<table>
<thead>
<tr>
<th>7E Science Lesson</th>
<th>Elicit: Ideas &amp; Indicators</th>
<th>Engagement/Excite</th>
<th>Exploration</th>
<th>Explanation</th>
<th>Extension/Expansion/Elaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did not identify &quot;big idea&quot; and indicators appropriate for lesson.</td>
<td>Missing either &quot;big idea&quot; or indicators for lesson OR they do not match the lesson content.</td>
<td>Identifies &quot;big idea&quot; and indicators appropriate for lesson.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing two or more of the following components: captures students' attention, accesses prior knowledge, and identifies appropriate activities.</td>
<td>Missing one of the following components: captures students' attention, accesses prior knowledge, and identifies appropriate activities.</td>
<td>Addresses all components of this stage: captures students' attention, accesses prior knowledge, and identifies appropriate activities.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing 3 or more components of this stage: student centered, teacher as guide, interactive, inquiry based, direct concrete experiences with the concept.</td>
<td>Missing 2 components of this stage: student centered, teacher as guide, interactive, inquiry based, direct concrete experiences with the concept.</td>
<td>Addresses all components of this stage: student centered, teacher as guide, interactive, inquiry based, direct concrete experiences with the concept.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing 3 or more components of this stage: teacher and students work together, analysis of info from exploration, teacher clarifies info and shares scientific terminology, concept is formed.</td>
<td>Missing 2 components of this stage: teacher and students work together, analysis of info from exploration, teacher clarifies info and shares scientific terminology, concept is formed.</td>
<td>Addresses all components of this stage: teacher and students work together, analysis of info from exploration, teacher clarifies info and shares scientific terminology, concept is formed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing 2 component of this stage: student centered, active learning.</td>
<td>Missing one component of this stage: student centered, active learning.</td>
<td>Addresses all components of this stage: student centered, active learning,</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Rubric for Constructivism and the 7E Model Science Lesson

Name: _______________________

<table>
<thead>
<tr>
<th>Aspect being scored</th>
<th>Beginning 1</th>
<th>Developed 2</th>
<th>Accomplished 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>Did not mention historical perspective; provided minimum explanation of constructivism.</td>
<td>Provided minimum info on historical background. Discussed the big ideas related to constructivism.</td>
<td>Provided sufficient info on historical background. Discussed the big ideas and included specific aspects related to constructivism.</td>
</tr>
<tr>
<td>Visual presentation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Visual is lacking appeal due to typographical errors, inappropriate use of color, or graphics; distracting to viewer.</td>
<td>Visual uses a few colors, fonts, and graphics.</td>
<td>Visual is appealing with appropriate use of color, fonts, and graphics. It complements the presentation and helps it to flow.</td>
</tr>
<tr>
<td>Organization</td>
<td>Presentation is disorganized, cluttered, and difficult for the user to follow.</td>
<td>Presentation has basic organizational scheme, but may be misleading for some users.</td>
<td>Presentation is well organized and easy to follow. Good use of graphics/color to enhance flow of info.</td>
</tr>
<tr>
<td>Content</td>
<td>Identifies broad, general issues not specific to constructivism.</td>
<td>Identifies a few basic issues related to constructivism.</td>
<td>Analysis of info evident by the identification of valid issues and specific aspects related to the constructivist approach.</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Extend</td>
<td>Extend</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------</td>
<td>-------------------------</td>
<td></td>
</tr>
<tr>
<td>Lacking means to evaluate or inappropriate tool identified.</td>
<td>Lacking connections to future learning.</td>
<td>Shows good understanding of concepts and transfers this knowledge to new learning.</td>
<td></td>
</tr>
<tr>
<td>Evaluation conducted only at end of lesson.</td>
<td>Little transfer of knowledge to future learning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriate formal and informal evaluations are identified throughout lesson.</td>
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<td></td>
<td></td>
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ABSTRACT EXAMPLES:

DELVING INTO DENSITY

HANDS-ON, INTEGRATED, INQUIRY-BASED ACTIVITIES DESIGNED TO ENGAGE STUDENTS IN HIGHER LEVEL COMPREHENSION OF MATH/SCIENCE CONCEPTS. MARZANO'S HIGH YIELD STRATEGIES AND 7E LESSON PLANS TO DEVELOP INSTRUCTIONAL STRATEGIES FOR ACADEMIC ACHIEVEMENT.

WHAT'S THE "MATTER"

EXPERIENCE HANDS-ON, INQUIRY LEARNING ACTIVITIES TO EXTEND YOUR STUDENTS THINKING AND LEARNING ABOUT MATTER. RECEIVE LESSON PLANS DESIGNED USING THE 7E MODEL.

DO BABY STYROXES LOOK LIKE THEIR PARENTS?

PARTICIPANTS WILL ENGAGE IN A HIGHLY ENGAGING HANDS-ON, INQUIRY BASED EXPERIMENTAL MODEL THAT DEVELOPS THE MATHEMATICAL MODELS OF GENETICS TRAITS.
Content Enhancement Lesson Plans
Science content:
http://www.teach-nology.com/teachers/lesson_plans/science/k2/
lan&db=lessonplans&collab=

Graphic organizers research
http://udl.cast.org/ncaclindex.cfm?i=4769

Graphic organizers templates:
http://t4.jordan.k12.ut.us/teacher_resources/inspiration_templates/
http://www.learnalberta.ca/content/ssass/html/graphicorganizers.html

Math Interactive Manipulatives:
http://nlvm.usu.edu/en/nav/vlibrary.html

Math Websites:
• http://coolmath4kids.com/
• http://aplusteach.com/
• http://mathplayground.com/games.html
• http://www.fusebrain.com/brain/MathBrain/MathBrain.html
• http://www.teachrkids.com/
• http://www.multiplication.com/
• http://www.bigbrainz.com/teachers.php

Science Websites:
• http://www.engagingscience.org/games/onlinegames/games.html
• http://childparenting.about.com/gi/dynamic/offsite.htm?zi=1/XJ/Ya&sdn=childpa
• http://www.edheads.org/index.htm
• http://childparenting.about.com/gi/dynamic/offsite.htm?zi=1/XJ/Ya&sdn=childpa
renting&zu=http%3A%2F%2Fwww.fusebrain.com%2F
• http://childparenting.about.com/gi/dynamic/offsite.htm?zi=1/XJ/Ya&sdn=childpa
• http://childparenting.about.com/gi/dynamic/offsite.htm?zi=1/XJ/Ya&sdn=childpa
renting&zu=http%3A%2F%2Fwww.bbc.co.uk%2Fscience%2Fhumanbody%2Fb
ody%2Finteractives%2F3djigsaw_02%2Findex.shtml%3Forgans
• http://education.jlab.org/vocabhangman/index.html
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**ELICIT**

Determine prior knowledge

**Lesson objective(s):**

**Differentiation strategies to meet diverse learner needs:**

**ENGAGEMENT**

- Describe how the teacher will capture students' interest.
- What kind of questions should the students ask themselves after the engagement?

**EXPLORATION**

- Describe what hands-on/minds-on activities students will be doing.
- List "big idea" conceptual questions the teacher will use to encourage and/or focus students' exploration

**EXPLANATION**

- Student explanations should precede introduction of terms or explanations by the teacher. What questions or techniques will the teacher use to help students connect their exploration to the concept under examination?
- List higher order thinking questions which teachers will use to solicit student explanations and help them to justify their explanations.

**ELABORATION**

- Describe how students will develop a more sophisticated understanding of the concept.
- What vocabulary will be introduced and how will it connect to students' observations?
- How is this knowledge applied in our daily lives?

**EVALUATION**

- How will students demonstrate that they have achieved the lesson objective?
- This should be embedded throughout the lesson as well as at the end of the lesson

**Extend**

Transfer to new learning
| **Teacher:**  |
| **Date:**  |

**Subject area / course / grade level:**

**Materials:**

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Extend
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