

Assumptions

Based on a recommended CR worth a maximum of 3 pts.

Since there are a large number of expectations, a reasonable goal would be to assess all of the expectations within a 2-3 year period. This explains the presence of zeros in multiple columns on the TOS and blueprints.

A minimum number of 6 points per reporting category in the Engineering/Technology reporting category reflects the requested change by DESE.

Large range in Number of Items and Points in Operational and Field Test Categories reflects the variation in the number of items per scenario that will be field tested and survive, the number of standalone items that are field tested and survive, and point values per item can be 1-3 points.

Linking items are between-form anchors only, there will be no linking between 2018 and 2019 administrations

Missouri Grade 5 Science Test Blueprint and Test Design—2019 Administration

Science Core Points by Domain and Strand

| Domain/Reporting Category | Strand | Item Types | Number of Points | Percent of Total |
|------------------------------------|---|------------------|------------------|------------------|
| Physical Science | Matter and Its Interactions (6) | SR, CR, TE | 6-8 | 10-13% |
| | Motion and Stability: Forces and Interactions (6) | SR, CR, TE | 6-8 | 10-13% |
| | Energy (5) | SR, CR, TE | 5-7 | 8-11% |
| | Waves and Their Applications in Technologies for Information Transfer (2) | SR, CR, TE | 0-4 | 0-6% |
| | Total PS | | 20-23 | 34-38% |
| Life Science | From Molecules to Organisms: Structure and Processes (6) | SR, CR, TE | 6-8 | 10-13% |
| | Heredity: Inheritance and Variation of Traits (1) | SR, CR, TE | 0-4 | 0-5% |
| | Ecosystems: Interactions, Energy, and Dynamics (4) | SR, CR, TE | 5-7 | 8-11% |
| | Total LS | | 14-17 | 24-28% |
| Earth and Space Science | Earth's Place in the Universe (4) | SR, CR, TE | 4-6 | 6-10% |
| | Earth's Systems (6) | SR, CR, TE | 6-8 | 10-13% |
| | Earth and Human Activity (3) | SR, CR, TE | 3-5 | 5-8% |
| | Total ESS | | 14-17 | 24-28% |
| Engineering and Technology Science | Engineering Design (3) | SR, CR, TE | 6-9 | 10-14% |
| | | Total ETS | 6-9 | 10-14% |
| Total Grade 5 Science | | | 60 | 100% |

() indicates number of expectations in each strand

| Item Types* | |
|-------------|--|
| SR | Multiple-choice Multi-Select ((similar to Multiple Choice but with multiple correct responses) |
| CR | Open-ended questions that require students to create a written response. Auto-Scored Constructed Response (e.g., number input) Hand-Scored Constructed Response (e.g., text box, list input) |
| TE | Bar Graph (creating a bar graph) Coordinate Graph (graphing on a coordinate grid) Drag and Drop (dragging text or graphics into a drop area) Drop-Down Menu (responding by selecting an option provided in a drop-down menu), Highlighting Text (selecting specific text based on the given task) Matching (using a line to connect options in a left column with those in a right column) Select Answer/Hot Spot (selecting one or more graphics or area(s) in a graphic based on the given task) |

*Assessable item types are to be determined

Science Test Form Design-2019 and Beyond

| Session | Session Description | Total Operational Linking Points* | Total Unique Operational Points | Total Operational Points | Total Field Test Points | Total Points | Recommended Session Time (min) |
|--------------|---|-----------------------------------|---------------------------------|--------------------------|-------------------------|--------------|--------------------------------|
| 1 | Mixed Use: Operational Scenario(s) and Standalone items and Field Test Standalone Items | 7-15 | 7-16 | 15-30 | 0-6 | 20-30 | 45-60 |
| 2 | Mixed Use: Operational Scenario(s) and Standalone items and Field Test Standalone Items | 7-15 | 7-16 | 15-30 | 0-6 | 20-30 | 45-60 |
| 3 | Mixed Use: Operational Stand alone items and Field Test Scenario and Standalone items | 5-8 | 5-8 | 10-15 | 10-15 | 20-30 | 45-60 |
| Total | | 25-35 | 25-35 | 60 | 15-20 | 75-80 | 135-180 |

*Linking items are between-form anchors only, there will be no linking between 2018 and 2019 administrations

| Missouri Grade 8 Science Test Blueprint and Test Design—2019 Administration | | | | |
|---|---|------------------|------------------|------------------|
| Science Core Points by Domain and Strand | | | | |
| Domain/Reporting Category | Strand | Item Types | Number of Points | Percent of Total |
| Physical Science | Matter and Its Interactions (6) | SR, CR, TE | 5-7 | 8-12% |
| | Motion and Stability: Forces and Interactions (5) | SR, CR, TE | 4-6 | 6-10% |
| | Energy (5) | SR, CR, TE | 4-6 | 6-10% |
| | Waves and Their Applications in Technologies for Information Transfer (2) | SR, CR, TE | 0-4 | 0-6% |
| | Total PS | | 18-20 | 30-33% |
| Life Science | From Molecules to Organisms: Structure and Processes (7) | SR, CR, TE | 6-8 | 10-13% |
| | Ecosystems: Interactions, Energy, and Dynamics (5) | SR, CR, TE | 3-5 | 5-8% |
| | Biological Evolution; Unity and Diversity (4) | SR, CR, TE | 3-5 | 5-8% |
| | Total LS | | 14-16 | 23-27% |
| Earth and Space Science | Earth's Place in the Universe (5) | SR, CR, TE | 4-6 | 6-10% |
| | Earth's Systems (6) | SR, CR, TE | 5-7 | 8-12% |
| | Earth and Human Activity (5) | SR, CR, TE | 4-6 | 6-10% |
| | Total ESS | | 14-16 | 23-27% |
| Engineering and Technology, and Application of Science | Engineering Design (4) | SR, CR, TE | 10-12 | 16-20% |
| | | Total ETS | 10-12 | 16-20% |
| Total Grade 8 Science | | | 60 | 100% |

() indicates number of expectations in each strand

| Science Test Form Design-2019 and Beyond | | | | | | | |
|--|---|-----------------------------------|---------------------------------|--------------------------|-------------------------|--------------|--------------------------------|
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*Assessable item types are to be determined

| Number of Science Forms in the Spring 2019 Administration and Beyond | |
|--|--|
| Grade | Number of Online Forms |
| 5 | 16 total: 7 Operational forms with field test slots (Core Form A) 7 Operational forms with field test slots (Core Form B) 1 Breach (no field tests slots) 1 Transcription Core Form A (no field test slots)* |
| 8 | 16 total: 7 Operational forms with field test slots (Core Form A) 7 Operational forms with field test slots (Core Form B) 1 Breach (no field tests slots) 1 Transcription Core Form A (no field test slots)* |

* Transcription form to be used for Braille, LP & Print Accommodations

| Number of Items and Points in the Science On-line Test Forms | | | | | | | |
|--|------|-------------------------|--------------------------|------------------------|-------------------------|-------------|--------------|
| Grade | Form | Total Operational Items | Total Operational Points | Total Field Test Items | Total Field Test Points | Total Items | Total Points |
| 5 | A | 35-42 | 60 | 9-12 | 15-20 | 44-54 | 75-80 |
| 5 | B | 35-42 | 60 | 9-12 | 15-20 | 44-54 | 75-80 |
| 8 | A | 36-44 | 60 | 9-12 | 15-20 | 45-54 | 76-80 |
| 8 | B | 36-44 | 60 | 9-12 | 15-20 | 45-56 | 75-80 |

| Science Timing Estimates | | |
|--------------------------|-------------------|--------------------------------|
| Grade Session | Recommended Range | Recommended Range (Total Test) |
| Grade 5 Session 1 | 45-60 | 135-190 |
| Grade 5 Session 2 | 45-60 | |
| Grade 5 Session 3 | 45-60 | |
| Grade 8 Session 1 | 45-60 | 135-190 |
| Grade 8 Session 2 | 45-60 | |
| Grade 8 Session 3 | 45-60 | |