

# The 5E Instructional Model for the Next Generation Chemistry Classroom



## Project Background

In the fall of 2014, the Lewiston School District adopted the Next Generation Science Standards (NGSS) for secondary courses. As a result, the need arose to develop lesson plans that fosters active learning through integrated instructional units. The 5E instructional model was chosen as a lesson plan template to meet these needs. This project emphasizes NGSS Science and Engineering Practices (SEP) along with the 5E instructional model in four instructional units.

## Research Question

How does the integration of the 5E instructional model impact student growth of the NGSS Science and Engineering Practices?

## Sub Questions

- 1) Does a curriculum that emphasizes the NGSS S & E practices effect students' ability to apply scientific literacy skills?
- 2) How does the implementation of the 5E lesson model impact students' attitudes towards scientific processes?
- 3) Does a curriculum that emphasizes the S & E practices influence students' ability to articulate claims and evidence?

## Results

Results suggest an attitudinal and cognitive gain in students' literacy skills during the 5E instructional units. The most growth occurred within the Science and Engineering Practice of planning and carrying out investigations, where the highest scores were seen in normalized gain value in rubric comparisons. In addition, this practice received the highest number of student responses to most focused on practice and highest percentage of gain during the Test for Scientific Literacy.

	Data Source 1	Data Source 2	Data Source 3
<b>Sub Question 1</b>	Scientific Reasoning Skills Test (pre and post)	Laboratory Rubric	Student Interviews SEP Post Survey
<b>Sub Question 2</b>	Elements of Science Literacy Likert Survey (pre/post test)	Informal Teacher Observations	Student Interview SEP Post Survey
<b>Sub Question 2</b>	Elements of Science Literacy Likert Survey(pre/post test)	Laboratory Rubric	Student Interviews

