

FOR TEACHERS ONLY

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

EARTH AND SPACE SCIENCES

Thursday, June 18, 2026 — 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 website during the rating period. Check this website at: <https://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 Earth and Space Sciences. Additional information about scoring is provided in the publication *Directions for Scoring Regents Examinations*.

Allow 1 credit for each correct response.

At least two science teachers must participate in the scoring of the 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.

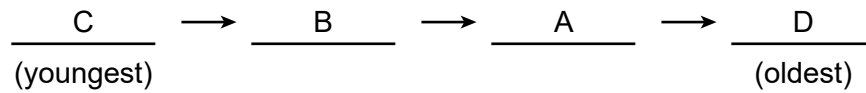
For hand scoring, raters should enter the scores earned in the appropriate boxes printed on the separate answer sheet. Next, the rater should add these scores and enter the total in the space provided. Then the student's raw score on the test should be converted to a scale score by using the conversion chart that will be posted on the Department's website at: <https://www.nysed.gov/state-assessment/high-school-regents-examinations> on the day of the examination. 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.

The test item map on page 12 identifies the Performance Expectation with which each test question is aligned. All NYSP-12SLS Performance Expectations are three-dimensional (<https://www.nysed.gov/sites/default/files/programs/standards-instruction/p-12-science-learning-standards.pdf>). The integration of these three dimensions provides students with a context for the content of science (DCI), the methods by which science knowledge is acquired and understood (SEP), and the ways in which the sciences are connected through concepts that have universal meaning across the disciplines (CCC).

- 1** [1] Allow 1 credit for the correctly completed sequence, as shown below:



- 2** [1] Allow 1 credit for 2.

- 3** [1] Allow 1 credit for 1.

- 4** [1] Allow 1 credit for 3.

- 5** [1] Allow 1 credit for 1.

- 6** [1] Allow 1 credit for *both* a correct name and description of motion *and* a correct constellation name. Acceptable responses include, but are not limited to:

Name and description of motion:

- Earth’s revolution around the Sun
- Earth orbits the Sun

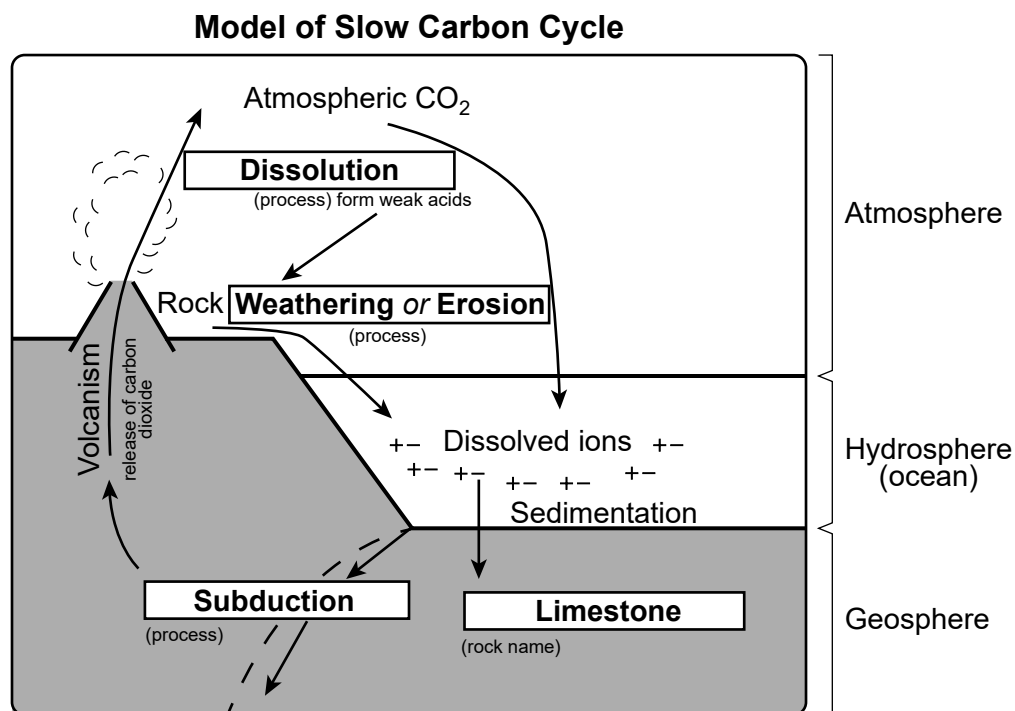
Constellation name:

- Gemini

7 [1] Allow 1 credit for 3.

8 [1] Allow 1 credit for 4.

9 [1] Allow 1 credit for all *four* correctly placed terms in the model, as shown below:



10 [1] Allow 1 credit for an acceptable response. Acceptable responses include, but are not limited to:

- Carbonate rocks are subducted, melted, and rise to Earth's surface due to thermal convection. The dissolved CO₂ outgasses when the volcano erupts.
- Convection causes convergence and melted carbonate rocks to rise to the surface. The dissolved CO₂ is released into the atmosphere during a volcanic eruption.

11 [1] Allow 1 credit for 1.

12 [1] Allow 1 credit for 3.

13 [1] Allow 1 credit for 4.

- 14** [1] Allow 1 credit for *both* a correct polar jet stream pattern change and a weather condition change. Acceptable responses include, but are not limited to:

Change in polar jet stream pattern:

- The polar jet stream will change from being not wavy to wavy.
- The polar jet stream will change from staying farther to the north to dropping farther to the south.

Change in weather condition:

- New York State residents will experience colder temperatures as the polar jet stream becomes more wavy.
- Precipitation will become more likely.

- 15** [1] Allow 1 credit for an acceptable response. Acceptable responses include, but are not limited to:

- The pattern of isotherms shows a large area of cold temperatures covering the central part of the country.
- Both the minimum and maximum temperatures are very cold and dip southward into the central United States.

- 16** [1] Allow 1 credit for 2.

- 17** [1] Allow 1 credit for 2.

- 18** [1] Allow 1 credit for 1.

- 19** [1] Allow 1 credit for 4.

20 [1] Allow 1 credit for correctly placing *four* check marks in the table, as shown below:

Design Criteria or Constraints	Positive Trade-off	Negative Trade-off
Ability to Detect Older, More Distant Objects	✓	
Access for Repair		✓
High Development Cost		✓
Quality of Infrared Imagery	✓	

Note: Allow credit if a symbol other than a check mark is used.

21 [1] Allow 1 credit for 1.

22 [1] Allow 1 credit for correctly placing the names of *all three* stars in the relative age spaces *and* for *three* appropriate H-R Diagram classifications, as shown below:

Relative age	1. <u>21 Lyncis</u> (youngest)	→	2. <u>Quyllur</u>	→	3. <u>WD 1202-232</u> (oldest)
Classification	1. <u>Main sequence</u>	→	2. <u>Supergiant</u>	→	3. <u>White dwarf</u>

23 [1] Allow 1 credit for 1.

24 [1] Allow 1 credit for 4.

25 [1] Allow 1 credit for *both* correct responses. Acceptable responses include, but are not limited to:

Effect of aerosols on energy flow:

- Ejected aerosols result in less solar energy reaching Earth’s surface due to reflection of radiation and more energy being directed into the atmosphere above the aerosols.
- Volcanic aerosols reflect more energy back into the upper atmosphere, which causes less energy to reach Earth’s surface.

Change in climate:

- Less energy reaching Earth’s surface would result in decreased surface temperatures.
- Air temperatures would be cooler due to less incoming solar radiation reaching Earth’s surface.

26 [1] Allow 1 credit for 4.

27 [1] Allow 1 credit for 2.

28 [1] Allow 1 credit for 3.

29 [1] Allow 1 credit for 4.

30 [1] Allow 1 credit for identifying *two* Earth systems and *two* accurate descriptions of the impact of urbanization on the water cycle. Acceptable responses include, but are not limited to:

Earth Systems	Description
Atmosphere	— Decrease in water entering atmosphere by evapotranspiration.
Hydrosphere	— Increase in water entering hydrosphere by runoff. — Decrease in infiltration.
Geosphere	— Decrease in infiltration into geosphere. — Increase of impermeable ground cover.

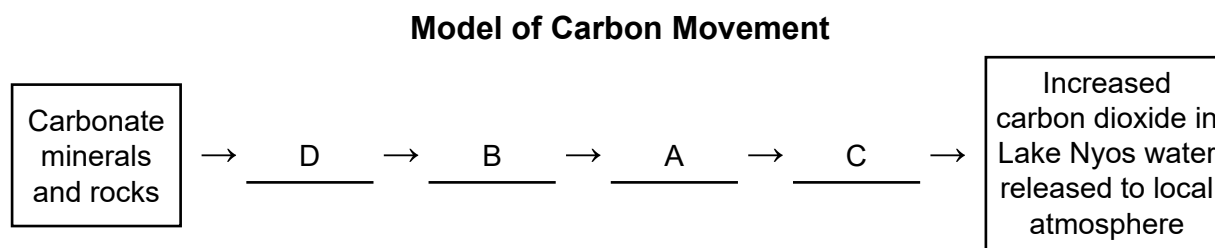
Note: If all three Earth systems have responses, all three must be correct to receive credit.

31 [1] Allow 1 credit for 4.

32 [1] Allow 1 credit for 3.

33 [1] Allow 1 credit for 1.

34 [1] Allow 1 credit for a correctly completed model, as shown below:



35 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- The rocks of the continental segment contain more potassium feldspar than the rocks of the oceanic segment which have more olivine/pyroxene.
- The rocks of the continental segment have quartz which is not found in rocks of the oceanic segment.

Note: Do *not* allow credit for any carbonate minerals as they are found in the volcanoes on the oceanic segment and continental segment of the Cameroon Volcanic Chain.

Do *not* allow credit for general mineral properties such as felsic or mafic, alone, and/or crystal size, as these properties do not describe the distribution of minerals within the rocks.

36 [1] Allow 1 credit for 2.

37 [1] Allow 1 credit for 3.

38 [1] Allow 1 credit for 1.

39 [1] Allow 1 credit for a correct sequence, as shown below:

D → B → C → A

40 [1] Allow 1 credit for 4.

41 [1] Allow 1 credit for volcano/volcanic island arc/ocean ridge *and* one correct example of evidence. Correct examples include, but are not limited to:

- Water decreases the melting point of basalt.
- Wet basalt melted at a lower temperature than dry basalt.

42 [1] Allow 1 credit for 3.

43 [1] Allow 1 credit for 1.

44 [1] Allow 1 credit for *both* correct responses. Acceptable responses include, but are not limited to:

Characteristics:

- The Kepler stars have lower temperatures and luminosities than the Sun.
- Kepler-16A and Kepler-16B are main sequence stars that have lower temperatures and luminosities and are smaller than the Sun.

Lifetime:

- The Kepler stars have lower temperatures and luminosities and are less massive than the Sun, making them have a longer lifespan.
- Less massive stars have a longer lifespan than the Sun.
- Smaller stars remain on the main sequence for a longer period of time than the Sun.

45 [1] Allow 1 credit for 2.

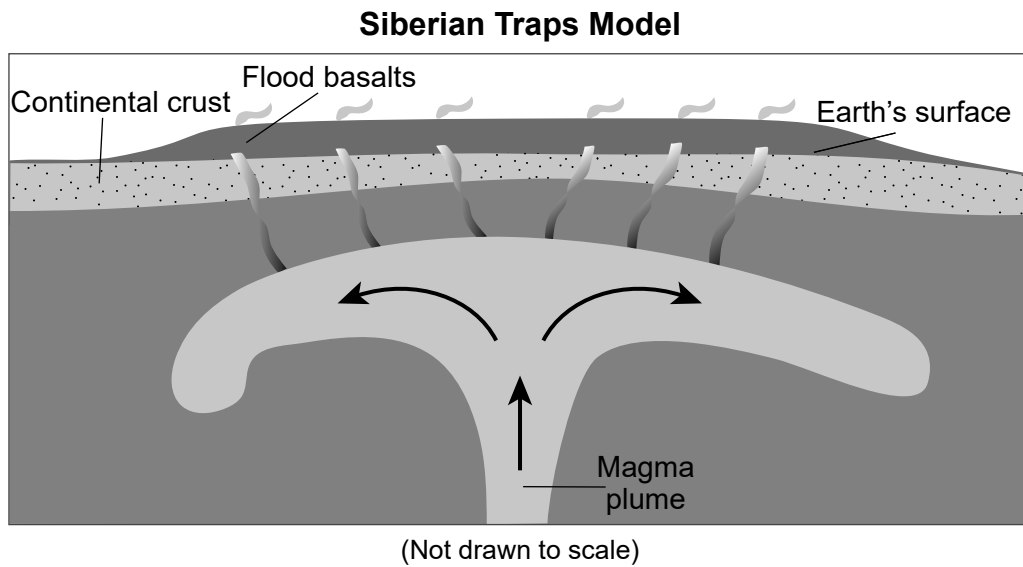
46 [1] Allow 1 credit for an answer from 6 to 8 hours for Kepler-16A, from 1 to 3 hours for Kepler-16B, *and* an acceptable explanation. Acceptable explanations include, but are not limited to:

- Kepler-16A is a larger star, so it takes longer for Kepler-16b to pass across its disk.
- The planet is farther away from Kepler-16A, so it moves at a slower speed.

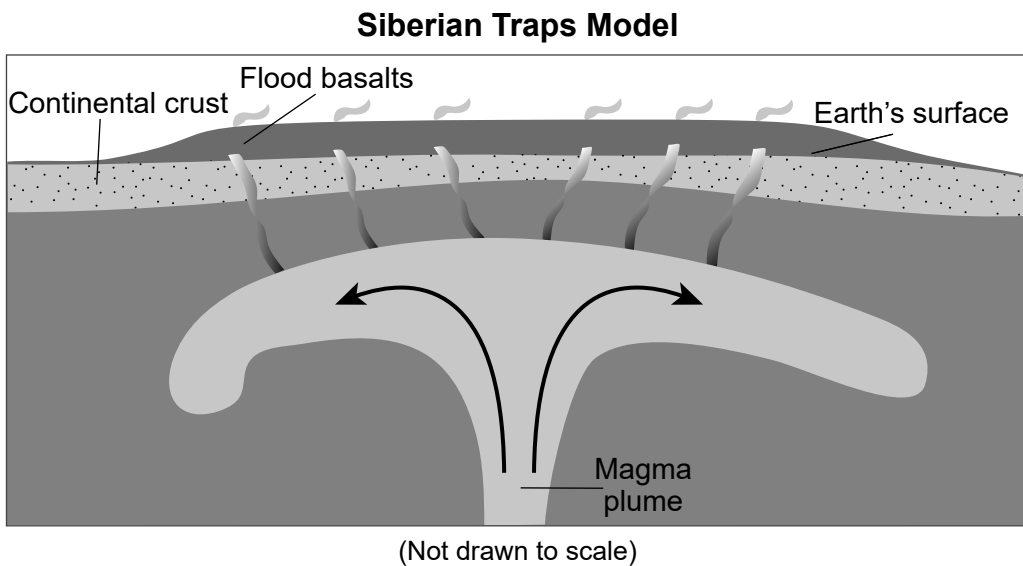
Note: When writing about the planet Kepler-16b, students *must* use lower case because 16B indicates the star, not the planet.

- 47 [1] Allow 1 credit for constructing a model showing at least **two** arrows in the mantle plume to represent convection.

Examples of a 1-credit response:



or



- 48 [1] Allow 1 credit for 3.

- 49 [1] Allow 1 credit for 2.

- 50 [1] Allow 1 credit for 3.

The *Chart for Determining the Final Examination Score for the June 2026 Regents Examination in Earth and Space Sciences* will be posted on the Department's website at: <https://www.nysed.gov/state-assessment/high-school-regents-examinations> no later than on the day of the examination. Conversion charts provided for previous administrations of the Regents Examination in Earth and Space Sciences 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.nysed.gov/state-assessment/teacher-feedback-state-assessments>.
2. Click Regents Examinations.
3. Complete the required demographic fields.
4. Select the test title from the Regents Examination dropdown list.
5. Complete each evaluation question and provide comments in the space provided.
6. Click the SUBMIT button at the bottom of the page to submit the completed form.

THE STATE EDUCATION DEPARTMENT
THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234
June 2026 Earth and Space Sciences Test Item Map to the Standards

Question	Type	Points	Performance Expectation
1	Constructed Response	1	HS-ESS1-5
2	Multiple Choice	1	HS-ESS2-1
3	Multiple Choice	1	HS-ESS3-1
4	Multiple Choice	1	HS-ESS3-2
5	Multiple Choice	1	HS-ESS1-3
6	Constructed Response	1	HS-ESS1-7
7	Multiple Choice	1	HS-ESS1-1
8	Multiple Choice	1	HS-ESS1-2
9	Constructed Response	1	HS-ESS2-6
10	Constructed Response	1	HS-ESS2-3
11	Multiple Choice	1	HS-ESS2-5
12	Multiple Choice	1	HS-ESS2-1
13	Multiple Choice	1	HS-ESS3-4
14	Constructed Response	1	HS-ESS2-8
15	Constructed Response	1	HS-ESS2-8
16	Multiple Choice	1	HS-ESS2-8
17	Multiple Choice	1	HS-ESS2-8
18	Multiple Choice	1	HS-ESS2-8
19	Multiple Choice	1	HS-ESS1-4
20	Constructed Response	1	HS-ETS1-3
21	Multiple Choice	1	HS-ESS1-2
22	Constructed Response	1	HS-ESS1-1
23	Multiple Choice	1	HS-ESS1-3
24	Multiple Choice	1	HS-ESS2-1
25	Constructed Response	1	HS-ESS2-2
26	Multiple Choice	1	HS-ESS3-3
27	Multiple Choice	1	HS-ESS3-1
28	Multiple Choice	1	HS-ESS3-1
29	Multiple Choice	1	HS-ESS3-6
30	Constructed Response	1	HS-ESS3-6
31	Multiple Choice	1	HS-ETS1-3
32	Multiple Choice	1	HS-ESS2-8
33	Multiple Choice	1	HS-ESS3-1
34	Constructed Response	1	HS-ESS2-6
35	Constructed Response	1	HS-ESS2-1
36	Multiple Choice	1	HS-ESS3-4
37	Multiple Choice	1	HS-ESS1-5
38	Multiple Choice	1	HS-ESS2-1
39	Constructed Response	1	HS-ESS2-3
40	Multiple Choice	1	HS-ESS2-3
41	Constructed Response	1	HS-ESS2-5
42	Multiple Choice	1	HS-ESS1-7
43	Multiple Choice	1	HS-ESS1-4
44	Constructed Response	1	HS-ESS1-1
45	Multiple Choice	1	HS-ESS1-3
46	Constructed Response	1	HS-ESS1-4
47	Constructed Response	1	HS-ESS2-3
48	Multiple Choice	1	HS-ESS2-3
49	Multiple Choice	1	HS-ESS2-2
50	Multiple Choice	1	HS-ESS2-1