

Science – Grade 4

Science, Technology, Society, Environment (STSE)

4 - Excelling	3 - Meeting	2 - Approaching	1 - Working Below
Independently and consistently describes that science and technology uses processes to investigate the natural and constructed world (e.g., multiple trials, re-testing, variations in data)	Generally describes that science and technology uses processes to investigate the natural and constructed world (e.g., multiple trials, re-testing, variations in data)	Sometimes (or with support) describes that science and technology uses processes to investigate the natural and constructed world (e.g., multiple trials, re-testing, variations in data)	Has difficulty (even with support) describing that science and technology uses processes to investigate the natural and constructed world (e.g., multiple trials, re-testing, variations in data)
Independently and consistently describes that science and technology develop over time	Generally describes that science and technology develop over time	Sometimes (or with support) describes that science and technology develop over time	Has difficulty (even with support) describing that science and technology develop over time
Independently and consistently describes ways that science and technology work together	Generally describes ways that science and technology work together	Sometimes (or with support) describes ways that science and technology work together	Has difficulty (even with support) describing ways that science and technology work together
Independently and consistently evaluates reliability of sources	Generally evaluates reliability of sources	Sometimes (or with support) evaluates reliability of sources	Has difficulty (even with support) evaluating reliability of sources
Independently and consistently describes applications of science and technology that have developed in response to human and environmental needs	Generally describes applications of science and technology that have developed in response to human and environmental needs	Sometimes (or with support) describes applications of science and technology that have developed in response to human and environmental needs	Has difficulty (even with support) describing applications of science and technology that have developed in response to human and environmental needs
Independently and consistently describes positive and negative effects that result from applications of science and technology in their own lives, the lives of others, and the environment	Generally describes positive and negative effects that result from applications of science and technology in their own lives, the lives of others, and the environment	Sometimes (or with support) describes positive and negative effects that result from applications of science and technology in their own lives, the lives of others, and the environment	Has difficulty (even with support) describing positive and negative effects that result from applications of science and technology in their own lives, the lives of others, and the environment
Evidence: (following “Knowledge” section)			

Science – Grade 4

Skills: Plan, Perform

4 - Excelling	3 - Meeting	2 - Approaching	1 - Working Below
Independently and consistently states clearly testable questions identifying all necessary observable or measurable characteristics	Generally rephrases clearly questions in a testable form identifying necessary observable or measurable characteristics)	Sometimes (or with support) states a question answerable by doing an experiment identifying some observable or measurable characteristics	Has difficulty (even with support) stating a question answerable by doing an experiment seldom identifying observable or measurable characteristics
Independently and consistently selects all relevant variables to test, control, and measure	Generally selects relevant variables to ensure a fair test (controlling variables)	Sometimes (or with support) selects some variables to ensure a fair test (controlling variables)	Has difficulty (even with support) selecting variables to ensure a fair test (controlling variables)
Independently and consistently makes prediction supported by scientific learning and research	Generally makes plausible prediction supported by scientific learning	Sometimes (or with support) makes prediction supported by scientific learning	Has difficulty (even with support) making a prediction
Independently and consistently designs experiments to collect intended evidence; steps are complete, concise and can be understood by others	Generally designs experiments to collect intended evidence; steps are complete and can be understood by others	Sometimes (or with support) designs experiments to collect intended evidence; some steps may be incomplete or missing	Has difficulty (even with support) designing a complete experiment
Independently and consistently chooses appropriate materials and equipment	Generally chooses appropriate materials and equipment	Sometimes (or with support) chooses appropriate materials and equipment	Has difficulty (even with support) choosing appropriate materials and equipment
Independently and consistently conducts experiments that control all needed variables	Generally conducts experiments that control most variables	Sometimes (or with support) conducts experiments that controls some variables	Has difficulty (even with support) conducting an experiment that controls some variables
Independently and consistently uses materials, techniques and equipment competently	Generally uses materials, techniques and equipment competently	Sometimes (or with support) uses materials, techniques and equipment competently	Has difficulty (even with support) using materials, techniques and equipment
Independently and consistently observes relevant evidence	Generally observes relevant evidence	Sometimes (or with support) observes evidence	Has difficulty (even with support) observing evidence
Independently and consistently records evidence appropriately (symbols, units, labels, readability)	Generally records evidence appropriately (symbols, units, labels, readability)	Sometimes (or with support) records evidence appropriately (symbols, units, labels, readability)	Has difficulty (even with support) recording evidence (symbols, units, labels, readability)
Independently and consistently identifies and uses safety procedures	Generally identifies and uses safety procedures	Sometimes (or with support) identifies and uses safety procedures	Has difficulty (even with support) using safety procedures
Evidence: (following “Knowledge” section)			

Science – Grade 4

Skills: Analyze, Explain

4 - Excelling	3 - Meeting	2 - Approaching	1 - Working Below
Independently and consistently organizes and displays evidence efficiently and effectively (charts, graphs, tables)	Generally organizes and displays evidence appropriately and effectively (charts, graphs, tables)	Sometimes (or with support) organizes and displays evidence appropriately (charts, graphs, tables)	Has difficulty (even with support) organizing and displaying evidence appropriately (charts, graphs, tables)
Independently and consistently classifies accurately	Generally classifies accurately	Sometimes (or with support) classifies to some extent	Has difficulty (even with support) classifying
Independently and consistently recognizes and explains patterns and relationships in data	Generally recognizes patterns and relationships in data	Sometimes (or with support) recognizes some patterns in data	Has difficulty (even with support) recognizing patterns
Independently and consistently makes conclusions supported by data	Generally makes conclusions supported by data	Sometimes (or with support) makes conclusions	Has difficulty (even with support) making a conclusion
Independently and consistently relates conclusion to prediction based on research	Generally relates conclusion to prediction	Sometimes (or with support) relates conclusion to prediction	Has difficulty (even with support) relating conclusion to prediction
Independently and consistently identifies 2 or more new testable questions that arise from what was learned	Generally identifies 1-2 new questions that arise from what was learned	Sometimes (or with support) identifies another question that arises from what was learned	Has difficulty (even with support) identifying another question that arises from what was learned
Independently and consistently evaluates and suggests practical improvements to constructed objects or experimental design	Generally evaluates and suggest improvements to constructed objects or experimental design	Sometimes (or with support) evaluates and suggest improvements to constructed objects or experimental design	Has difficulty (even with support) suggesting an improvement to constructed objects or experimental design
Independently and consistently communicates questions, procedures, and results efficiently and effectively	Generally communicates questions, procedures, and results effectively	Sometimes (or with support) communicates questions, procedures, and results	Has difficulty (even with support) communicating questions, procedures, results
Independently and consistently uses specific science vocabulary appropriately	Generally uses specific science vocabulary appropriately	Sometimes (or with support) uses science vocabulary appropriately	Has difficulty (even with support) using science vocabulary appropriately
Independently and consistently expresses ideas clearly	Generally expresses ideas clearly	Sometimes (or with support) expresses ideas	Has difficulty (even with support) expressing ideas
Independently and consistently collaborates with others	Generally collaborates with others	Sometimes (or with support) collaborates with others	Has difficulty (even with support) collaborating with others
Independently and consistently seeks and respects the views of other	Generally seeks and respects the views of others	Sometimes (or with support) respects the views of others	Has difficulty (even with support) respecting the views of others
Applies findings to other situations			

Evidence: (following “Knowledge” section)

Science – Grade 4

Knowledge:

4 - Excelling	3 - Meeting	2 - Approaching	1 - Working Below
Independently and consistently demonstrates deep and extensive understanding of concepts	Generally demonstrates understanding of most concepts (4 out of 5 opportunities)	Sometimes (or with support) demonstrates understanding of some concepts (3 out of 5 opportunities)	Has difficulty (even with support) understanding concepts
Independently, consistently and completely describes content and uses specific science vocabulary appropriately	Generally descriptions of content are mostly complete, using specific science vocabulary appropriately	Sometimes (or with support) describes content (sometimes incomplete); science vocabulary used at times	Has difficulty (even with support) describing content; science vocabulary used at times
Independently and consistently communicates knowledge efficiently and effectively (written, oral, and/or visual)	Generally communicates knowledge effectively (written, oral, and/or visual)	Sometimes (or with support) communicates knowledge with some difficulty (written, oral, and/or visual)	Has difficulty (even with support) communicating knowledge (written, oral, and/or visual)
Applies content to new situations			
Evidence: (following “Knowledge” section)			

Evidence of Learning: Suggested Sources

Observations:

- Observe students during “warm up” activities
- Observe students during experiments
- Observe students during group work
- Observe student presentations and demonstrations
- “Gallery” walks

Conversations (oral/written):

- Conferences
- Interviews
- Whole class and group discussions
- Science journal entry
- Exit slips (written responses)
- Self- and peer assessment and reflection

Products:

- Quizzes (oral/written)
- Projects
- Tests
- Work samples
- Exit slips or other responses to questions
- Science journal entry
- Photos of student’s work
- Group problem solving records
- Portfolios