

# Life Science (LS)

## Signature Assignment and Reflection Guide

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- This is a guide. Faculty should attempt to have their signature assignments and student reflections address as many of the learning outcomes identified here as make sense within the context of each course. The General Education Committee will be using these overall expectations when examining courses up for 5-year review, and a course that addresses few of these outcomes may raise concerns among committee members. From an assessment point of view, the General Education program and its students benefit when General Educated designated courses address the program's outcomes.
- This guide is derived from the faculty-developed map for signature assignments and reflection. The rubrics in this document will be used to assess random samples of graduating student ePortfolios. Therefore, the General Education Committee encourages faculty to use these rubrics when they grade student work and make students aware of the standards by which signature assignments will be judged.
- Within the boundaries of this guide, faculty develop their own mix of assignments and reflection prompts that best fits their course. Note that a key decision for faculty to make is whether having students document one or two or even three signature assignments in their ePortfolio is the best way to meet the assessment expectations for this designation.
- When designing courses and aligning learning outcomes with classroom activities and assignments, remember to balance two key features: Your course should be an engaging and memorable experience for students and it should contribute to assessment of the General Education program by focusing our attention to the pages of student ePortfolios most likely to have evidence for specific learning outcomes.

## Quantitative Literacy

Signature assignments **should, if it makes sense to the context of the assignment,** ask students to use sources that are appropriate/credible/authoritative for the project.

### **Use of Quantitative Information Rubric** (From the AAC&U Quantitative Literacy VALUE Rubric)

	4	3	2	1
<i>Students use quantitative evidence in support of the argument or purpose of the work.</i>	Work uses quantitative information in connection with the argument or purpose of the work, presents it in an effective format, and explicates it with consistently high quality.	Work uses quantitative information in connection with the argument or purpose of the work, though data may be presented in a less than completely effective format or some parts of the explication may be uneven.	Work uses quantitative information, but does not effectively connect it to the argument or purpose of the work.	Work presents an argument for which quantitative evidence is pertinent, but does not provide adequate explicit numerical support. (May use quasi-quantitative words such as "many," "few," "increasing," "small," and the like in place of actual quantities.)

## Critical Thinking

Signature assignments **must** ask students to do **one or more** of the following:

- Demonstrate scientific reasoning processes to draw conclusions.
- Demonstrate the application of specialized methods and tools of scientific inquiry by actively and directly collecting, analyzing, and interpreting data, presenting findings, and/or using information to answer questions.
- Understand the role science plays in historical and contemporary issues.

### **Scientific Reasoning Rubric** (from the WICHE Passport Learning Outcomes)

	4	3	2	1
<i>Students demonstrate scientific reasoning processes to draw conclusions.</i>	Conclusions are clearly based on careful observation, marshalling of data or information, and/or the use of qualitative or quantitative analysis.	Conclusions are based on observation, marshalling of data or information, and/or the use of qualitative or quantitative analysis.	Conclusions are minimally based on observation, data or information, and/or the use of qualitative or quantitative analysis.	Conclusions not supported by observation, data or information, or analysis.

### **Scientific Inquiry Rubric** (from the WICHE Passport Learning Outcomes)

	4	3	2	1
<i>Students apply the tools of scientific inquiry</i>	Work deftly uses specialized methods and tools of scientific inquiry by actively and directly collecting, analyzing, and interpreting data, presenting findings, and/or using information to answer questions.	Work uses specialized methods and tools of scientific inquiry by actively and directly collecting, analyzing, and interpreting data, presenting findings, and/or using information to answer questions.	Work attempts to use specialized methods and tools of scientific inquiry by actively and directly collecting, analyzing, and interpreting data, presenting findings, and/or using information to answer questions.	Work does not use specialized methods and tools of scientific inquiry by actively and directly collecting, analyzing, and interpreting data, presenting findings, and/or using information to answer questions.

### **Role of Science Rubric**

	4	3	2	1
<i>Students understand the role science plays in historical and contemporary issues.</i>	Work strongly demonstrates that the student understands the role science plays in historical and/or contemporary issues.	Work demonstrates that the student understands the role science plays in historical and/or contemporary issues.	Work demonstrates some understanding of the role science plays in historical and/or contemporary issues.	Work unsuccessfully attempts to show the role science plays in historical and/or contemporary issues.

## Information Literacy

Signature assignments **should, if it makes sense to the context of the assignment,** ask students to use sources that are appropriate/credible/authoritative for the project.

### **Information Literacy Rubric for LS Courses** (Developed from the ACRL Framework for Information Literacy for Higher Education)

	4	3	2	1
<i>Student will use sources that are appropriate/credible/authoritative for the project</i>	Work includes a variety of sources identifiable as appropriate/credible/authoritative.	Work includes mostly appropriate/credible / authoritative sources.	Work includes minimally appropriate/credible / authoritative sources.	Work does not include sources.

## Reflection

The reflection in student ePortfolios **must address at least one of the following:**

- Disciplinary and/or content connections between one course and other courses or other academic knowledge
- Links between coursework and its broader applicability outside of school
- Themselves as learners and their improvement over time.

An ideal way to meet this requirement is to provide students a choice of reflection prompts—each of which address one of the bulleted items above.

### **Reflection Rubric for Cross-disciplinary/Content Connections**

	4	3	2	1
<i>Students make disciplinary and/or content connections between one course and other courses or other academic knowledge.</i>	Reflection makes engaging, detailed, and/or sophisticated connections between two or more General Education courses, the assignments therein, or between a General Education course and another body of academic knowledge.	Reflection makes connections between two or more General Education courses, the assignments therein, or between a General Education course and another body of academic knowledge.	Reflection attempts to make connections to other courses or assignments, but they are not compelling, lack detail, and/or are unsophisticated.	Reflection is simplistic and/or contains no detail.

### **Reflection Rubric for Broader Applicability**

	4	3	2	1
<i>Students make links between coursework and its broader applicability outside of school.</i>	Reflection makes engaging, detailed, and/or sophisticated links between coursework and its broader applicability outside of school.	Reflection makes connections between coursework and its broader applicability outside of school.	Reflection attempts to make links the world outside of school, but they are not compelling, lack detail, and/or are unsophisticated.	Reflection is simplistic and/or contains no detail.

### Reflection Rubric for Students as Learners

	4	3	2	1
<i>Students reflect on themselves as learners and their improvement over time.</i>	Reflection makes engaging, detailed, and/or sophisticated observations about the student's learning and/or intellectual growth over time.	Reflection makes strong observations about the student's learning and/or intellectual growth over time.	Reflection attempts to make observations about the student's learning and/or intellectual growth over time.	Reflection does not shed light on the student as a learner or their intellectual growth over time.

### **Effective Communication**

Signature assignments in LS courses do not need to address effective communication.

### **Creative Expression**

Signature assignments in LS courses do not need to address creative expression.

### **Civic Literacy**

Signature assignments in LS courses do not need to address civic literacy.

### **Computer Literacy**

Signature assignments in LS courses do not need to address computer literacy.

### **Work w/Others Professionally/Constructively**

Signature assignments in LS courses do not need to address working with others professionally and constructively. This learning outcome will not be addressed in the annual ePortfolio assessment of the General Education program. Instead, we will be working individually with faculty who have collaborative group assignments in their courses to embed grading rubrics for those assignments that indicate students can:

- Contribute to team meetings/activities
- Contribute to group projects outside of team meetings
- Foster constructive team climate