

FOR TEACHERS ONLY

The University of the State of New York
REGENTS HIGH SCHOOL EXAMINATION

PHYSICAL SETTING/EARTH SCIENCE

Friday, June 17, 2022 — 1:15 to 4:15 p.m., only

RATING GUIDE

Directions to the Teacher:

Refer to the directions on page 2 before rating student papers.

Updated information regarding the rating of this examination may be posted on the New York State Education Department's web site during the rating period. Check this web site at: <http://www.nysed.gov/state-assessment/high-school-regents-examinations> and select the link "Scoring Information" for any recently posted information regarding this examination. This site should be checked before the rating process for this examination begins and several times throughout the Regents Examination period.

Directions to the Teacher

Follow the procedures below for scoring student answer papers for the Regents Examination in Physical Setting/Earth Science. Additional information about scoring is provided in the publication *Information Booklet for Scoring Regents Examinations in the Sciences*.

Allow 1 credit for each correct response.

At least two science teachers must participate in the scoring of the Part B–2 and Part C open-ended questions on a student’s paper. Each of these teachers should be responsible for scoring a selected number of the open-ended questions on each answer paper. No one teacher is to score more than approximately one-half of the open-ended questions on a student’s answer paper. Teachers may not score their own students’ answer papers.

Students’ responses must be scored strictly according to the Rating Guide. For open-ended questions, credit may be allowed for responses other than those given in the rating guide if the response is a scientifically accurate answer to the question and demonstrates adequate knowledge as indicated by the examples in the rating guide. Do not attempt to correct the student’s work by making insertions or changes of any kind. On the student’s separate answer sheet, for each question, record the number of credits earned and the teacher’s assigned rater/scorer letter.

Fractional credit is *not* allowed. Only whole-number credit may be given for a response. If the student gives more than one answer to a question, only the first answer should be rated. Units need not be given when the wording of the questions allows such omissions.

For hand scoring, raters should enter the scores earned in the appropriate boxes printed on the separate answer sheet. Next, the rater should add these scores and enter the total in the space provided. Then the student’s raw scores on the written test should be converted to a scale score by using the conversion chart that will be posted on the Department’s web site at: <http://www.nysed.gov/state-assessment/high-school-regents-examinations> on the day of the exam. The student’s scale score should be entered in the box labeled “Scale Score” on the student’s answer sheet. The scale score is the student’s final examination score.

Schools are not permitted to rescore any of the open-ended questions on this exam after each question has been rated once, regardless of the final exam score. Schools are required to ensure that the raw scores have been added correctly and that the resulting scale score has been determined accurately.

Because scale scores corresponding to raw scores in the conversion chart may change from one administration to another, it is crucial that, for each administration, the conversion chart provided for that administration be used to determine the student’s final score.

Part B–2

Allow a maximum of 15 credits for this part.

To ensure the accuracy of overlays, select a printer setting such as *full*, *actual size*, or *100%* when printing this document. Do **not** select the *fit to page* setting.

51 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

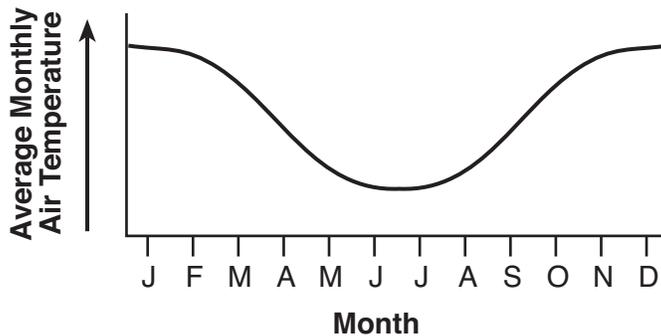
- elevation
- altitude
- height above sea level

52 [1] Allow 1 credit if *all four* student responses are correct. Acceptable responses include, but are not limited to:

Time of Day and Atmospheric Condition	Over the Beach	Over the Ocean
Daytime air temperature	— higher — warmer — hotter	— lower — cooler — colder
Daytime air pressure	— lower — less	— higher — more

53 [1] Allow 1 credit for a line that shows the lowest air temperature in June, July, or August and the highest air temperatures in January and December.

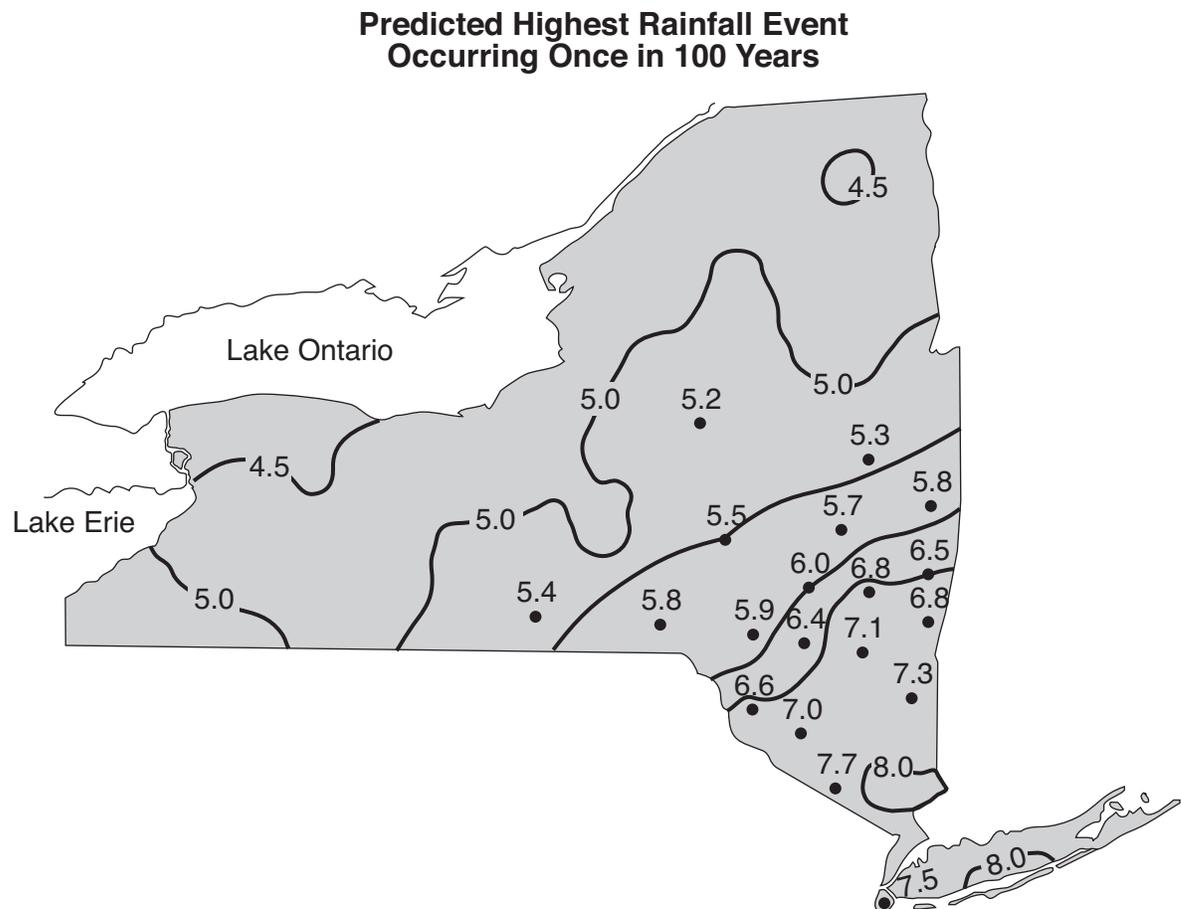
Example of a 1-credit response:



- 54 [1] Allow 1 credit for correctly drawing the 5.5, 6.0, and 6.5 inch isolines that extend to the edges of the state. If additional isolines are drawn, all isolines must be correct to receive credit.

Note: The isolines must pass through or touch the 5.5, 6.0, and 6.5 data points.

Example of a 1-credit response:



- 55 [1] Allow 1 credit for any value greater than 4.5 inches but less than 5.0 inches.

- 56 [1] Allow 1 credit for *two* correct responses from the list below.

- Atlantic Coastal Plain
- Manhattan Prong
- Newark Lowlands
- Hudson Highlands

Note: Allow credit for New England Province (Highlands) only if Manhattan Prong or Hudson Highlands are *not* used as a response.

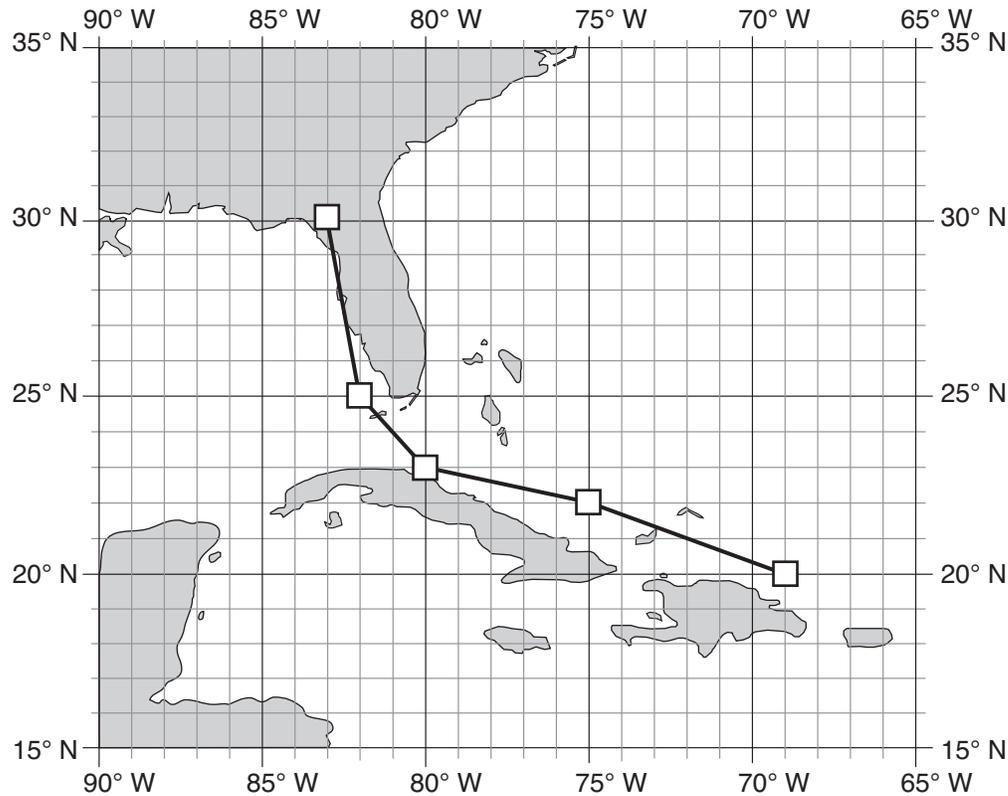
- 57** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- Land covered by blacktop and concrete has a lower permeability.
 - Rainfall can't infiltrate city surfaces.
 - There are more areas for water to seep into the ground in rural areas.
 - More vegetation in rural areas slows the runoff and allows more time for infiltration.
- 58** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- unsorted
 - unlayered
 - mixed
- 59** [1] Allow 1 credit for pebbles.
- 60** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- U-shaped valley
 - The valley will have a rounded bottom with steep sides.

- 61 [1] Allow 1 credit if the centers of *all five* plots are within or touch the boxes shown and are correctly connected with a line that passes within or touches each box.

Note: Allow credit if the line does not pass through the student's plots, but is still within or touches the boxes.

It is recommended that an overlay of the same scale as the student answer sheet be used to ensure reliability in rating.

Do *not* allow credit if the student drawn line extends beyond the first and last boxes on the rating guide.



- 62 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- As barometric pressure increases, the wind speed decreases.
- The higher the wind speed, the lower the pressure.
- inverse relationship/negative relationship

- 63 [1] Allow 1 credit for Florida Current.

- 64 [1] Allow 1 credit for any value for a temperature from 4900°C to 5000°C and any value for a pressure from 1.4 million atmospheres to 1.6 million atmospheres.

- 65 [1] Allow 1 credit for *both* circling solid and identifying iron (Fe) and nickel (Ni) for the composition.

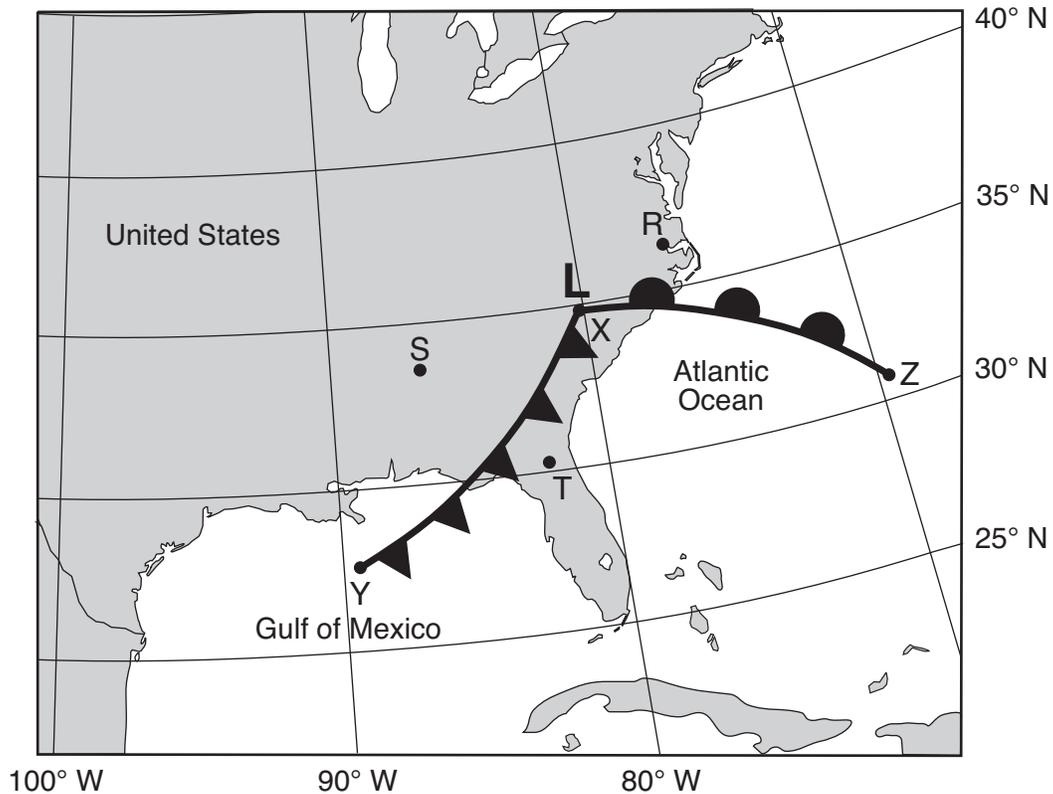
Part C

Allow a maximum of 20 credits for this part.

- 66** [1] Allow 1 credit for the placement of the correct symbols facing in the correct directions for *both* fronts.

Note: Allow credit if the symbols are *not* shaded in.

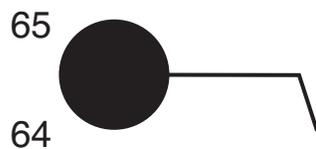
Example of a 1-credit response:



- 67** [1] Allow 1 credit if *all five* weather conditions are in the correct location and in the correct format.

Note: Allow credit for a wind speed feather drawn at the end on either side of the wind direction line.

Example of a 1-credit response:

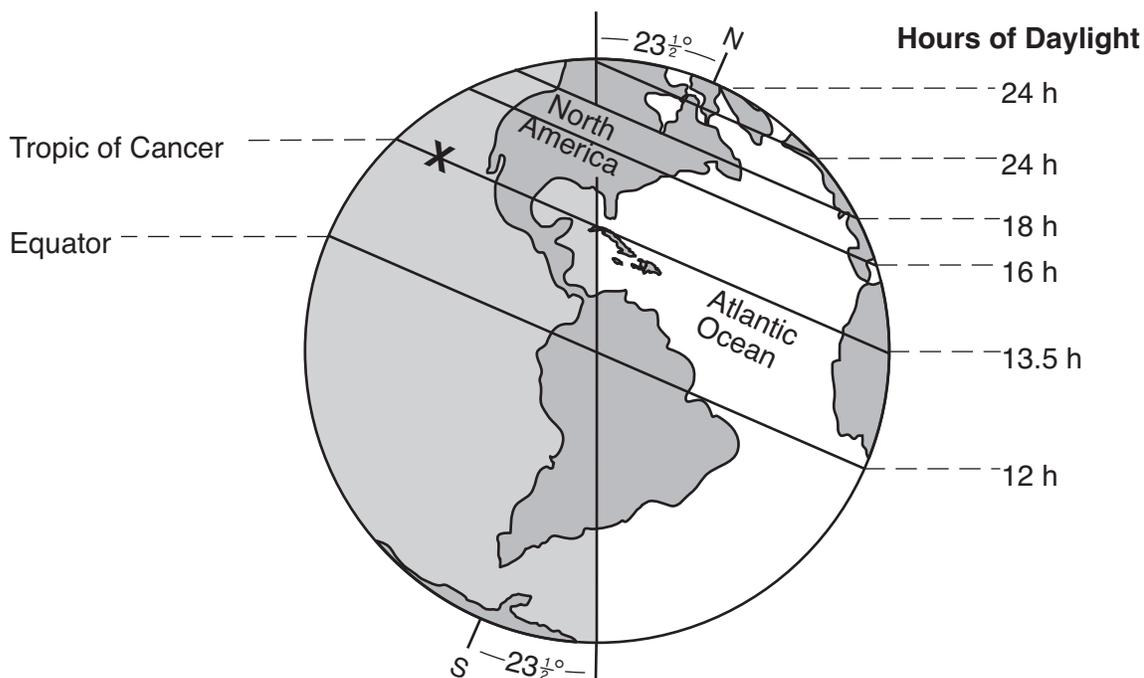


68 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- northeast/NE
- eastward/E
- NNE
- ENE
- west to east

69 [1] Allow 1 credit if the center of the **X** is drawn at any location within 1 mm above or below the Tropic of Cancer.

Example of a 1-credit response:



(Not drawn to scale)

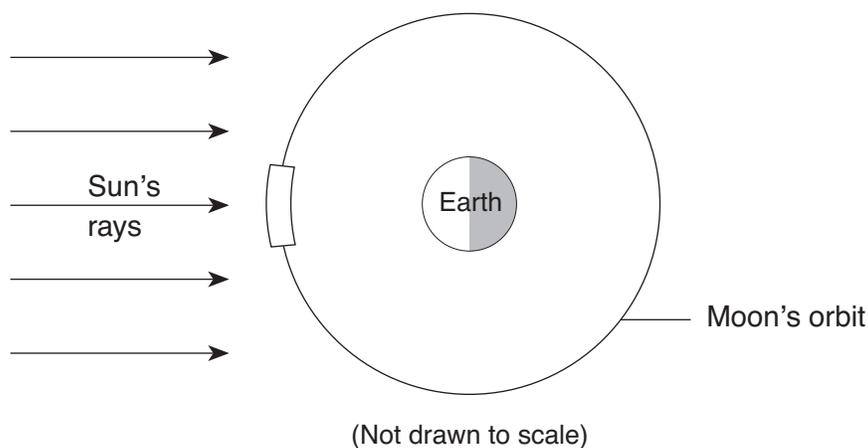
70 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- The Earth's axis is not perpendicular to the plane of Earth's orbit.
- The Earth's axis is inclined $23\frac{1}{2}^\circ$.
- The northern end of Earth's axis is tilted toward the Sun on this date.
- Earth's axis is tilted.
- Earth rotates on its axis

71 [1] Allow 1 credit if the center of the **X** is drawn within or touches the clear band shown below.

Note: Allow credit if a symbol other than an **X** is used.

It is recommended that an overlay of the same scale as the student answer sheet be used to ensure reliability in rating.



72 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- The Moon's shadow falls above or below Earth's position in its orbit.
- The shadow of the Moon is not aligned with Earth.
- The Moon and Earth are not aligned on the same plane.

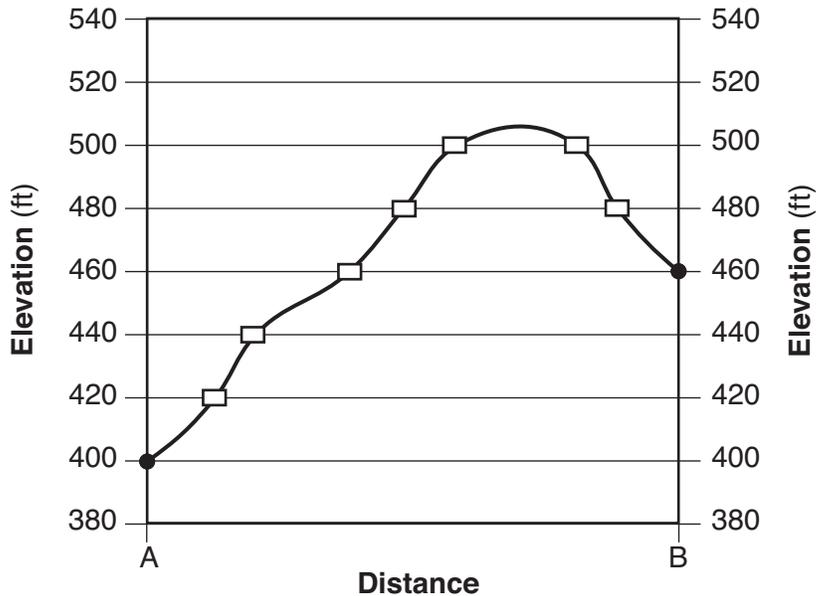
73 [1] Allow 1 credit for 2071.

74 [1] Allow 1 credit for any value from 29 to 30 days.

- 75 [1] Allow 1 credit if the centers of *all seven* student plots are within or touch the rectangles shown and all 9 plots are correctly connected with a line that passes within or touches the rectangles. The line must show a hill higher than 500 feet, but lower than 520 feet.

Note: Allow credit if the student-drawn line does *not* pass through the student plots but is still within or touching the rectangles.

It is recommended that an overlay of the same scale as the student answer sheet be used to ensure reliability in rating.



- 76 [1] Allow 1 credit for any value from 37 to 43 with correct units. Acceptable units include, but are not limited to:

- ft/mi
- feet/mi
- feet per mile

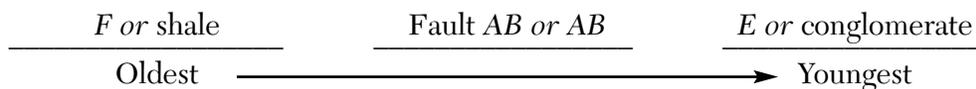
- 77 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- The contour lines are spread far apart here.
- No contour lines pass through this area, so it is relatively flat.
- Wider-spaced contour lines show a flatter area.

- 78 [1] Allow 1 credit for southwest/SW *or* from the northeast/NE to southwest/SW.

- 79 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- Rock units above letter C have not been metamorphosed.
 - Contact metamorphism is missing above location C.
 - Conglomerate and sandstone do not show contact metamorphism above letter C.

- 80 [1] Allow 1 credit for:



- 81 [1] Allow 1 credit for gravity *or* gravitational force.

- 82 [1] Allow 1 credit for 4600 mya.

Note: Allow credit if an equivalent value is expressed in other units (e.g., 4.6 billion years ago), if the student crosses out mya (million years ago).

- 83 [1] Allow 1 credit for fusion *or* nuclear fusion.

- 84 [1] Allow 1 credit for *two* correct responses. Acceptable responses include, but are not limited to:

- The Jovian planets formed from less dense materials/lower density
- Jovian planets are larger/have greater equatorial diameters/more massive.
- Jovian planets are composed of more gaseous materials.
- greater period of revolution
- shorter period of rotation
- greater mass
- They are colder.
- greater number of Moons
- Jovian planets have rings.

- 85 [1] Allow 1 credit for Venus.

Regents Examination in Physical Setting/Earth Science

June 2022

Chart for Converting Total Test Raw Scores to Final Examination Scores (Scale Scores)

The *Chart for Determining the Final Examination Score for the June 2022 Regents Examination in Physical Setting/Earth Science* will be posted on the Department's web site at: <http://www.nysed.gov/state-assessment/> on the day of the exam. Conversion charts provided for previous administrations of the Regents Examination in Physical Setting/Earth Science must NOT be used to determine students' final scores for this administration.

Online Submission of Teacher Evaluations of the Test to the Department

Suggestions and feedback from teachers provide an important contribution to the test development process. The Department provides an online evaluation form for State assessments. It contains spaces for teachers to respond to several specific questions and to make suggestions. Instructions for completing the evaluation form are as follows:

1. Go to <https://www.surveymonkey.com/r/8LNLLDW>.
2. Select the test title.
3. Complete the required demographic fields.
4. Complete each evaluation question and provide comments in the space provided.
5. Click the **SUBMIT** button at the bottom of the page to submit the completed form.

Map to Core Curriculum

June 2022 Physical Setting/Earth Science			
Question Numbers			
Key Ideas/Performance Indicators	Part A	Part B	Part C
Standard 1			
Math Key Idea 1		50, 53, 61	73, 75, 76
Math Key Idea 2	1, 30	36, 37, 59, 62, 64	
Math Key Idea 3	10, 11	40, 54, 55	77
Science Inquiry Key Idea 1	27	43, 46, 51, 53, 57	70, 71, 72, 77, 81
Science Inquiry Key Idea 2			
Science Inquiry Key Idea 3	1, 10, 11, 12, 16, 17, 18, 19, 22, 23, 24, 26, 28, 29, 32, 33, 35	36, 38, 39, 40, 47, 48, 56, 59, 63, 64, 65	66, 67, 76, 82, 84, 85
Engineering Design Key Idea 1			
Standard 2			
Key Idea 1		38	68, 72, 73
Key Idea 2			
Key Idea 3			
Standard 6			
Key Idea 1	7	52, 58, 60	83, 84
Key Idea 2	2, 8, 9, 15, 16, 17, 18, 20, 22, 25, 28, 30, 31, 34	37, 39, 41, 42, 44, 45, 49, 51, 53, 55, 56, 60, 61, 63, 64, 65	66, 68, 69, 71, 75, 76, 77, 78, 79, 80, 81, 85
Key Idea 3		55	77, 85
Key Idea 4			
Key Idea 5	5, 7, 15, 16, 20, 21, 30, 31	49	71, 73, 74
Key Idea 6			
Standard 7			
Key Idea 1			
Key Idea 2			
Standard 4			
Key Idea 1	1, 2, 3, 4, 5, 7, 8, 9, 16, 19, 21, 22, 23, 27	40, 49, 50, 57, 58, 61	69, 70, 71, 72, 73, 74, 79, 80, 81, 82, 83, 84, 85
Key Idea 2	6, 10, 11, 12, 13, 14, 15, 17, 18, 20, 24, 25, 28, 30, 31, 34	36, 41, 42, 43, 44, 45, 46, 47, 48, 51, 52, 53, 54, 55, 56, 58, 59, 60, 62, 63, 64, 65	66, 67, 68, 75, 76, 77, 78
Key Idea 3	26, 29, 32, 33, 35	37, 38, 39	
Reference Tables			
ESRT 2011 Edition (Revised)	1, 10, 11, 12, 16, 17, 18, 19, 22, 23, 24, 26, 28, 29, 32, 33, 35	36, 38, 39, 40, 47, 48, 56, 59, 63, 64, 65	66, 67, 76, 82, 84, 85