

Meeting Common Core Standards with Wixie®

Grade 4



What is Wixie?

Wixie is a cloud-based tool fourth-grade students can use to write, paint pictures, and tell stories. Wixie provides a fun way for students to explore and respond to curriculum topics related to the Common Core Standards.

Students can add text to a Wixie page to practice their writing, draw ideas from their imagination using the paint tools, record narration for stories, and more. Student work is online and can be shared immediately through a URL as well as printed as booklets, comics, and more.



Using Wixie with Fourth-Grade Students

In fourth-grade, a student's ability and understanding are growing rapidly. Expanding curiosity and the ability to find answers on their own allows students to be more independent learners. While encouraging this independent learning, be sure to remain involved in their work and offer ideas, suggestions, and lots of praise. As they build projects, encourage them to be creative and remind them it takes practice to get good at writing and drawing. Try to find ways to give their creations an audience. This will help keep their time in Wixie from feeling like "work."

As you explore some of the ideas in this guide, think of the students in your class. Which ones will respond if allowed to explore content in this way? Wixie allows you to assign different activities to different students, so you can more easily adjust the content and work to meet individual student learning needs.

Don't forget time for open "play" in Wixie so students can explore wherever their interests lead. Passion for learning is one of the most important things to teach at this age!



Contents

Grade 4 Language Arts

Reading: Literature	
Key Ideas and Details.....	3
Craft and Structure.....	4
Integration of Knowledge and Ideas	4
Reading: Informational Text	
Key Ideas and Details.....	5
Craft and Structure.....	6
Writing	
Text Types and Purposes	7
Production and Distribution of Writing.....	8
Research to Build and Present Knowledge.....	9
Speaking & Listening	
Comprehension and Collaboration	9
Presentation of Knowledge and Ideas	10
Language	
Conventions of Standard English	11
Vocabulary Acquisition and Use	12
Language Arts Lesson - Persuasive & Pres. Writing	14

Grade 4 Mathematics

Operations & Algebraic Thinking	
Generate and analyze patterns.....	16
Number & Operations in Base Ten	
Generalize place value understanding for multi-digit whole numbers	17
Use place value understanding and properties of operations to perform multidigit arithmetic	17
Number & Operations: Fractions	
Use place value understanding and properties of operations to perform multidigit arithmetic.	18
Extend understanding of fraction equivalence.....	19
Build fractions from unit fractions.	19
Understand decimal notation for fractions, and compare decimal fractions.	20
Measurement & Data	
Solve problems involving measurement	20
Represent and interpret data.....	22
Geometric measurement: understand concepts of angle and measure angles.	22
Geometry	
Draw and identify lines and angles, and classify shapes by properties of their lines and angles.....	23
Math Lesson - Exploring Line Symmetry	25
Appendix A	
Assign Activities by Common Core Standard.....	27
Appendix B	
Assign Common Core Standards to Student Work	30

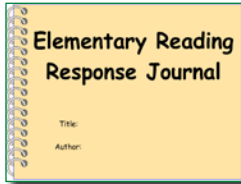
Grade 4 Language Arts

Reading: Literature

Key Ideas and Details

2. Determine a theme of a story, drama, or poem from details in the text; summarize the text.

Reading Response Journal



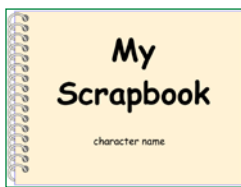
As students are working through leveled readers, assign Wixie's Reading Response activity to explore details in a story that hint at the theme. The Reading Response Journal activity includes opportunities for summarizing events, sharing how text made a student feel, and opportunities to compare and make predictions.

Log in to your teacher account. Click the Activities tab, open the Language Arts folder, open the Reading folder, open the Literature folder, and select the Reading Response Journal 3-5 activity. Click the Assign button to assign the activity to students.

Most reading series are organized by themes, making it easy to compare texts with a common theme and explore how different authors address the same theme. Using Wixie's Compare activity (Activities>Graphic Organizers>Templates) can also help students identify ways that different stories approach a theme.

3. Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions).

Character Scrapbook



To begin, work with your class to brainstorm traits of the main character of a story you are reading. Open the Character Description activity in Wixie on an interactive whiteboard and work together to add in details. Be sure that students support the "what" details they identify with relevant examples from the text.

Log in to your teacher account. Click the Activities tab, open the Language Arts folder, open the Reading folder, open the Comprehension folder, and select the Character Scrapbook activity. Click the Assign button to assign the activity to students.

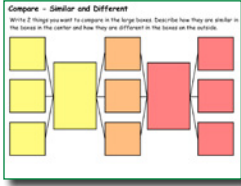
Have students demonstrate their understanding by creating a digital scrapbook for a character. The Character Scrapbook activity includes pages for students to write journal entries about important events from the main character's perspective, a picture page to show important events, a souvenirs page to share objects and explanations of why they are important to the main character, and a page for them to write a letter from the main character to a secondary character about a problem in the story and the secondary character's response.

Reading: Literature

Craft and Structure

6. Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations.

First or Third Person?



Read a traditional version of the Jack and the Beanstalk story to your students. Then read Julia Donaldson’s version, “The Giant and the Joneses”. Not only is the Donaldson’s version told in the first person, it is told from the perspective of a young female giant! Talk with your students about the point of view shared in a story. How do first-person and third-person writing affect how you perceive point of view?

Log in to your teacher account. Click the **Activities** tab, open the **Templates** folder, open the **Graphic Organizers** folder, and select the **Compare** activity. Click the **Assign** button to assign the activity to students.

Have students complete the Compare activity to find similarities and differences in the two stories. After they have worked individually, have students share their comparisons with a critical friend. Students should use the information in each of their comparisons to answer questions like: What details did not match between the stories? Was something left out of the first-person version? Did this help to better frames the point of view of the wolf? Does point of view affect how we perceive events in a story? Might an author use point of view to show us the parts of a story they want us to believe?

Reading: Literature

Integration of Knowledge and Ideas

7. Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text.

Pictures and Silent Movies



Chris Van Allsburg’s books, like *Jumanji* and *Zathura*, are as well known for their illustrations as they are for their stories. Share one of his books with your class, and do a picture walk, asking students to share what they think happens on each page.

Log in to your teacher account. Click the **Activities** tab, open the **Language Arts** folder, open the **Reading** folder, open the **Comprehension** folder, and select the **Key Ideas** activity. Click the **Assign** button to assign the activity to students.

Challenge students to determine information about what they think they can know about characters, setting, and events using only the pictures in the book. Print individual student work and work in small teams to compare, or project student projects and discuss as an entire class.

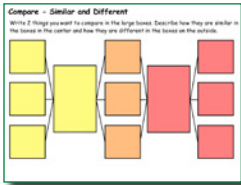
Next, have the students use Wixie to create a “silent movie” of a favorite children’s story using only images. Present the silent movies to the rest of the class. Ask students to guess the story, and then try to identify what happens in each scene. Then, have students record audio to retell the story in their movie. How do written words or audio files improve the communication of the story? How do the images continue to enhance the story?

Reading: Literature

Integration of Knowledge and Ideas

9. Compare and contrast the treatment of similar themes and topics (e.g., opposition of good and evil) and patterns of events (e.g., the quest) in stories, myths, and traditional literature from different cultures.

Compare



Provide students with, or explore together, different versions of a story with similar themes, such as *Cinderella* and *Ella Enchanted* or one title from the *Harry Potter* series and one from the *Charlie Bone* series.

Log in to your teacher account. Click the Activities tab, open the Templates folder, open the Graphic Organizers folder, and select the Compare activity. Click the

Assign button to assign the activity to students.

Have students compare the two stories on their own. When they have finished, have them work with a partner to compare and analyze their diagrams. What similarities and differences did they have in common? Which ones were different? After working with a partner, ask students to duplicate their comparison page and create a second version that includes the new information they and their partner uncovered.

Reading: Informational Text

Key Ideas and Details

2. Determine the main idea of a text and explain how it is supported by key details; summarize the text.

Explore Main Idea



Have your students think about the main idea as an umbrella that covers all of the content and holds it together. Share a couple of different nonfiction books related to a science or social studies topic you are studying.

Look at the cover picture and title. What is the main idea? Now explore the titles, pictures, and text inside the book. How are they organized? Project a copy of Wixie's Main Idea Umbrella activity for students to see. Work together to add text to describe the main idea of one section of the book, as well as key details from each paragraph in that section.

Log in to your teacher account. Click the Activities tab, open the Language Arts folder, open the Reading Folder, open the Comprehension folder, and select the Main Idea Umbrella activity. Click the Assign button to assign the activity to students.

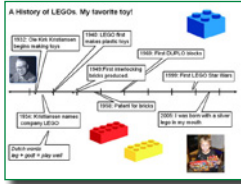
Have students complete the Main Idea Umbrella activity on a nonfiction topic they will be exploring in their writing workshop. This will help them collect information for their writing. You can also have students create a page that illustrates the main idea using clip art, the text tool, and the paint tools.

Reading: Informational Text

Key Ideas and Details

3. Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

Inventions



Inventions are fascinating to our students and are all around us. Innovations can also be made to our favorite and most useful tools (OXO kitchen utensils story). Read part of the book *Toys! Amazing Stories Behind Some Great Inventions* by Don Wulffson.

Talk with your students about some of their favorite inventions that have evolved over time. How was the invention started? What is the process of the invention becoming copyrighted? What else do your students know about inventions?

Log in to your teacher account. Click the Activities tab, open the Templates folder, open the Graphic Organizers folder, and select the Timeline activity. Click the Assign button to assign the activity to students.

Ask students to select an invention and complete a timeline about the events and process of this invention. Students should complete research on the release of the invention as well as significant events in process of the creation of that invention. In addition to the visual timeline they create, you may want to ask students to create a page in Wixie for each event in the timeline.

Reading: Informational Text

Craft and Structure

4. Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a *grade 4 topic or subject area*.

Vocabulary Trading Cards



Students are more eager to learn new vocabulary when they get some choice in the matter. As you are exploring nonfiction on a topic in your classroom, ask your students to keep track of new words they encounter. Give them the definitions or have them look up the meaning of each word on their list.

Log in to your teacher account. Click the Activities tab, open the Language Arts folder, open the Vocabulary folder, and select the Vocabulary Trading Card activity. Click the Assign button to assign the activity to students.

At the end of the week or unit, ask students to choose their favorite new word and create a trading card to teach the meaning to other students. Students should define the word so that other students can understand its meaning, use it in a sentence with the same context as the unit you are studying, and draw a picture that helps depict the meaning.

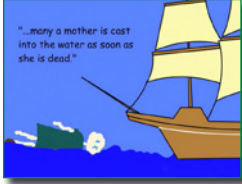
Have students print enough copies of their page using the Postcard style (4 to a page with the Repeat Page option selected) to cut out and distribute to the rest of the class.

Reading: Informational Text

Craft and Structure

6. Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.

A Digital Journal



Share the story, “The Journal of James Edmond Pease a Civil War Union Soldier” (My Name is America). This is a diary of a young man, age 15, and his life during the Civil War. Have the students select a side of the Civil War and write their own journal of what they are experiencing and how they are feeling.

Log in to your teacher account. Click the Activities tab, open the Language Arts folder, open the Writing folder, and select the Booklet activity. Click the Assign button to assign the activity to students.

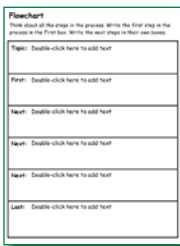
Assign the Booklet template for the students to use as the diary. Students will print their diary in postcard form (4 to a page) and bind with yarn or string. Share the diaries in the reading center.

Writing

Text Types and Purposes

2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

Your Very Own eHow



Television loves DIY (Do It Yourself) programming. There are entire channels devoted to cooking, decorating, and building. The eHow do-it-yourself web site features videos and articles on how to do just about everything. Fourth-grade students are getting more and more capable and many of them have already found passions like soccer, woodworking, sewing, and more.

Combine this media with their current passions by asking students to choose one of their favorite pastimes and create a how-to with Wixie. Letting them practice procedural writing on their favorite topics will engage them in writing informational text.

Log in to your teacher account. Click the Activities tab, open the Language Arts folder, open the Writing folder, and select the Flow Chart activity. Click the Assign button to assign the activity to students.

As they begin to think about what they want to share, have students use the Flowchart activity brainstorm the steps in the procedure as well as identify the words they can use to link the steps, such as next, also, and because.

Once their steps and ideas have been added to the flow chart, have students create individual pages in a new Wixie project for each step someone needs to complete in order to sew a skirt, complete a great corner kick, or bake a great chocolate cake.

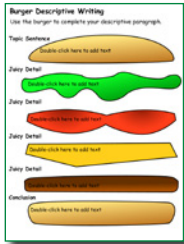
Encourage students to use order words (first, after, next, and finally) in their writing and add supporting illustrations to each page. They should record their voice explaining each step and then embed the project (Send button, Copy Project Embed) on the class blog or Edmodo page.

Writing

Text Types and Purposes

3. Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.

Descriptive Writing - Burger Style



Have students develop a personal narrative about something that occurred recently, such as a family event or a trip to the zoo. Choosing a familiar event will help them determine sequence as well as remember specific details to make their writing descriptive. Have each student plan out their writing use the Burger Writing activity in Wixie. In this simple diagram, students start with the topic and brainstorm “juicy details” that make their story tasty and interesting.

Log in to your teacher account. Click the Activities tab, open Language Arts folder, open Writing folder, and select Burger Writing activity. Click the Assign button to assign the activity to students.

After the introduction and conclusion (the top and bottom buns that hold the story together) and the juicy details have been outlined, have students write and illustrate each idea on a separate page in Wixie. Print out the pages as a comic.

Writing

Production and Distribution of Writing

6. With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting.

ABC's of Fourth Grade



Select a theme for a fourth grade ABC book. You might choose to focus on processed and procedures of 4th grade as a book to share with students the next year, select your state or other social studies focus, or even select a general theme like math and use this as an opportunity for review of terminology and concepts.

Log in to your teacher account. Click the Activities tab, open the Language Arts folder, open the Reading folder, open the Alphabetic Principle folder, open the ABC Book folder and select a letter activity and assign the activity to the appropriate student.

Assign each student a letter and ask them to use Wixie to create a page for a class ABC book on your topic or theme. For example, “L is for laughs because Ms. Brown makes us laugh with all the great jokes and stories.”

Students should type text on the page and use the Paint tools and stickers to create appropriate illustrations. When their work is complete, have students click the Wixie button and choose Share. You can log into your account and then import the shared pages into one file. When all pages are together, sort them into alphabetical order and publish to FLASH or HTML to share from your class web site, or print the pages at postcard size to make a book or set of ABC cards.

Writing

Research to Build and Present Knowledge

7. Conduct short research projects that build knowledge through investigation of different aspects of a topic.

Research with Graphic Organizers



Fourth graders are independent learners and generally want to learn more about topics they enjoy. Have students conduct research on a person in history you are studying, or if you have the support, let them research a famous sports star or musician. A student-driven project will require more assistance to find appropriate informational materials, but often results in increased engagement.

Log in to your teacher account. Click the Activities tab, open Templates folder, open Graphic Organizers folder, and select the Fact or Opinion activity. Click the Assign button to assign the activity to students.

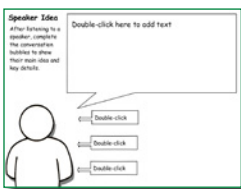
Have students take notes as they complete their research using the Fact or Opinion organizers in Wixie. Rather than writing a research report, ask students to create a two-page presentation in Wixie. The first page should include at least three facts they have found in their research. The next page should include their personal opinions about the subject using opinion words they found in their research such as: feel, believe, always, never, most, best, and worst.

Speaking & Listening

Comprehension and Collaboration

2. Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.

Our Expert Visitor



It is important to connect the learning that goes on inside the classroom with the work and lives of people outside of it. One common way to make this connection is by inviting “experts” into our classes to share knowledge and information as it relates to their job or personal history. Encourage students to take notes about what they are hearing.

Log in to your teacher account. Click the Activities tab, open Language Arts folder, open Reading folder, open the Comprehension folder, and select the Speaker Idea activity. Click the Assign button to assign the activity to students.

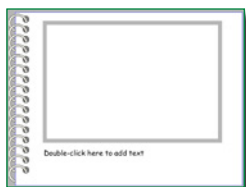
After a guest visit, have students complete the Speaker Idea activity in Wixie to summarize the information they learned. Have students print out their pages and use them to discuss the visit with a classmate or share with the entire class.

Speaking & Listening

Presentation of Knowledge and Ideas

4. Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

Field Trip Memory Book



Field trips are one of the most enjoyable and memorable events of the school year. After a field trip, have students create a page for the field trip memory book. You might choose to have each student recount a favorite exhibit or part of the field trip, or brainstorm a list of things that happened during the trip and assign the events to different students to capture for the field trip memory book.

Log in to your teacher account. Click the Activities tab, open the Templates folder, and select the Memory Book activity. Click the Assign button to assign the activity to students.

Ask each student to write about the event, use the Paint tools and stickers to add appropriate illustrations, and then click the Record button to record their description of the event. If pictures were taken, bring in a picture of the event. Link to the URLs for each student project from your school web site or class Edmodo page.

5. Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.

Career Ready



Part of the focus of the Common Core State Standards is career readiness. Have the students research a career that is of interest to them and then create a presentation about the main responsibilities of the career, what skills are needed, and what education is required. Add audio and images to enhance the presentation. Embed the project into the class blog or wiki.

Language

Conventions of Standard English

I. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

Prepositions Stories



“I sat down with my plan book and Teacher’s Editions for my combined fourth- and fifth-grade class and noticed a couple of language arts lessons on prepositions for both grades. As a former kindergarten teacher, prepositions always remind me of the book *Rosie’s Walk* by Pat Hutchins. After creating several digital stories this year with my students, I thought my students might like to create their own preposition story. It turned out to be one of the most fun and creative projects that my students created all year. Who knew prepositions could be so fun?

I started by reading *Rosie’s Walk* to my students. They giggled at the story as the blundering fox followed the oblivious hen throughout the farm. As a class we recalled all the places Rosie went—around the pond and over the haystack, which led perfectly into a discussion on prepositions and how we use them in our writing. Normally during this discussion, half the class starts counting the holes in the ceiling tiles or planning ahead to their recess games. However, upon mentioning that they would be making a digital preposition story using Pixie, eyes brightened, ears perked up, and I had their attention.

We identified the prepositions in the story and brainstormed many more. Working in small groups, the students were given a list of prepositions and a storyboard. They began by coming up with a character and setting. After a little encouragement, they came up with catchy character names like Tyler the Tiger and Yacka the Alpaca. They wrote eight prepositional phrases on the storyboard with quick sketches for the illustrations.

Students created a title slide, a slide for the beginning of the story, a slide for each prepositional phrase, and an ending slide using stickers and original drawings. They enjoyed creating pictures with their creatures going up, over, around, and through. For each slide, the students recorded their voices to tell the story. With a few guidelines from me, the students used their creativity and developed fabulous Preposition Digital Stories!”

—Gillian Ryan
Santee, CA

Language

Vocabulary Acquisition and Use

4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies.

Vocabulary Trading Cards



As you read to the class or when students are reading independently, have students raise their hands to let you know when they encounter an unfamiliar word. Have them ask the rest of the class if anyone can help share the meaning of the word. Keep a list of the new words the class encounters and post it where all students can both see it and add to it.

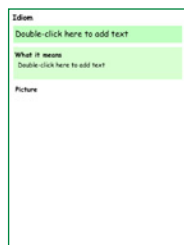
Log in to your teacher account. Click the Activities tab, open the Language Arts folder, open the Vocabulary folder, and select the Vocabulary (green) activity. Click the Assign button to assign the activity to students.

At the end of the week, or unit, ask students to choose their favorite word from the list and create a vocabulary trading card to teach others about the word. Students should define the word so that other students can understand its meaning, use it in a sentence with the same context as the unit you are studying, and draw a picture that helps describe the meaning.

Have students click the Send button, choose Print, choose Repeat pages, and select Trading Cards. This will print the image nine to a page. Have students print enough copies so they can cut out and share their card with the rest of the class. If this size makes it too hard to read the content, try printing at postcard size. This will print the image at four to a page.

5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

Create an Idiom Dictionary



Some idioms are easy to understand (i.e. All bark and no bite) due to the obvious figurative connection, but others aren't quite so easy and require cultural or historical knowledge (i.e.: that attorney is an ambulance chaser). Assign each student an idiom and have them use Wixie to create dictionary entries that explain their idiom with text, illustration, and narration.

Log in to your teacher account. Click the Activities tab, open the Language Arts folder, open the Writing folder, and select the Idiom activity. Click the Assign button to assign the activity to students.

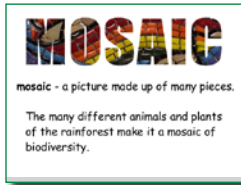
Once the pages are created, you can print them as trading cards or postcards to share with the class. Since printed projects won't include narration, you may also want to link to each student's project to create an online dictionary.

Vocabulary

Vocabulary Acquisition and Use

6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).

Mental Image Vocabulary



Mental images of words can help students learn the words and help store the words in their memory. Depending on the level of your students, distribute vocabulary words to each student or to small teams. Have each student or group write a definition for the term and brainstorm synonyms and antonyms for it.

Review their definition and synonyms and antonyms with your students and ask them to brainstorm ideas for pictures that might provide a visual clue to each word's meaning. Have students use a digital camera to take pictures of those clues or explore the Photos folder in the Stickers library to use images from the Pics4Learning collection.

Have students use the Text tool to type the vocabulary term on the page. Choose a fun font in a large size. Add the pictures that match the word. Have students print enough copies of their page using the Postcard style (4 to a page with the Repeat Page option selected) to cut out and distribute to the rest of the class.

You may also want to print the page in color at full-size to make it part of a word wall or classroom vocabulary list. You can also use Wixie's Import Page function to collect all pages into one file and run as a slide show students can watch when they arrive at class in the morning.

Language Arts Lesson

While individual activities can be used to address specific language standards, you can also create engaging lessons that address multiple standards in one project.

Persuasive and Presidential Writing



Students will use Wixie create a presentation to persuade the National Park Service to add another monument or memorial to Washington DC.

Engage

Washington DC is a treasure trove of Memorials and Monuments. Take a picture tour of the different monuments and memorials, sharing the difference between a memorial and a monument.

As a class, create a list of the qualities shared by the monuments and memorials. Let students know that it is their task to identify these qualities in the next person or event that should be added to the DC Monuments and Memorials. They will craft a persuasive argument and then develop a persuasive presentation to convince others to support adding their selection.

Give students some time to think about the memorial they think should be added. You may want to assign research about several lesser-known events or people before having them choose, or ask them to survey family and friends for their opinions.

Have students choose the event or person they think should be added to Washington DC. You might have them complete a KWL worksheet to help them identify what they already know about their selection, as well as identify topics that they will need to research.

Create

The goal of persuasive writing is to convince others to agree with our facts, share our values, accept our arguments

and conclusions, and adopt our way of thinking. Discuss elements of persuasive writing with your students, so they are ready to establish facts, provide examples, prioritize

arguments, craft an emotional appeal, state conclusions, and communicate logically.

Have each student use his or her research to write a persuasive essay about why their selection should be the next DC Monument/Memorial. Have students share their rough drafts with a classmate before editing and submitting their finished written arguments.

Discuss the structure of the Wixie project with your students. Like their persuasive essay, the first page should contain a position statement, such as “The New DC Memorial/Monument should be _____ because...”

The rest of the project should include pages that present arguments why this selection should be added to Washington DC and a final page that restates the position and summarizes the argument. The presentation should include supporting images and illustrations, as well as narration that summarizes the argument.

Share

Have students share their persuasive presentations with the rest of the class using the Show option on the Wixie toolbar. They can mute the audio if they would like to summarize live instead of playing their recorded narration. As a class, discuss the effectiveness elements of each argument. At the end, can the class choose just one new memorial/monument.

Language Arts Lesson (continued)

Common Core Standards

- RI 1. Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- RI 4. Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
- RI 7. Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
- RI 9. Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.
- RF 4. Read with sufficient accuracy and fluency to support comprehension.
- W 2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
- W 4. Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience.
- W 5. With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.
- W 6. With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting.
- W 7. Conduct short research projects that build knowledge through investigation of different aspects of a topic.
- W 8. Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.
- W 9. Draw evidence from literary or informational texts to support analysis, reflection, and research.
- SL 2. Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
- SL 4. Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
- L 1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- L 2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
- L 3. Use knowledge of language and its conventions when writing, speaking, reading, or listening.

Grade 4 Mathematics

Operations & Algebraic Thinking

Generate and analyze patterns.

5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers.

Pattern Rules

Number Patterns	
3, 4, 5, 6, 7, 8,	Double
0, 2, 4, 6, 8, 10,	Double
0, 3, 6, 9, 12, 15,	Double
1, 3, 5, 7, 9, 11,	Double

Patterns are all around us, in designs for architecture, flooring, art work and much more. Sometimes patterns are for function purposes, as a way to “lock” pieces in. Have students investigate where they see a pattern and discuss if the pattern is based on design or function and what rules the pattern follows. Next, have the students develop their own patterns for a floor or wall design. Developing their own patterns helps elementary student build concrete understandings of patterns and their rules.

Have students use objects in Wixie’s Sticker library to create and extend patterns. Share student work between small teams or log into your account and share with the entire class. Ask students to predict which shapes will come next in the patterns. How do they know? Work as a class to determine the rule for each visual pattern.

Log in to your teacher account. Click the Activities tab, open the Math folder, open the Algebra folder, open the Patterns folder, and select the Patterns-Numbers activity. Click the Assign button to assign the activity to students.

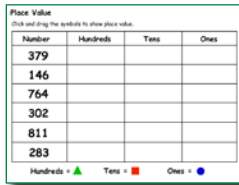
Explain to students how to write mathematical rules for determining sequences. Teach them how to write the rule, with ‘n’ representing the position in the sequence (for example, $n+1$). Have students work on their own to extend the remaining sequences. Get back together as class and discuss the rules students developed to determine the next number.

Number & Operations in Base Ten

Generalize place value understanding for multi-digit whole numbers.

1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.

Game - What Number is It?



Number	Hundreds	Tens	Ones
379			
146			
764			
302			
811			
283			

Place value is the value of a digit depending on its position in the number, such as ones, tens, hundreds, and thousands places. After practicing with place value, assign the Place Value – Hundreds activity so you can evaluate student’s ability to add the correct number of shapes to each column to mark out the number of hundreds, tens, and ones.

Log in to your teacher account. Click the Activities tab, open the Math folder, open the Numbers and Operations folder, open the Numbers folder, and select the Place Value - Hundreds activity. Click the Assign button to assign the activity to students.

Next, give students an opportunity to use the Base Ten blocks in the Stickers Library (Math>Base Ten) to create a three digit number. Have each student share their project by clicking the Wixie button and choosing Share. Log in to your teacher account, click the Wixie button and choose Import Pages to combine all of their work into one file.

Click the View Full Screen button at the bottom of the window and play a game with your class. Display each page and have students see how fast they can call out the number. You may also choose to display each page for a given number of seconds and ask the students to write down the numbers they see.

Number & Operations in Base Ten

Use place value understanding and properties of operations to perform multi-digit arithmetic.

5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Multiplying with Arrays



Using arrays helps students visualize mathematical equations, making them more concrete and easier to understand. The patterns in arrays also build foundations for patterns in algebra. Open Wixie’s Grid – XSmall activity so all students can see it and work together to develop an array that represents a simple multiplication equation, such as 15×11 .

Log in to your teacher account. Click the Activities tab, open the Math folder, open the Templates folder, and select the Grid - XSmall activity. Click the Assign button to assign the activity to students.

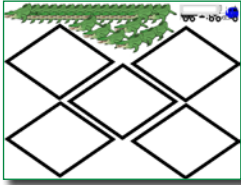
Assign each student a different multiplication equation. Have students open the medium-sized grid template in Wixie (Activities>Math .Templates .Grid – Medium) and use the Paint Bucket Fill tool to create an area model. When the first model is complete, ask students to duplicate the page and adjust the colors in their model to show different ways to factor the number.

Number & Operations: Fractions

Use place value understanding and properties of operations to perform multidigit arithmetic.

6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Visualizing Remainder



“Using clip art to demonstrate grouping and sets was one of the first ways I integrated technology into my teaching, so when the fourth–grade teachers at the Bullis School asked for some help with division and remainders, I knew just what to do.

Many students who were good with fact families couldn’t extend their skill to division problems that have no ‘non facts’ that did not have a matching multiplication fact (for example $9/3$ vs. $10/3$) and struggled with the concept of the remainder.

I developed my own series of Division Zoo activities, each of which included 24 animals and two to ten cages and assigned them to students. They then had to drag animals into cages so that each cage contained the same number of animals. Each page also included a picture of a truck, allowing students to move ‘spare’ animals into the truck for shipment to another zoo. When they were finished, students wrote out math equations to represent the objects on each page.

The lesson reinforced the concept of division into equal groups and that a remainder happens when you have an amount left over that is too small to fit into one of the groups. Some students rushed into spreading out their animals and wound up with equations that did not match their manipulative work, providing instant feedback that demonstrated which students were struggling.

Later in the year, students used Wixie to develop word problems involving the interpretation of a remainder. Students could divide stickers and then look at the problem to see if they needed more items (i.e. enough cars to carry a group of people) or if they had items they could not use (i.e. extra ingredients that would not be enough to bake an additional pie). Working with clip art really helped students see the remainder as the ‘left over’ amount.

Using Stickers as graphic manipulatives and typing equations and answers into text objects made Wixie an invaluable tool in exploring the world of division.”

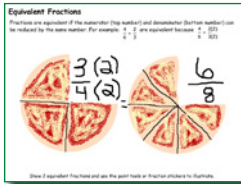
—N. Gordon
Potomac, MD

Number & Operations: Fractions

Extend understanding of fraction equivalence and ordering.

1. Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

Equivalent Fractions



Fractions are equivalent if the numerator (top number) and denominator (bottom number) can be reduced, or multiplied, by the SAME number. This is why you can double each of the ingredients for a batch of cookies to feed twice as many people, but still create the same cookie, since each ingredient is still the same fraction of the whole as it was before. After demonstrating how to produce equivalent fractions to your students, have students use the Equivalent Fractions activity to demonstrate their understanding.

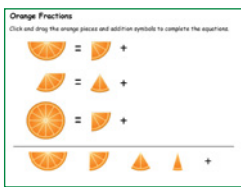
Log in to your teacher account. Click the Activities tab, open the Math folder, open the Numbers and operations folder, open the Fractions folder, and select the Equivalent Fractions activity. Click the Assign button to assign the activity to students.

By pairing numeric representations of equivalent fractions with a visual model of the same thing, students will learn that they need to copy and paste the model (X) number of times to create the equivalent. This will help cement their understanding of the concept.

Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

3. Understand a fraction a/b with $a, 1$ as a sum of fractions $1/b$.

Orange Fractions



When represented only by numbers, fractions can be scary. This is why most people introduce fractions with manipulatives. The same holds true as students begin to learn to add fractions.

Log in to your teacher account. Click the Activities tab, open the Math folder, open the Numbers and operations folder, open the Fractions folder, and select the Orange Fractions activity. Click the Assign button to assign the activity to students.

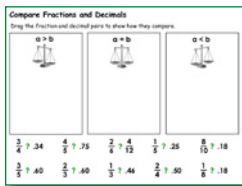
Depending on the ability of your class, open the Orange Fractions activity and project it so you can all work together or have them work individually and move about the room to help students first determine what the denominator in the equation should be by counting how many segments would be in an entire (whole) orange. Since adding fractions requires a common denominator, working with only orange segments that are equal, means they can focus on adding the segments (numerators) to produce the correct sums.

Number & Operations: Fractions

Understand decimal notation for fractions, and compare decimal fractions.

7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model.

Fractions and Decimals



Show four quarters to your students. How much does this total? Ask students if they can guess where the name “quarter” comes from. Represent 100 cents as \$1.00. Then, show students that the decimal representation of a quarter is .25. Ask your students if they know the decimal equivalent of some common fractions (a half-dollar is another great place to start).

Show your students how to convert from a fraction to a decimal by dividing the numerator by the denominator. This might also be a good time to revisit how to round numbers as well.

Log in to your teacher account. Click the Activities tab, open the Math folder, open the Numbers and Operations folder, open the Fractions folder, and select the Fractions and Decimals activity. Click the Assign button to assign the activity to students.

To assess your students’ ability to convert basic fractions to decimals, round to the nearest hundredth, and compare values, have them complete the Fractions and Decimals activity. After completing, see if students have found any shortcuts to help them assess comparative value before they convert the fraction and compare decimal against decimal.

Measurement & Data

Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

1. Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.

Converting Chart Data

Day	Distance	Time
Day 1	1.2	18
Day 2	1.5	22
Day 3	2.0	28
Day 4	2.5	35
Day 5	3.0	42
Day 6	3.5	50
Day 7	4.0	58
Day 8	4.5	65
Day 9	5.0	72
Day 10	5.5	80

1. What day did Ryan run the farthest?
2. Double-click here to add
3. What day did Ryan run the longest?
4. Double-click here to add

Introduce the various units within both systems of measurement (standard and metric). Have each student in your class use the Ten Frame activity template in Wixie (Activities>Math>Templates>Ten Frame) to develop their own conversion charts for converting liquid measurements, time, and distance within these systems. If you are working with limited time or a range of ability, group students together and have them complete one conversion chart to share with the class.

Log in to your teacher account. Click the Activities tab, open the Math folder, open the Measurement folder, and select the Running Chart activity. Click the Assign button to assign the activity to students.

To assess students’ ability to work with the charts and begin converting on their own, have them complete the Running Chart activity in Wixie. After converting meters and kilometers, and minutes and seconds, work as a class to brainstorm other real-world activities that might require conversion within the same measurement system such as liquid measurements in recipes, the time it takes to complete a task, and distance traveled.

Measurement & Data

Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems.
For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.

Finding Perimeter



Perimeter is the total length around the outside of a 2-dimensional shape. Students can find the perimeter of a shape by counting similar units, but this can be time consuming. To help them understand how knowing formulas can make their life easier, have them complete the Perimeter activity in Wixie.

Log in to your teacher account. Click the Activities tab, open the Math folder, open the Measurement folder, and select the Perimeter activity. Click the Assign button to assign the activity to students.

In this activity, students first count to determine perimeter. Then, they work to rearrange complex shapes into rectangles so they can apply the $2x + 2y$ formula to find the perimeter. This helps them begin to learn to break down complex shapes into simple ones to determine perimeter and area as their mathematical expertise grows.

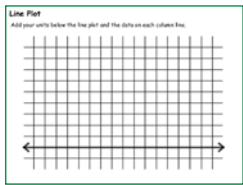
You can assess students' ability to determine perimeter, as well as work with formulas, by having them apply what they know to story problems and real world examples. The last page of the Perimeter Wixie activity asks them to create flower beds that have a perimeter of 64. Once students have completed this part of the activity, ask them to add a new page to the file to create another shape or space and show how they can determine perimeter.

Measurement & Data

Represent and interpret data.

4. Make a line plot to display a data set of measurements in fractions of a unit ($1/2$, $1/4$, $1/8$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.*

Whose Cookie is the Biggest?



Bring in a bag of animal crackers or cookies. These should all be about the same size, but still with enough difference to be easily measurable. Distribute 3-4 cookies to each student. Ask them to measure each cookie to the nearest $1/8$ of an inch using a standard ruler.

Log in to your teacher account. Click the Activities tab, open the Math folder, open the Templates folder, and select the Line Plot activity. Click the Assign button to assign the activity to students.

Then, have each them open the Line Plot activity and place units along the line at the bottom at $1/8$ increments from the largest to the smallest cookie size. Walk around the room to monitor each student's progress. Using their line plot, ask students to identify the largest cookie, the smallest cookie, the two cookies closest in size, and the two cookies that have the largest size difference.

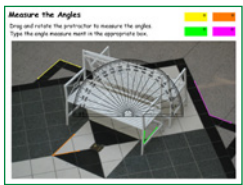
Have students share their finding with the entire class, describing the size differences in eighths of an inch.

Measurement & Data

Geometric measurement: understand concepts of angle and measure angles.

6. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

Measure Angles



Students in Fourth Grade are familiar with how to measure objects using a ruler. Explain to them how intersecting lines are measured using a protractor to determine the angle between the rays. To give students practice measuring different angles, have them use the protractor in the Measure Angles activity in Wixie.

Log in to your teacher account. Click the Activities tab, open the Math folder, open the Measurement folder, and select the Measure Angles activity. Click the Assign button to assign the activity to students.

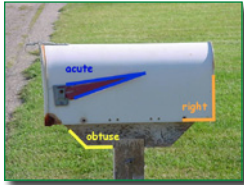
As students are measuring angles and recording their findings in the colored boxes, you can move around the room to assess individual ability and answer questions. You may need to demonstrate to the entire group how to rotate the protractor using the rotation handle so that one of the angle rays is at 0° .

Geometry

Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

Angles All Around Us



Introduce different types of angles (acute, obtuse, and right) to your students. Once you think students understand the different types of angles, have them showcase their knowledge using a digital camera and the paint tools in Wixie.

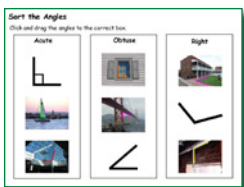
Have students work in small teams to locate and capture images around your school (or online) that contain both an acute and obtuse angle. Have students download the pictures to the computer and open them in Wixie. Instruct students to use the arrow shape in the Wixie Shapes tool to identify the angles in their picture. They should also add text captions to each angle to note whether the angle is acute or obtuse.

Initially students find it difficult to find both angles in the same picture. But it doesn't take long for them to discover that when they find one angle, they often find its supplement. Give bonus points to students who also locate a right angle in the same picture.

After students have printed their work, hang them up around the room as visual examples of acute and obtuse angles.

2. Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.

Identifying Angles and Geometric Shapes



To assess student understanding of the definition of different types of angles (acute, obtuse, and right), have students each complete the Sort the Angles activity in Wixie. You may want to have them work in a lab situation so that you can walk around the room to assess progress and correct misconceptions.

Log in to your teacher account. Click the Activities tab, open the Math folder, open the Geometry folder, and select the Sort the Angles activity. Click the Assign button to assign the activity to students.

You may also want to have students complete the Geometric Shapes template in Wixie (Activities > Math > Geometry > Geometric Shapes). In this activity, students use the Paint tools to draw examples of geometric shapes such as a rhombus, octagon, obtuse angle, and intersecting lines.

Geometry

Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

3. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

Line Symmetry



Open the Symmetry – Line activity in Wixie on your interactive whiteboard. After looking at the images on the page, ask your students if they can tell you what symmetry means. Ask students to work in Wixie to draw the line of symmetry on each image in the activity.

Log in to your teacher account. Click the Activities tab, open the Math folder, open the Geometry folder, and select the Symmetry – Line activity. Click the Assign button to assign the activity to students.

To practice and assess their skills, you can have students complete some of the other line symmetry activities. For example, students can select a picture and set it as the background. Then have students use the paint tools to draw the line of symmetry and then recreate one side of the picture with paint tools.

Math Lesson

Wixie also makes it easy to implement open-ended lessons that engage students in the Common Core Standards.

Exploring Line Symmetry



Students will use Wixie to create original artwork and manipulate images to demonstrate understanding of line symmetry.

Engage

Write the word “symmetry” on the board. Ask your students if they can tell you what it means. Share some examples of real-world objects that are symmetrical. See if you can get students to define what makes these images symmetrical.

To help students grasp the concept of symmetry, distribute square handheld mirrors and have them practice making symmetry by holding the mirrors up to various objects. Explain that this is called bilateral, or line, symmetry because the symmetry is along one axis.

Go back to the example images of symmetry and ask students to identify the line of symmetry in each image.

Create

Activity 1: Symmetry in the World Around Us

To give students a chance to practice and apply their skills, divide them into teams of three or four. Have each student use a digital camera to take a picture of a symmetrical object. If you do not have a digital camera, students can find images at Pics4Learning.com or in the Wixie stickers library.

Help each team transfer their images to the computer. Students should open the images in Wixie and use the Line tool to draw the line, or lines, of symmetry on each image.

Activity 2: Mirror Symmetry with Faces

Though our faces exhibit symmetry, they are not perfectly symmetrical. You can have students use Wixie to show how one side of their face is slightly different from the other.

Have students pair up to take a front view photograph of each other’s faces. In Wixie, have them open the image as a sticker and resize it. Have the students glue the image to the background, select half of their face with the Rectangle Selector tool, and use the copy, paste, and flip buttons to show true symmetry with their faces. Students should do this for both sides of their face, resulting in a total of three images.

Activity 3: Painting Symmetrical Objects

Butterflies are common symmetrical objects. Share a couple of images of butterflies and have students talk about their symmetry. Make sure they can identify the line of symmetry that runs directly through the body of the butterfly.

Have students use Wixie to paint a butterfly with a vertical body and one wing. Then, have them use the same technique they used for their faces to create a complete butterfly by selecting half the butterfly, copying and pasting the selection, flipping it and moving it into position.

Next, test students’ ability to think symmetrically by having them use the mirroring feature of the Paintbrush tool to draw another butterfly. Have students choose the Paintbrush tool, check the Mirror box on the Editing panel, and choose 2 for line symmetry painting.

Starting in the middle of the canvas, have them paint one wing; the other wing will paint at the same time. Remind them to click the Undo button if they need to try again.

Math Lesson (continued)

Share

There are multiple ways in which students can share their work with these activities. Ask students to add narration to their Wixie pages to check for understanding of symmetry and

share the projects as a slideshow embedded on the class web page or as a link in Edmodo. Finally, students can add text to their images and print them out to make a book of symmetry.

Common Core Standards

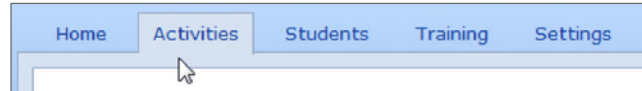
G 3. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

Appendix A

Assign Activities by Common Core Standard

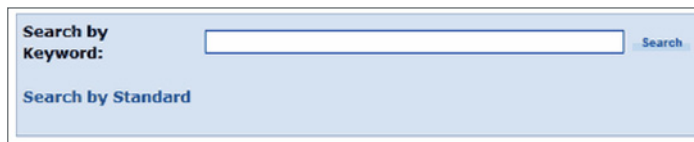
You can assign activities in Wixie that you find by searching the Common Core Standards. Log in to Wixie with your teacher username and password.

Click the **Activities** tab.

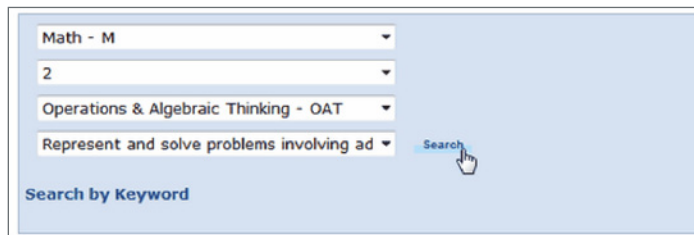


You will see the Activities page.

Click the **Search by Standard** link at the bottom of the page.



Use the pull-down menus to narrow down your search by subject, grade, topic, and subtopic.



Click the **Search** button.

Scroll to the top of the page to see Wixie activities for this standard.

Click an activity to view all standards associated with it, to assign it to specific students in a class, or to customize.

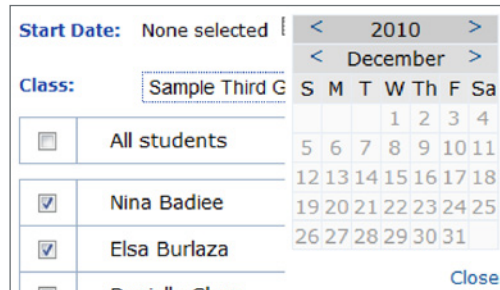
You will see a preview of the activity and a description.



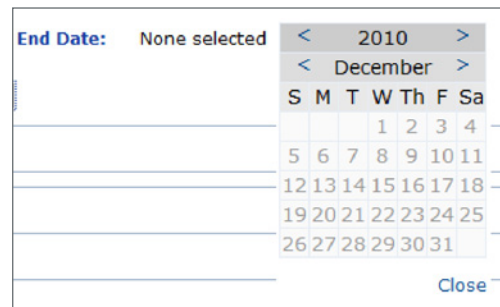
Click the **Assign** button.

You will see a dialog that will allow you to assign the activity to a class or individual students.

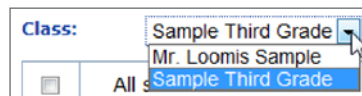
Click the **Start Date** calendar to select the first day you want students to see the activity in Wixie.



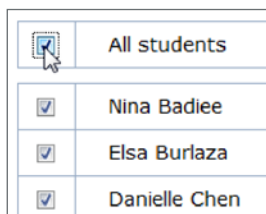
Click the **End Date** calendar to select the last day you want students to see the activity in Wixie.



Use the **Class** pull-down menu to select the class of students you want to view.



If you want every student in the class to see the activity, click the All students check box.



If you only want individual students to see the activity, click the check box for each student.

<input checked="" type="checkbox"/>	Nina Badiee
<input type="checkbox"/>	Elsa Burlaza
<input checked="" type="checkbox"/>	Danielle Chen
<input type="checkbox"/>	Alejandra Deitrich

To assign the same activity to students in another class, select the class using the **Class** pull-down menu.

When you are finished choosing students, click the **Save** button.



You will see the activity in the Assigned Activities section of the Activities page.



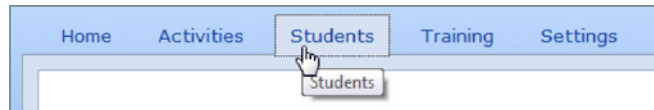
The students you selected will see the activity on the dates you specified.

Appendix B

Assign Common Core Standards to Student Work

Log in to Wixie with your teacher username and password.

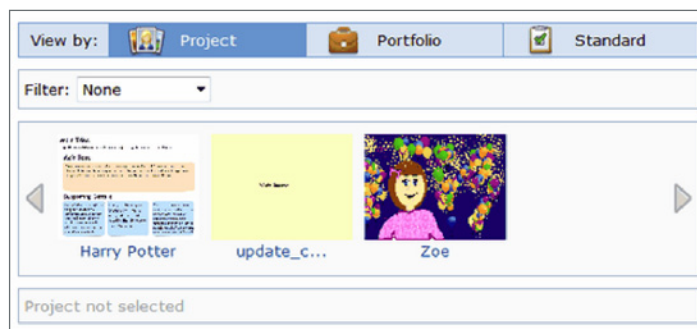
Click the Students tab.



Select a student to view their projects.

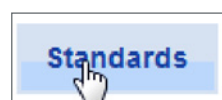


You will see all of the Wixie projects created by the student.



Click a project to open it.

Click the Standards button below the project.

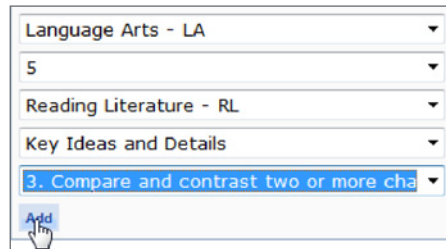


You will see any standards that have already been attached.

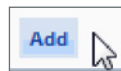
Click the Add button to assign additional standards.



Select standard criteria for the activity, or project, from the pull-down menus.



Click the Add button to assign the selected standard, or standards, to the activity.



Grade 4

Peer collaborative learning in Wixie

“Our kindergarten students at Meiklejohn Elementary School didn’t know their log ins for Wixie, so I had the fourth-graders design shape activities in Wixie for them with directions like, ‘Fill in the triangle shapes with red,’ ‘Drag the shape word inside the shape,’ or ‘Find how many squares are in the drawing.’

The fourth-graders then helped their kindergarten buddies learn their Wixie log in and worked with them to complete the shape activities they designed.

One student decided that he would teach his buddy about proper nouns and shapes, so he had his buddy drag the proper nouns in a circle and the nouns in a square. When I shared my concerns that it might be too hard, he said, ‘But Mrs. Swenson, I have a really smart buddy!’ He was right, and the buddy did just fine learning the proper nouns and the shapes!”

—Melissa Swenson

