**5E Learning Cycle Lesson Plan**

Your written lesson plan will be added to TK20 for final grading. This lesson plan should include the following items; please be sure to number them as they are numbered here. Except where noted, **please use an outline or bulleted format rather than a paragraph format** so it is easier to use.

1. **Title.**

2. **Overview and Statement of Purpose**.

A, Include a several sentence statement of purpose for the lesson.

B. How does it connect to the real world?

3. **Grade Level and Objectives.**

A. Please list grade level and all science objectives being taught. You should connect this to the new [Essential Standards.](http://www.ncpublicschools.org/acre/standards/support-tools/#unscience)

B. Explain clearly in one or two sentences specifically how each objective will be met in the lesson.

4.**Developmental Level/Student Background Knowledge.**

A. How does this lesson fit the students coming to you in terms of what they might have experienced in real life?

B. Explain how it is matched to their physical skills (what they can do with their bodies)?

C. How is it matched to their conceptual skills (what is going on developmentally in their minds)?

D. How does it relate to what they would have learned in previous grade levels (look at the curriculum!)?

E. How does it relate to what they will learn in the future (look at the curriculum!)?

5. **21st Century Skills.**

A. Please list 21st Century Skills targeted by this lesson. See <http://www.p21.org/storage/documents/P21_Framework_Definitions.pdf>

B. Explain how you will meet each.

6. **Curricular Integration.** (Note: You do not actually have to teach these activities during your 5E lesson. This just shows that you are aware of some ways that you could integrate).

A. First Activity:

i. What is an additional curricular integration activity (from language arts, social studies, health etc.) you could use with your lesson plan?

ii. How would you integrate this activity?

iii. Which competency goal from your same grade does this activity address?

B. Second activity:

i. What is a second additional curricular integration activity (from language arts, social studies, health etc.) you could use with your lesson plan?

ii. How would you integrate this activity?

iii. Which competency goal from your same grade does this activity address?

7. **Essential Knowledge (for teacher**).

Provide a detailed explanation of the science content being developed in the lesson. The purpose of this explanation is for you as a teacher to demonstrate your own understanding of the background knowledge and science content being taught in the lesson. It is beyond what students will need to know and should be written clearly enough to teach another teacher this background knowledge. Use diagrams where necessary.

8 . **List of Materials.**

9. **Safety Considerations.**

10 . **Detailed Lesson Plan**. The Learning Cycle (5E’s) should be developed in enough detail for a knowledgeable substitute to use. (Be sure to see your [rubric](http://www1.appstate.edu/%7Egoodmanj/elemscience/lessonplanning/5E_learning_cycle_rubric.htm" \t "_blank) for specific details of what to include in each of the phases of the 5E Learning Cycle.) Look at [suggested question stems chart](http://www1.appstate.edu/~goodmanj/elemscience/questions/Bloom-16-17_Stems_for_Instruction.pdf) and [action verbs chart](http://www.clemson.edu/assessment/assessmentpractices/referencematerials/documents/Blooms%20Taxonomy%20Action%20Verbs.pdf) for developing good higher order thinking skills questions.

A. Engagement with transition question, challenge, or problem

i. What will you do to engage the students?

ii. How will you connect to students’ everyday lives?

iii. What questions will you ask? (Provide sample answers.)

B. Exploration

i. How will you transition from the engagement to the exploration?

ii. How will you set up this exploration? Include a table or example.

iii. What data will students gather?

iv. How will you help students generate their own questions?

v. What questions will you ask? (Provide sample answers.)

C. Explanation

i. How will you get students to share their data?

ii. What guiding questions will you ask? (Provide sample answers.)

iii. What ideas will you be trying to develop?

iv. How might you act out or demonstrate the ideas you’re developing?

iv. What terminology will you introduce, and how will you relate this to the data?

D. Expansion

i. What will students do in the Expansion phase?

ii. What concepts will you be having them apply?

iii. How is this different but related to what came before?

iv. What guiding questions will you ask? (Provide sample answers.)

E. Evaluation

i. What formative assessments will you use, and when in the lesson will you use them?

ii. What specifically will you be looking for in these?

iii. What summative assessment will you use?

iv. What specifically will you be looking for in this?

v. Provide a sample response to the summative assessment and a rubric for grading this.

**\*\*\*Now go back through the 5E’s above and put in parentheses all the process skills used in the lesson where they belong.**

11. **Modifications.**

A. How will you modify this lesson to meet the needs of students with ADD/ADHD?

B. How will you modify this lesson to meet the needs of learning disabled students? Note: connect these to the [Extended Essential Standards.](http://www.ncpublicschools.org/acre/standards/extended/)

C. How will you modify this lesson to meet the needs of AG students?

D. How will you modify this lesson to meet the needs of ESL students?

12. **Sources.**

A. Note a minimum of three different science sources used for developing the lesson plan and background information. The SCOS is not considered one of your sources. Each source should include a title, bibliographic information, and a short annotation.

B. List at least one video you could use showing this concept in real life. Provide a title, link and annotation. This should not be an animation or video lesson, but a real life example related to your topic. (This should be used somewhere in the 5E directly.)