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# Request for Proposals

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**DEVELOPMENT AND IMPLEMENTATION OF THE CONNECTICUT  
MASTERY TEST (CMT) AND CONNECTICUT ACADEMIC  
PERFORMANCE TEST (CAPT) IN SCIENCE  
RFP# 15SDE0001-RFP**

*\*\* UPDATED VERSION 2-5-15: TO INCLUDE VARIOUS LANGUAGE CHANGES AND CORRECTED OUTLINE NUMBERING (SECTION 2.4.3.\*), ALSO APPENDIX A TABLE CORRECTION, AND ADDITION OF APPENDIX B TO EXPAND UPON INVOLVEMENT IN CCSO SCIENCE ASSEMENT COLLABORATIVE.*

Connecticut State Department of Education

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Date Issued: February 2, 2015

Due Date: March 20, 2015



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### **Background: Present and Future of the CMT and CAPT Science Programs**

The Connecticut Mastery Test (CMT) and Connecticut Academic Performance Test (CAPT) in Science are statewide assessments administered annually in March to approximately 41,000 Connecticut public school students per grade. The CMT Science is administered at Grades 5 and 8 and has been in place since 2008. The CAPT Science, in place since 1994, is currently administered at Grade 10 with retesting available for Grade 11 and 12 students who have not previously achieved the Goal level or above. The CAPT Science may transition from Grade 10 to Grade 11 over the next several years.

The CMT and CAPT Science assessments are aligned to the state's [Core Science Curriculum Framework](#) that includes curriculum standards and performance expectations for students at each grade level. The content assessed is cumulative for each grade band (e.g., CMT Science in Grade 5 assesses content from Grades 3-5). In order to assess students' abilities to apply and integrate the scientific knowledge and skills appropriate to their grade level, selected-response and constructed-response items are used. Some of the items on the assessments are aligned with [curriculum-embedded science performance tasks](#) that students complete in their science classrooms.

Results from the assessments are reported annually at the student, school, district and state levels through both printed student reports and an online reporting website [www.ctreports.com](http://www.ctreports.com). The CSDE will be transitioning to an online reporting system housed on the department's website and/or using an online reporting system developed for the Smarter Balanced Assessments in Mathematics and English Language Arts under a separate contract.

The CMT and CAPT Science are used to monitor students' academic achievement and growth over time as mandated by state and federal legislation. The assessments are a driving force in directing the state and its public school districts in continually improving the quality of curriculum and instruction that students receive in science. The assessment programs must be able to adapt to future changes in the requirements of state and federal legislation, especially the Elementary and Secondary Education Act (ESEA).

The CMT and CAPT Science assessments are currently administered primarily in paper-and-pencil mode with online testing available for certain special populations requiring test accommodations. Braille and Large-Print versions of the test forms are also available. The state is interested in transitioning to an online assessment for all students during the time period covered by this contract. A specific plan for the transition to online testing has not yet been developed, but will likely occur by grade (e.g., starting with grade 10 in 2016, then grade 8 in 2017 and finally grade 5 in 2018). Districts will likely be given the option of paper-and-pencil or online administration during the transition period covered by this contract.

Live test forms for the CMT Science (Grade 5 and 8) currently exist and have been used in previous administrations. These forms (perhaps with modifications) will continue to be used in future live test administrations during the time period covered by this contract. CAPT Science (Grade 10) utilizes a new test form each year with some common, linking items (15 selected-response items) used for the purpose of equating forms across years. Replacement test forms, for use in cases of testing irregularities, also exist for both CMT and CAPT Science and will continue to be used in future administrations. In addition, a bank of CMT and CAPT Science pilot items not yet used on live test forms exists and will likely be utilized under this contract. All CMT and CAPT Science test forms and items in the bank will be turned

over to the CSDE in electronic format (test forms in camera-ready format as well) at the end of the current contract.

The CMT and CAPT Science are accessible to all students using consistent application of the principles of Universal Design allowing a range of tools, supports and accommodations for students with disabilities (See the CMT and CAPT [Assessment Guidelines](#) for further information.) The online test delivery system includes a variety of embedded testing tools, supports and accommodations (e.g., text to speech, word processor response, magnification, highlighting, etc.). Braille and large-print test forms are also available for eligible students. For students with significant disabilities, Connecticut offers an alternate science assessments called the [CMT and CAPT Science Skills Checklists](#). These are non-secure assessments completed by student's teacher(s) and remain the same every year. The CMT and CAPT Science Skills Checklists are completed and submitted by teachers through a secure, online system. Prior to submission, information about students selected to participate in this assessment is also collected through a separate secure, online system.

Scoring materials (including general and specific scoring rubrics and scored anchor, training and qualifying student responses) exist for all constructed-response items currently in the bank. These existing scoring materials must be used by the contractor to score student responses. In collaboration with the CSDE, the contractor will also be responsible for developing scoring materials for newly developed and piloted items.

The Connecticut State Board of Education is in the process of considering the adoption (or adaption) of the [Next Generation Science Standards](#) (NGSS). An NGSS adoption decision is expected in 2015. Whether or not NGSS is adopted, a transition to new science standards based on the vision of the National Research Council's (NRC) [Framework for K-12 Science Education](#) is expected over the next several years. A transition plan will be developed providing guidance to school districts in terms of curriculum and instructional changes as well as a timeline for the transition to new statewide science assessments that will occur during the length of this contract. The CSDE is interested in a gradual transition of the CMT and CAPT Science from alignment with the current standards to new standards. A summary of a possible assessment transition plan is included in Appendix B.

This transition will be influenced by national efforts to support NRC Science Framework and NGSS implementation in curriculum, instruction and assessment such as the recent NRC publication, [Developing Assessments for the Next Generation Science Standards](#). The CSDE is interested in transitioning the current CMT and CAPT Science programs to a more comprehensive science assessment system that will reflect the vision of the NRC Science Framework and the more complex nature of the NGSS. In addition to the large-scale external monitoring assessments (CMT and CAPT Science), the state is interested in the development of local classroom assessments to fully assess the breadth and depth of NGSS and to provide educators with timely, actionable feedback to influence curriculum and instruction. This science assessment system might include innovative items and performance tasks (including computer-based tasks or simulations) and design elements (e.g., computer adaptive, matrix-sampling) that expand the current ability to assess the range of challenging performance expectations, such as those included in NGSS. The testing contractor should anticipate developing items and tasks aligned to the new science standards that will be pilot tested during each year's spring test administration for the length of the contract. To support the interpretation of results from these assessments, the development and reporting of measures of students' Opportunity to Learn science is also desired.

The CSDE will likely be collaborating with other states and organizations on the development of guidance documents for the next generation science assessments (e.g., science assessment framework,

item specifications) as well as assessment items and tasks aligned to NGSS that may be used as part of the CMT and CAPT Science and/or interim assessment for use by local school districts. This includes participation in the Council of Chief State School Officer's (CCSSO) Science Assessment Item Collaborative (see further information in Appendix B). This work is in early stages and the products to be developed are uncertain at this time. Therefore, decisions will need to be made in 2015 as to the scope of item development expected under this contract.

### **Purpose of Solicitation**

The Connecticut State Department of Education (CSDE) seeks proposals from qualified individuals, companies and organizations to execute the scope of work outlined in this RFP, covering an array of activities and services that will be needed to assist the CSDE in the management of the project and development, administration, scoring, analyzing and reporting of results from the CMT and CAPT Science at grades 5, 8 and 10 (with a likely transition to grade 11). The contract period for the tasks described in this RFP will begin on or about July 1, 2015 and will continue through October 31, 2019. The contract awarded through this RFP will cover four operational statewide test administrations in spring of each year.

## **PART 2 SCOPE OF WORK: PRODUCT AND SERVICE SPECIFICATIONS**

### **Introduction**

This section of the RFP contains a description of the major tasks required of the proposer for the successful completion of this project and provides information on contract deliverables. The proposer's response must directly reference and address each of the tasks contained in this section. In addition, the proposer must identify any additional tasks not included in this RFP that the proposer determines are necessary for the successful completion of this project. Proposers may also wish to propose modifications to tasks or alternative methods that might improve the efficiency of the project and/or quality of the materials and services produced for the project. These alternatives should reference both how the alternatives will improve the quality of the program and any specific budget implications.

The quality of all work and materials produced by the recipient of this award, and the security of test materials and administration procedures, are critical to the success of the project. Therefore, the proposer must provide ample evidence and descriptions of the methods and procedures that will be used to ensure the quality of work and to ensure security at each stage of the project, including the qualifications of all sub-contractors and how the quality of their work will be ensured.

The proposer's response must adequately address capability with and procedures for issues related to the handling, transmission, and storage of secure and/or confidential materials by the prime contractor and all relevant subcontractors and vendors as well as applicable Federal and State laws that govern access to personally identifiable student information. In addition to the security of physical materials, the response must address the security of materials delivered electronically via the internet (e.g., data files, secure test items, individual student results), as well as the proposer's ability to transfer data securely to and from the CSDE.

### **Project Timeline**

Table 1 provides a rough outline of the major contract activities over the first 12 months of the contract. The CSDE will work with the contractor to establish a specific timeline for activities during the initial and subsequent years of the contract. As shown in Table 1, the initial work of the contract is focused on the preparation for the first operational administration of the assessments under this contract (March 2016)

and ends with the reporting of results. It is anticipated that a similar schedule will be followed for the remaining three operational assessment administrations.

Table 1: Proposed Timeline of Major Activities for the First Year

Date	Major Activities
July – August, 2015	Conduct first annual planning meeting. Develop work plan with detailed tasks and timelines. Select and/or develop live test forms. Begin pilot item development.
September – December, 2015	Prepare test materials for the operational test administration. Prepare online test-delivery system for the standard (live and pilot) and alternate assessments. Develop and launch online portal for use by LEAs to support the test administration. Develop and launch online test accommodations data collection system. Pilot item review by State Science Assessment Advisory Committee, Fairness/Accessibility Committee and Expert Reviewers.
January – February, 2016	Finalize preparations for the operational test administration. Ship test materials to school districts. Finalize online test delivery system. Prepare training materials for test coordinators and examiners. Prepare training materials for live scoring.
March, 2016	Support the CMT and CAPT Science administrations including pilot testing. Prepare sample score reports for results of live tests. Develop process for trial data file and report review.
April – May, 2016	Process returned test/answer booklets and prepare for scoring. Train scorers and score student responses from live tests. Support the review of student demographic data and initial testing status by districts. Prepare data files for reporting of results. Prepare scoring materials for pilot items.
June – July, 2016	Review and finalize data files and reports from live tests. Produce and ship reports to LEAs. Score student responses and analyze data from pilot items.

### Major Areas of Work

The following sections detail major areas of work under this contract including:

- Project Management
- Test Development
- Test Administration
- Processing and Scoring
- Data Analysis and Reporting
- Next Generation Science Assessment Development

## **2.1 Project Management**

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The proposer should outline a clear and sustainable plan for management of the project for the period of time covered by this contract including:

- 2.1.1 Appointment of a project manager who oversees the management of the project including any work assigned to subcontractors. The project manager will serve as primary point of contact with CSDE staff.
- 2.1.2 A plan for the number of full or part-time staff specifically assigned to key roles on the project.
- 2.1.3 Conduct an annual meeting (via videoconference) with CSDE staff to plan project activities.
- 2.1.4 Support ongoing communication with the CSDE including regular conference calls.
- 2.1.5 Provide the CSDE with regular written reports of project activities including an annual project plan and schedule as well as monthly written reports describing the status of scheduled tasks and recommending updates and revisions, as needed, to the project schedule.

## **2.2 Test Development**

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The proposer should describe procedures to annually produce live and replacement test forms to be used for the CMT and CAPT Science administration including:

- 2.2.1 Development of an online application for item banking (including key item data such as item codes, p-values, point-biserials, IRT parameters, etc.) and for the modification and/or development of equated test forms.
- 2.2.2 Assistance with the modification and/or development of four equated live test forms for the standard CMT and CAPT Science at each tested grade level.
- 2.2.3 Assistance with the modification and/or development of an equated replacement test form for the standard CMT and CAPT Science at each tested grade level.

## **2.3 Test Administration**

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The proposer should detail the products and services provided to successfully administer the annual CMT and CAPT Science (standard and skills checklist) including:

### **2.3.1 Customer Service Supports**

- 2.3.1.1 Development of an online portal to house a database of Local Education Agency (LEA) contact information including a list of District Test Coordinators and LEA mailing/shipping addresses. The portal should include a database of educators trained to administer the CMT and CAPT Skills Checklists. The portal should also include updated correspondence and pertinent testing documents accessible to LEAs.
- 2.3.1.2 Maintain a customer service center to respond to any ongoing issues and questions that arise from LEAs, especially during the annual test administration. Maintain ongoing communication with LEAs via email, phone and fax. Send correspondence to LEAs as needed and approved by the CSDE.

### **2.3.2 Preparations for Test Administration**

- 2.3.2.1 Development and maintenance of a secure online data collection system for cataloging and monitoring designated supports and documented accommodations used by students (approximately 6,000-7,000 per grade) during the assessments. This system should also collect information on students who qualify for the CMT and CAPT Science Skills Checklists (currently 400-500 students per grade). Proposers are asked to review the [Assessment Guidelines 2014-15 Edition](#) and the [CMT/CAPT Accommodations Data Collection Center Help Guide](#) to gain a better understanding of the supports and accommodations offered and features and functionalities needed in the system. The test accommodation data collection system should include the following features:

- 2.3.2.1.1 a submission process that allows for batch uploads of student demographic data from the state's Public Student Information Systems (PSIS);



- 2.3.2.1.2 a submission process that allows for manual entries or batch uploads of students' designated supports and accommodations from LEA special education management systems or individualized education program (IEP) software;
- 2.3.2.1.3 allowance for the review of designated supports and documented accommodation data in a roster report format;
- 2.3.2.1.4 generation of summary reports of designated supports and documented accommodations data by type;
- 2.3.2.1.5 checks for possible errors in data submissions;
- 2.3.2.1.6 procedures for the transfer of designated supports and accommodations to the online test administration platform (preferably an integrated system);
- 2.3.2.1.7 maintenance of security of all student data; and
- 2.3.2.1.8 allowance for future modifications.

Note: The proposal should include separate pricing for the online test accommodations system.

2.3.2.2 Procedures to obtain student demographic information from the state's Public School Information Systems (PSIS) in order to generate Pre-Id labels for students to be used on test/answer booklets. Develop generic labels for use by students participating in testing who were not in the Pre-ID file.

2.3.2.3 Provide a training module (in-person and/or online) for the CMT and CAPT Science administrations for local district test coordinators.

2.3.2.4 Production of printed CMT and CAPT Science Practice Tests (in English and Spanish) for all tested students and deliver these documents to districts approximately three weeks prior to the test administration. (Note: CMT and CAPT Science [Practice Tests](#) currently exist and may require modifications over the length of the contract.) Produce Braille and large-print versions of the CMT and CAPT Science Practices tests.

2.3.2.5 Development of online CMT and CAPT Science Practice Tests. The online practice tests should familiarize students with items types and system functionality including the use of software and hardware students will use at the time of testing.

2.3.2.6 Development of electronic informational brochures intended for students and parents about the CMT and CAPT Science (standard and skills checklist). Note: [CMT and CAPT brochures](#) currently exist and will require modifications over the span of this contract.

### **2.3.3 Production, Shipment and Return of Paper-and-Pencil Test Materials**

2.3.3.1 Produce necessary quantities of paper-and-pencil test/answer booklets based upon enrollment data (from PSIS) and overage requirements.

2.3.3.2 Produce a printed periodic table for each student as a supplement to the CAPT Science.

2.3.3.3 Develop and produce Braille and large-print versions of all test forms, and answer booklets (Braille versions negotiable). Braille versions of all test forms must be reviewed by the Connecticut Board of Education and Services for the Blind.

2.3.3.4 Produce sufficient quantities of printed Test Coordinator and Test Examiner manuals to support the annual test administration. Electronic copies of these documents (in PDF format) should also be made available for posting on the CSDE website.

2.3.3.5 A process to employ rigorous editing and proofreading procedures (including CSDE reviews) to ensure that all test materials are error-free and of high quality prior to final production, including checks during printing.

2.3.3.6 A process to ensure accurate collating and packaging of paper-and-pencil test materials in preparation for shipment to LEAs. Test materials must be clearly labeled with documentation to support the accounting for all documents.

2.3.3.7 A plan to ensure the timely delivery of all test materials to LEAs according to CSDE specifications (e.g., no curbside delivery). All test materials must be delivered to LEAs at least three weeks prior to the start of the testing window.

2.3.3.8 A plan to track all secure test documents throughout shipping to and return from LEAs. Any missing secure test documents must be reported to the CSDE and the contractor must follow-up with LEAs to retrieve materials as needed.

2.3.3.9 A plan for the timely return of all paper-and-pencil test/answer booklets.

#### **2.3.4 Online Test Delivery System and Technical Support**

2.3.4.1 Develop a system for the online delivery of the standard CMT and CAPT Science at each tested grade that includes:

2.3.4.1.1 features to manage student information and monitor the online test administration by district test coordinators test examiners;

2.3.4.1.2 ongoing features that allow students to practice using the online test delivery system with all available tools and accommodations available;

2.3.4.1.3 features that facilitate uploading student information including demographic data, designated supports and accommodations with allowance for ongoing modifications to this information;

2.3.4.1.4 features to support embedded tool, supports and accommodations (e.g., computer response for all item types, text reader with corresponding highlighting, magnification, integration of Braille technology, etc.)

2.3.4.1.5 feature that provide for test directions and items to be read to students (human voice recording preferred) with corresponding highlighting;

2.3.4.1.6 allowance for the integration of assistive-use technology (e.g., compatibility with voice-recognition and speech-to-text software, specialized keyboards, etc.); and

2.3.4.1.7 features and/or procedures to maintain the security of the online testing environment and items.

2.3.4.2 Develop an online system for the secure and accurate data collection for the CMT and CAPT Science Skills Checklists that includes:

2.3.4.2.1 features that facilitate uploading student demographic information;

2.3.4.2.2 features to support the submission of completed skills checklists by LEAs; and

2.3.4.2.3 features to manage student information and monitor submissions by district test coordinators and the CSDE.

2.3.4.3 Supports for the online assessment system including:

2.3.4.3.1 documents that provide information about requirements for the use of any software (and supporting devices), minimum and preferred technology infrastructure needed by LEAs to support the online assessment system, descriptions of training protocols to be provided at the local level on test administration procedures; and

2.3.4.3.2 technical support available for LEAs via telephone and email.

#### **2.4 Processing and Scoring**

The proposer should describe strategies and procedures to ensure the timely and accurate processing of test/answer booklets and scoring of student responses for all assessment items. See Appendix A for an overview of the CMT and CAPT Science scoring process.

Note: The CSDE is open to the idea of scoring student responses to constructed-response items using Artificial Intelligence (AI). If proposed, all requirements listed below must be met by AI scoring. In addition, the contractor must show evidence of the accuracy of AI scoring and comparability of AI scoring with human scoring. The proposer should also provide a phase-in plan for the use of AI scoring.

Requirements for processing and scoring include:

- 2.4.1 Accurately process and scan all returned test/answer booklets. This includes processes to identify any cases where students may have more than one test/answer booklet or completed a paper-and-pencil and online test. Provide a report to the CSDE of any missing secure test materials.
- 2.4.2 Accurately score student responses to all selected-response items. Note: All answer keys for selected-response items must be reviewed and approved by the CSDE.
- 2.4.3 Accurately and reliably score student responses to all constructed-response items including:
  - 2.4.3.1 Prior to live scoring for the spring 2016 administration only, develop a methodology to conduct trial scoring activities to ensure consistency with past scoring results;
  - 2.4.3.2 Processes and procedures to train and qualify scorers including;
    - 2.4.3.2.1 details on the quality control processes to be used to monitor inter-rater reliability throughout the scoring process;
    - 2.4.3.2.2 process to identify scorers for retraining or removal and processes used to invalidate scores from particular scorers.
    - 2.4.3.2.3 process for the monitoring of scoring results for each item throughout the scoring process and to compare the results of live scoring to pilot results;
    - 2.4.3.2.4 process to provide the CSDE with daily monitoring reports (online preferred) throughout the scoring process so that issues can be resolved in a timely manner;
    - 2.4.3.2.5 provide for representatives from the CSDE to be present at the scoring site(s) during the first year's scoring training and qualification and initial scoring activities;
    - 2.4.3.2.6 provide for representatives from the CSDE to monitor of scoring training remotely (e.g., teleconference) after the first year;
    - 2.4.3.2.7 a process for identifying and informing the CSDE about "crisis papers" (e.g., student responses that contain concerning content) in a timely fashion;
    - 2.4.3.2.8 processes for rescoring, late batch scoring, and score verification requests; and
    - 2.4.3.2.9 procedures and safeguards established for the scoring process that ensure confidentiality is maintained and student identity is securely controlled.
- 2.4.4 Provide the CSDE with an analysis (by school) of evidence of possible cheating incidents including but not limited to erasure patterns of students responses to selected-response items, patterns of similar student responses to selected-response items, and patterns of similar student responses to constructed-response items.
- 2.4.5 Plan to develop training materials for and score newly developed and piloted items. Scoring training materials must be reviewed and approved by CSDE staff and the State Science Assessment Committee.

## **2.5 Data Analysis and Reporting**

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The proposer should describe products and services to provide for the data analysis and reporting including:

- 2.5.1 Prior to 2016 reporting only, produce sample data files and reports at the individual, school, district, and state levels according to CSDE specifications. Participate with the CSDE in a thorough review of data files and reports for accuracy and completeness (see Appendix A for further information about data files and report checking).
- 2.5.2 Produce and maintain complete, accurate and secure data files for the CMT and CAPT Science (standard and skills checklist) that includes student demographic information and test results according to CSDE specifications. This includes file layouts and various "freezes" of data files used for various purposes in the review and reporting of results (see Appendix A for further details on data files). All complete data files used for online, public reporting of results must be finalized and delivered to the CSDE by ten weeks from the end of the testing window.

2.5.3 Develop and maintain an online system for LEAs to review student demographic information and test status (e.g., valid score, absent, left blank) prior to the creation of Freeze 2 data files. Missing or questionable data should be highlighted for LEAs. The system should allow for review and modification of data by local school personnel with all changes tracked by the contractor and reported to CSDE. Some data changes by LEAs will require the approval of the CSDE.

2.5.4 Develop and implement a comprehensive process to review all data files and sample printed and online reports for accuracy and completeness prior to public release. CSDE staff must review and approve data files and sample reports. (See Appendix A for further information.)

2.5.5 Prepare and maintain reporting specifications that includes all reports to be produced and data to be provided with calculations to be performed. Oversee, conduct and document specific statistical analyses of CMT and CAPT Science data. Determine the specifications for the data analyses, in consultation with CSDE staff.

2.5.6 Provide procedures for the equating of test forms and the development of scale scores according to CSDE specifications.

2.5.7 Make provisions for within and inter-generation equating and procedures to maintain or modify achievement standards for CMT and CAPT Science in a manner acceptable to CSDE.

2.5.8 Develop, produce and deliver individual student-level reports (multi-color) and adhesive permanent record labels for the CMT and CAPT Science and CMT and CAPT Science Skills Checklist according to CSDE specifications and timelines. For the CAPT Science, also produce and deliver adhesive cumulative transcript labels and certificates of mastery (for students achieving at the Goal level or above). All printed reports must be delivered to LEAs by twenty weeks after the end of the testing window. Samples of current student reports, labels and certificates can be seen in the [CMT](#) and [CAPT](#) Interpretive Guides. (Note: CSDE may wish to combine reporting for the CT alternate assessment in Mathematics and English language arts and the science skills checklists.)

2.5.9 Develop, produce and deliver school, district and statewide level reports of the CMT and CAPT Science results according to CSDE specifications and timelines. All hard copy school and district reports must be delivered to LEAs by twenty weeks after the end of the testing window. Samples of current school and district reports can be seen in the CMT and CAPT Interpretive Guides. (Note: The CSDE may wish to combine reporting for the CT alternate assessment in Mathematics and English language arts and science skills checklists.)

2.5.10 Develop and maintain an interactive, online reporting system that includes:

2.5.10.1 Downloadable student level data files in csv format;

2.5.10.2 Downloadable static reports;

2.5.10.3 Interactive results analysis that includes, at a minimum, disaggregation by subgroups (i.e., ethnicity, gender, special education status, English Learner status, income as measured by Free/Reduced-Lunch status), with a function for cross-tabulation;

2.5.10.4 Longitudinal data reporting for districts, schools and individual students;

2.5.10.5 Other recommendations for functions that will provide schools with actionable data that may be used to analyze results in ways that support CSDE's desire to make the assessments highly relevant to monitoring and improving curriculum, instruction and general classroom practices;

2.5.10.6 Provide descriptions of security measures embedded in the system, including multi-user password systems that will allow the system to serve as a public portal, and also an access point for confidential student-level data and reports; and

2.5.10.7 Provide descriptions of administrative tools that will permit local school administrators, as well as education agency personnel, to monitor use of the system, assign new user passwords, and other functions to be recommended in the proposal.

Note: The proposal should include separate pricing for the interactive, online reporting system.

2.5.11 Develop electronic versions of the CMT and CAPT Science [Program Overviews](#) and Interpretive Guides for posting on CSDE web site.

2.5.12 Develop an electronic version of a [released sample items and scored student responses packet](#) for posting to the CSDE website.

2.5.13 Assist with the preparation of statewide press releases and supplemental reporting materials as needed.

2.5.14 Produce data files and summary reports of the results of all pilot testing according to CSDE specifications. This may include analysis of feedback studies from students and/or test examiners on innovative items or tasks aligned to the NRC Science Framework and NGSS.

2.5.15 Produce a CMT and CAPT Science Technical Report each year detailing the test development, scaling and reporting. Present evidence of construct, content and consequential validities. Include reliability indicators such as internal consistency, decision accuracy, and decision consistency. Present evidence that the results from the test forms are properly equated and are comparable across years.

2.5.16 A process to collect, analyze and report any industry standard statistics regarding validity and reliability across the paper-and-pencil and online administrations. This may include such studies as comparisons between students taking paper-and-pencil versus online assessments or issues related to the transition to the new generation of science assessments.

2.5.17 Plan and conduct two meetings per year of a Technical Advisory Committee (TAC). Contractor responsibilities will include the following:

2.5.17.1 Work with CSDE staff to identify and recruit TAC members;

2.5.17.2 Execute any necessary contractual arrangements with TAC members, including payment of a reasonable stipend that is consistent with industry standards;

2.5.17.3 Identify an appropriate meeting site, and make all logistical and contractual arrangements;

2.5.17.4 Prepare all meeting materials, including an annotated agenda, and arrange for key project management and psychometric staff members to attend and present to the TAC when appropriate; and

2.5.17.5 Prepare and disseminate detailed meeting notes.

2.5.18 Consult with the CSDE and other outside consultants on psychometric and technical issues. Specific areas of consultation include but are not limited to: data file design, scaling and equating, differential item functioning by subgroup, data analysis strategies, reporting strategies, IRT model data fit, evaluation of partial credit model performance, and evaluation of equating procedure.

2.5.19 Make provisions to consult with independent professionals on a per diem basis for technical assistance with data analysis and research related to the validity and reliability of the CMT and CAPT Science (standard and Skills Checklists).

## **2.6 Next Generation Science Assessment Development**

The proposer should describe any relevant experience in developing assessment items and tasks aligned to the vision of the NRC Framework and/or NGSS. The proposer should also describe a full plan to develop assessment items and performance tasks to transition the current CMT and CAPT Science to a more comprehensive assessment system aligned to new science standards including:

2.6.1 Assist with the development or modification of item and test specifications (including test blueprints) for the transition of the science assessments to new standards based on the vision and scope of the NRC Science Framework. Specifications should provide guidance for the development of high quality, innovative assessment items, performance tasks and test forms that assess the depth and breadth of the challenging performance expectations in new science standards.

2.6.2 Make provisions to consult with independent professionals on a per diem basis for the development of guidance documents and assessment items and tasks aligned to the vision of the NRC Framework and new science standards. A budget of \$20,000 per year for outside consultants with experience in developing high quality, innovative science assessments should be included.

2.6.3 Assist with the development of sufficient items aligned to the new science standards to provide for the full transition of the CMT and CAPT Science assessments at each tested grade level. All items

and tasks must be reviewed and approved by the CSDE, the State Science Assessment Advisory Committee, Fairness and Accessibility Committee and Expert Reviewers prior to pilot testing. Note: Expert Reviewers are selected by the CSDE and are paid at a rate determined by the CSDE with payment processed by the contractor.

2.6.4 Support the ongoing development of curriculum-embedded science performance tasks by CT educators and CSDE staff including:

2.6.4.1 Make logistical arrangements for in-person training sessions for the development of science performance tasks;

2.6.4.2 Arrange for payment of educators to attend training sessions and develop science performance tasks according to CSDE specifications. Rate of payment will be determined by the CSDE.

2.6.5 Assist in communication with and arrangement of in-person meetings of the CT Science Assessment Advisory committee consisting of CSDE staff and CT educators to advise on the development of next generation science assessments and for item review.

2.6.6 Assist with arrangement of in-person meetings of a CT Fairness and Accessibility Advisory committee consisting of CSDE staff and CT educators (selected by the CSDE) to advise on the development of next generation science assessments and for item review.

2.6.7 Pilot test assessment items in paper-and-pencil and online formats with a representative sample of students at each tested grade level to support the transition of the assessments. Develop and produce pilot administration manuals and related documents as needed. All materials must be reviewed and approved by the CSDE prior to pilot testing. Assist with the administration and observation of pilot testing as needed.

2.6.8 Develop scoring training materials (i.e., rubrics, sample scored student responses) for all constructed responses items. All scoring materials must be reviewed and approved by the CSDE and the State Science Assessment Committee.

2.6.9 Accurately and reliably score all test items and performance tasks from pilot testing.

2.6.10 Analyze the results of the pilot data and produce a report of the results classical item statistics, IRT parameters, DIF outcomes and equating results.

2.6.11 Modify test specifications, test blueprints, test items and performance tasks as needed based on the results of pilot testing.

2.6.12 Develop a methodology to gather and report data on a series of indicators that students are provided with adequate opportunity to learn science consistent with the vision of the NRC Science Framework. These indicators may include teacher qualification and subject area pedagogical knowledge, professional development opportunities, and time, resources, and materials devoted to science instruction.

2.6.13 Work with the CSDE to develop interim science assessments (“modules”) aligned to specific content standards at each grade level in order to provide educators with diagnostic feedback on student performance. The CSDE is interested in exploring the use of innovative science assessment tools including computer simulations and interactive performance tasks.

2.6.14 Develop an online test delivery system for interim science assessments for use by LEAs in CT that includes:

2.6.14.1 A student information management system with demographic information and results from the interim assessments;

2.6.14.2 Provide mechanisms to score student responses to the interim assessments to provide immediate or timely feedback to students and educators. This includes exploration of artificial intelligence to score responses to constructed-response items and/or performance tasks.

2.6.14.3 Provide a mechanism to report the results of the interim science assessment immediately or in a timely fashion to students and educators. The reports should provide overall results as well

as diagnostic information on specific science standards and/or dimensions at each grade as determined by the CSDE.

2.6.15 Support modifications to the CMT and CAPT Science Skills Checklists based on the transition to new science standards.

## **PART 3 PROPOSAL APPLICATION AND SELECTION**

### **3.1 Proposal Guidelines**

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Proposals must include each of the following sections:

#### **3.1.1 Bidder Information**

The proposer's response should include the following information:

Company/Vendor Name

Representative

Address

Telephone Numbers

Email Address

#### **3.1.2 Introduction**

The proposer's response should include an introduction that briefly describes the proposer's approach for completing the tasks required for this project, and that demonstrates the proposer's overall understanding of the CMT and CAPT Science programs, the required tasks and needs of the CSDE. This section of the proposer's response should also introduce any alternative methods or additional tasks that the proposer plans to propose to successfully complete this project.

#### **3.1.3 Corporate Capabilities**

The proposer's response must include a description of the corporate capabilities of the prime proposer and all proposed subcontractors that will be performing key functions on this project. Each corporate capability statement must address the proposer's qualifications, background, experience, and capacity to perform the tasks required for the successful completion of this project.

The proposer's response must adequately address issues related to the handling, transmission, and storage of secure and/or confidential materials by the prime contractor and all relevant subcontractors and vendors, consistent with [Federal and State laws that govern access to personally identifiable student information](#). In addition to the security of physical materials, the response must address the security of materials delivered electronically via the internet (e.g., data files, secure test items, individual student results), as well as the proposer's ability to transfer data securely. The proposer's response should include an independent external report summarizing a third party security audit and certification that includes any security flaws that were discovered and how they have been corrected.

The proposer's response must include a list of major large-scale assessment projects in which the organization is currently or has been involved as a prime contractor or subcontractor over the last ten years. The list and description should include a short description of the responsibilities and outcomes, dates engaged, and total amount of contract as well as client contact information for each project (i.e., contact name, affiliation, phone number, and email address). By submitting the list of past clients, the proposer gives permission for the states to contact current and prior staff of those clients.

### **3.1.4 Responses to the Scope of Work**

The proposer's response must describe specific approaches and plans for accomplishing the scope of work called for in the RFP. The response must provide sufficient detail to allow the CSDE to evaluate the proposed methods. The proposer must respond to each task described in the scope of work as well as provide descriptions of additional tasks that the proposer determines are necessary for the successful completion of the project. If the proposer identifies alternatives or modifications to specific tasks described in this RFP, each proposed task must be fully described and clearly identified.

### **3.1.5 Project Staffing**

The proposer's response must include descriptions of experience and resumes for all individuals proposed to fill key functions within this project. The proposer's response will also include a staffing plan that notes the allocation of persons and/or departments by full-time employee (FTE) across the major tasks to be completed. Any individual assigned to the project as key management/administration/development staff or at 0.5 FTE or more must be named in the proposer's response and a resume must be submitted for that individual. Staffing information will be submitted on the task allocation forms provided.

If the proposer plans to use subcontractors, each subcontractor's roles and responsibilities must be clearly delineated as well as the proposer's management plan to hold the subcontractor accountable for the work, and how the states will be involved if a subcontract needs to be terminated. The CSDE retains the right of approval of any subcontractors.

### **3.1.6 Budget**

The proposer's response must include a budget delineating the costs of all major tasks with a detailed narrative describing the basis for these costs. Note that the CSDE is seeking separate pricing for the following products and services:

- Development and maintenance of an online system for the collection of test accommodation information for all tested students.
- Development and maintenance of an online, interactive reporting system for results from the CMT and CAPT Science (standard and skills checklist).
- Development of high-quality, innovative assessment items aligned to the vision of the NRC Science Framework and Next Generation Science Standards.
- Development and maintenance of an online delivery and data management system for interim science assessments for use by LEAs in Connecticut.

Any cost drivers in the proposer's assumptions must be delineated clearly. Otherwise, the CSDE will not incur any additional costs if conditions or variables subsequently change. The CSDE is not open to the notion that some contract activities are assumed, but not fully described in the proposal. Therefore, change orders will be entertained only when the CSDE requests additions or alternatives to items specifically noted in the proposal. Proposals for alternative methods or tasks in addition to those specified in the RFP must submit separate budget forms detailing the costs of the alternatives proposed.

Annual budgets should be based on work completed during fiscal years beginning July 1 and ending June 30. Time and costs should be allocated to the fiscal year in which the work is to be performed. Work related to any single test administration will be conducted across two fiscal years.



### 3.2 Proposal Evaluation Criteria

A CSDE committee will review and score all proposals. The following criteria, in addition to the requirements, terms and conditions identified in the RFP, will be considered as part of the selection process.

<b>Proposal Evaluation Criteria and Rating System</b>				
Each Proposal Evaluation Criterion will be rated for evidence of quality, clarity, completeness, innovation and overall probability of success using the following ratings: <b>Excellent (E)</b> – Exceeds expectations for this criterion. Demonstrates a very high level of quality, clarity, completeness and/or innovation. Very high probability of success. <b>Good (G)</b> – Meets expectations for this criterion. Demonstrates a high level of quality, clarity, completeness and/or innovation. High probability of success. <b>Minimal (M)</b> – Meets some expectations for this criterion. Demonstrates an adequate level of quality, clarity, completeness and/or innovation. Moderate probability of success. <b>Unsatisfactory (U)</b> – Does not meet the expectations for this criterion. Demonstrates a low level of quality, clarity, completeness and/or innovation. Low probability of success.				
<b>Criterion</b>	<b>E</b>	<b>G</b>	<b>M</b>	<b>U</b>
<b>1. CORPORATE CAPACITY (24 points)</b>				
a. Proposer demonstrates the capacity and committed resources to successfully achieve all aspects of the project.	12	8	4	0
b. Proposer provides evidence of extensive experience completing similar large-scale assessment projects with a high degree of quality.	12	8	4	0
<b>2. SCOPE OF WORK (42 points)</b>				
a. <u>Project Management</u> : Provides evidence of a strong management plan including a highly qualified project manager and team using effective communication strategies.	6	4	2	0
b. <u>Test Development</u> : Demonstrates the capacity to maintain an effective online item banking system and ability to develop all equated test forms needed.	6	4	2	0
c. <u>Test Administration</u> : Demonstrates the ability to provide effective customer service, produce all needed test materials, provide test administration supports, and maintain an online test delivery system.	6	4	2	0
d. <u>Processing and Scoring</u> : Demonstrates the capacity and expertise to accurately process and reliably score student responses from the assessments.	6	4	2	0
e. <u>Data Analysis and Reporting</u> : Demonstrates the ability to produce accurate, secure data files and printed reports. Provides expertise and supports related to the technical quality of the assessments.	6	4	2	0
f. <u>Next Generation Science Assessment Development</u> : Demonstrates expertise in developing valid and innovative assessments to be aligned with the vision of the NRC Science Framework and NGSS.	12	8	4	0
<b>3. COSTS AND FISCAL MANAGEMENT (18 points)</b>				
a. Proposes a budget that is cost effective and consistent with the proposed activities and the state’s history with past projects of similar size and scope.	12	8	4	0
b. Demonstrates the ability to employ sound fiscal management practices that meet or exceed standards of practice for the industry and in accordance with billing and reporting practices required by the state.	6	4	2	0
<b>4. OVERALL QUALITY OF PROPOSAL (16 points)</b>				
Provides a comprehensive, coherent and integrated proposal to successfully produce all products and provide all services contained in the RFP with a high level of quality, on time, and within budget.	16	10	6	0
<b>Total</b>	<b>100 Points</b>			

### 3.3 Application Procedures

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#### 3.3.1 Schedule

Table 1 shows key activities and dates associated with the RFP, review of proposals and the selection of a contractor for this project.

Table 1: Schedule of Key Activities

Activity	Date
Release of RFP	February 2, 2015
Receipt of Questions	February 27, 2015
Responses to Questions Posted	March 10, 2015
Proposal Due Date	March 20, 2015
Proposals evaluated by CSDE	March 23 – April 24, 2015
Awarding of project and contract negotiations	April 27 – June 30, 2015
Beginning of contract work	July 1, 2015

During the period from receipt of this RFP until a contract is awarded, proposers shall not contact any employee of the State of Connecticut for additional information related to the RFP, except in writing, directed to the “Department Contact” listed on the cover page of this document.

#### 3.3.2 Questions Concerning the RFP

Questions for the purposes of clarifying the RFP must be submitted in writing and be received no later than 12:00 p.m. (noon) on Friday, February 27, 2015. Questions should be submitted to Jeff Greig at [jeff.greig@ct.gov](mailto:jeff.greig@ct.gov). Responses to all questions will be posted by March 10, 2015.

#### 3.3.3 Proposal Submission Requirements

Proposers are required to submit an original and six (6) printed copies of all materials and forms requested in this RFP. Proposers must also submit an electronic copy of the materials. Proposers may submit hard copy or electronic copies of supplemental materials and/or work samples submitted to support their proposals. All proposal materials must be received by 4:00 p.m. EST on March 20, 2015.\* Proposals received by the CSDE after this deadline will not be considered. Proposals must be addressed to:

Connecticut State Department of Education  
c/o Jeff Greig  
Academic Office, Room 221  
165 Capitol Avenue  
Hartford, CT 06106

\* Expedited services (FedEx, USPS, and UPS) are acceptable providing a signed receipt identifies the delivery time prior to the above stated deadline.

#### 3.3.4 Proposal Selection Process

The CSDE plans to review proposals and select a contractor according to the schedule in Table 1. Unforeseen circumstances may result in changes to the schedule. Bidders will be informed of any schedule changes via e-mail.

The CSDE may choose to interview particular bidders prior to making an award recommendation. Interviews would be conducted at a location to be determined – either in person or using virtual

meeting technologies. Proposers would be represented at the interview by the proposed project director and senior staff as requested.

### **3.4 Proposal and Contract Provisions**

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This RFP is not a contract and, alone, shall not be interpreted as such. Rather, this RFP only serves as the instrument through which proposals are solicited. Following the selection of the winning proposal, the state will pursue negotiations with the selected proposer. If, for some reason, CSDE and the initial proposer fail to reach consensus on the issues relative to a contract, then CSDE may commence contract negotiations with other proposers. Thereafter, proposers will be required to sign a formal contract. CSDE may decide at any time to start the RFP process again.

#### **3.4.1 Contract Period**

The State intends that the contract shall be in effect for a period of four years beginning on July 1, 2015, and ending October 31, 2019. The State reserves the right to extend this contract for a period up to the full original contract term or parts thereof with mutual consent between both parties.

#### **3.4.2 Stability of Proposed Prices**

Any price offerings from proposers must be valid for a period of 120 days from the due date of the proposals.

#### **3.4.3 Proposal Modifications**

No additions or changes to any proposal will be allowed after the proposal due date, unless such modification is specifically requested by CSDE. CSDE, at its option, may seek proposer retraction and/or clarification of any discrepancy or contradiction found during its review of proposals.

#### **3.4.4 Amendment or Cancellation of the RFP**

CSDE reserves the right to cancel, amend, modify or otherwise change this RFP at any time if it deems it to be in the best interest of the State to do so.

#### **3.4.5 Proposer Presentation of Supporting Evidence**

Proposers must be prepared to provide any evidence of experience, performance, ability, and/or financial surety that CSDE deems to be necessary or appropriate to fully establish the performance capabilities represented in their proposals.

#### **3.4.6 Proposer Demonstration of Proposed Services and or Products**

At the discretion of CSDE, proposers must be able to confirm their ability to provide all proposed services. Any required confirmation must be provided at a site approved by CSDE and without cost to the State.

#### **3.4.7 Erroneous Awards**

CSDE reserves the right to correct inaccurate awards. This may include, in extreme circumstances, revoking the awarding of a contract already made to a proposer and subsequently awarding the contract to another proposer. Such action on the part of CSDE shall not constitute a breach of contract on the part of CSDE since the contract with the initial proposer is deemed to be void and of no effect as if no contract ever existed between CSDE and such proposer.

#### **3.4.8 Proposal Expenses**

Proposers are responsible for all costs and expenses incurred in the preparation of proposals and for any subsequent work on the proposal that is required by CSDE.

### **3.4.9 Ownership of Proposals**

All proposals received shall become the sole property of the State and will not be returned.

### **3.4.10 Ownership of Subsequent Products**

Any product, whether acceptable or unacceptable, developed under a contract awarded as a result of this RFP shall be the sole property of the State unless otherwise stated in the contract. All electronic and printed materials developed for this project, unless specifically stated in the RFP or prearranged by the Contractor during the initial project planning meetings, are the sole property of the CSDE and will not be copyrighted or resold by the contractor.

### **3.4.11 Oral Agreement or Arrangements**

Any alleged oral agreements or arrangements made by proposers with any State agency or employee will be disregarded in any State proposal evaluation or associated award.

### **3.4.12 Project Staffing**

Throughout the course of the project, the CSDE retains the right of approval of individuals assigned to key positions within this project.

### **3.4.13 Subcontractors**

CSDE must approve any and all subcontractors utilized by the successful proposer prior to any such subcontractor commencing any work. Proposers acknowledge by the act of submitting a proposal that any work provided under the contract is work conducted on behalf of the State and that the Commissioner of CSDE or his/her designee may communicate directly with any subcontractor as the State deems to be necessary or appropriate. It is also understood that the successful proposer shall be responsible for all payment of fees charged by the subcontractor(s). A performance evaluation of any subcontractor shall be provided promptly by the successful proposer to CSDE upon request. The successful proposer must provide the majority of services described in the specifications.

### **3.4.14 Liquidated Damages/Penalties**

The final contracts negotiated under this contract will include a provision for penalties or liquidated damages due to non-performance or breach of contract. In particular, penalties or liquidated damages will be tied primarily to actions on the part of the contractor that result in either the late delivery of materials or services, or execution of deliverables that fail to meet contract specifications. Specifics of the penalties and liquidated damages will be determined by the CSDE during contract negotiations. As a starting point for negotiations, the CSDE proposes a policy in which the contractor shall be penalized no more than a fixed percentage (e.g., 7.5%) of the total contracted amount in a given year. The maximum penalty shall be prorated against the number of days in which the contractor is determined to be in noncompliance with the contract (e.g., failure to provide deliverables on time and/or insufficient to meet technical specifications). The CSDE will hold the penalty sum in escrow over the course of the contract year and will add the sum to the final annual payment if all contract deliverables have met timelines and specifications. Contractors will not be held responsible for delays that result from the CSDE failing to meet their specific timelines and responsibilities.



## Appendix A: Overview of CMT and CAPT Science

### CMT Science Overview

The CMT science assessments measure what students have learned over several years about core science concepts and scientific inquiry, literacy and numeracy. The assessments include questions related to concepts in life science, physical science and earth science and how those concepts apply to real world issues and technologies. The 2004 Core Science Curriculum Framework describes the conceptual focus of four Content Standards for each grade in the pK-8 span, as well as the Expected Performances assessed on the CMT.

The Elementary School Science CMT is a cumulative test administered at Grade 5. It assesses science knowledge and abilities described in the framework expected performances for Grades 3, 4 and 5. Expected performances for Grades PK-2 are considered foundational, and, although not directly assessed on the Elementary Science CMT, they play an important role in supporting students' ongoing development of science understanding. The Middle School Science CMT is a cumulative test administered at Grade 8. It includes science knowledge and abilities described in the Core Science Curriculum Framework for Grades 6, 7 and 8.

### CMT Grade 5 Science Test Blueprint

	Content Knowledge		Scientific Inquiry, Literacy and Numeracy	Total Points
	SR*	CR*	SR*	
Life Science	6	1	6	14
Physical Science	6	1	6	14
Earth Science	6	1	6	14
Total Points	24		18	42

\* Each selected-response item is worth 1 point. Each constructed-response item is worth 2 points.

### CMT Grade 8 Science Test Blueprint

	Content Knowledge	Scientific Inquiry, Literacy and Numeracy		Total Points
	SR*	SR*	CR*	
Life Science	10	5	1	17
Physical Science	10	5	1	17
Earth Science	10	5	1	17
Total Points	30	21		51

\* Each selected-response item is worth 1 point. Each constructed-response item is worth 2 points.

### Test Formats

The Elementary Science CMT includes 39 test questions: 36 selected-response (SR) items and three constructed-response (CR) items. Of the 36 selected response items, 18 assess Content Knowledge and 18 assess processes of Scientific Inquiry, Literacy and Numeracy. The three constructed response items assess Content Knowledge.

The Middle School Science CMT includes 48 test questions: 45 selected response items and three constructed response items. Of the 45 selected response items, 30 assess Content Knowledge and 15 assess Scientific Inquiry, Literacy and Numeracy practices. The three constructed response items assess

Scientific Inquiry, Literacy and Numeracy in the context of the Grade 6, 7 and 8 Curriculum- Embedded Performance Tasks.

The selected-response items are scored electronically as correct or incorrect. Constructed-response items are hand-scored by trained readers using a three-point scale (0-2 points).

### **Curriculum-Embedded Performance Tasks**

CSDE has developed curriculum-embedded performance tasks related to content standards in Grades 3-8. Teachers are encouraged to incorporate these inquiry investigations into a learning unit that addresses the content standard related to each task. The CMT Science includes two to three selected-response items that assess expected performances in Scientific Inquiry, Literacy and Numeracy within the context of each embedded performance task.

### **Reporting**

A total CMT Science score is reported based on all 42 points. In addition, the following subscores are reported:

- |   |                   |
|---|-------------------|
| • Life Science                              | 14 points (33.3%) |
| • Physical Science                          | 14 points (33.3%) |
| • Earth Science                             | 14 points (33.3%) |
| • Content Knowledge                         | 24 points (57%)   |
| • Scientific Inquiry, Literacy and Numeracy | 18 points (43%)   |

### **Testing Time**

The CMT Science at Grade 5 is administered in one testing session, 65 minutes in length. The CMT Science at Grade 8 is administered in one testing session, 70 minutes in length.

### **CAPT Science Overview**

The CAPT Science test assesses conceptual understanding and scientific inquiry, literacy and numeracy skills from the following content strands:

- Energy Transformation
- Chemical Structures and Properties
- Global Interdependence
- Cell Chemistry & Biotechnology
- Genetics, Evolution and Biodiversity

### **Test Format**

Students respond to 60 selected-response (SR) and 5 constructed-response (CR) items. For the constructed-response items, students respond in writing or sketch a graph. Selected-response items are scored electronically as correct or incorrect. Constructed-response items are hand-scored by trained readers using a 4-point scale (0-3 points).

Each content strand is assessed by 13 items; 12 selected-response and 1 constructed-response item. Eight of the SR items assess conceptual understanding and 4 SR items assess scientific inquiry, literacy and numeracy. Items are sometimes clustered around contextualized scenarios.

## Test Blueprint

	Conceptual Understanding	Scientific Inquiry, Literacy and Numeracy		
Content Strand	SR Items*	SR Items*	CR Items*	Points
I. Energy Transformations	8	4	1	15
II. Chemical Structures & Properties	8	4	1	15
III. Global Interdependence	8	4	1	15
IV. Cell Chemistry & Biotechnology	8	4	1	15
V. Genetics, Evolution & Biodiversity	8	4	1	15
<b>Totals</b>	<b>40 SR Items</b>	<b>20 SR Items</b>	<b>5 CR Items</b>	<b>75 Points</b>

\* Each selected-response item is worth 1 point. Each constructed-response item is worth 3 points. 3 selected-response items from each strand are used as linking items across test forms for equating purposes.

## Reporting

A total CAPT Science score is reported based on all 75 points as well as the following strand scores:

- Energy Transformations 15 points 20%
- Chemical Structures and Properties 15 points 20%
- Global Interdependence 15 points 20%
- Cell Chemistry and Biotechnology 15 points 20%
- Genetics, Evolution and Biodiversity 15 points 20%
- Conceptual Understanding 40 points 53%
- Scientific Inquiry, Literacy and Numeracy 35 points 47%

Five performance levels have been set for the CAPT Science: Below Basic, Basic, Proficient, Goal and Advanced. Students who reach the state Goal level or above receive a Certificate of Mastery in Science.

## Testing Time

The Science test is divided into two sessions, each 50 minutes in length. The test sessions may be administered on separate days.

## Curriculum-Embedded Performance Tasks and Constructed-Response items on the Written Test

A science performance task is available for each of the five content strands in the CT science framework for grades 9-10. Districts are encouraged, though not required, to embed these tasks in their grade 9-10 curricula. The five constructed-response items on the written test assess scientific inquiry and communication skills in the same contexts as the tasks. These constructed-response items total 15 points or 20% of the total test.

## Scoring of the CMT and CAPT Science

The CMT and CAPT Science tests include selected-response (SR) and constructed-response (CR) items (requiring students to write a short response or construct a table or graph). SR items are scored by machine as either correct or incorrect (0-1 points) while CR items are scored by trained readers. All CR items are scored using item specific rubrics. CMT Science CR items are scored on a 3-point scale (0-2 points) and CAPT Science CR items are scored on a 4-point scale (0-3 points). A general scoring rubric describing the essential elements of student responses at each score point has been developed for use with all CMT and CAPT Science CR items. In addition, each item has a specific scoring rubric that delineates the characteristics of student responses at each score point. An anchor set is developed for each item that includes clear and common student responses at each score point. Training sets are also developed that represent a wider variety of student responses to help clarify the score points. Scoring

training materials are reviewed and approved by the CSDE and a committee of science educators. See previous years [CAPT Science Released Item](#) packets for sample rubrics and scored student responses.

All CMT and CAPT Science scorers hired by the testing contractor must have at least a bachelor's degree in science or a science-related field. Scorers participate in a training session involving a thorough review of the scoring process, the items to be scored, scoring rubrics, and anchor and training sets. Following training, potential scorers must pass qualifying. This involves scoring a set of ten student responses for which scores have been pre-assigned. Readers must achieve at least an 80% exact match with no single score off by more than one point. If the scorer does not successfully pass the qualifying criteria, he or she may be dismissed from the project. Provision must be made for CSDE staff to observe (on-site or remote) and monitor the scoring training process.

A number of steps are in place to ensure that scorers are applying the CAPT scoring criteria accurately and consistently. For CMT and CAPT Science, a random sample of 20 percent of each scorer's papers are blindly scored by a lead scorer and the scores are compared. An agreement level of at least 70% must be reached by each reader, each day as well as for each item over the course of scoring. Various reports are produced and reviewed on a daily basis by CSDE staff and the testing contractor to ensure that the reliability of scoring is maintained. Scoring of live test items must also be compared and be consistent with pilot scoring. If scoring reliability and consistency is not maintained, various steps may be taken the testing contractor such as retraining or dismissing readers and/or rescoring student papers as needed.

#### **Data Files and Report Review**

Data from the CMT and CAPT Science assessments belong to the CSDE and copies of data files are kept at both the CSDE office and the contractor. The data files are created for each year's test administration and contain a single record for each student who takes the science assessment in grades 5, 8 and 10. In addition, files are created for students who take CMT and CAPT Science Skills Checklists, and students in grades 11 or 12 who retest on the CAPT.

The data elements consist of four parts:


1. Student information (School, district, student name, ID, gender, etc.)
2. Student participation indicators and scores
3. Student scores on live test items
4. Student scores on pilot test items

Currently, all data are kept in ASCII fixed-format. The CSDE and the contractor exchange data via secure FTP site or hand-delivered CDs. Each fall, the CSDE provide the contractor with a file of students who will take the science tests in the following spring. The file is an extract from the state Public School Information System (PSIS) and contains all the student information data for the testing grades. These files are used to create scan-able Pre-ID labels for most test takers.

The contractor shares data files with the CSDE at different stages in preparation for reporting results. The first data files are sent to the CSDE in early spring after all test/answer booklets are scanned. The purpose of these initial files is to correct problem records (e.g., student ID's, duplicate records, etc.). The second set of files is delivered after all scores for each student have been processed and is used for equating and scaling of the year's test forms. The third set of data files is delivered when the scale scores are added to the files and is used to examine the completeness and accuracy of the data. At this point, the review ensures that all scores and indicators are consistent, and that all fields are filled according to specifications.



The contractor creates and shares a fourth set of files with updates from the above step along with any data updates from schools (following an online review process). This file is used to conduct thorough checks of all results for three selected districts containing all score designations (e.g., absent, left blank, not available, etc.). This process involves cross-checking contractor-generated reports with CSDE-generated reports for accuracy and completeness. The performance reports include individual student reports, labels and mastery certificates, school and district rosters, and summaries at the school, district and state levels. The performance summaries include overall summaries, participation rates, and performance by subgroups. At the end of review process, new data files are created with all discrepancies between the contractor's reports and the CSDE's reports fixed. The final files contain the data of record for that year's tests.



## Appendix B: Transition to Next Generation Science Assessments

The table below shows information related to a proposed comprehensive science assessment system for Connecticut. The proposed system is based on recommendations from the NRC publication, *Developing Assessments for the Next Generation Science Standards*. The science assessment system will include various tools and instruments that can provide useful information used for various purposes and audiences.

**Table 2: Proposed Comprehensive Science Assessment System for Connecticut**

	ASSESSMENTS	PURPOSES	AUDIENCES	INFORMATION PROVIDED
Local Classroom Assessments	Formative Assessment Tools and Resources	Diagnose strengths and weaknesses of student learning in science. Provide teachers with timely, actionable feedback to guide instructional decision making and lesson planning. Provide students with guidance about their own learning.	Students, parents and teachers.	Diagnostic feedback on specific performance expectations and their components (core disciplinary ideas, science and engineering practices and/or crosscutting concepts).
	Curriculum-Embedded Performance Assessment Tasks  Interim Assessments (end-of unit, end-of grade)	Monitor student performance on specific standards and their progress toward the learning progressions in science. Results may be used in grading students. Inform decisions about curriculum and instruction at the student, classroom, school and district levels. (Performance Task may also serve formative assessment purposes shown above.)	Students, parents, teachers and administrators.	Overall score for each unit and/or for the end of each grade. Diagnostic feedback on specific performance expectations and their components.  Results could be disaggregated for students in various subgroups.
	Indicators of Opportunity to Learn	Evaluate the effectiveness of science instructional programs and the equity of students' opportunity to learn science in the ways envisioned by the new science framework.	Parents, teachers, administrators, business and industry, and local and state policy makers.	Various indicators of the quantity and quality of science education programs.
External Monitoring Assessments	Statewide Summative Assessments (CMT and CAPT Science at grades 5, 8 and 10/11)	Monitor student performance in science at the student (to establish mastery), school, district and state levels to inform curricular, instructional and professional development decisions and policies. Focus alignment of district curriculum and instruction on state standards. Comparisons can be made across schools and districts throughout the state. Results are used for accountability under the state's NCLB waiver. Results are required to be used in educator evaluation for the tested grades.	Students, parents, teachers, administrators, higher education, business and industry, local and state policy makers and the public.	Overall Science score and subscores (to be determined). Results are disaggregated for students in various subgroups.

**Table 2: Proposed Comprehensive Science Assessment System for Connecticut (continued)**

	ASSESSMENTS	DEVELOPED/REVIEWED BY	USED/ADMINISTERED BY	FEEDBACK PROVIDED/SCORED BY
Local Classroom Assessments	Formative Assessment Tools and Resources	To be determined.	Teachers in the classroom.	Teachers in the classroom.
	Curriculum-Embedded Performance Assessment Tasks	The CSDE and the Performance Task Work Group. Additional tasks may be developed by other organizations (e.g., Achieve, SCASS, other states, etc.).	Teachers in the classroom.	Teachers in the classroom. Results may be reviewed at the school and district levels.
	Interim Assessments (end-of unit, end-of grade)	The CSDE and its testing vendor with input from the State Science Assessment Advisory and Fairness Committee.	Teachers in the classroom with support from the CSDE and its testing vendor. Schools and/or district may be involved in coordinating the administration.	Teachers in the classroom. Results may be reviewed at the school and district levels.
	Indicators of Opportunity to Learn	The CSDE and its testing vendor with input from the State Science Assessment Advisory and Fairness/Accessibility Committees.	Local school districts, the CSDE and policy makers.	The CSDE and its testing vendor. Results are reviewed at various levels.
External Monitoring Assessments	Statewide Summative Assessments (CMT and CAPT Science at grades 5, 8 and 11)	The CSDE and its testing vendor with input from the State Science Assessment Advisory and Fairness Committees.	Local school districts with support from the CSDE and testing vendor.	The CSDE and its testing vendor. Results are reviewed at various levels.

The summary below is presented as a possible scenario for the transition from the current CMT and CAPT Science to the next generation of statewide science assessments and should not be considered final. A complete transition plan will likely be developed in 2015 and modified over time as needed.

	2015-16	2016-17	2017-18	2018-2019
Science Assessments	CMT and CAPT Science (Grades 5, 8 &10) <ul style="list-style-type: none"> <li>Alignment: 100% CT Science Standards (CTSS)</li> <li>Pilot Next Generation Science Assessment (NGSA) items and tasks</li> </ul>	CMT and CAPT Science (Grades 5, 8 &10) <ul style="list-style-type: none"> <li>Alignment: 67% CTSS/33% NGSS</li> <li>Pilot NGSA items/tasks</li> </ul>	CMT and CAPT Science (Grades 5, 8 &10) <ul style="list-style-type: none"> <li>Alignment: 33% CTSS/67% NGSS</li> <li>Pilot NGSA items/tasks</li> </ul>	CMT and CAPT Science (Grades 5, 8 & 11) <ul style="list-style-type: none"> <li>Alignment: 100% NGSS</li> <li>Pilot NGSA items/tasks</li> </ul>

## CCSSO Science Assessment Item Collaborative

**Overview of collaborative:** The purpose of this collaborative is to develop high-quality summative assessment items aligned to the Next Generation Science Standards (NGSS) that states will then be able to access. This collaborative will develop assessment items; it is not a consortia and is not developing a full science assessment. Each state maintains full autonomy in determining what its final science assessment will include and how it incorporates the assessment items into its comprehensive science assessment.

The work will be broken into two phases with two separate fees. Participation in one Phase is not dependent on participation in the other Phase.

**Phase I (December 2014– May 2015):** Each state that participates in Phase I will have access to an assessment framework and item specification guidelines developed by an independent consultant. In addition, each state that participates will provide guidance and feedback on the development of these resources. Finally, each state that participates will help to shape the work moving forward in Phase II. State participants will attend two convenings, the cost of which will be covered as part of the overall payment for Phase I. Phase I will be completed by May 31, 2015. The cost for Phase I is \$20,000 per state.

**Phase II (May 2015 – May 2016):** Each state that participates in Phase II will have access to a pool of high-quality assessment items aligned to the NGSS. The process for item development will be finalized as part of Phase II. These assessment items can serve as the basis for the state’s full science assessment. The cost for Phase II will be finalized within the coming months.

Note: Connecticut will participate in Phase I of the CCSSO Science Assessment Item Collaborative. A decision on participation in Phase II of the project will depend on the cost and products to be delivered.



## Appendix C: Statement of Assurances

### Statement of Assurances

PROJECT: Connecticut Mastery Test (CMT) and Connecticut Academic Performance Test (CAPT) in Science.

THE APPLICANT, \_\_\_\_\_, HEREBY ASSURES THAT:  
(Insert Name)

1. The applicant has the necessary legal authority to submit a proposal in response to this RFP and to contract for the provision of the services described therein.
2. The filing of this application has been authorized by the applicant's governing body, and the undersigned official has been duly authorized to file this application for and on behalf of said applicant, and otherwise to act as the authorized representative of the applicant in connection with this application.
3. The activities and services for which assistance is sought under this RFP will be administered by or under the supervision and control of the applicant.
4. The project will be operated in compliance with all applicable state and federal laws and in compliance with the regulations and other policies and administrative directives of the Connecticut State Board of Education and the State Department of Education; Fiscal control and accounting procedures will be used to ensure proper disbursement of all funds awarded.
5. The applicant will submit a final project report (within 60 days of the project completion) and such other reports, as specified, to the State Department of Education, including information relating to the project records and access thereto as the State Department of Education may find necessary;
6. The Connecticut State Department of Education reserves the exclusive right to use and grant the right to use and/or publish any part or parts of any summary, abstract, reports, publications, records, and materials resulting from this project;
7. The applicant will protect and save harmless the State Board of Education from financial loss and expense, including fees and legal fees and costs, if any, arising out of any breach of the duties, in whole or in part, described in the application;
8. At the conclusion of the contract period, the applicant will provide for an independent audit report acceptable to the CSDE in accordance with Sections 7-394a and 7-396a of the Connecticut General Statutes, and the applicant shall return to the CSDE any monies not expended in accordance with the approved program/operation budget as determined by audit;
9. Required Contract Language:
  - (1) For the purposes of this section, "Commission" means the Commission on Human Rights and Opportunities. For the purposes of this section, "minority business enterprise" means any small contractor or supplier of materials fifty-one percent or more of the capitol stock, if any, or assets of which is owned by a person or persons: (a) who are active in the daily affairs of the enterprise, (b) who have the power to direct the management and policies of the enterprise and (c) who are members of a minority, as such term is defined in subsection (a) of Connecticut General Statutes Section 32-9n; and "good faith" means that the degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations. "Good faith efforts" shall include, but shall not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements. For the purposes of this section, "sexual orientation" means having a preference for heterosexuality, homosexuality or bisexuality, having a history of such preference or being

identified with such preference, but excludes any behavior which constitutes a violation of part VI of chapter 952 of the general statutes.

(2) (a) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or the State of Connecticut. If the contract is for a public works project, the contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such project. The contractor further agrees to take affirmative action to insure that applicants with job related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, or physical disability, including, but not limited to, blindness, unless it is shown by the contractor that such disability prevents performance of the work involved; (b) the contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the commission; (c) the contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each contractor with which such contractor has a contract or understanding, a notice to be provided by the commission, advising the labor union or worker's representative of the contractor's commitments under this section and to post copies of the notice in conspicuous places available to employees and applicants for employment; (d) the contractor agrees to comply with each provision of this section and Connecticut General Statutes Sections 4a-62, 32-9e, 46a and 46a-68b to 46a-68k, inclusive and with each regulation or relevant order issued by said commission pursuant to said sections; (e) the contractor agrees to provide the commission on human rights and opportunities with such information requested by the commission, and permit access to pertinent books, records, and accounts, concerning the employment practices and procedures of the contractor as related to the provisions of this section and section 46a-56.

(3) Determination of the contractor's good faith efforts shall include but shall not be limited to the following factors: the contractor's employment and subcontracting policies, patterns and practices; affirmative advertising; recruitment and training; technical assistance activities and such other reasonable activities or efforts as the commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.

(4) The contractor shall develop and maintain adequate documentation, in a manner prescribed by the commission, of its good faith efforts.

(5) The contractor shall include the provisions of subsection (2) of this section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and such provisions shall be binding in a subcontractor, contractor or manufacturer unless exempted by regulations or orders of the commission. The contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of reinforcing such provisions including sanctions for noncompliance in accordance with this section and Connecticut General Statutes Sections 4a-62, 32-9e, 46a-56 and 46a-68b to 46a-68k, inclusive; provided if such contractor becomes involved in, or is threatened with litigation with a subcontractor or contractor as a result of such direction by the commission, the contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

(6) The contractor agrees to comply with the regulations referred to in this section as the term of this contract and any amendments thereto as they exist on the date of the contract and as they may be adopted or amended from time to time during the term of this contract and any amendments thereto.

(7) (a) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or the State of Connecticut, and that employees are treated, when employed, without regard to their sexual orientation; (b) the contractor agrees to provide each

labor union or representative of workers with which such contractors has a collective bargaining agreement or other contract or understanding and each contractor with which such contractor has a contract or understanding, a notice to be provided by the commission on human rights and opportunities advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (c) the contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said commission pursuant to section 46a-56 of the Connecticut General Statutes; (d) the contractor agrees to provide the commission on human rights and 21opportunities with such information requested by the commission and permit access to pertinent books, records and accounts, concerning employment practices and procedures of the contractor which related to the provisions of this section and section 46a-56 of the general statutes.

(8) The contractor shall include the provisions of subsection (7) of this section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and such provisions shall be binding on a subcontractor, contractor, or manufacturer unless exempted by regulations and orders of the commission. The contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with section 46a-56 of the general statutes; provided, if such contractor or contractor becomes involved in, or is threatened with, litigation with a subcontractor or contractor as a result of such direction by the commission, the contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

The signature of the authorized official on the Statement of Assurances Signature Page indicates the intent to comply with the provisions referenced in each section. Assurances not agreed to by the authorized official must be identified on a separate sheet with a rationale for the disagreement.

I, the undersigned authorized official, hereby certify that these assurances shall be fully implemented.

Signature \_\_\_\_\_

Name (typed) \_\_\_\_\_

Title (typed) \_\_\_\_\_

Name of Organization \_\_\_\_\_

Date \_\_\_\_\_

