonstration of learning.
### Sample Task Featuring Writing to Demonstrate Learning: High School Music

<table>
<thead>
<tr>
<th>Visual and Performing Arts Standards Alignment</th>
<th>Artistic Process Alignment</th>
<th>Additional Standards Connections:</th>
<th>Reading and Writing Standards Alignment</th>
<th>Interdisciplinary Literacy Practices Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual and Performing Arts Standards Connections:</td>
<td>Artistic Process Connections: Responding</td>
<td>Additional Connections: The Artistic Process of “Responding” through this lens can be applied to any of the 5 arts disciplines:</td>
<td>RI.11-12.1 Cite relevant and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.</td>
<td>ILP 1: Recognize that text is anything that communicates a message.</td>
</tr>
<tr>
<td><strong>MU:Re9.1.E.III</strong> Develop and justify evaluations of music, programs of music, and performances based on criteria, personal decision-making, research, and understanding of contexts.</td>
<td><strong>Process Component:</strong> Evaluate</td>
<td><strong>Anchor Standard 9:</strong> Apply criteria to evaluate artistic work.</td>
<td><strong>C.11-12.2</strong> Compose informative/explanatory texts to examine and/or convey complex ideas, concepts and information clearly and accurately through the effective selection, organization and analysis of content.</td>
<td>ILP 4: Utilize receptive and expressive language arts to better understand self, others and the world.</td>
</tr>
</tbody>
</table>

### The Task

**Performance Reflection:**
After performing in or attending a public performance, students will demonstrate their learning of elements of music as they reflect on their experience as a performer and/or audience member using an assignment such as the Performance Reflection form.

After the public performance, the teacher will provide a recording of the event for students to view as they complete a Performance Reflection.

### Teacher Notes
Students who were a part of the performance should view the performance recording within the same week as the live performance to give them an opportunity to reflect on their most fresh ideas and feelings about the experience.
Often, students will be the performer for some selections and an audience member for the rest of the concert. Therefore, the Performance Reflection should be labeled with each section of the performance or titles to aid students in responding from the correct viewpoint.

Response prompts can be catered to current discipline-specific vocabulary or focal points of the repertoire.

**Examples:**
What did you learn about the importance of dynamic contrast in music?
How did adding movement to our performance enhance the performance for the audience?

Teachers may allow students to listen to the piece in its entirety and then pause the recording giving students a chance to respond to prompts or encourage students to respond in real time while listening to the piece.

**Remember:** At the high school level, students may choose to specialize in one or more art forms. Students may also choose to not specialize in an art form but rather, move beyond the grounding in the arts achieved at the middle school level toward proficiency in the arts. Proficiency Levels allow for students at multiple grades and abilities to be in the same arts course, learning and growing at their own level.