

A Practical Guide for Aligning Existing Materials to the NGSS

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Timeline

- Introduction (5 min)
 - Project NEURON
 - The EQuIP rubric
- Step 1: Review materials
 - Presented unit/lesson overview
 - Review materials: rubric, lesson materials, NGSS
- Step 2: Apply Category 1 criteria (20 min)
- Step 3: Apply Category 2 & 3 criteria (20 min)
- Debrief: Share out and feedback (10 min)



What is Project NEURON?

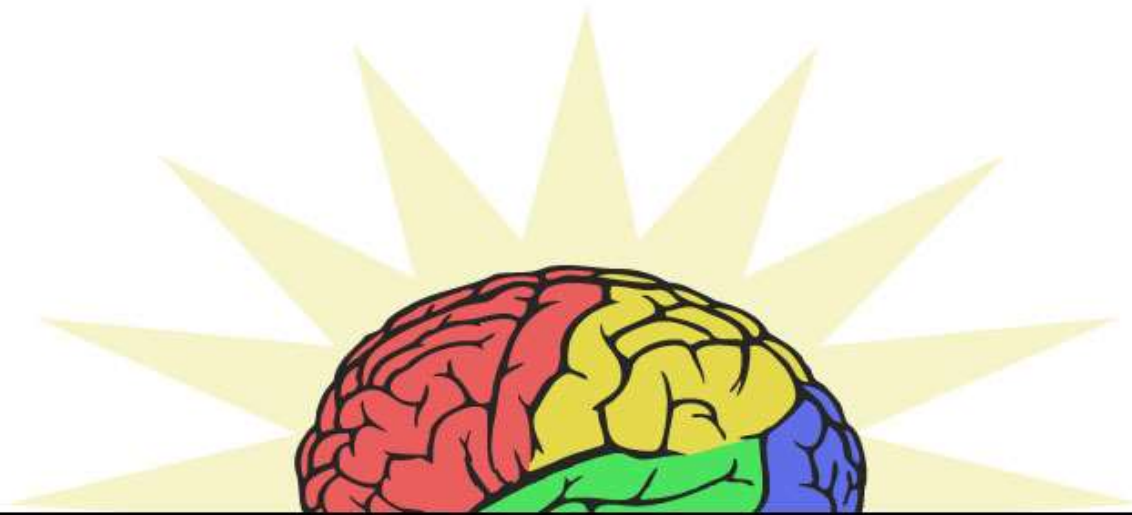
- At the University of Illinois
- Educators, scientists, and graduate students
- Curriculum development
 - Inquiry-based
 - Connect to standards
- Professional development
 - Summer institutes
 - Conferences



EQuIP: Tool to support implementation

- EQuIP: *Educators Evaluating Quality Instructional Products*
- Developed by Achieve + NSTA involving Framework and NGSS writers
- Analyze curriculum materials – individual lessons, sequences of lessons, units
- Evaluate – how well do the materials help achieve the important conceptual shifts in NGSS?





The EQulP Rubric

Step 1: Review Materials

Step 2: Apply Category 1 Criteria

Overview of Unit/Lesson

Do you see what I see?

1. What do I see?
2. How does biology affect perception?
3. How does the environment affect perception?
4. What are color and light?
5. What is a fish's favorite color?
6. **Why do guppies have favorite colors?**
7. What do you see?



Novel Education for Understanding Research On Neuroscience

Project NEURON is a large, cutting-edge research in middle and high school students through experiential, interactive, hands-on research conducted at the University of Illinois.

<http://neuron.illinois.edu/>

Do you see what I see?
light, light, and natural selection

Lesson 1: What do I see?
This introductory lesson introduces the unit "Do you see what I see?" by introducing students to selected differences in visual perception. In small groups, students take on a variety of roles and gain first-hand experience regarding perception, perception, and perception. This activity provides students with a first-hand experience of the world of perception. In subsequent lessons, students investigate the role of perception in the world of perception, the role of perception in the perception of light, and the role of perception in the world of perception.

Lesson 2: How does biology affect perception?
Students learn that perception is affected by biology. Students begin by investigating the role of biology in the perception of light. Students then investigate the role of biology in the perception of light. Students then investigate the role of biology in the perception of light.

Lesson 3: How does the environment affect perception?
Students continue to explore factors that affect perception, moving from biological factors to social and physical environments. Students investigate the role of perception in the perception of light. Students then investigate the role of perception in the perception of light. Students then investigate the role of perception in the perception of light.

Lesson 4: What are color and light?
Students continue to investigate how the environment affects perception by exploring the perception of light. Students investigate the perception of light. Students then investigate the perception of light. Students then investigate the perception of light.



Categories of EQuIP (p. 4)

I. Alignment to the NGSS	II. Instructional Supports	III. Monitoring student progress
<p><i>A. Three dimensional:</i> Supports students in three dimensional learning to explain phenomena or design solutions</p>	<p>A-E. Supports learning for all students through meaningful scenarios, supporting practices, supports phenomena and representations</p>	<p>A-D. Assessments evaluate three-dimensional learning; include formative; are accessible and unbiased</p>
<p><i>B, C, D. Coherence:</i> Lessons fit together coherently, develops connections</p>	<p>F, G: Provides guidance for teachers to build coherence across the unit</p>	<p>E, F. Pre, formative, and summative aligned to three-dimensional learning</p>

Step 1 – Review Materials

Become familiar with the **rubric**, the **lesson or unit**, and the **practices, disciplinary core ideas, and crosscutting concepts targeted in the lesson.**

1. Review the rubric

1. Record the grade and title of the lesson or unit

2. Scan to see:

1. What the lesson or unit contains
2. What dimension components are targeted: Examine the Performance Expectations in handout
3. How it is organized

3. Read key materials

(We will combine Steps 1 & 2 today)



Step 2 – Apply Criteria in Category I: Alignment to the NGSS

Examine lesson through the “lens” of each criterion

1. Individually,

1. check each criterion for which *clear and substantial* evidence is found and
2. record the evidence and your reasoning

2. As a team, discuss

1. criteria for which clear and substantial evidence is found and
2. criterion-based suggestions for specific improvements that might be needed to meet criteria

20 minutes – Steps 1 and 2 (p. 2)

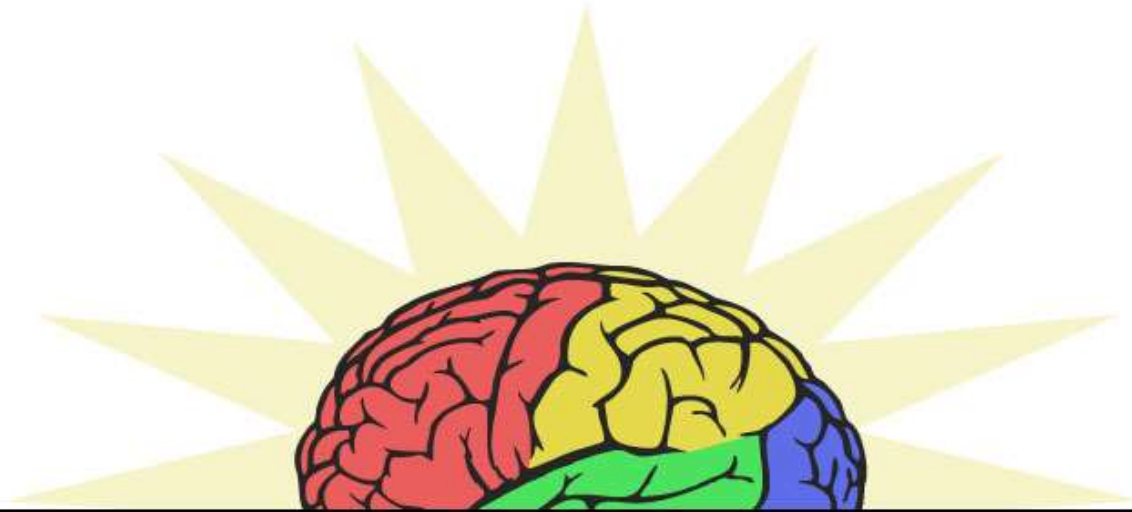


Stop and Ask...

- **Is this lesson aligned enough to the NGSS to warrant further examination?**

“If the lesson or unit is not closely aligned to the Next Generation Science Standards, it may not be appropriate to move on to the second and third categories. Professional judgment should be used when weighing the individual criterion.”





The EQulP Rubric

Step 3: Apply Category 2 & 3 Criteria

Step 3 – Apply Criteria in Categories II & III: Instructional Supports and Monitoring Student Progress

Examine the lesson through the “lens” of each criterion in the 2nd & 3rd categories

1. Individually,

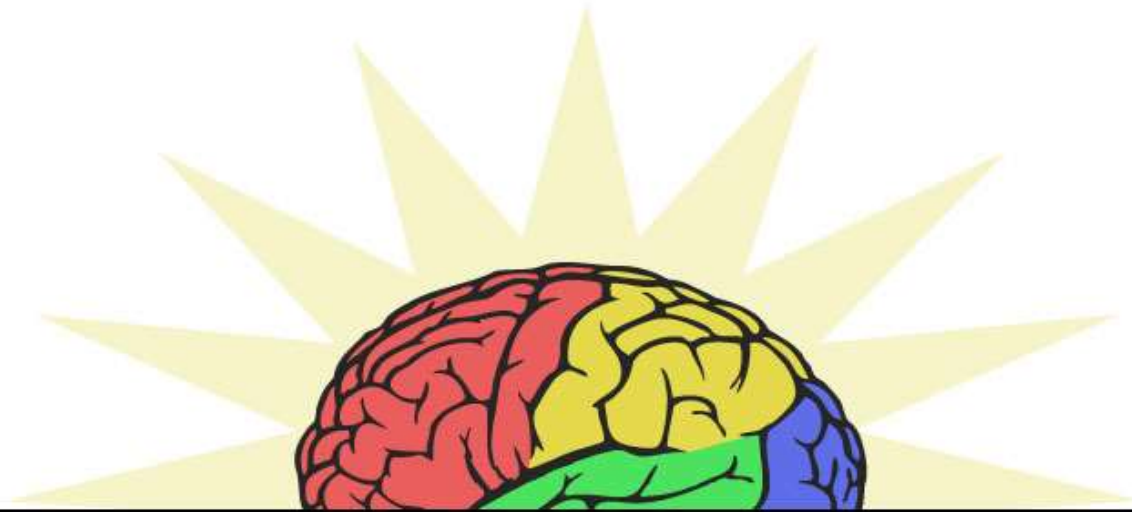
1. check each criterion on the response form for which clear and substantial evidence is found and
2. record the evidence and reasoning

2. As a team, discuss

1. criteria for which clear and substantial evidence is found
2. criterion-based suggestions for specific improvements that might be needed to meet criteria.

20 minutes





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Share-out and Debrief

Share out

- To which aspect(s) of each dimension did the lesson most closely align?
- If you could suggest only one improvement (the best of several your group discussed), what would it be?



More questions

- Do you feel like you have a better understanding of the EQuIP rubric than when you started?
- Do you have a curriculum on which you'd like to try using the EQuIP rubric?



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