**Student Profile: Science Inquiry Learning Grades PreK-4**

**Student:**

DOB: ______________________

Date of Entry: _____________ Re-entry: ________________

<table>
<thead>
<tr>
<th>Year</th>
<th>Grade</th>
<th>Teacher</th>
<th>Support Service Provider</th>
<th>Case Manager</th>
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The Student Profile for Science Inquiry Learning provides a guide for instructional planning, progress monitoring, and documentation of essential learning of science inquiry skills and concepts within and across grades PreK–4. The science skills and concepts listed have been integrated with consideration of developing literacy and numeracy skills at these grade levels. At the end of each school year, samples of student work could accompany this record when the Profile is passed on to the next year’s teacher.

- Grade level teams can begin using the Profile by listing the major units of study for Earth & Space Science, Physical Science, and Life Science on page 3 under the columns at the far right. Sample units for grade 2 have been filled in to illustrate this first step. This helps to see the balance of units across science domains.

- Next, list the assessment tools (by name or description) under column E (page 3) that are used for each unit of study. Teachers/teams must determine which assessments to include - performance tasks, science notebook entries, etc. In the grade 2 example, the “Ice Melt Task” is a performance task used in the physical science unit, Solids, Liquids, & Gases. This investigation assesses use of prior knowledge or evidence to explain predictions, which corresponds to A-10. (A-Formulating Questions, skill #10 for grade 2). Other skills assessed with this task might also include other grade 2 skills: A-11 (identify variables), C-13 (draw key features), C-14 (explain similarities/differences), and D-12 (organize data). (See highlighting on pages 2-3 of Profile for skills assessed with the grade 2 Ice Melt Task.)

**DIRECTIONS for Documenting Progress:**

/ in the box indicates the skill/concept has been introduced, but the student has not yet demonstrated conceptual understanding or consistently applied the skill in the context of an investigation. It may be necessary to: scaffold instruction; re-teach the concept using another approach or another context/investigation; or re-assess acquisition of skills/concepts at earlier levels if not yet mastered. Administering formative assessments prior to conducting extended investigations is highly recommended to guide instructional planning and appropriate timing of the summative assessments.

X in the box indicates the student has met expectations for this grade level, meaning that there is sufficient evidence (assessment data from multiple formats – teacher observations, formative assessments, performance tasks, etc.) to support this conclusion.

When including a sample of student work (e.g., for parent conferences), label the student work with the inquiry indicator letter (“A” - Formulating Questions, etc.) and include the corresponding skills/concepts assessed with that assessment task. Also list the name of the assessment tool used and be sure the student work is dated.

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Important Note: Numbers in the profile are for ease of use only and relate to a general progression, not a specific intended skill sequence.
### Science Inquiry

#### Formulating Questions & Hypothesizing

- **PreK-K**
  - Sustains curiosity and focus during teacher-guided explorations
  - Answers questions about things observed, manipulated, or predicted
  - Uses picture cues, prior knowledge, and observations to make predictions
  - Formulates questions about things observed or manipulated when cued (e.g., what do you wonder? or on own)

- **Grade 1**
  - Asks questions about things that can be observed or manipulated (how far...)
  - Connects prior knowledge/evidence to observations and predictions
  - Identifies variable to change/test (e.g., what if …more or less water?)

- **Grade 2**
  - Poses observational questions (e.g., compare differences in speed)
  - Uses prior knowledge/evidence to explain logical predictions
  - Identifies variable to change/test
  - Generates new inquiry questions

- **Grade 3**
  - Poses cause-effect questions
  - Uses observations and evidence to explain predictions (e.g., data patterns, cause-effect observations)
  - Describes variables that affect systems using “if-then” statements

- **Grade 4**
  - Connects observations to a question
  - Makes reasonable predictions based on available evidence
  - Supports prediction or question with an explanation
  - Analyzes scientific data about systems to generate questions or predictions (showing cause-effect relationships)

### Planning & Critiquing

- **PreK-K**
  - Works with others to generate simple testable questions: What tools/materials to use How to “collect” data Where/how to record data Safety rules

- **Grade 1**
  - Works with others to generate simple testable questions
  - Identifies potential data to collect and tools & materials needed
  - Works with others to develop major steps to follow to collect & record data

- **Grade 2**
  - Works with others to write a plan to answer observational questions
  - Identifies data to collect and tools and materials needed
  - Explains safety rules and (steps) procedure for data collection

- **Grade 3**
  - Develops a sequential plan to test a prediction/answer a question
  - Identifies tools, materials, and equipment needed and data to collect
  - Explains how to ensure a “fair test” (e.g., variables to control, methods) & identifies potential design flaws

### Conducting Investigations

- **PreK-K**
  - Uses multiple senses to collect data/ make observations

- **Grade 1**
  - Uses simple tools (e.g., magnifier, scale) to gather data
  - Uses nonstandard units, numbers, words, drawings to record observations

- **Grade 2**
  - Follows steps of a plan
  - Identifies differences in observable characteristics of materials or events

- **Grade 3**
  - Follows a plan to conduct investigations
  - Identifies similarities in observable characteristics of materials or events

- **Grade 4**
  - Follows all steps of a plan
  - Identifies similarities & differences in teacher-provided tables/charts/templates

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<table>
<thead>
<tr>
<th>D</th>
<th>Is the student able to use information and/or data to communicate and support ideas and draw conclusions?</th>
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<tbody>
<tr>
<td>E</td>
<td>List common assessment tasks, specific in-depth learning experiences (e.g., projects), and/or inquiry investigations used to assess science inquiry.</td>
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<tr>
<td>Earth &amp; Space Science Concepts</td>
<td>Physical Science Concepts</td>
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<tr>
<th>Developing &amp; Evaluating Explanations</th>
<th>List Common Assessments &amp; (codes for) Related Skills</th>
<th>Units of Study (&amp; assessment)</th>
<th>Units of Study (&amp; assessment)</th>
<th>Units of Study (&amp; assessment)</th>
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<tbody>
<tr>
<td>1. Nonverbally conveys ideas investigated (drawing, movement, demonstrate with objects)</td>
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<td>2. Verbally conveys ideas investigated</td>
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<td>3. Uses some letters or words to label drawings</td>
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<td>4. Organizes data (e.g., makes pictograph, colors in bar graph, fills in chart, sorts objects)</td>
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<td>5. Explains observations using props (e.g., table, drawing, graph, objects)</td>
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<td>6. Sorts/classifies objects by observable attribute (e.g., color, size, shape, etc.)</td>
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<td>7. Writes a coherent message (1-2 sentences) to describe observations (I saw…; I found out…)</td>
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<td>8. Organizes data (e.g., pictograph, diagram, bar graph, chart)</td>
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<td>9. Sorts/classifies objects and explains groupings</td>
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<td>10. Describes results (in table, diagram, drawing)</td>
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**Ice melt Task assesses:**

- A-10, A-11, C-13, C-13, D-12

**Objects in the Sky:**

- Observe things in the sky; describe movements and locations (e.g., sun, stars, clouds)

**Solids, Liquids, & Gases:**

- Observe the effects of changing temperatures

**Ice Melt Task**

**Life Cycles:**

- Investigate how life cycles of plants and animals are alike and different

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