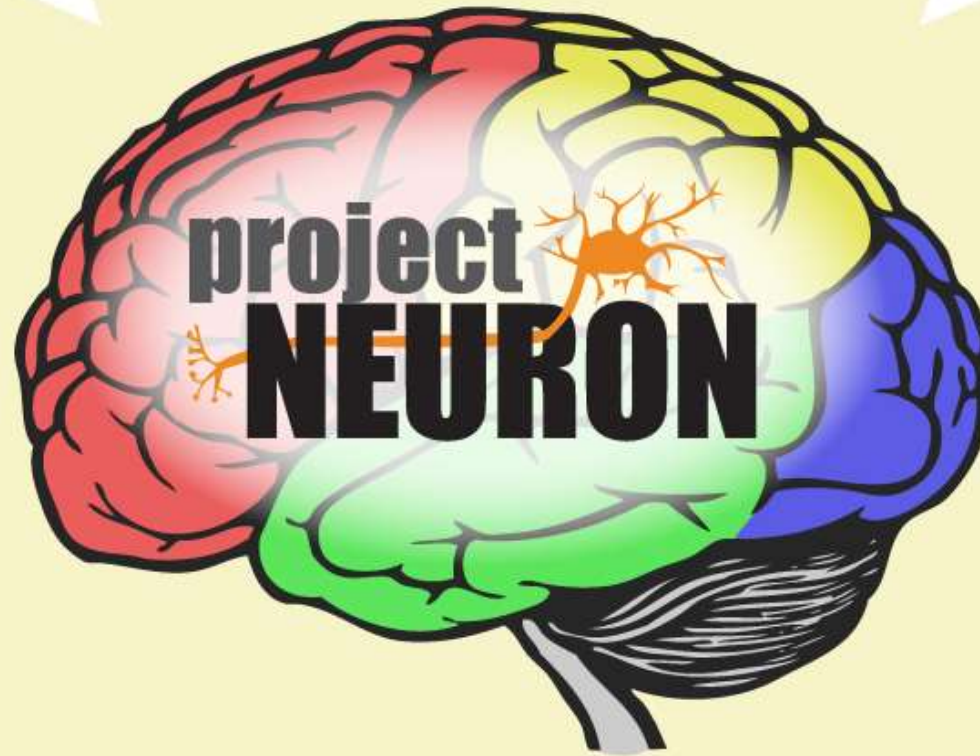


Go Full-Screen with NGSS: A Model for Teaching with Video



*Robert Wallon, Hillary Lauren,
Chandana Jasti, and Barbara Hug
University of Illinois*

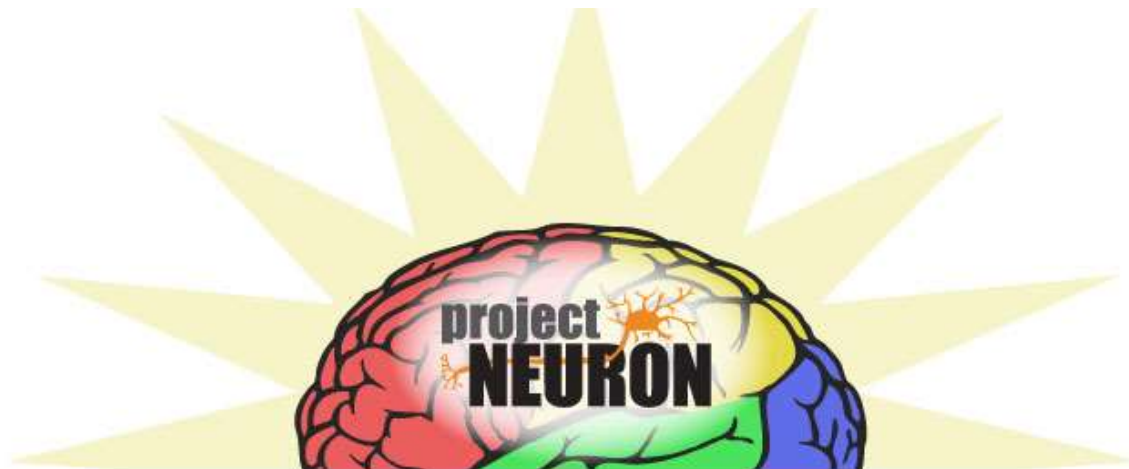


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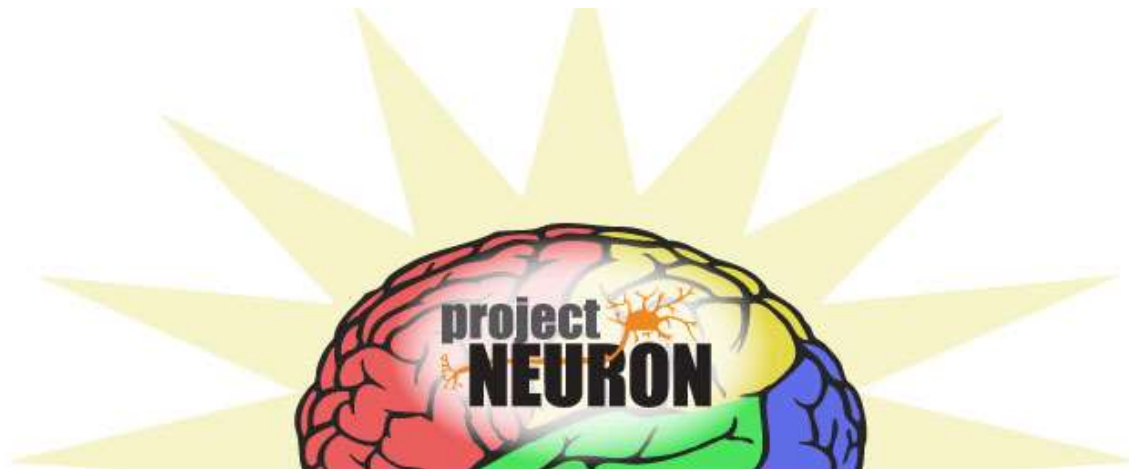
On your notecard...

- How did you use video the last time you taught with it?



Goals for Session

- Introduce Project NEURON
- Compare examples of using video to engage students in scientific practices
- Plan applying ideas to your classroom practice



What is Project NEURON?

- Curriculum development
 - Inquiry
 - Connect to standards
- Professional development
 - Summer institutes
 - Conferences



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Project NEURON Curriculum Units

- **Do you see what I see?**
 - *Light, sight, and natural selection*
- **What can I learn from worms?**
 - *Regeneration, stem cells, and models*
- **What makes me tick...tock?**
 - *Circadian rhythms, genetics, and health*
- **What changes our minds?**
 - *Toxicants, exposure, and the environment*
 - *Foods, drugs, and the brain*
- **Why dread a bump on the head?**
 - *The neuroscience of traumatic brain injury (TBI)*
- **Food for thought: What fuels us?**
 - *Glucose, the endocrine system, and health*
- **What makes honey bees work together?**
 - *How genes and environment affect behavior*
- **How do small microbes make a big difference?**
 - *Microbes, ecology, and the tree of life*

Available at:
neuron.illinois.edu

Let's start with an example...

- Take notes on the video.
- [<https://www.youtube.com/watch?v=lE-8QuBDkkw>]

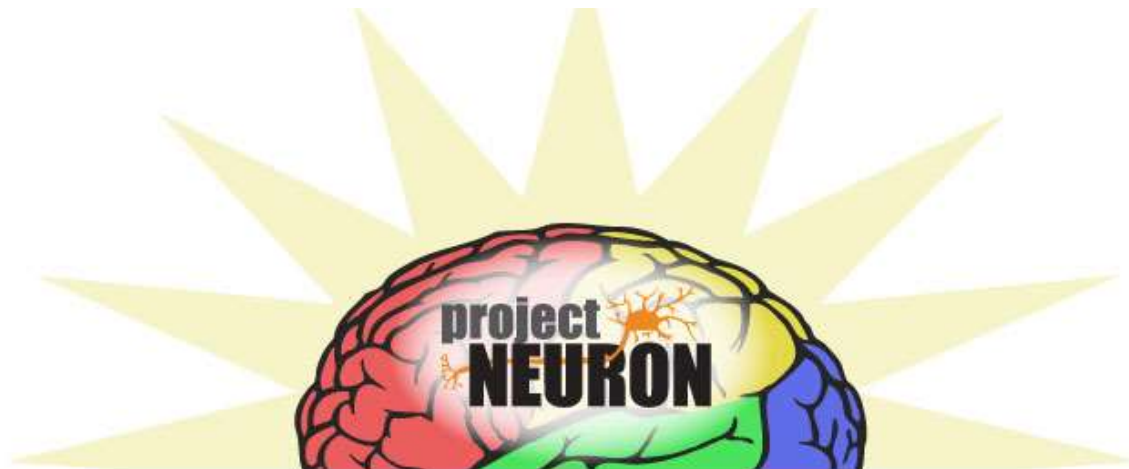
Another example...

- What do honey bees do?
- Record your observations of honey bee behavior.
- Write questions about what you observe.

Comparison

[Video 1](#)

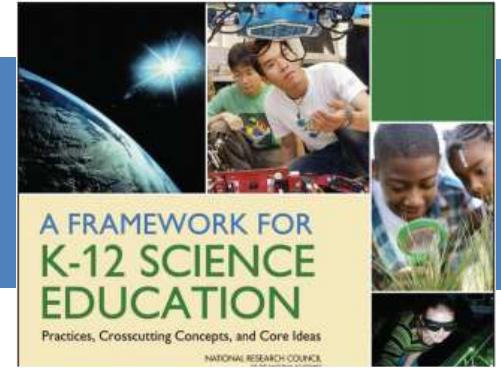
[Video 2](#)



Efficiency vs. Different Thinking

- “Many schools, technology developers, and researchers now use technology to ‘enhance’ education by making the achievement of traditional objectives more efficient.”
(Pea, 1993)

A Framework for K-12 Science Education



Dimension 1: Scientific & Engineering Practices	Dimension 2: Crosscutting Concepts	Dimension 3: Disciplinary Core Ideas
<ol style="list-style-type: none">1. Asking questions2. Developing/Using models3. Planning/Carrying out investigations4. Analyzing & interpreting data5. Using math, information and computer technology, and computational thinking6. Constructing explanations7. Engaging in argument from evidence8. Obtaining, evaluating, communicating information	<ol style="list-style-type: none">1. Patterns2. Cause and Effect3. Scale, Proportion, and Quantity4. Systems and System Models5. Energy and Matter6. Structure and Function7. Stability and Change	<ol style="list-style-type: none">1. Physical Sciences2. Life Sciences3. Earth and Space Sciences4. Engineering, Technology and Applications of Science

NGSS



Practices

Crosscutting Concepts

Core Ideas



Your turn to try!

- Videos in folders on laptops

Discussion

- On back of your index card,
 - What is one specific idea for using video to engage your students in scientific practices?

Acknowledgements

- NIH, SEPA
- University of Illinois

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The screenshot shows the Project NEURON website homepage. At the top, there is a navigation bar with the University of Illinois logo and a search bar. Below the navigation bar, the main heading reads "Project NEURON Novel Education for Understanding Research on Neuroscience". The page features several sections: "Find out more about our 2013 Summer Professional Development!", a paragraph about the project's mission, a section for "News and Events" with three items, and a "Neuroscience Day" event poster for March 19th in Sioux City, NE and March 20th in Mission, SD. The event poster includes a brain graphic and details about the time and lunch provided.

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project NEURON

Search

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Curriculum Units Professional Development Games and Media Additional Projects About

Project NEURON
Novel Education for Understanding Research on Neuroscience

Find out more about our 2013 Summer Professional Development!

Project NEURON brings cutting-edge neuroscience to middle and high school students through classroom modules and activities based on research conducted at the University of Illinois at Urbana-Champaign. We bring together scientists, science educators, schoolteachers, and students to develop and disseminate materials that connect science with national and state science standards.

Our core project is the development of in-class curriculum units that emphasizing inquiry and active learning. These materials are tested by a dedicated group of high school teachers, to whom we provide support and professional development. We have adapted and expanded these materials into a variety of additional projects that include outreach for younger grades, informal education, and educational games and videos.

Please note that we are continuously improving this website and the materials hosted here. We work hard to create quality materials, but if you notice any inconsistencies, missing materials, etc., please let us know! We also love to hear suggested improvements or adaptations from teachers who have used our materials!

News and Events

Color Sorting Activity in The Science Teacher
March 13, 2013
The March 2013 issue of The Science Teacher features the colored candy sorting activity in an article titled, "What color do you see?" (p. 62-65).

Color Sorting Game is Back Online
February 20, 2013
The Color Sorting Game is back up on the Project NEURON web site.

Project NEURON at 2013 Public Engagement Symposium
February 6, 2013
Keep an eye out for a poster at the 2013 Public Engagement Symposium that describes FIND Orphy.

Neuroscience Day
Neuroscience Day

March 19 @ Marina Inn
S. SIOUX CITY, NE

March 20 @ Siente Gieska
MISSION, SD

9:00 - 3:00 with lunch provided