

RI Next Generation Science Assessment

Scale Scores, Overall Achievement Levels, and Performance Levels by Science Discipline

Rhode Island State Assessment Program Administration



Understanding Student Performance on RI NGSA

- **Scale Score:** a student's score from 1-120 that shows how well overall a student performed
- **Overall Achievement Level:** how well a student met grade level expectations according to the *Next Generation Science Standards*. A student will receive one of the following levels:
 1. Beginning to Meet Expectations
 2. Approaching Expectations
 3. Meeting Expectations
 4. Exceeding Expectations
- **Performance Level by Science Discipline:** how well a student performed in each of the three domains of science – *Life Sciences*, *Physical Sciences*, and *Earth and Space Sciences*. A student will receive one of the following levels per discipline:
 1. Below Mastery
 2. At/Near Mastery
 3. Above Mastery



General Information about RI NGSA Scoring

- The scale score that students receive falls within the score range for one of the achievement levels:
 - Achievement level descriptions are the same for grades 5, 8, & 11
 - Score ranges for achievement levels are different for grades 5, 8, & 11
- Students receive information about their level of mastery for each of the three science disciplines:
 - Descriptions are different for each grade level since they are based on the content and skills specific to each grade level's standards
 - Level of mastery is not a numerical score, though in the AIRWays Reporting System students' performance is further distilled by performance expectations within each domain



Key Takeaways

- Reviewing overall achievement levels and performance levels by discipline at the LEA, school, and student group levels can show misalignment or gaps in scope and sequence or curriculum
- LEA or school performance "below mastery" for a specific science discipline may be an area for growth – LEA or school performance "at/near mastery" or "above mastery" are areas of strength
- Over time, assessing overall school and district performance in science can find performance trends at each grade level
- Accountability for SY 2021-22 will include measures for science proficiency and science assessment participation using the science assessment data from SY 2020-21 and SY 2021-22



Grade 5 – Achievement Levels

Achievement Level 4: Exceeding Expectations	Achievement Level 3: Meeting Expectations	Achievement Level 2: Approaching Expectations	Achievement Level 1: Beginning to Meet Expectations
Score Range: 72 to 120	Score Range: 60 to 71	Score Range: 38 to 59	Score Range: 1 to 37
<p>Students who achieve at this level demonstrate advanced understanding of knowledge and skills needed to apply three dimensions of science to question, evaluate, and explain science phenomena. Student performance based on assessment results exceeds grade level expectations.</p>	<p>Students who achieve at this level demonstrate satisfactory understanding of knowledge and skills needed to apply three dimensions of science to question, evaluate, and explain science phenomena. Student performance based on assessment results meets grade level expectations.</p>	<p>Students who achieve at this level demonstrate minimal understanding of knowledge and skills needed to apply three dimensions of science to question, evaluate, and explain science phenomena. Student performance based on assessment results partially meets grade level expectations.</p>	<p>Students who achieve at this level demonstrate initial understanding of knowledge and skills needed to apply three dimensions of science to question, evaluate, and explain science phenomena. Student performance based on assessment results begins to meet grade level expectations.</p>

Grade 5 – Domain-Level Performance

Performance Level	Above Mastery	At/Near Mastery	Below Mastery
Life Sciences	Your student can consistently model life cycles and movement of matter in ecosystems; use evidence to explain that organisms need structures to live; and interpret data to show that individuals inherit traits, populations have different traits, and some organisms thrive in specific environments.	Your student can sometimes model life cycles and movement of matter in ecosystems; use evidence to explain that organisms need structures to live; and interpret data to show that individuals inherit traits, populations have many different traits, and some organisms thrive in specific environments.	Your student may have difficulty modeling life cycles and movement of matter in ecosystems; using evidence to explain that organisms need structures to live; and interpreting data to show that individuals inherit traits, populations have many different traits, and some organisms thrive in specific environments.
Physical Sciences	Your student can consistently conduct experiments to explain the structure of matter, signs of chemical change, and how forces affect the motion of objects; use evidence to explain speed and energy transfer; and model particles of matter and light waves.	Your student can sometimes conduct experiments to explain the structure of matter, signs of chemical change, and how forces affect the motion of objects; use evidence to explain speed and energy transfer; and model particles of matter and light waves.	Your student may have difficulty conducting experiments to explain the structure of matter, signs of chemical change, and how forces affect the motion of objects; using evidence to explain speed and energy transfer; and modeling particles of matter and light waves.
Earth and Space Sciences	Your student can consistently display data to show the results of Earth’s movements around the sun; graph global distribution of fresh and salt water; model interactions of the geosphere, biosphere, hydrosphere, and atmosphere; and use evidence to analyze solutions to hazards caused by weather.	Your student can sometimes display data to show the results of Earth’s movements around the sun; graph where fresh and salt water exist on Earth; model interactions of the geosphere, biosphere, hydrosphere, and atmosphere; and use evidence to analyze solutions to hazards caused by weather.	Your student may have difficulty presenting data to show the results of Earth’s movements around the sun; graphing where fresh and salt water exist on Earth; modeling interactions of the geosphere, biosphere, hydrosphere, and atmosphere; and using evidence to analyze solutions to hazards caused by weather.



Grade 8 – Achievement Levels

Achievement Level 4: Exceeding Expectations	Achievement Level 3: Meeting Expectations	Achievement Level 2: Approaching Expectations	Achievement Level 1: Beginning to Meet Expectations
Score Range: 75 to 120	Score Range: 60 to 74	Score Range: 38 to 59	Score Range: 1 to 37
<p>Students who achieve at this level demonstrate advanced understanding of knowledge and skills needed to apply three dimensions of science to question, evaluate, and explain science phenomena. Student performance based on assessment results exceeds grade level expectations.</p>	<p>Students who achieve at this level demonstrate satisfactory understanding of knowledge and skills needed to apply three dimensions of science to question, evaluate, and explain science phenomena. Student performance based on assessment results meets grade level expectations.</p>	<p>Students who achieve at this level demonstrate minimal understanding of knowledge and skills needed to apply three dimensions of science to question, evaluate, and explain science phenomena. Student performance based on assessment results partially meets grade level expectations.</p>	<p>Students who achieve at this level demonstrate initial understanding of knowledge and skills needed to apply three dimensions of science to question, evaluate, and explain science phenomena. Student performance based on assessment results begins to meet grade level expectations.</p>

Grade 8 – Domain-Level Performance

Performance Level	Above Mastery	At/Near Mastery	Below Mastery
Life Sciences	Your student can consistently use experimental data and models to describe cells and systems of living things; model links between genetic variation, organisms, populations, energy, and matter in ecosystems; and use fossil data to explain changes in populations over time.	Your student can sometimes use experimental data and models to describe cells and systems of living things; model links between genetic variation, organisms, populations, energy, and matter in ecosystems; and use fossil data to explain changes in populations over time.	Your student may difficulty using experimental data and models to describe cells and systems of living things; modeling links between genetic variation, organisms, populations, energy, and matter in ecosystems; and using fossil data to explain changes in populations over time.
Physical Sciences	Your student can consistently model and interpret data about chemical reactions; predict, model, and calculate features and energy of waves; and investigate, graph, and make claims about the motion, mass, forces, and energy of objects.	Your student can sometimes model and interpret data about chemical reactions; predict, model, and calculate features and energy of waves; and investigate, graph, and make claims about the motion, mass, forces, and energy of objects.	Your student may difficulty modeling and interpreting data about chemical reactions; predicting, modeling, and calculating features and energy of waves; and investigating, graphing, and making claims about the motion, mass, forces, and energy of objects.
Earth and Space Sciences	Your student can consistently develop and use models to describe the motion of celestial bodies, gravity, energy flow, and matter cycles; and analyze data to explain properties of the solar system, Earth’s history, geologic time scales and processes, Earth’s resources, and human impact on the environment.	Your student can sometimes develop and use models to describe the motion of celestial bodies, gravity, energy flow, and matter cycles; and analyze data to explain properties of the solar system, Earth’s history, geologic time scales and processes, Earth’s resources, and human impact on the environment.	Your student may have difficulty developing and using models to describe the motion of celestial bodies, gravity, energy flow, and matter cycles; and analyzing data to explain properties of the solar system, Earth’s history, geologic time scales and processes, Earth’s resources, and human impact on the environment.



Grade 11 – Achievement Levels

Achievement Level 4: Exceeding Expectations	Achievement Level 3: Meeting Expectations	Achievement Level 2: Approaching Expectations	Achievement Level 1: Beginning to Meet Expectations
Score Range: 71 to 120	Score Range: 60 to 70	Score Range: 36 to 59	Score Range: 1 to 35
<p>Students who achieve at this level demonstrate advanced understanding of knowledge and skills needed to apply three dimensions of science to question, evaluate, and explain science phenomena. Student performance based on assessment results exceeds grade level expectations.</p>	<p>Students who achieve at this level demonstrate satisfactory understanding of knowledge and skills needed to apply three dimensions of science to question, evaluate, and explain science phenomena. Student performance based on assessment results meets grade level expectations.</p>	<p>Students who achieve at this level demonstrate minimal understanding of knowledge and skills needed to apply three dimensions of science to question, evaluate, and explain science phenomena. Student performance based on assessment results partially meets grade level expectations.</p>	<p>Students who achieve at this level demonstrate initial understanding of knowledge and skills needed to apply three dimensions of science to question, evaluate, and explain science phenomena. Student performance based on assessment results begins to meet grade level expectations.</p>

Grade 11 – Domain-Level Performance

Performance Level	Above Mastery	At/Near Mastery	Below Mastery
Life Sciences	Your student can almost always model atomic structure, properties of waves in various media, and the effects of energy and forces on systems; explain changes in matter, reactions, and energy as conditions are modified; and plan experiments to collect data showing relationships between force, mass and acceleration.	Your student can sometimes investigate homeostatic feedback loops; explain the role of DNA in heredity and protein synthesis; support claims about changes of matter, energy, and organisms in ecosystems; and use data to explain changes in genetic variation and distribution of traits within populations.	Your student may have trouble investigating homeostatic feedback loops; explaining the role of DNA in heredity and protein synthesis; supporting claims about changes of matter, energy, and organisms in ecosystems; and using data to explain changes in genetic variation and distribution of traits within populations.
Physical Sciences	Your student can almost always model atomic structure, properties of waves in various media, and the effects of energy and forces on systems; explain changes in matter, reactions, and energy as conditions are modified; and plan experiments to collect data showing relationships between force, mass, and acceleration.	Your student can sometimes model atomic structure, properties of waves in various media, and the effects of energy and forces on systems; explain changes in matter, reactions, and energy as conditions are modified; and plan experiments to collect data showing relationships between force, mass, and acceleration.	Your student may have trouble modeling atomic structure, properties of waves in various media, and the effects of energy and forces on systems; explaining changes in matter, reactions, and energy as conditions are modified; and planning experiments to collect data on relationships of force, mass, and acceleration.
Earth and Space Sciences	Your student can almost always use math to predict the motion of objects in the solar system, evaluate information to describe stars of various masses and ages, model the effects of energy flow on Earth's systems, and predict changes to climate based on data.	Your student can sometimes use math to predict the motion of objects in the solar system, evaluate information to describe stars of various masses and ages, model the effects of energy flow on Earth's systems, and predict changes to climate based on data.	Your student may have trouble using math to predict the motion of objects in the solar system, evaluating information to describe stars of various masses and ages, modeling the effects of energy flow on Earth's systems, and predicting changes to climate based on data.