NOVEMBER 2026 / JANUARY 2027 PLANNING

Earth and Space Sciences atlas

Standards, score design, seasonal evidence, public stimuli, scored work and original transfer tasks.

Tue Jan 26 · 1:15 p.m. | Official January 2027 schedule

January forms	June forms	August forms	Printed slots
1	2	2	250

What the available design supports

The exam organizes phenomena into multi-question clusters. The blueprint gives 20–31% each to space systems, Earth’s systems and human sustainability; 11–20% each to Earth history and weather/climate; and 3–9% to engineering.

All five released forms contained 50 slots. January 2026 included a drifting cargo spill, glacial ice and Mount Morris Dam. Ten January clusters included a model word cue, six a graph cue and five a map cue. The June mean graph count was 5.5; August was 7.

One January. A named New York location is a useful practice setting, with little basis for predicting which place will anchor the exam. Distinguish information in a reference table from information in a supplied map.

NYSED course guide / administration authority

A useful preparation decision

Select a recurring evidence demand, compare the official scoring criterion with a response, then change context for an independent check. The six new topic cards below broaden practice. Their contexts are original designs, and their exact future appearance has no estimated probability.

Topic	Original card
Climate and energy	ESS-N01 A roof and its energy budget
Weather and circulation	ESS-N02 The afternoon shore breeze
Plate tectonics	ESS-N03 A moving plate, a time pattern
Water and Earth materials	ESS-N04 Water through a sediment column
Orbital evidence	ESS-N05 A repeated dimming
Resources and decisions	ESS-N06 Recycling under constraints

Blueprint and score contribution

Component	Range or maximum	Unit
Space Systems	20.0 to 31.0	percent of test
History of Earth	11.0 to 20.0	percent of test
Earth Systems	20.0 to 31.0	percent of test
Weather and Climate	11.0 to 20.0	percent of test
Human Sustainability	20.0 to 31.0	percent of test
Engineering Design	3.0 to 9.0	percent of test
Phenomenon-based clusters	9.0 to 11.0	clusters
Selected response	60.0 to 60.0	approx percent items
Constructed response	40.0 to 40.0	approx percent items
Required-investigation-linked questions	15.0 to 15.0	approx percent items

Inherited NYSED guide snapshot. Consult the current linked guide before operational use. Ranges describe blueprint constraints. Distinct units and weighting rules must be retained.

Preserve the scoring interpretation

A local response criterion supports feedback about that task. A shortened exam or modified full-length assembly lacks the state form's validated conversion. Report separate evidence for independent and prompted work. Preserve item weights when describing coverage.

Code ledger and form prevalence

Each row reports forms with at least one valid matching slot. A count such as 1/2 is a form prevalence, not student accuracy. Codes are retained at their actual mapping granularity. ELA writing tasks carry broad mappings and are excluded from this frequency ledger.

Published code / label	Jan	June	Aug	All
HS-ESS1-1 Energy from the Sun	0/1	2/2	2/2	4/5
HS-ESS1-2 Evidence about the early universe	1/1	2/2	2/2	5/5
HS-ESS1-3 Stellar formation of elements	1/1	2/2	2/2	5/5
HS-ESS1-4 Motion of orbiting objects	1/1	2/2	2/2	5/5
HS-ESS1-5 Plate motions and crustal age	0/1	2/2	0/2	2/5
HS-ESS1-6 Evidence of early Earth history	1/1	1/2	2/2	4/5
HS-ESS1-7 Cycles of the Sun, Earth and Moon	1/1	2/2	2/2	5/5
HS-ESS2-1 Surface processes across scales	1/1	2/2	2/2	5/5
HS-ESS2-2 Feedback across Earth systems	1/1	2/2	2/2	5/5
HS-ESS2-3 Earth interior and convection	1/1	1/2	2/2	4/5
HS-ESS2-4 Energy flow and climate	1/1	1/2	2/2	4/5
HS-ESS2-5 Water and surface processes	1/1	2/2	2/2	5/5
HS-ESS2-6 Carbon cycling among reservoirs	1/1	2/2	1/2	4/5
HS-ESS2-7 Coevolution of life and Earth	1/1	1/2	2/2	4/5
HS-ESS2-8 Air masses and weather	1/1	1/2	2/2	4/5
HS-ESS3-1 Resources, hazards, climate and human activity	1/1	2/2	2/2	5/5

Published code / label	Jan	June	Aug	All
HS-ESS3-2 Trade-offs in resource use	1/1	2/2	2/2	5/5
HS-ESS3-3 Human activity and sustainability	1/1	2/2	1/2	4/5
HS-ESS3-4 Human impacts and technical solutions	1/1	2/2	2/2	5/5
HS-ESS3-5 Climate evidence and projections	1/1	1/2	1/2	3/5
HS-ESS3-6 Human changes to Earth systems	1/1	2/2	2/2	5/5
HS-ETS1-1 Define a design problem	0/1	1/2	1/2	2/5
HS-ETS1-2 Break down a complex problem	0/1	1/2	0/2	1/5
HS-ETS1-3 Evaluate trade-offs among solutions	1/1	2/2	1/2	4/5
HS-ETS1-4 Use simulations to evaluate a solution	1/1	0/2	0/2	1/5

Zero observed January forms provide no winter rate. Multiple codes can describe the same slot. Labels are short teaching descriptions, and official code wording and its boundary remain authoritative.

Topics, trend and stimulus hypotheses

Climate and energy

HS-ESS2-4
January 1/1 | June 1/2 | August 2/2

Pooled planning probability 71.4% for a union of named codes in 4/5 forms. Nominal observed-prevalence interval 38%-96%. Union of named official codes on valid printed scoring slots in fully mapped target forms.

Design hypothesis constructed energy budget using ice-albedo comparison. Preserve the target relationship and change the setting.

Weather and circulation

HS-ESS2-8
January 1/1 | June 1/2 | August 2/2

Pooled planning probability 71.4% for a union of named codes in 4/5 forms. Nominal observed-prevalence interval 38%-96%. Union of named official codes on valid printed scoring slots in fully mapped target forms.

Design hypothesis constructed temperature transect using lake-effect pattern. Preserve the target relationship and change the setting.

Plate tectonics

HS-ESS2-1
January 1/1 | June 2/2 | August 2/2

Pooled planning probability 85.7% for a union of named codes in 5/5 forms. Nominal observed-prevalence interval 57%-100%. Union of named official codes on valid printed scoring slots in fully mapped target forms.

Design hypothesis constructed island-age model using seafloor age transect. Preserve the target relationship and change the setting.

Water and Earth materials

HS-ESS2-5
January 1/1 | June 2/2 | August 2/2

Pooled planning probability 85.7% for a union of named codes in 5/5 forms. Nominal observed-prevalence interval 57%-100%. Union of named official codes on valid printed scoring slots in fully mapped target forms.

Design hypothesis constructed investigation design using permeability investigation. Preserve the target relationship and change the setting.

Orbital evidence

HS-ESS1-4
January 1/1 | June 2/2 | August 2/2

Pooled planning probability 85.7% for a union of named codes in 5/5 forms. Nominal observed-prevalence interval 57%-100%. Union of named official codes on valid printed scoring slots in fully mapped target forms.

Design hypothesis constructed light-curve data using planet position table. Preserve the target relationship and change the setting.

Resources and decisions

HS-ESS3-2
January 1/1 | June 2/2 | August 2/2

Pooled planning probability 85.7% for a union of named codes in 5/5 forms. Nominal observed-prevalence interval 57%-100%. Union of named official codes on valid printed scoring slots in fully mapped target forms.

Design hypothesis constructed resource comparison using mineral recovery design. Preserve the target relationship and change the setting.

The contexts are possible practice stimuli. Their probabilities are unestimated. The quantitative estimates apply only to the named mapped-code event. Rows overlap and are not additive.

Observed public stimuli by topic

Climate and energy

ESS_2026_08 Q42-46 Hunga Tonga-Hunga Ha’pai Volcano

Text cues graph|table|model|map

Open this source set or cluster

ESS_2026_08 Q23-27 Carbon Emissions in Industry

Text cues table|model|map

Open this source set or cluster

Weather and circulation

ESS_2026_08 Q42-46 Hunga Tonga-Hunga Ha’pai Volcano

Text cues graph|table|model|map

Open this source set or cluster

ESS_2026_08 Q33-37 The Gulf

Text cues model|map

Open this source set or cluster

Plate tectonics

ESS_2026_08 Q33-37 The Gulf

Text cues model|map

Open this source set or cluster

ESS_2026_08 Q10-14 Canary Islands Hotspot

Text cues map

Open this source set or cluster

Water and Earth materials

ESS_2026_08 Q19-22 Dams on the Colorado River

Text cues graph|table|model|map

Open this source set or cluster

ESS_2026_08 Q15-18 Earth’s Oceans–A Climate Change Indicator

Text cues graph

Open this source set or cluster

Orbital evidence

ESS_2026_08 Q38-41 Full Supermoon Events in 2024

Text cues graph|table|model|photograph

Open this source set or cluster

ESS_2026_08 Q1-4 Cyclic Patterns

Text cues graph|table|model

Open this source set or cluster

Resources and decisions

ESS_2026_08 Q23-27 Carbon Emissions in Industry

Text cues table|model|map

Open this source set or cluster

ESS_2026_06 Q1-4 Iceland Hotspot

Text cues table|map

Open this source set or cluster

A source-set overlap with a code is broader than a one-to-one match between the format and the entire expectation. The full CSV retains all observed sets and joins.

Released item exemplars and mappings

Climate and energy / ESS-N01

Practice evidence A reflects 25% and absorbs 600 W/m². B reflects 60% and absorbs 320 W/m².

ESS_2026_08_43 public question

Official published mapping

Verification route live map row match

Weather and circulation / ESS-N02

Practice evidence Surface air flows from water toward land, rises over land, returns aloft toward water, and descends over water in the simplified model.

ESS_2026_08_44 public question

Official published mapping

Verification route live map row match

Plate tectonics / ESS-N03

Practice evidence 200 km/2 million years=0.1 m/year=10 cm/year. The Z pair gives the same estimate.

ESS_2026_08_35 public question

Official published mapping

Verification route live map row match

Water and Earth materials / ESS-N04

Practice evidence Use replicate columns, equal geometry, starting dryness, input volume and time. Change grain size while controlling packing and material composition as closely as feasible.

ESS_2026_08_20 public question

Official published mapping

Verification route live map row match

Orbital evidence / ESS-N05

Practice evidence The intervals are six days, giving a modeled six-day period.

ESS_2026_08_41 public question

Official published mapping

Verification route live map row match

Resources and decisions / ESS-N06

Practice evidence A costs about $1667 per tonne and fits the budget. B costs $1875 per tonne and exceeds it.

ESS_2026_08_27 public question

Official published mapping

Verification route live map row match

The connection is a shared published code. Compare the complete tasks before treating them as equivalent practice.

Link a circulation change to weather

ESS_2026_06 Q14 | Published result 1 credit criterion

Observed evidence

The guide requires both a change in the polar jet stream pattern and a corresponding weather change.

Possible interpretation

A student may describe the map correctly but stop before explaining the weather consequence.

Diagnostic prompt

Trace the air movement toward the region. How does that change local conditions?

Teaching move

Trace the pathway on the map, then write one sentence linking circulation to the weather in a named area.

Public task

Sample or criterion

Commentary

Official mapping

This is a selected released example or criterion. Local student work was not supplied. Preserve alternate explanations until a new response distinguishes them.

Track two Earth systems

ESS_2026_06 Q30 | Published result 1 credit criterion

Observed evidence

The point requires two systems and two accurate descriptions of urbanization’s effect on the water cycle.

Possible interpretation

A repeated term such as runoff may hide that only one system or one effect has been addressed.

Diagnostic prompt

Where did the water go? Which second system gained or lost water, and by what process?

Teaching move

Use a before-and-after pathway. Label each Earth system and explain two different changes.

Public task

Sample or criterion

Commentary

Official mapping

This is a selected released example or criterion. Local student work was not supplied. Preserve alternate explanations until a new response distinguishes them.

Connect transit duration to a model

ESS_2026_06 Q46 | Published result 1 credit criterion

Observed evidence

The guide specifies an acceptable duration range for each star and requires an explanatory relationship. It distinguishes the star 16B from the planet 16b.

Possible interpretation

A reversal may be a labeling or graph-reading issue rather than a misconception about orbital motion.

Diagnostic prompt

Point to each dip and read its duration. Which object is crossing which disk?

Teaching move

Separate graph reading from model explanation. Mark entry and exit before comparing duration and disk size.

Public task

Sample or criterion

Commentary

Official mapping

This is a selected released example or criterion. Local student work was not supplied. Preserve alternate explanations until a new response distinguishes them.

Six original contexts and the prep route

Card	Target relationship	Transfer condition
ESS-N01 A roof and its energy budget	Calculate reflected fractions and absorbed solar energy per square meter.	Double roof area. Distinguish energy per square meter from total power.
ESS-N02 The afternoon shore breeze	Draw a circulation model with surface and upper-level arrows.	Reverse the nighttime surface temperature contrast and revise the arrows.
ESS-N03 A moving plate, a time pattern	Estimate the modeled plate speed in centimeters per year.	Introduce a bend in the chain while retaining ages. Identify a possible change in plate motion.
ESS-N04 Water through a sediment column	Design a repeated comparison to test the effect of grain size.	Change grain size and packing together. Explain why the cause of a changed drainage rate becomes harder to identify.
ESS-N05 A repeated dimming	Infer the modeled orbital period.	Make the intervals 6, 6 and 12 days. Propose a missed observation and a competing model.
ESS-N06 Recycling under constraints	Compare cost per recovered tonne and budget feasibility.	Add a reuse option and specify the comparable evidence needed to evaluate all three.

Retained three-week Studio sequence

Week 1 session 1 Read a stream record

Week 1 session 2 Decode a contour crossing

Week 2 session 3 Use relative time evidence

Week 2 session 4 Explain a seasonal difference

Week 3 session 5 Infer motion from paired locations

Week 3 session 6 Make a watershed decision

The practice folder contains the prior standalone original exam, Form B rehearsal insert and directions, exam guide, six-session student prep and worked responses. Separate new stimulus student and teacher books add these six contexts. Use the full-length public booklet links in the assembly map.

Connections and department decisions

ESS-N01 A roof and its energy budget

Treating an energy-flux difference as an equal numerical temperature difference. This is a diagnostic hypothesis. Ask the learner to explain the step before selecting a response.

Related reasoning ALG1-N05 Labels on an exponential model, BIO-N03 Where does the dry mass come from?

ESS-N02 The afternoon shore breeze

Equating the motion of warm rising air with the horizontal wind direction. This is a diagnostic hypothesis. Ask the learner to explain the step before selecting a response.

Related reasoning ALG2-N04 A randomized tutoring comparison, GLOBAL2-N02 Mechanization and the household

ESS-N03 A moving plate, a time pattern

Reading the age sequence as evidence that all islands erupted at the same time. This is a diagnostic hypothesis. Ask the learner to explain the step before selecting a response.

Related reasoning ALG1-N04 Same center, different repair times, ALG1-N06 Measuring foam panels

ESS-N04 Water through a sediment column

Equating high porosity with guaranteed rapid drainage without considering pore connection and water retention. This is a diagnostic hypothesis. Ask the learner to explain the step before selecting a response.

Related reasoning ALG1-N05 Labels on an exponential model, BIO-N03 Where does the dry mass come from?

ESS-N05 A repeated dimming

Equating transit duration with the full orbital period. This is a diagnostic hypothesis. Ask the learner to explain the step before selecting a response.

Related reasoning ALG1-N02 Raised garden arch, GEO-N06 Which transformations undo each other?

ESS-N06 Recycling under constraints

Treating a single cost-benefit ratio as a complete account of environmental and social consequences. This is a diagnostic hypothesis. Ask the learner to explain the step before selecting a response.

Related reasoning ALG1-N01 Charging the battery cart, ALG1-N03 Two receipt checks

Use the anonymous calibration record to preserve the initial judgments, criterion evidence, an instructional move and a new independent response. Review the same reasoning in a changed context and record prior exposure.