**“Next-Generation” Competency Portfolio Requirements**

**SCIENCE AND TECHNOLOGY/ENGINEERING**

For either **BIOLOGY** or **INTRODUCTORY PHYSICS**:

Carefully review the Science and Technology/Engineering competency portfolio requirements listed below, since these have been updated to incorporate the content standards contained in the *2016* *Massachusetts Science and Technology/Engineering Curriculum Frameworks.*

In order to be considered for the CD, a high schoolSTE portfolio must include evidence and the requirements below:

* work samples createdby the student that demonstrate all aspects of standards selected for the discipline and core idea.
* a completed **High School STE Competency Portfolio Work Description** attached to each work sample (or collection of related work samples) produced for the portfolio
* a score (percent accurate) given by the teacher for each work sample. Work samples must be produced as independently as possible by the student, with all corrections clearly marked. Work samples may not be corrected by the teacher and submitted as the student’s own work.
* written evidence of the student’s thinking and problem-solving indicating the process used to solve each problem (i.e., show all student work)
* a clear indication of the type(s) and frequency of assistanceprovided to the student by the teacher (i.e., percent independence and any accommodations used by the student), either written directly on each piece or described on the High School Competency Portfolio Work Description
* submission of multiple-choice, matching, or fill-in-the-blank worksheets is strongly ***discouraged***.

Biology and Introductory Physics portfolios must include

* evidence of five (5) required standards in the selected discipline as shown in the table below (bold and underlined), PLUS:
* three (3) *additional* standards at the teacher’s discretion in Biology, or
* two (2) *additional* standards at the teacher’s discretion in Introductory Physics
* **a minimum of** **4 different** science and engineering practices (see the 2016 [STE curriculum framework](http://www.doe.mass.edu/frameworks/scitech/2016-04.pdf), page 72) must be documented throughout the work submitted in the portfolio in either of these disciplines.

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| **BIOLOGY** |  | **INTRODUCTORY PHYSICS** |
| **Core Ideas:** |  | **Core Ideas:** |
| From Molecules to Organisms: Structures and Processes **(HS-LS1-1)** |  | Matter and Its Interactions  |
| Ecosystems: Interactions, Energy, and Dynamics (**HS-LS2-1** and **HS-LS2-5**) |  | Motion and Stability: Forces and Interactions(**HS-PS2-9** and **HS-PS2-10**) |
| Heredity: Inheritance and Variation of Traits(**HS-LS3-3**) |  | Energy (**HS-PS3-1** and **HS-PS3-4a**) |
| Biological Evolution: Unity and Diversity(**HS-LS4-5**)\_ |  | Waves and their Applications in Technologies for Information Transfer (**HS-PS4-1**) |

**Science and Engineering Practices**

1. Asking questions (for science) and defining problems (for engineering)

2. Developing and using models

3. Planning and carrying out investigations

4. Analyzing and interpreting data

5. Using mathematics and computational thinking

6. Constructing explanations (for science) and designing solutions (for engineering)

7. Engaging in an argument from evidence

8. Obtaining, evaluating, and communicating information