

NSDL Annual Meeting - November 19, 2009



<http://www.contentclips.com>

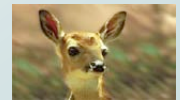


<http://www.stemstories.org>

Lightning Talk: *Combinations for Learning: How $1 + 1 = 3$*

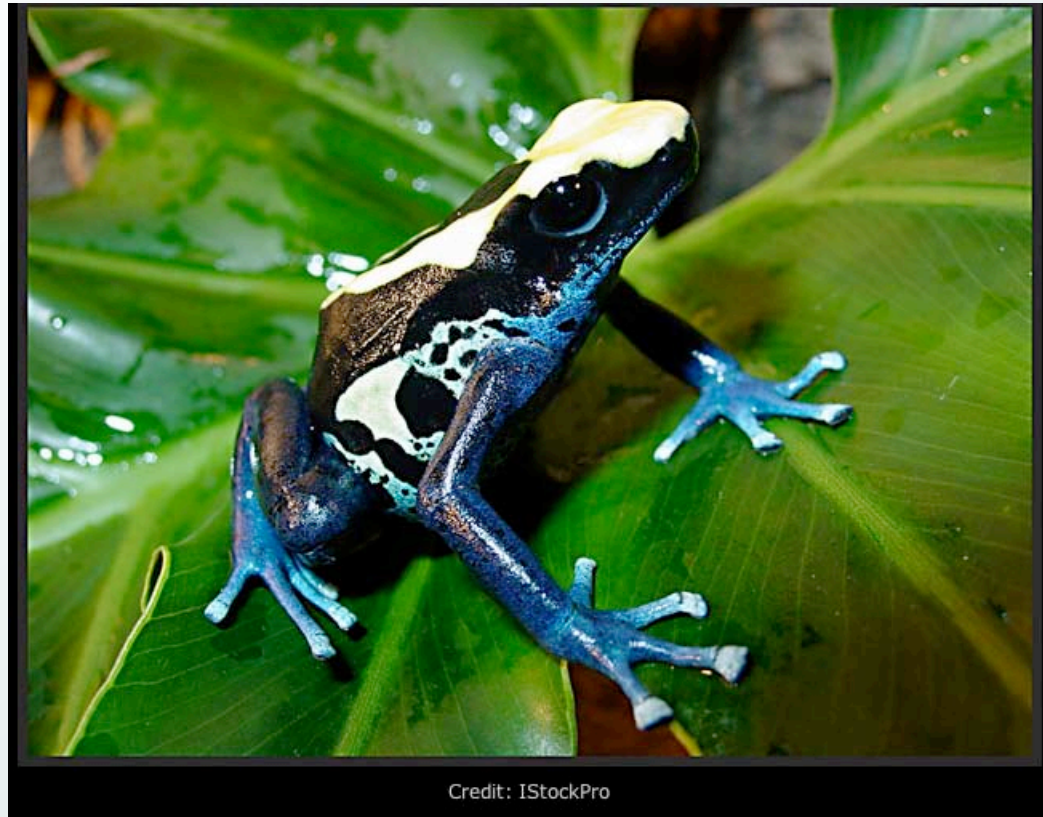


Lois McLean
Rick Tessman
McLean Media



This talk is based on work with the *Content Clips* system, looking at ways to combine resources from different collections into educational presentations and activities. I'm going to highlight 3 examples.

Blue Poison Arrow Frog



First example. You could search the *Content Clips Collection* for a single image, but such a granular object has limited educational value.

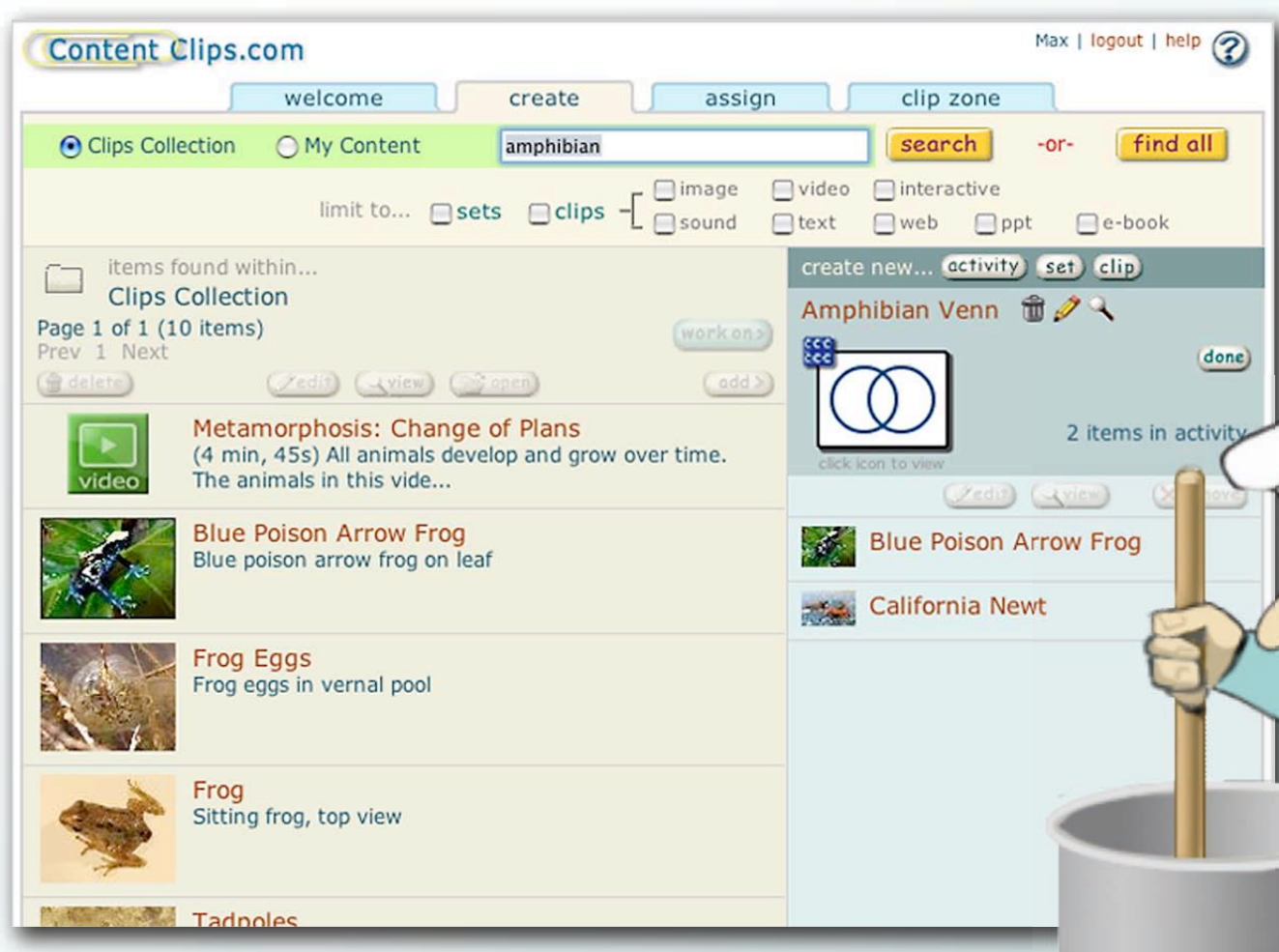
California Newt



Credit: McLean Media

By combining it with just one more clip, you can start to make connections between them.

MIX

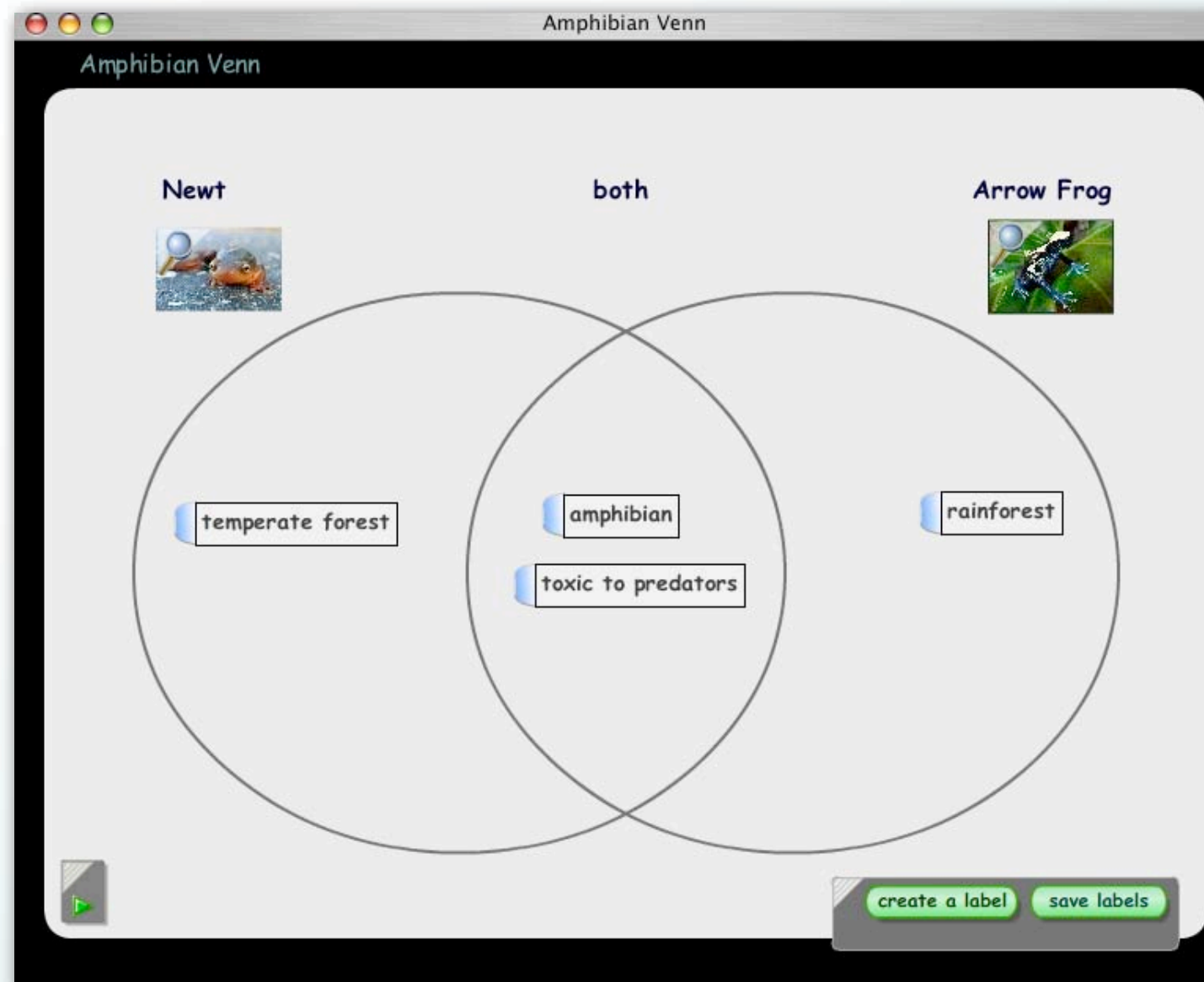


Combine clips to create
meaning and context



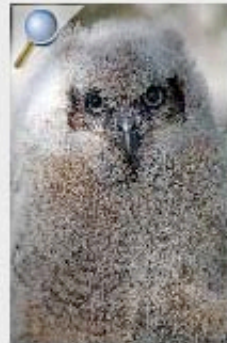
For example, you could use *Content Clips* to assemble a class activity to compare and contrast them

Venn



This Venn diagram might lead to a discussion about why both of these amphibians are highly toxic if eaten and why.

Animal Scramble



dog

blind-worm

newt

frog

lizard

bat

adder

howlet

More objects --- more possible connections. And perhaps even a sequence . . .
Mixing science and literature, here's one option you might recognize . . .

Animal Scramble



newt



frog



bat



dog



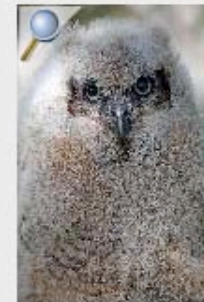
adder



blind-worm



lizard



howlet



Line spoken by witch in Shakespeare's *Macbeth*:
"Double, double toil and trouble; Fire burn and cauldron bubble."

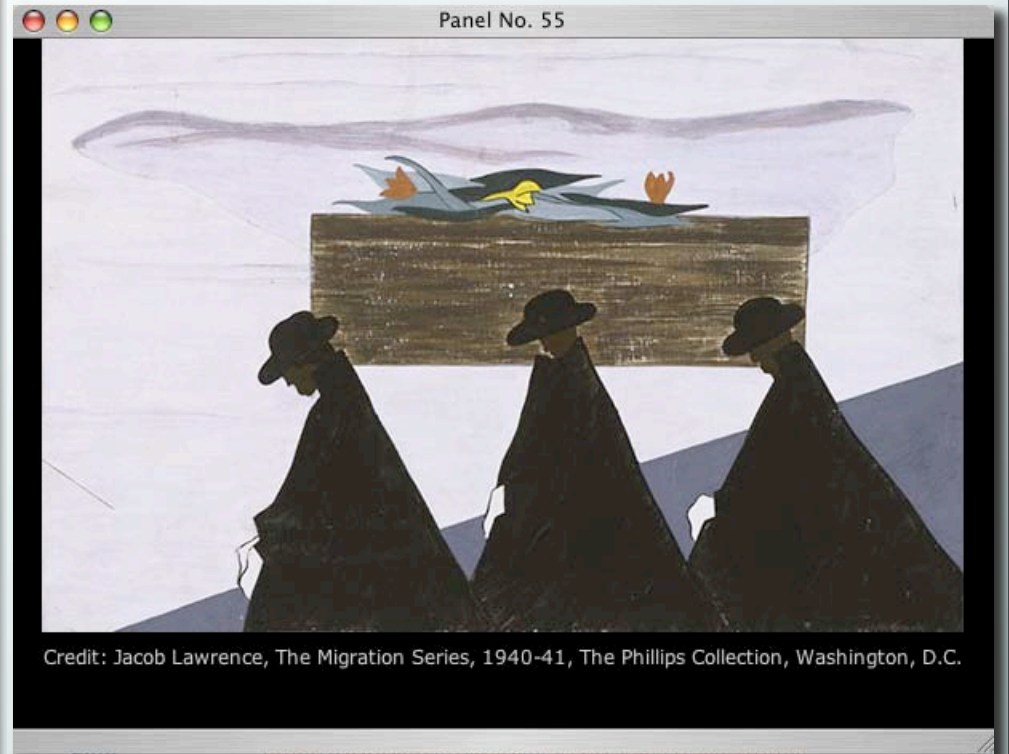
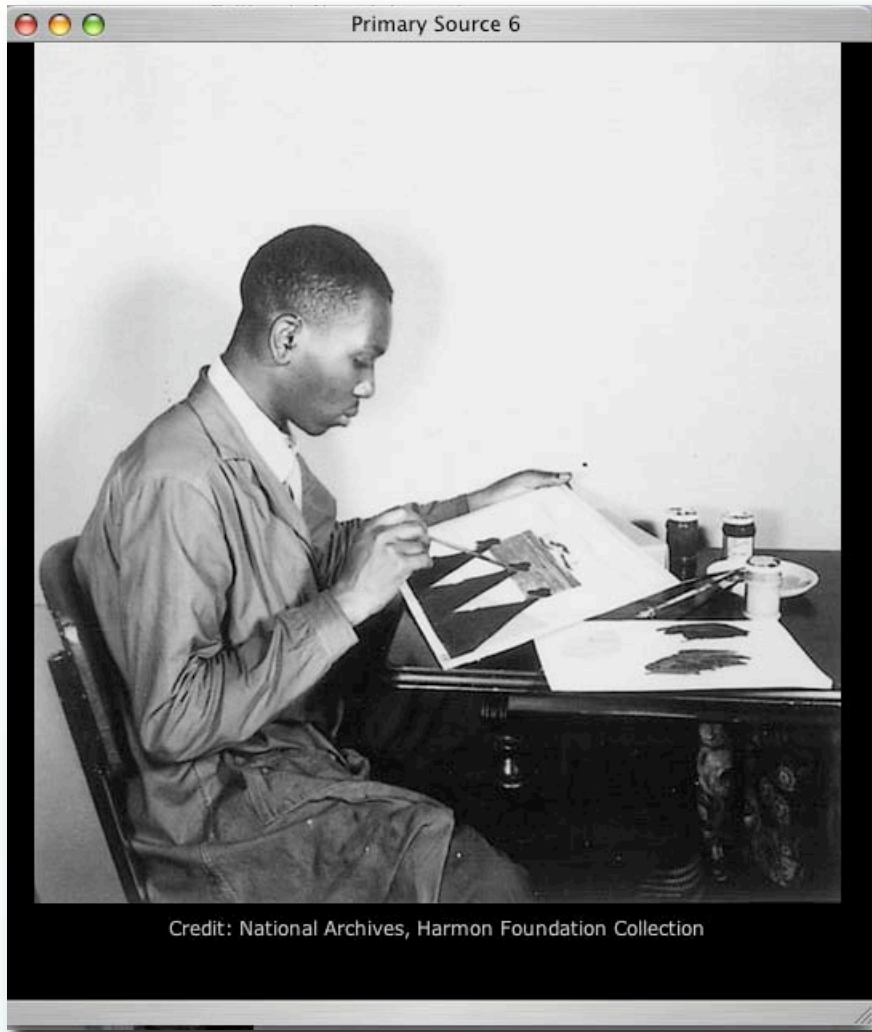
I used this as part of an activity with some teachers at a conference that fell on Halloween.
Eye of newt, and toe of frog, wool of bat and tongue of dog,
Adder's fork and blind-worm's sting, lizard's leg and howlet's wing.

Jacob Lawrence, The Migration Series, Panel 1



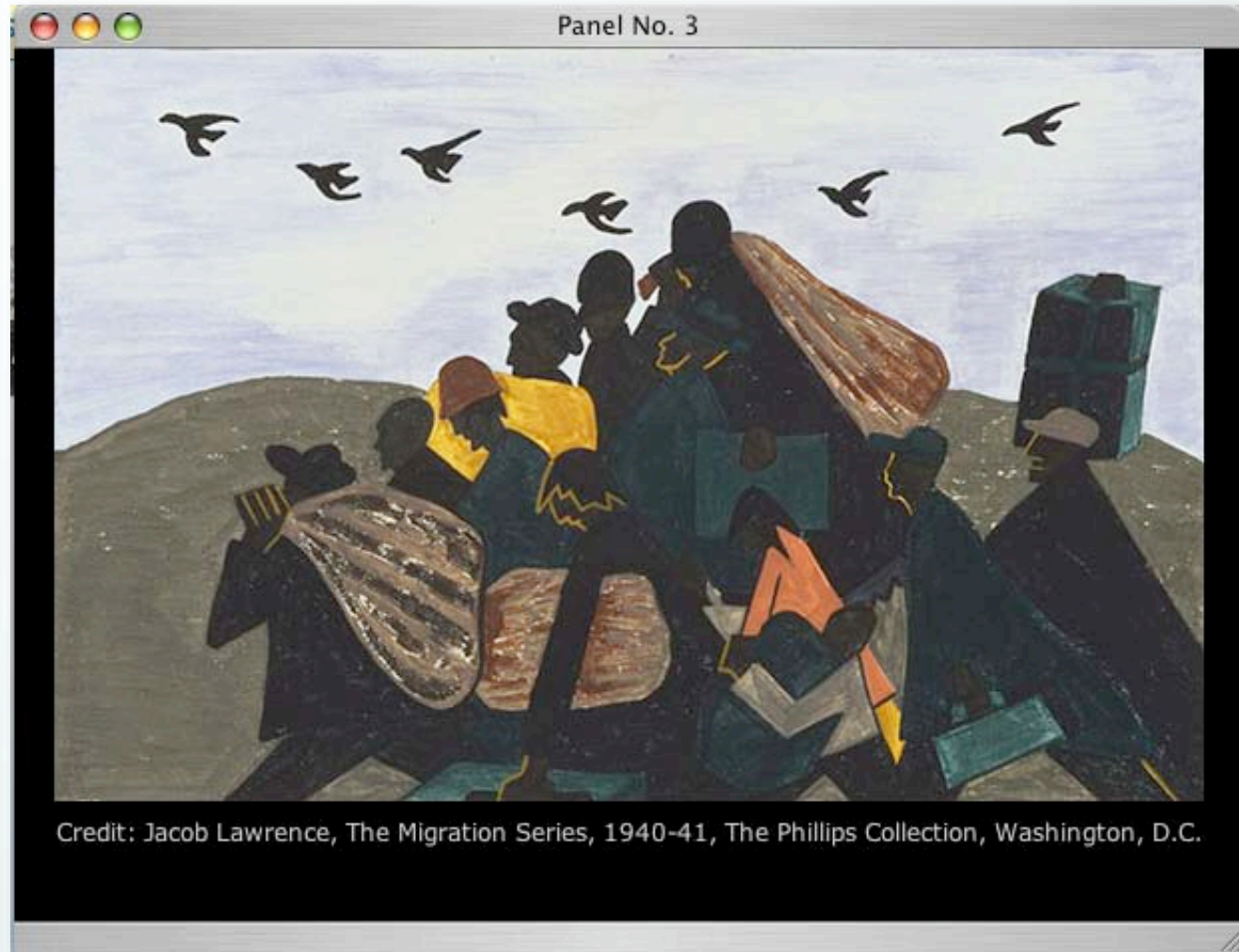
Example 2 is a test with a museum teaching kit from the Phillips Collection here in DC. It features the *Migration Series*, painted by Jacob Lawrence in the 1940s, about the migration of African Americans to the North, starting around World War I. We put some of the images online in the *Content Clips Collection* and we used metadata tags to block access by the general public.

Jacob Lawrence, The Migration Series, Panel 55



The kit includes primary resources such as this photo of Jacob Lawrence at work on Panel 55. There are 60 panels in the series.

Jacob Lawrence, The Migration Series, Panel 3



Credit: Jacob Lawrence, The Migration Series, 1940-41, The Phillips Collection, Washington, D.C.

And what's unique about this situation is that the Phillips Collection only owns the odd-numbered panels.

Jacob Lawrence, The Migration Series, Panels 2 and 4



And the New York MOMA owns the even numbers, which are in their online collection. So a teacher could link to them by creating a personal clip.

Virtual Repatriation, Panels 1, 2, 3, 4



And an online tool like *Content Clips* can bring together objects such as paintings or artifacts that are physically separated through what's called *virtual repatriation*.

telling STEM stories through Content Clips

The image shows a screenshot of the STEM Stories website interface. The website has a blue header with the 'STEM stories' logo and navigation tabs for 'clips', 'spotlight', and 'profiles'. A search bar is present with the word 'animals' entered. Below the search bar, there are filters for 'limit to...' and various media types like 'sets', 'clips', 'image', 'video', 'interactive', 'sound', 'text', 'web', 'ppt', and 'e-book'. The main content area displays a list of video clips, each with a green 'video' icon and a title. The clips listed are: 'Wild Animal Rehabilitation (Kieran Lindsey)', 'Wildlife Biology (Laura Brandt)', 'Guess How Whales Hear! (Darlene Ketten)', 'Kemps Ridley Sea Turtle (Donna Shaver)', 'Dolphin Air Rings (Diana Reiss)', and 'La'ona DeWilde: Environmental Biologist'. The last clip is highlighted. To the right, a video player window is open, showing a video of a woman wearing a fur hat. The video player has a title bar that reads 'http://stg.contentclips.com - La'ona DeWilde: Env...'. Below the video frame, there are controls for 'Captions: On | Off', a progress bar, and a credit line: 'Credit: copyright 2009 WGBH Educational Foundation. Third party materials courtesy of La'ona DeWilde.' The video player also has a 'Done' button at the bottom.

<http://www.stemstories.org>

My final example is from our *STEM Stories* project, which uses the *Content Clips* framework and brings together clips from many sources to introduce a variety of people and careers to students in Grades 4-8.

Profiles

STEMstories home clips spotlight profiles FAQ

search -or- find all

[clear search](#)

Birthdates

- ☐ 350 - 1699
- ☐ 1700 - 1799
- ☐ 1800 - 1849
- ☐ 1850 - 1874
- ☒ 1875 - 1899
- ☒ 1900 - 1924
- ☒ 1925 - 1949
- ☒ 1950 - present

Field of Study

Life Science

- ☐ Animals
- ☒ Bacteria, Viruses, Fungi
- ☒ Cells, Genetics
- ☐ Ecosystems
- ☐ Human Beings
- ☐ Microbiology

Physical & Earth Science

- ☐ Astronomy
- ☐ Chemistry
- ☐ Geology
- ☐ Meteorology
- ☐ Physics

Use the profiles to explore science

Rachel Carson

Field: ecology
Dates: 1907 - 1964
Birthplace: Springdale, Pennsylvania
Ideas Explored:
The effect of pesticides on wildlife
Oceans and marine life

PHOTO (top): U.S. Fish and Wildlife Service

Accomplishments:
The only American woman field naturalist who became a household name
Brought national attention to the problems of pesticide pollution

Biography Highlights:
Rachel grew up on a farm outside Pittsburgh. Her mother encouraged her to enjoy nature, and Rachel spent her time outside with animals. Rachel always loved to write and published her first story when she was in fourth grade. She was also concerned with protecting the environment and studying sea life in its natural setting. Rachel entered college, she still wanted to become a writer, but taking a biology course with a dynamic teacher changed her mind. She was always curious about the sea and decided to major in biology and marine zoology. In 1929, she was given a full scholarship at Johns Hopkins University in Baltimore, Maryland. Seeing this was the first time that summer increased her interest in becoming a marine zoologist. After graduate school, Rachel got a job writing scripts about marine life for a weekly radio series produced by the U.S. Bureau of Fisheries. At night, after work, Rachel started writing a book called *Under the Sea Wind*. It took her three years to finish this book, which shows marine creatures in life-and-death struggles. In 1942, Rachel found work in the U.S. Office of Information. She learned to dive and joined a research crew gathering information off the North Atlantic coast. She turned what she learned about oceanography in this job into a new book, *The Sea Around Us*. Rachel received both literary and scientific honors for the book. In 1955, she wrote *The Edge of the Sea* about the variety of life that lives near the shore. Rachel then became aware of the harmful effects of pesticides. After studying the problem for several years, Rachel decided that people needed to be warned about the dangers of these chemicals. She decided to write a book about pesticides called *Silent Spring*, which was published in 1962. This book caused a lot of controversy but had an impact on how Americans deal with pesticides. It even caused President John F. Kennedy's administration to change its policy on their use.

http://stg.contentclips.com - Rachel Carson

Credit: Rachel Carson History project

Stem Stories™ powered by

policies | FAQ

It includes some short biographies (profiles) of historical figures such as Rachel Carson . . .

Correspondence

The cry embedded within the purr

Karen McComb¹, Anna M. Taylor¹,
Christian Wilson¹, and
Benjamin D. Charlton²

Despite widespread interest in

Moreover, when we re-synthesised

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from their owners (see S
data available on-line w

seeking food at equal amplitude to
purs recorded in non-solicitation
contexts, even individuals with no
experience of owning cats judged
the 'solicitation' purs to be more
urgent and less pleasant. Embedded
within the naturally low-pitched purr,
we found a high frequency voiced
component, reminiscent of a cry or
meow, that was crucial in determining
urgency and pleasantness ratings.

When we conducted ple
purs from 10 cats recor
solicitation and non-sol
contexts to 50 human p
at equal amplitude (Sup
Data), they consistently
solicitation purs to be
and less pleasant than
solicitation purs (urgen
248.26, $P < 0.0005$; and
 $F_{1,500} = 138.24$, $P < 0.00$

Karen McComb



Photos courtesy Karen McComb

... as well as living individuals, such as Karen McComb. She studies animal behavior and communication and sent us some photos of her at work in Africa with elephants and with cats, such as lions. She's been interested in animals since she was a little girl.

Correspondence

The cry embedded within the purr

Karen McComb¹, Anna M. Taylor¹,
Christian Wilson¹, and
Benjamin D. Charlton²

Despite widespread interest in inter-specific communication, few studies have examined the abilities companion animals to communicate with humans in what has become their natural environment — the human home [1,2]. Here we report how domestic cats make subtle use of one of their most characteristic vocalisations — purring — to solicit food from their human hosts, apparently exploiting sensory biases that humans have for providing care. When humans were played purrs recorded while cats were actively seeking food, purrs recorded in contexts, even experience of the 'solicitation' purr was found to be more urgent and less within the natural range of purrs. We found a high component, a meow, that was more urgent and

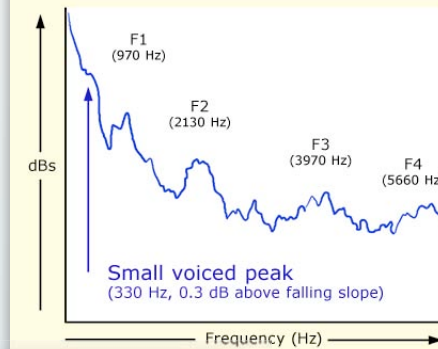
Moreover, when we re-synthesised solicitation purrs to remove only



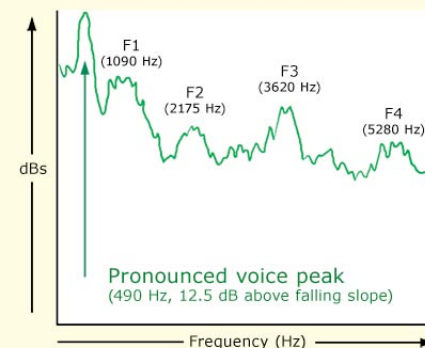
Pepo and Purrs



Non-solicitation purr



Solicitation purr



Now she has a cat named Pepo, who got her interested in why cats purr, which led to her team's discovery that some cats use a solicitation purr when they want to be fed. This purr has an embedded high-frequency sound that humans find annoying. You can compare it to a regular purr in graphs of sound wave or mp3 files that she sent.

So, by combining just a few resources, we're adding much more context to the profile and building a more interesting story that we hope will appeal to kids.