# STATE OF NEW JERSEY
# DEPARTMENT OF EDUCATION

## Informational Guide for the Mathematics Portfolio Appeals Process 2018-19

To fulfill the mathematics assessment component of New Jersey high school graduation requirements, a student must demonstrate proficiency in mathematics. A student may do this by demonstrating competency in Constructed Response Tasks (CRTs) evidencing the mathematical practices aligned to the high school mathematics content areas.

Each of the content areas encompasses knowledge and skills articulated in the New Jersey Student Learning Standards for Mathematics (NJSLS-M). Through the Portfolio Appeal process, evidence is gathered of a student's ability to demonstrate the mathematical practices through **reasoning** and **modeling** within the high school content areas. The high school mathematics content areas, which can be found in the NJSLS-M starting on page 59, include:
- Number and Quantity (N)
- Functions (F)
- Algebra (A)
- Geometry (G)
- Statistics and Probability (S)

The appeals process must provide evidence from two mathematical practice categories as follows:

I.   **Expressing Mathematical Reasoning:** Express appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others and/or attending to precision when making mathematical statements.
- Base explanations and reasoning on knowledge and skills articulated in the Number and Quantity, Algebra, Functions, Geometry, and Statistics and Probability content areas.

II.  **Modeling:** Apply knowledge and skills to solve real-world problems, engaging particularly in the Modeling practice and, where appropriate, making sense and persevering to solve them, reasoning abstractly and quantitatively, using appropriate tools strategically and making use of structure.
- Solve multi-step contextual problems requiring application of knowledge and skills articulated in the Number and Quantity, Algebra, Functions, Geometry, and Statistics and Probability content areas.

Districts should use PARCC practice items and released items as examples of the kinds of questions that must be included, but may **not** use the actual items for their appeals.

*Updated December 2018*

**Frequently Asked Questions (FAQs)**

The following FAQs will help guide you in creating the evidence needed for the student appeal process.

**Q: What are constructed response tasks (CRTs)?**
CRTs open-ended questions that are designed, administered, and graded locally. CRTs must be designed to demonstrate the student holds core mathematical competencies equivalent to the expectations of the PARCC Evidence Statements. CRTs must be completed and scored in district before submission to the New Jersey Department of Education (NJDOE). The content of a CRT must be aligned to Reasoning or Modeling Evidence Statements found in the Algebra I, Geometry and/or Algebra II Evidence Statement Documents.

**Q: How many CRTs should be submitted per student?**
A total of four CRTs must be submitted per student: two reasoning tasks and two modeling tasks. Each task is from a different content area.

**Q: Where can I find Evidence Statements Tables that align to the reasoning and modeling practice categories?**
You can find the Evidence Statement Tables in the Informational Guides posted on the NJDOE website. Here are direct links to the Informational Guides for Algebra I, Geometry, and Algebra II. These are the **only** Evidence Statement Tables to be used.

Reasoning Evidence Statements are shaded in lavender on page 11 of the Algebra I Evidence Statement Document and have a prefix of "HS.C." The Algebra I Evidence Statement Document has seven Reasoning Evidence Statements. The Geometry and Algebra II Evidence Statement Documents also have Reasoning Statements that are similarly arranged and coded.

Modeling Evidence Statements are shaded in aqua on page 12 of the Algebra I Evidence Statement Document and have a prefix of "HS.D." The Algebra I Evidence Statement Document has five Modeling Evidence Statements. The Geometry and Algebra II Evidence Statement Documents also have Modeling Statements that are similarly arranged and coded.

**Q: How many CRTs must be in a completed math portfolio appeal? How do I select what statements to use?**
A completed mathematics portfolio must contain four student-completed CRTs, each of which must be accompanied by a Constructed Response Item Cover Sheet (see bottom of this document) and an item specific scoring rubric.

The four CRTs in a portfolio must be aligned to any two unique Reasoning Evidence Statements and any two unique Modeling Evidence Statements from the Algebra I, Geometry and/or Algebra II Evidence Statements. No Evidence Statement may be used twice.

When selecting evidence statements, also consider mathematical conceptual categories. The NJSLS-M contain content from five Conceptual Categories:
- Number and Quantity (N)
- Algebra (A)
- Functions (F)
- Geometry (G), and

- Statistics and Probability (S).

The four Reasoning and Modeling Evidence Statements you select must reflect four **unique** Conceptual Categories. This is best accomplished by using the Content Scope associated with the Reasoning and Modeling Evidence Statements. For example, in the Algebra I Evidence Statement Document the first Reasoning Evidence Statement found on page 11 is "HS.C.5.6" and has a Content Scope of "A-REI.5." This Content Scope is part of Conceptual Category A or Algebra.

A portfolio may include four CRTs all aligned to Algebra I Reasoning and Modeling Evidence Statements, or Geometry, or Algebra II Evidence Statements; this is a district decision. Perhaps the student is currently in an Algebra II course and you would like the portfolio to reflect content that the student is currently studying. You may also use Evidence Statements from all or any Evidence Statement Documents.

Districts may use Evidence Statements that have a Content Scope from the middle school standards (securely held knowledge). For example, the Algebra I Evidence Statement Document includes HS.C.18.1 with Content Scope "8.EE.B." This Content Scope easily fits within the Conceptual Categories A or F, however, the reasoning required for a CRT aligned to this Evidence Statement should be of the high school level.

**Q: What should each CRT consist of?**
Each CRT should have the following:
1. A cover sheet that lists the following: (a blank cover sheet is in this document for your use)
- the student's name
- the Evidence Statement to which the task aligns (use the coding found in the Evidence Statement tables)
- the actual Evidence Statement
- the content scope in the Evidence Statement that is being assessed
- the content area being assessed (N, F, A, G, or S)
- the type of item: Reasoning or Modeling
- the student's score
2. The constructed response task
3. The student's response and score
4. The constructed response rubric

**Q: Can I see a sample set of CRT selections for a particular student?**
Below is a sample set of four Reasoning/Modeling Evidence Statements that would fulfill the requirements. This selection of Evidence Statements includes two from Reasoning (C), two from Modeling (D), and covers four distinct Conceptual Categories: A, N, G, and F:
- Algebra I Evidence Statement Document: HS.C.5.6 Content Scope A-REI.5
- Also from the Algebra I Evidence Statement Document: HS.D.2-5 Content Scope: N-Q
- From the Geometry Evidence Statement Document: HS.C.13.2 Content Scope: G-GPE.5
- From the Algebra II Evidence Statement Document: HS.D.2-10 Content Scope: F-IF.7

**Q: What would a sample CRT look like?**
Below is a sample CRT:

**Evidence Statement Code**: HS.C.6.1
**Evidence Statement**: Base explanations/reasoning on the principle that the graph of an equation and inequalities in two variables is the set of all its solutions plotted in the coordinate plane.

*Updated December 2018*

**Content scope**: A-REI.D, excluding exponential and logarithmic functions.
**Content Scope**: A-REI.D
**Conceptual Category Assessed:** Algebra (A)
**Type of Item**: Reasoning (C)
**Student Score**: 3

**CRT:**

Let $|x| + |y| = c$, where $c$ is a real number.

Determine the number of points that would be on the graph of the equation for **each** given case:

Case 1: $c < 0$
Case 2: $c = 0$
Case 3: $c > 0$

Justify your answers.

**Student Response**
Please note: The student's response may be on separate pages from the task. Please make sure the student's name is on each page of his/her response.

**Sample Scoring Rubric**

| Score | Description |
|---|---|
| **3** | Student response includes each of the following three elements:<br><br>• One reasoning point: Correct justification of the number of points on the graph for c < 0<br>• One reasoning point: Correct justification of the number of points on the graph for c = 0<br>• One reasoning point: Correct justification of the number of points on the graph for c > 0<br><br>Sample Student Response:<br>$|x|$ and $|y|$ are each nonnegative for all real numbers x and y. So, the sum must be nonnegative for all real numbers. Therefore, the sum cannot equal a negative number.<br><br>There are no solutions and no points on the graph when c < 0.<br><br>If c = 0, there is only one solution, (0, 0). The graph consists of only one point.<br><br>If c > 0, there are infinitely many solutions, which means that there are infinitely many points on the graph. |
| **2** | Student response includes two of the three elements. |
| **1** | Student response includes one of the three elements. |
| **0** | Student response is incorrect or irrelevant. |

**Q: What other sources can I use to develop a CRT?**

Additional examples of CRTs can be found among the [New Jersey Student Learning Assessment Released Items](#) for Algebra I, Geometry and Algebra II. District should consider updating, refreshing, and developing new CRTs as they collect feedback on currently active CRTs.

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CRTs should reflect high school-level Reasoning, Modeling, and content. For example, a CRT that merely requires a student to add up a food bill would not allow a student to demonstrate proficiency in high school-level Modeling and content.

**Q: How do I score a CRT?**
- CRTs aligned to Reasoning Evidence Statements should be worth a total of 3 or 4 points to be consistent with the NJSLA-M).
- CRTs aligned to Modeling Evidence Statements should be worth a total of 3 or 6 points to be consistent with the NJSLA-M.
- **At least half** of the available points in each CRT must be for Reasoning or Modeling. Any remaining points can be for computation.
- Score points should **not** be awarded in half-points.
- Only student scores of 50% or more of the available points should be submitted to NJDOE. If your district is using a CRT with a total of 3 available points, only student portfolios with scores of 2 or 3 demonstrate student proficiency of the NJSLS-M.
- The score the district awards to a student completed CRT must be consistent with the uniform scoring rubric that the district is using. CRTs not scored in this manner will be returned to the district.

**Q: Can I send my CRTs for review by the NJDOE before I administer them to my students?**

You may send the CRTs to the NJDOE for review. It is not required, but it is recommended. Having the CRTs reviewed will help eliminate issues when the appeal is sent. It is far easier to correct issues with the CRTs before they are administered to students than to find out there are issues after the appeals have been received at the NJDOE.

**Q: If I sent in CRTs for review last year, should I send them in again?**

Districts may choose to have CRTs reviewed again by the NJDOE. However, this is recommended only if you feel, after reviewing this updated information guide and the further clarifications mentioned, that some CRTs from last year don't exactly match one of the Evidence Statements, or do not focus on the primary content of an Evidence Statement**.**

**Q: Are there common mistakes a district can avoid when developing CRTs?**
The NJDOE recommends checking for common mistakes such as:
1. The cover sheet is missing or is not correctly filled out for each CRT.
2. There is more than one Evidence Statement listed.
3. There is more than one content scope listed.
4. The content of the CRT does not align to the Evidence Statements and content scope.
5. The content of the CRT is below the content level and rigor of the content scope.
6. The CRT is not graded and does not show where the student made an error.
7. The rubric does not show the points delineated for modeling/reasoning and computation, if any.
8. The rubric is missing a sample student response.

It is very important to review your CRTs, cover sheets and rubrics prior to submission with the appeal. If there are any errors, it may delay the acceptance of the appeal.

**Q: Where can I find the mathematics CRT cover sheet?**
The next page is a cover sheet for the mathematics CRTs. Please copy as necessary.

*Updated December 2018*

**Contact Information**
For questions about Evidence Statement Documents, Conceptual Categories, or anything related to CRT development or scoring please contact Michael Luke at michael.luke@doe.nj.gov or 609-376-3443.

For policy questions about the Portfolio Appeals Process please contact Dr. Faye Ball at faye.ball@doe.nj.gov or 609-387-3458.

**Submitting Appeals**
The appeals and constructed response tasks should be sent to the following address:

Dr. Faye Ball
NJDOE Portfolio Appeals Coordinator
New Jersey Department of Education
PO Box 500
Trenton, NJ 08625-500

*Updated December 2018*

**Student Name:**

**Modeling/Reasoning Evidence Statement Code:**

**Evidence Statement:**

**Content Scope (found in Evidence Statement):**

**Conceptual Category (N, F, A, G, or S):**

**Student Score:**