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**Appendix**

**Digital Literacy and Computer Science 5-12 Teacher**

**Structured Guidance & Supports (SG&S)**

**Performance Rubrics and Required Forms**

This Appendix includes a performance rubric to assess the candidate’s performance against indicators aligned to the subject matter knowledge requirements for the license being sought. The rubric should be reviewed at the Initial, Formative, and Summative meetings and it should be used for guidance and supports as well as for evaluation for meeting the competency review requirements. This Appendix also includes the required SG&S form (found on pages 8-10) that should be submitted to the licensure office as documentation of the completed process.

Upon completion of the SG&S process, conducted over a 150-hour field-based experience, the candidate and supervising educator should review progress and fill out the required licensure forms at the end of this appendix. The candidate must submit these forms to the licensure office to document completion of the competency review requirement. The forms may also be used to verify the successful completion of a 150-hour internship with a qualified mentor during the SG&S process for teacher candidates seeking to obtain an additional Initial or Professional license.

Candidates must meet at least a Needs Improvement readiness threshold across all indicators on the specific license with the exception of two indicators have been deemed as priority indicators; on these, the candidate must meet a readiness threshold of at least Proficient. Priority indicators are marked with an asterisk (\*) on the SG&S form. The ultimate determination of competency is to be made by the supervising educator based on a holistic evaluation of the candidate’s demonstrated skills across the indicators. This is indicated by selecting Met Requirements or Not Met Requirements on the SG&S form. See the “Performance Level” section of the SG&S Guidelines for more information on using the rubric.

If the supervising educator and supervising administrator determine that the licensure candidate has Not Met Requirements, the candidate may still submit the SG&S forms as partial fulfillment of this requirement. The candidate could then complete an additional 150 hour field-based experience or internship with an emphasis on high quality professional support growth opportunities and intensive supervision and support on areas where improvement is needed.

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| **Rubric for Teacher of Digital Literacy and Computer Science License** |
| 1. **Understanding the ethical and legal obligations for using technology, including license agreements and permissions, intellectual property, and applying best safety and security concepts and strategies. (CAS)**
 |
| **Unsatisfactory** | **Needs Improvement** | **Proficient** | **Exemplary** |
| Demonstrates limited knowledge of ethics and laws and rarely applies best safety and security practices and/or its pedagogy; relies heavily on textbooks or resources for development of the factual content. Rarely engages students in learning experiences focused on complex knowledge or skills in the area.  | Demonstrates factual knowledge of ethics and laws and sometimes applies best safety and security practices and the pedagogy it requires by sometimes engaging students in learning experiences around complex knowledge and skills in the area. | Demonstrates sound knowledge of ethics and laws and usually applies best safety and security practices and the pedagogy it requires by consistently engaging students in learning experiences that enable them to acquire complex knowledge and skills in the area. | Demonstrates expertise in ethical and legal obligations for using technology, including license agreements and permissions, intellectual property and applies effective safety and security practices and the pedagogy it requires by engaging all students in learning experiences that enable them to synthesize complex knowledge and skills in the subject. Is able to model this |
| 1. **Examine the positive and negative impacts of technology, access to technology, assistive technology, technology proficiencies, social media in people’s lives, commerce, and society, including cybercrime, cyberbullying, and peer pressure. (CAS)**
 |
| **Unsatisfactory** | **Needs Improvement** | **Proficient** | **Exemplary** |
| Demonstrates limited knowledge of the impact of technology and/or its pedagogy; relies heavily on textbooks or resources for development of the factual content. Rarely engages students in learning experiences focused on complex knowledge or skills around the impact of technology. | Demonstrates factual knowledge of the impact of technology and the pedagogy it requires by sometimes engaging students in learning experiences around complex knowledge and skills around the impact of technology | Demonstrates sound knowledge of the impact of technology and the pedagogy it requires by consistently engaging students in learning experiences that enable them to acquire complex knowledge and skills around the impact of technology. | Demonstrates expertise in the impact of technology and the pedagogy it requires by engaging all students in learning experiences that enable them to synthesize complex knowledge and skills around the impact of technology. Is able to model this element. |

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| 1. **Selection and use digital tools or resources to create an artifact, solve a problem, communicate, and publish online. (DTC)**
 |
| **Unsatisfactory** | **Needs Improvement** | **Proficient** | **Exemplary** |
| Demonstrates limited knowledge of the selection and use of digital tools and the iterative design process and/or its pedagogy; relies heavily on textbooks or resources for development of the factual content. Rarely engages students in learning experiences focused on complex knowledge or skills in the selection and use of digital tools to create artifacts, solve problems, communicate, and publish online. | Demonstrates factual knowledge of the selection and use of digital tools and the iterative design process and the pedagogy it requires by sometimes engaging students in learning experiences around complex knowledge and skills in the selection and use of digital tools to create artifacts, solve problems, communicate, and publish online. | Demonstrates sound knowledge and understanding of the selection and use of digital tools and the iterative design process and the pedagogy it requires by consistently engaging students in learning experiences that enable them to acquire complex knowledge and skills in the selection and use of digital tools to create artifacts, solve problems, communicate, and publish online. | Demonstrates expertise in the selection and use of digital tools and the iterative design process and the pedagogy it requires by engaging all students in learning experiences that enable them to synthesize complex knowledge and skills in the selection and use of digital tools to create artifacts, solve problems, communicate, and publish online. Is able to model this element. |
| 1. **Use of advance research skills including advanced searches, digital source evaluation, synthesis of information and appropriate digital citation. (DTC)**
 |
| **Unsatisfactory** | **Needs Improvement** | **Proficient** | **Exemplary** |
| Demonstrates limited knowledge of advanced research skills and/or its pedagogy; relies heavily on textbooks or resources for development of the factual content. Rarely engages students in learning experiences focused on complex knowledge or skills in advanced research including advanced searches, digital source evaluation, synthesis of information and appropriate digital citation. | Demonstrates factual knowledge of advanced research skills and the pedagogy it requires by sometimes engaging students in learning experiences around complex knowledge and skills in advanced research including advanced searches, digital source evaluation, synthesis of information and appropriate digital citation. | Demonstrates sound knowledge and understanding of advanced research skills and the pedagogy it requires by consistently engaging students in learning experiences that enable them to acquire complex knowledge and skills in advanced research including advanced searches, digital source evaluation, synthesis of information and appropriate digital citation. | Demonstrates expertise in advanced research skills and the pedagogy it requires by engaging all students in learning experiences that enable them to synthesize complex knowledge and skills in advanced research including advanced searches, digital source evaluation, synthesis of information and appropriate digital citation.Is able to model this element. |

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| 1. **Selection and use best computing devices and networks to accomplish a real-world task and understand network structures, functionality, and vulnerabilities. (CS)**
 |
| **Unsatisfactory** | **Needs Improvement** | **Proficient** | **Exemplary** |
| Demonstrates limited knowledge of computing devices and networks and the iterative design process and/or its pedagogy; relies heavily on textbooks or resources for development of the factual content. Rarely engages students in learning experiences focused on complex knowledge or skills in the selection and use of computing devices and networks to accomplish a real-world task and understand network structures, functionality, and vulnerabilities. | Demonstrates factual knowledge of computing devices and networks and the iterative design process and the pedagogy it requires by sometimes engaging students in learning experiences around complex knowledge and skills in the selection and use of computing devices and networks to accomplish a real-world task and understand network structures, functionality, and vulnerabilities. | Demonstrates sound knowledge and understanding of computing devices and networks and the iterative design process and the pedagogy it requires by consistently engaging students in learning experiences that enable them to acquire complex knowledge and skills in the selection and use of computing devices and networks to accomplish a real-world task and understand network structures, functionality, and vulnerabilities. | Demonstrates expertise in computing devices and networks and the iterative design process and the pedagogy it requires by engaging all students in learning experiences that enable them to synthesize complex knowledge and skills in the selection and use of computing devices and networks to accomplish a real-world task and understand network structures, functionality, and vulnerabilities, Is able to model this element. |
| 1. **Use troubleshooting strategies to solve routine hardware and software problems, by using systematic approaches to isolate and identify steps involved in diagnosing tasks/problems and plan solutions. (CS)**
 |
| **Unsatisfactory** | **Needs Improvement** | **Proficient** | **Exemplary** |
| Demonstrates limited knowledge of troubleshooting strategiesand/or its pedagogy; relies heavily on textbooks or resources for development of the factual content. Rarely engages students in learning experiences focused on complex knowledge or skills in troubleshooting strategies to solve routine hardware and software problems, by using systematic approaches to isolate and identify steps involved in diagnosing tasks/problems and plan solutions. | Demonstrates factual knowledge of troubleshooting strategiesand the pedagogy it requires by sometimes engaging students in learning experiences around complex knowledge and skills in troubleshooting strategies to solve routine hardware and software problems, by using systematic approaches to isolate and identify steps involved in diagnosing tasks/problems and plan solutions. | Demonstrates sound knowledge and understanding of troubleshooting strategiesand the pedagogy it requires by consistently engaging students in learning experiences that enable them to acquire complex knowledge and skills in troubleshooting strategies to solve routine hardware and software problems, by using systematic approaches to isolate and identify steps involved in diagnosing tasks/problems and plan solutions. | Demonstrates expertise in troubleshooting strategiesand the pedagogy it requires by engaging all students in learning experiences that enable them to synthesize complex knowledge and skills in troubleshooting strategies to solve routine hardware and software problems, by using systematic approaches to isolate and identify steps involved in diagnosing tasks/problems and plan solutions. Is able to model this element. |

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| 1. **Differentiate tasks/problems best solved by computing systems and/or by humans and evaluate the benefits of using a service with respect to function and quality.(CS)**
 |
| **Unsatisfactory** | **Needs Improvement** | **Proficient** | **Exemplary** |
| Demonstrates limited knowledge of task/problems best solved by computing systems and/or humans and evaluation of services and/or its pedagogy; relies heavily on textbooks or resources for development of the factual content. Rarely engages students in learning experiences focused on complex knowledge or skills in differentiating tasks/problems best solved by computing systems and/or by humans and evaluating the benefits of using a service with respect to function and quality. | Demonstrates factual knowledge of task/problems best solved by computing systems and/or humans and evaluation of services and the pedagogy it requires by sometimes engaging students in learning experiences around complex knowledge and skills in differentiating tasks/problems best solved by computing systems and/or by humans and evaluating the benefits of using a service with respect to function and quality. | Demonstrates sound knowledge and understanding of task/problems best solved by computing systems and/or humans and evaluation of services and the pedagogy it requires by consistently engaging students in learning experiences that enable them to acquire complex knowledge and skills in differentiating tasks/problems best solved by computing systems and/or by humans and evaluating the benefits of using a service with respect to function and quality. | Demonstrates expertise in task/problems best solved by computing systems and/or humans and evaluation of services and the pedagogy it requires by engaging all students in learning experiences that enable them to synthesize complex knowledge and skills in differentiating tasks/problems best solved by computing systems and/or by humans and evaluating the benefits of using a service with respect to function and quality, Is able to model this element. |
| 1. **Create a new representation through generalization and decomposition. Write and debug algorithms in a structured language. (CT)**
 |
| **Unsatisfactory** | **Needs Improvement** | **Proficient** | **Exemplary** |
| Demonstrates limited knowledge of generalization, decomposition, and creating algorithms in pseudocode using an iterative design process and/or its pedagogy; relies heavily on textbooks or resources for development of the factual content. Rarely engages students in learning experiences focused on complex knowledge or skills in creating a new representation through generalization and decomposition and write and debug algorithms in a structured language. | Demonstrates factual knowledge of generalization, decomposition, and creating algorithms in pseudocode using an iterative design process and the pedagogy it requires by sometimes engaging students in learning experiences around complex knowledge and skills in creating a new representation through generalization and decomposition and write and debug algorithms in a structured language. | Demonstrates sound knowledge and understanding of generalization, decomposition, and creating algorithms in pseudocode using an iterative design process and the pedagogy it requires by consistently engaging students in learning experiences that enable them to acquire complex knowledge and skills in creating a new representation through generalization and decomposition and write and debug algorithms in a structured language. | Demonstrates expertise in generalization, decomposition, and creating algorithms in pseudocode using an iterative design process and the pedagogy it requires by engaging all students in learning experiences that enable them to synthesize complex knowledge and skills in creating a new representation through generalization and decomposition and write and debug algorithms in a structured language. Is able to model this element. |

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| 1. **Understand how different data representation affects storage and quality. Create, modify, and manipulate data structures, data sets, and data visualizations. (CT)**
 |
| **Unsatisfactory** | **Needs Improvement** | **Proficient** | **Exemplary** |
| Demonstrates limited knowledge of data representation, sets, structures, and visualizations and the iterative design process and/or its pedagogy; relies heavily on textbooks or resources for development of the factual content. Rarely engages students in learning experiences focused on complex knowledge or skills in how different data representation affects storage and quality and how to create, modify, and manipulate data structures, data sets, and data visualizations. | Demonstrates factual knowledge of data representation, sets, structures, and visualizations and the iterative design process and the pedagogy it requires by sometimes engaging students in learning experiences around complex knowledge and skills in how different data representation affects storage and quality and how to create, modify, and manipulate data structures, data sets, and data visualizations. | Demonstrates sound knowledge and understanding of data representation, sets, structures, and visualizations and the iterative design process and the pedagogy it requires by consistently engaging students in learning experiences that enable them to acquire complex knowledge and skills in how different data representation affects storage and quality and how to create, modify, and manipulate data structures, data sets, and data visualizations. | Demonstrates expertise in data representation, sets, structures, and visualizations and the iterative design process and the pedagogy it requires by engaging all students in learning experiences that enable them to synthesize complex knowledge and skills in how different data representation affects storage and quality and how to create, modify, and manipulate data structures, data sets, and data visualizations, Is able to model this element. |
| 1. **Create programs to produce an artifact or solve a problem. (CT)**
 |
| **Unsatisfactory** | **Needs Improvement** | **Proficient** | **Exemplary** |

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| Demonstrates limited knowledge of programming using an iterative design process and/or its pedagogy; relies heavily on textbooks or resources for development of the factual content. Rarely engages students in learning experiences focused on complex knowledge or skills in writing and debugging programs. | Demonstrates factual knowledge of programming using an iterative design process and the pedagogy it requires by sometimes engaging students in learning experiences around complex knowledge and skills in writing and debugging programs. | Demonstrates sound knowledge and understanding of programming using an iterative design process and the pedagogy it requires by consistently engaging students in learning experiences that enable them to acquire complex knowledge and skills in writing and debugging programs. | Demonstrates expertise in programming using an iterative design process and the pedagogy it requires by engaging all students in learning experiences that enable them to synthesize complex knowledge and skills in writing and debugging programs. Is able to model this element. |

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| 1. **Create models and simulations to formulate, test, analyze, and refine a hypothesis. (CT)**
 |
| **Unsatisfactory** | **Needs Improvement** | **Proficient** | **Exemplary** |
| Demonstrates limited knowledge of creating models and simulations and the iterative design process and/or its pedagogy; relies heavily on textbooks or resources for development of the factual content. Rarely engages students in learning experiences focused on complex knowledge or skills in creating models and simulations to formulate, test, analyze, and refine a hypothesis. | Demonstrates factual knowledge of creating models and simulations and the iterative design process and the pedagogy it requires by sometimes engaging students in learning experiences around complex knowledge and skills in creating models and simulations to formulate, test, analyze, and refine a hypothesis. | Demonstrates sound knowledge and understanding of creating models and simulations and the iterative design process and the pedagogy it requires by consistently engaging students in learning experiences that enable them to acquire complex knowledge and skills in creating models and simulations to formulate, test, analyze, and refine a hypothesis. | Demonstrates expertise in creating models and simulations and the iterative design process and the pedagogy it requires by engaging all students in learning experiences that enable them to synthesize complex knowledge and skills in creating models and simulations to formulate, test, analyze, and refine a hypothesis, Is able to model this element. |

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| Candidates must meet at least a Proficient readiness threshold across all indicators on the specific license. |

**Digital Literacy and Computer Science, 5-12 Teacher: SG&S Form (Page 1 of 3)**

**\*Please Print**

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| General Information |
| Candidate Information |
| First Name |  | Last Name  |  |
| Street Address |  |
| City |  | State |  | Zip  |  |
| Massachusetts Educator License Number or MEPID |  |
| SG&S Setting (150-hour minimum) |
| School District |  | School Name  |  |
| License Field |  | License Grade Levels of Field Experience  |  |
| Select only one of the following. Was this experience a/an: |
| * Internship or field experience to meet the requirements of adding an Initial license?
 | * Field experience to meet the requirements of adding a Provisional license?
 |
| Supervising educator *(to be completed by the Supervising educator – see Guidelines for requirements for this role)* |
| First Name |  | Last Name  |  |
| School District |  | School Name  |  |
| Position |  | License Field(s) |  |
| Massachusetts Educator License Number or MEPID |  |
| Number of years experience under license |  | Type of license | * Initial
* Professional
 |
| Was your most recent summative evaluation proficient or higher?  | * Yes
* No
 |  |
| Supervising administrator *(to be completed by the Supervising administrator – see Guidelines for requirements for this role)* |
| First Name |  | Last Name  |  |
| School District or Institution |  | Position  |  |

**Digital Literacy and Computer Science, 5-12 Teacher: SG&S Form (Page 2 of 3)**

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| **Initial Meeting**  |
| Supervising educator (signature) | Date:  |
| Supervising administrator (signature) | Date:  |
|  Candidate (Signature)  | Date:  |
| **Formative Meeting** |
| Supervising educator (signature) | Date:  |
| Supervising administrator (signature) | Date:  |
| Candidate (Signature)   | Date:   |
| **Supervising educator:** Document how candidate has demonstrated competency in each indicator. Note: All indicators must be at least “Proficient.” |
| **Indicator** | **Rating** | **Form of Evidence Documented****(*select all that apply*)** |
| 1. Understanding the ethical and legal obligations for using technology, including license agreements and permissions, intellectual property, and applying best safety and security concepts and strategies. (CAS)
 | * Exemplary
* Proficient
* Needs Improvement
* Unsatisfactory
 | * Observation
* Artifacts of Practice
* Student Feedback
* Measures of Student Learning
 |
| 1. Examine the positive and negative impacts of technology, access to technology, assistive technology, technology proficiencies, social media in people’s lives, commerce, and society, including cybercrime, cyberbullying, and peer pressure. (CAS)
 | * Exemplary
* Proficient
* Needs Improvement
* Unsatisfactory
 | * Observation
* Artifacts of Practice
* Student Feedback
* Measures of Student Learning
 |
| 1. Selection and use digital tools or resources to create an artifact, solve a problem, communicate, and publish online. (DTC)
 | * Exemplary
* Proficient
* Needs Improvement
* Unsatisfactory
 | * Observation
* Artifacts of Practice
* Student Feedback
* Measures of Student Learning
 |
| 1. Use of advance research skills including advanced searches, digital source evaluation, synthesis of information and appropriate digital citation. (DTC)
 | * Exemplary
* Proficient
* Needs Improvement
* Unsatisfactory
 | * Observation
* Artifacts of Practice
* Student Feedback
* Measures of Student Learning
 |
| 1. Selection and use best computing devices and networks to accomplish a real-world task and understand network structures, functionality, and vulnerabilities. (CS)
 | * Exemplary
* Proficient
* Needs Improvement
* Unsatisfactory
 | * Observation
* Artifacts of Practice
* Student Feedback
* Measures of Student Learning
 |
| 1. Use troubleshooting strategies to solve routine hardware and software problems, by using systematic approaches to isolate and identify steps involved in diagnosing tasks/problems and plan solutions. (CS)
 | * Exemplary
* Proficient
* Needs Improvement
* Unsatisfactory
 | * Observation
* Artifacts of Practice
* Student Feedback
* Measures of Student Learning
 |

**Digital Literacy and Computer Science, 5-12 Teacher: SG&S Form (Page 3 of 3)**

|  |  |  |
| --- | --- | --- |
| 1. Differentiate tasks/problems best solved by computing systems and/or by humans and evaluate the benefits of using a service with respect to function and quality.(CS)
 | * Exemplary
* Proficient
* Needs Improvement
* Unsatisfactory
 | * Observation
* Artifacts of Practice
* Student Feedback
* Measures of Student Learning
 |
| 1. Create a new representation through generalization and decomposition. Write and debug algorithms in a structured language. (CT)
 | * Exemplary
* Proficient
* Needs Improvement
* Unsatisfactory
 | * Observation
* Artifacts of Practice
* Student Feedback
* Measures of Student Learning
 |
| 1. Understand how different data representation affects storage and quality. Create, modify, and manipulate data structures, data sets, and data visualizations. (CT)
 | * Exemplary
* Proficient
* Needs Improvement
* Unsatisfactory
 | * Observation
* Artifacts of Practice
* Student Feedback
* Measures of Student Learning
 |
| 1. Create programs to produce an artifact or solve a problem (CT)
 | * Exemplary
* Proficient
* Needs Improvement
* Unsatisfactory
 | * Observation
* Artifacts of Practice
* Student Feedback
* Measures of Student Learning
 |
| 1. Create models and simulations to formulate, test, analyze, and refine a hypothesis. (CT)
 | * Exemplary
* Proficient
* Needs Improvement
* Unsatisfactory
 | * Observation
* Artifacts of Practice
* Student Feedback
* Measures of Student Learning
 |
| Based on the candidate’s performance in the SG&S process, we have determined this candidate to have:  | * Met Requirements
 | * Not Met Requirements
 |
| **Summative Meeting** By signing, I acknowledge that this experience has been completed factually as represented in this form and described in official Department Guidelines. I acknowledge that the Department may conduct an audit of the candidate’s portfolio for verification purposes.  |
| Supervising educator (signature) | Date:  |
| Supervising administrator (signature) | Date:  |
| Candidate (Signature)  | Date:  |