

California Common Core Standards

Session 5 of 5: Technology



Technology and the Common Core

Presentation created by:
Dr. Laura Spencer,
Coordinator of Instructional Technology



05573.95

AT TODAY'S RATE OF CHANGE,
TECHNOLOGY WILL EXPERIENCE
20,000 YEARS OF GROWTH

THIS CENTURY

...

21st Century Learners Need To:

- Produce and Publish Documents
- Interact and Collaborate
- Communicate Using Web Tools
- Evaluate Information Presented in Different Media Formats



So how do we teach these skills?

Technology is embedded
in the new Common Core State
Standards









Reading Information Text Standard 5


Analyze the structure of texts, including how portions of the text relate to each other and the whole.

- 1st-2nd grade: Use text features (captions, headings, etc) to locate information
- 3rd grade: Use search tools like key words, sidebars and hyperlinks
- 6th grade: Analyze the use of text features in popular media

Finding Information – 3rd Grade

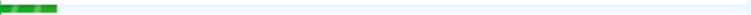
Categories:  1  2  3  4  5  6 [Bonus Points](#)

Art Literature



Question:

What Tom Wolfe novel is named after a 1497 ritual that Savonarola led involving mirrors?

0:19  275 points

[Hint?](#) [Clue?](#) [▶ Skip Question](#)

Finding Information – 6th Grade

The screenshot shows the NASA website homepage with a dark blue header. The header contains the NASA logo on the left and five navigation categories: NEWS (News, features & press releases), MISSIONS (Current, future, past missions & launch dates), MULTIMEDIA (Images, videos, NASA TV & more), CONNECT (Social media channels & NASA apps), and ABOUT NASA (Leadership, organization, budget, careers & more). A search bar is located to the right of the navigation menus. Below the header is a secondary navigation bar with links for 'For Public', 'For Educators', 'For Students', and 'For Media', along with 'Send' and 'Share' icons. The main content area features a large article titled 'LADEE Ready for Launch' with a photo of the launch preparation. To the right of the article is an 'Events' sidebar with a calendar icon and links for 'View Events Calendar', 'Launch Schedule', and 'NASA TV Schedule'. Below the article is a row of six small image thumbnails with captions: 'LADEE Launch', 'Glacier Retreat', 'Guy Bluford', 'Mega Canyon', 'NuSTAR Data', and 'More Stories'. At the bottom of the page are three tabs: 'Images', 'Multimedia', and 'Tweets', with a 'Follow' button next to the 'Tweets' tab.

NEWS
News, features & press releases

MISSIONS
Current, future, past missions & launch dates

MULTIMEDIA
Images, videos, NASA TV & more

CONNECT
Social media channels & NASA apps


ABOUT NASA
Leadership, organization, budget, careers & more

Search

For Public | For Educators | For Students | For Media

Send Share

LADEE Ready for Launch



Engineers from NASA's Ames Research Center in Moffett Field, Calif., have successfully completed launch preparation activities for NASA's Lunar Atmosphere and Dust Environment Explorer (LADEE) observatory, which has been encapsulated into the nose-cone of the Minotaur V rocket at NASA's Wallops Flight Facility in Virginia. LADEE now is ready to launch when the window opens on Sept. 6, 2013.

Events

Wednesday, Sept. 4: Japanese Cargo Ship Leaves International Space Station, Live Noon on NASA TV

- View Events Calendar
- Launch Schedule
- NASA TV Schedule

POPULAR TOPICS

Select...

Images Multimedia Tweets Follow

LADEE Launch Glacier Retreat Guy Bluford Mega Canyon NuSTAR Data > More Stories

Let's play...



NY TIMES BINGO TIME

<p>How should you dress tomorrow based on the weather?</p>	<p>A sports, arts or style article</p>	<p>An article that might not have been published if we did not have freedom of the press</p>	<p>A word you don't know and a guess about its meaning</p>
<p>The story considered most important by Times editors today</p>	<p>A story that would be considered hard news</p>	<p>The article on Page 1 you'd be most interested in reading</p>	<p>A metro or business article</p>
<p>A story that might benefit from a chart or graph, and why</p>	<p>A branch of the U.S. government involved in an article</p>	<p>A science, health or technology article</p>	<p>Your guess as to why the main photo was chosen</p>
<p>If an alien landed here and read only this page of this paper, what is one conclusion it might draw about human beings?</p>	<p>A controversial issue covered or alluded to on Page 1</p>	<p>An article that reminds you of something you've studied in school, and why</p>	<p>Another country and a brief summary of why it is in the news</p>



The New York Times



Thursday, September 5, 2013 Last Update: 1:48 PM ET



Follow Us



Subscribe to Home Delivery | Personalize Your Weather

- WORLD
- U.S.
- POLITICS
- NEW YORK
- BUSINESS
- DEALBOOK
- TECHNOLOGY
- SPORTS
- SCIENCE
- HEALTH
- ARTS
- STYLE
- OPINION

- Autos
- Blogs
- Books
- Cartoons
- Classifieds
- Crosswords
- Dining & Wine
- Education
- Event Guide

CRISIS IN SYRIA

Rebel Brutality Poses Dilemma as West Weighs Strike on Assad

By C. J. CHIVERS

Many Syrian rebel fighters have adopted some of the chillingly ruthless tactics used by the government, raising the prospect that a military strike could strengthen extremists.

910 Comments

LATEST Updates on Syria

10:40 AM Lawmakers Grapple With Lack of Clear Ally

10:37 AM New Figures on Chemical Payloads in Aug. 21 Attack



Ayman Oghanna for The New York Times

U.S. Threat in Syria Inflames Iraq's Shiites

By TIM ARANGO 56 minutes ago

As the West mulls strikes in Syria, Iraqi Shiites see the past repeating and are set to take on a familiar adversary.

The Opinion Pages

LINDA GREENHOUSE

The Next Abortion Case

An appeal in Oklahoma has drawn little attention, but at issue is the Supreme Court's own unstable abortion doctrine.

MORE IN OPINION

- Editorial: Stakes in Congress
- Rubin: Syria Is Not Kosovo
- Op-Ed: The Syria Plan?
- The Stone: The Disappearing Women

PRIVATE LIVES

Cooking Is Freedom

By JIM SOLLISCH

When I was 14, in 1972, girls took home ec and boys took shop. But I wanted to make lasagna, not birdhouses.

OP-ED COLUMNISTS

- Blow: The Era of Disbelief
- Collins: Off to the Mayoral Races
- Kristof: The Right Questions on Syria

MARKETS »

At 1:51 PM ET

S.&P. 500	Dow	Nasdaq
1,657.07	14,955.76	3,661.24
+3.99	+24.89	+12.19



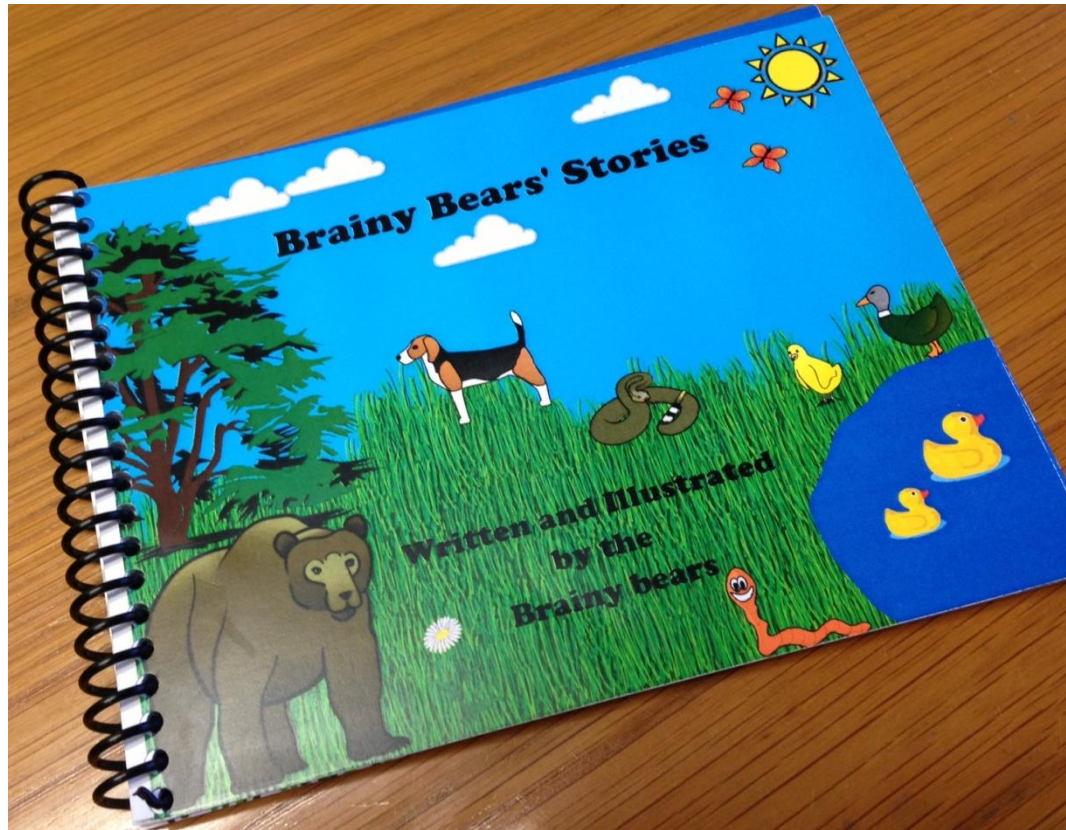
PERSONAL SAVINGS

Writing Standard 6

Use technology, including the Internet, to produce and publish writing as well and to interact and collaborate with others.

- Kinder – 2nd grade: Explore digital tools to produce/publish writing
- 3rd-5th grade: Publish with the guidance and support from adults
- 6th-8th grade: Interact and collaborate with others
- 9th – 12th grade: Keep information updated, and display information flexibly and dynamically

Producing and Publishing – K-2nd grade



- Pixie allows students to draw and add text
- Final products can be posted online, printed as a book, or saved as a photo
- Students learn how to use a mouse and keyboard while producing original works

Producing and Publishing – 3rd – 8th grade

Aurelia Aurita
Moon Jellyfish

Sarah Fuchs
5th hour

Invertebrate

Other names are the common jellyfish and saucer jellyfish.

Classification
Kingdom: Animalia
Phylum: Cnidaria
Class: Scyphozoa
Order: Sarsaeostomaeae
Family: Ulmidae
Genus: Aurelia
Species: Aurita

Diet
The moon jellyfish is carnivorous and mainly feeds on plankton like mollusks, crustaceans and copepods. They are also known to feed on zooplankton and ctenophores.

Adaptations
One of the moon jellies adaptations are their tentacles. They help defend the jellyfish when threatened. Moon jellies often sting their prey in order to quickly stun it and keep it from escaping also. Moon jellies prefer to float, letting the current carry them here and there. Jellyfish do not have brains. Instead, they have a network of nerves, which run throughout their entire body. These nerves can help the jellyfish sense things in all directions. They can sense predators and food. Moon jellies have a digestive system, that uses a special lining to absorb nutrients. Moon jellyfish have limited control over their movement, preferring to drift most of the time. However, they are also active swimmers and have an internal structure, called a hydrostatic skeleton, which helps them to move horizontally by body pulses. The species swims to keep close to the water surface, where they spread their tentacles to catch food. The color of the Moon jellyfish is clear, which helps to not be seen to a certain extent.

Habitat
The moon jellyfish are commonly found in coastal regions in warm and temperate waters. They are found in almost all the waters of the world between 70 degrees N and 40 degrees S, but are most abundant in Atlantic, Pacific and Indian Oceans.

Size
The medusa, or the bell of the moon jellyfish can range between 5 to 40 centimeters.

Video
A video player showing a moon jellyfish with the text "MOON JELLYFISH" overlaid.

Image
A photograph of a glowing moon jellyfish at night.

Map
A small map showing the distribution of moon jellyfish in the Atlantic, Pacific, and Indian Oceans.

- Edu.Glogster allows students to create interactive posters with:

- Text
- Photos
- Videos
- Graphics

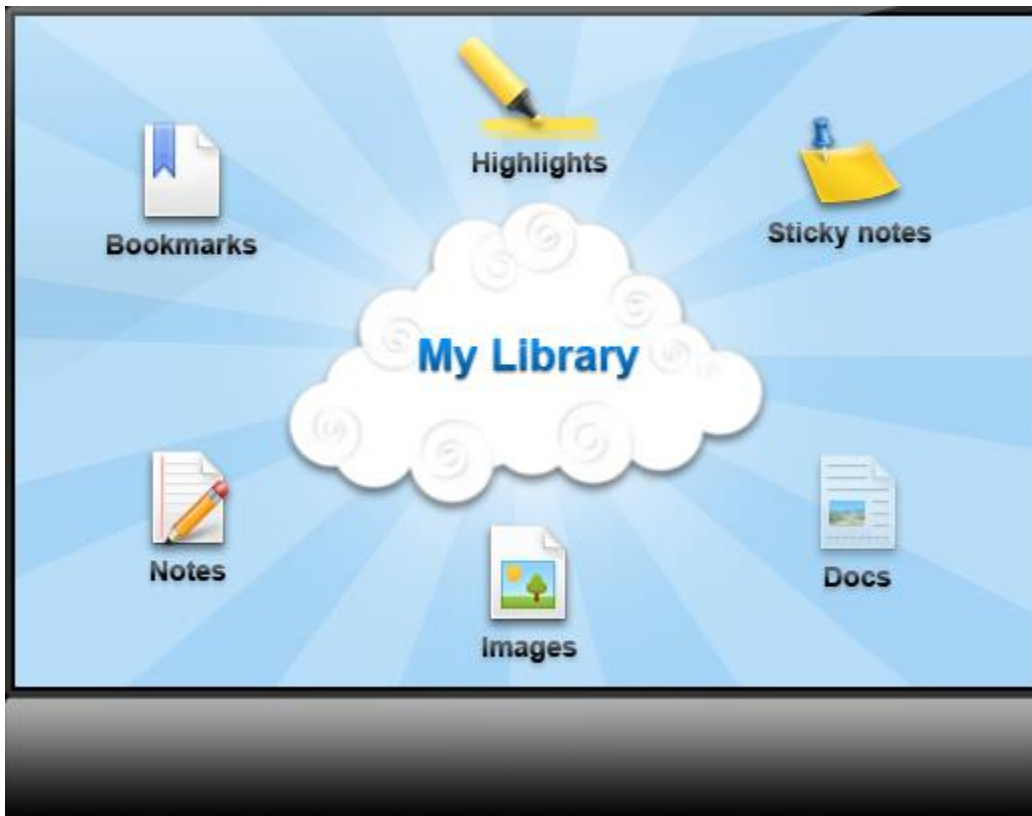
How is this different than the writing you completed as a student?

Writing Standard 8

Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.

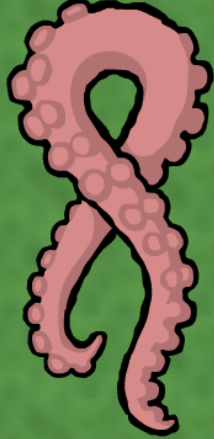
- 3rd-5th grade: summarize information and list sources
- 6th-8th grade: Use effective search terms, assess credibility of sources, avoid plagiarism, cite sources correctly
- 9th-12th grade: Gather information from multiple authoritative print and digital sources; use advanced searches effectively; Integrate information selectively; include footnotes and endnotes

Gathering Sources – 3rd-5th grade



- Diigo helps students keep all their research in one place
 - Highlight and annotate right on the webpage!
 - Share lists to collaborate with others
 - Access research from any internet-capable device

Gathering Sources – 6th-8th grade




Help Save The **ENDANGERED** PACIFIC NORTHWEST TREE OCTOPUS From **EXTINCTION!**

[About](#) [FAQs](#) [Sightings](#) [Media](#) [Activities](#) [Links](#)

THE PACIFIC NORTHWEST TREE OCTOPUS

The Pacific Northwest tree octopus (*Octopus paxarbolis*) can be found in the **temperate rainforests** of the Olympic Peninsula on the west coast of North America. Their habitat lies on the Eastern side of the Olympic mountain range, adjacent to Hood Canal. These solitary cephalopods reach an average size (measured from arm-tip to mantle-tip,) of 30-33 cm. Unlike most other cephalopods, tree octopuses are amphibious, spending only their early life and the period of their mating season in their ancestral aquatic environment. Because of the moistness of the rainforests and specialized skin adaptations, they are able to keep from becoming desiccated for prolonged periods of time, but given the chance they would prefer resting in pooled water.



Rare photo of the elusive tree octopus

An intelligent and inquisitive being (it has the largest brain-to-body ratio for any mollusk), the tree octopus explores its arboreal world by both touch and sight. Adaptations its ancestors originally evolved in the three dimensional environment of the sea have been put to good use in the spatially complex maze of the **coniferous Olympic rainforests**. The challenges and richness of this environment (and the intimate way in which it interacts with it,) may account for the tree octopus's advanced behavioral development. (Some evolutionary theorists suppose that "arboreal adaptation" is what laid the groundwork in primates for the evolution of the human mind.)

CEPHALONEWS

2013-08-27 Even Severed Octopus Arms Have Smart Moves (Sci. Am.)
Octopus's arms are not entirely under the control of the octopus's brain. And new research shows just how deep their independence runs – even when they are detached.

2013-08-27 Noodle-Armed Deep-sea Squid Mystery Solved (Nat. Geo.)
New video shows *Grimalditeuthis bonplandi* –





THE SAN DIEGO



Gathering Sources isn't just for school.
Use any of these to learn something
new?



WIKIPEDIA
The Free Encyclopedia



Speaking and Listening Standard 5

Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.

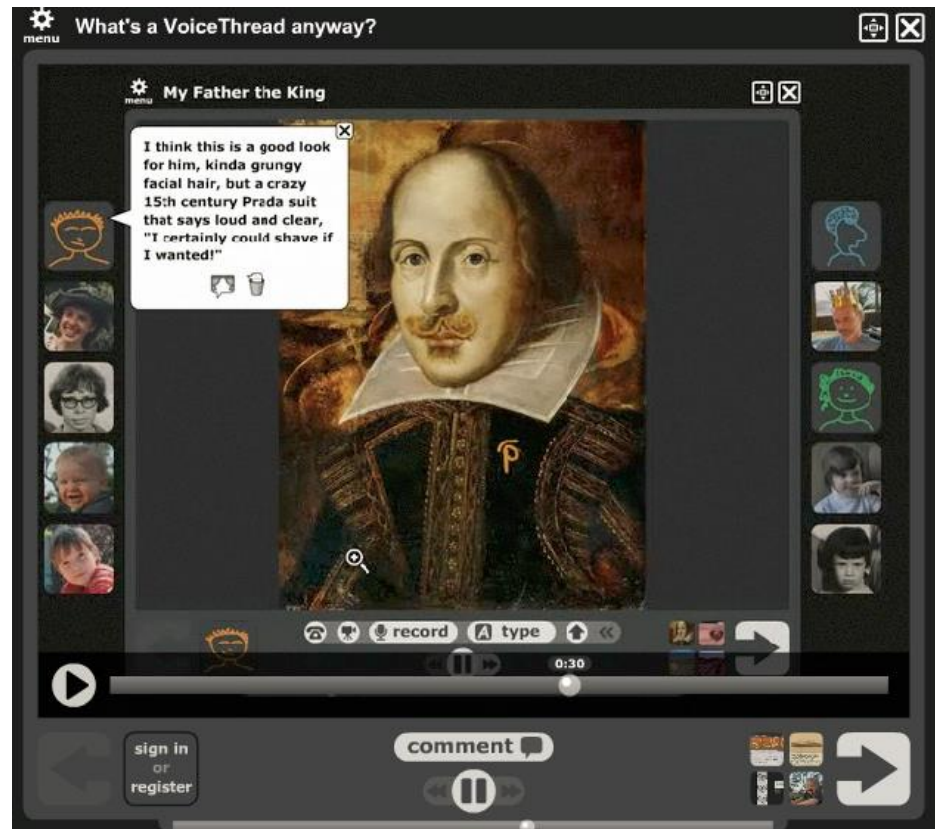
- 2nd-3rd grade: Create audio recordings of stories or poems
- 4th-6th grade: Use multimedia to enhance the development of themes and clarify information
- 7th-8th grade: Use multimedia to clarify claims and findings and emphasize salient points

Speaking and Listening: 2nd-3rd Grade

The screenshot shows the 'Edit Tale Cover' interface on LittleBirdTales.com. On the left, a vertical sidebar contains three steps: 'Step 1 Edit Your Tale' (with a pencil icon), 'Step 2 Add Pages' (with a plus icon), and 'Step 3 Share Your Tale' (with an envelope icon). The main area is titled 'Edit Tale Cover' and features a 'Tale Cover:' section with a drawing of a small bird. Below the drawing are 'Draw' and 'Upload' options. To the right, the 'Add Your Voice:' section includes a recording control with a green record button, a grey stop button, and a grey play button. Below these are 'Record Settings' and 'Recording Instructions' (a 5-step list: 1) Allow Flash Player Settings, 2) Press Record to begin recording, 3) Press Stop to end recording, 4) Press Play to listen to your recording, 5) Make sure you hit Save when finished. A tip states: 'Click Record Settings then the "Remember" checkbox to Always Allow'). At the bottom, there are text input fields for 'Tale Title:' (containing 'And every winged bird') and 'Tale By:' (containing 'jofrei & co'). A green 'Save and Continue' button is located at the bottom right.

- LittleBirdTales.com allows students to:
 - Write a story
 - Add pages with text and illustration
 - Record the voice reading the story
 - Publish

Speaking and Listening: 4th-8th Grade



- VoiceThread combines:
 - Images
 - Documents
 - Video
 - Voice
 - Text
 - Audio files

All through online collaboration!

Technology is even embedded in
math!

Any ideas how it could be used there?

Standards for Mathematical Practice

- Make sense of problems and persevere in solving them
- Model with mathematics
- Use appropriate tools strategically

Make Sense of Problems...

Ask a question, and Wolfram Alpha will show you the answer.



 computational knowledge engine

How do I add $\frac{2}{5}$ and $\frac{4}{7}$

Examples Random

Simplify the following:

$$\frac{2}{5} + \frac{4}{7}$$

Put the fractions in $\frac{2}{5} + \frac{4}{7}$ over a common denominator.

Put $\frac{2}{5} + \frac{4}{7}$ over the common denominator 35. $\frac{2}{5} + \frac{4}{7} = \frac{7 \times 2}{35} + \frac{5 \times 4}{35}$:

$$\frac{7 \times 2}{35} + \frac{5 \times 4}{35}$$

Multiply 7 and 2 together.

$$7 \times 2 = 14:$$

$$\frac{14}{35} + \frac{5 \times 4}{35}$$

Multiply 5 and 4 together.

$$5 \times 4 = 20:$$

$$\frac{14}{35} + \frac{20}{35}$$

Add the fractions over a common denominator to a single fraction.

$$\frac{14}{35} + \frac{20}{35} = \frac{14 + 20}{35}$$

$$\frac{14 + 20}{35}$$

Evaluate $14 + 20$ using long addition.

$$\begin{array}{r} 20 \\ + 14 \\ \hline 34 \end{array}$$

Answer:

$$\frac{34}{35}$$

Model with Math...

Word Problem: My friend, Belle, gave me 29 toys. Now I have 41 toys. How many toys did I have at first?

Add numbers to your model. Use a ? to show the missing number.

total amount

amount at first

amount from friend

41

?

29

Check

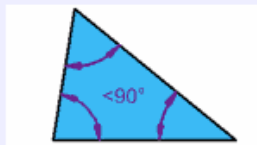
Feedback
Excellent work! Blocks and labels have been placed correctly. Now you can add numbers to the model.

Part Whole Model - 2 Parts

Use Appropriate Tools...

Acute Triangle

[more ...](#)

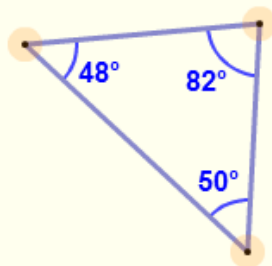


A triangle that has all angles less than 90° (90° is called a Right Angle)

See: [Obtuse Triangle](#)

(Drag the points for different triangles)

Acute Triangle



All angles are less than 90° .

© MathsIsFun.com v0.8

Reset

How often does your career require complex math equations be completed without access to any tools, even a calculator?

In Closing...

The Common Core standards don't just suggest novel technology use as a way to "engage students," but rather requires learners to make complex decisions about how, when, and why to use technology.

With the Common Core, technology integration is now a matter of law.

<http://www.teachthought.com/technology/exactly-what-the-common-core-standards-say-about-technology/>