

**Section IV**  
**Assessment #1—Content Knowledge**  
**Praxis II**

**Narrative****1. A brief description of the assessment and its use in the program**

The Praxis II content knowledge test is required for certification in Biology, Chemistry, Earth/Space, General Science, and Physical Science. It is not a Keene State College graduation requirement for graduation, but it is a NH state requirement for teacher licensure: General Science, 10425 (147 minimum required); Biology, 20235 (153); Chemistry 20245 (153); Earth/Space, 20571 (148); Physical Science, 20481 (148). Over the past three years, there have been program completers in Biology, Earth/Space Science, General Science, and Chemistry. There have been no completers in Physical Science. The Physical Science certification is no longer being offered in the State of New Hampshire. We are currently in the process of applying for Physics certification and anticipate its adoption for May 2010.

**2. A description of how this assessment specifically aligns with the standards**

The note in the *Guidebook for Program Planners and Review Writers, Chapter 4, NSTA Reviewer Criteria*, states “Praxis II should be assumed to align with NSTA standards.” This assessment aligns with Standard 1a, understanding major concepts, principles, theories, laws, and interrelationships in their fields of licensure.

**3. A brief analysis of the data findings**

There were fewer than 10 secondary science education candidates over the past three years. Data demonstrate that Keene State College has achieved over an 80% pass rate on the Praxis II Content Knowledge exam as required by NCATE. Of the eight program completers in the past three years (2007, 2008, 2009), all have passed the Praxis II exam for their content certification. This gives us an 100% pass rate (eight out of eight) over the last three years. (Because the test is not a requirement for program completion, Keene graduates who end up teaching in another state may not take the Praxis exam. For example, nearby states of Massachusetts and New York require non-ETS based licensure exams.)

**4. An interpretation of how that data provides evidence for meeting standards**

The Praxis II content knowledge exam, as acknowledged by both NSTA and KSC faculty, is an excellent indicator of the candidates’ knowledge of (1a) understanding the major concepts, principles, theories, laws, and interrelationships of their fields of licensure and supporting fields as recommended by the National Science Teachers Association. Because five of the six program completers over the past three years passed the test (87.5%), Praxis II provides evidence that our candidates meet NSTA/NCATE Standard 1a.

**5. Assessment Documentation**

**5A: Assessment Tool/Description**

Praxis II (Biology, Chemistry, Earth/Space, General Science, Physical Science)

**5B: Scoring Guide**

Educational Testing Service (ETS) provides scores. The State of New Hampshire decides the required score of candidates for each Content Knowledge exam.

**5C: Candidate Data**

(Numbers in parentheses refer to score received by test-taker, if known.)

Year	Biology 20235 NH Pass Score 153			Chemistry 20245 NH Pass Score 153			Gen. Science 10435 NH Pass Score 147			Earth/Space		
	Completers	Took Test	Passed Test	Completers	Took Test	Passed Test	Completers	Took Test	Passed Test	Completers	Took Test	Passed Test
2008-09	1	1	1	0	-	-	1	1	1	1	1	1
2007-08	0	-	-	0	-	-	2	2	2	0	-	-
2006-07	0	-	-	0	-	-	3	3	3	0	-	-
2005-06	2	2	2	1	0	-	1	1	0	0	-	-
2004-05	1	1	1	0	-	-	1	1	1	0	-	-
2003-04	1	1	1	1	1	1	1	1	1	0	-	-

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**BIOLOGY Subscores**

**Graduate 1: Subscores received on Biology #20235 (2005-06) Score Range: 100-200, Average Performance Range: 149-172**

Year 2005-2006	Basic Principles of Science	Molecular and Cellular Biology	Classical Genetics and Evolution	Diversity of Life, Plants, and Animals	Ecology	Science, Technology, and Society
Score	10	29	20	33	20	8
Possible Points	12	37	24	43	22	11
Avg. Performance	7-10	18-26	11-18	21-29	13-17	6-9

**Graduate 2: Subscores received on Biology #20235 (2005-2006) Score Range: 100-200, Average Performance Range: 149-172**

Year 2005-2006	Basic Principles of Science	Molecular and Cellular Biology	Classical Genetics and Evolution	Diversity of Life, Plants, and Animals	Ecology	Science, Technology, and Society
Score	12	31	16	30	19	9
Possible Points	13	38	23	44	22	10
Avg. Performance	7-11	17-27	10-12	18-29	12-18	5-8

**Graduate 3: Sub-scores received on Biology #0235 Score Range: 100-200**

**Graduate's score: 188\***

**NH Required Passing Score: 153**

**Status: Passed Graduate 3: Subscores received on Biology #20235 (2008-2009) Score Range: 100-200, Average Performance Range: 149-172**

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<b>Year 2008-09</b>	<b>Mol-ecular and Cell-ular Biology</b>	<b>Genetics and Evolution</b>	<b>Organ-ismal Biology and Ecology</b>	<b>Basic Principles of Science</b>	<b>Mol-ecular and Cell-ular Biology</b>	<b>Classical Genetics and Evolution</b>	<b>Diversity of Life, Plants, and Animals</b>	<b>Ecology</b>	<b>Science, Tech-nology, and Society</b>
<b>Points Earned</b>	<b>8</b>	<b>6</b>	<b>6</b>	<b>12</b>	<b>33</b>	<b>18</b>	<b>38</b>	<b>20</b>	<b>7</b>
<b>Points Available</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>12</b>	<b>39</b>	<b>23</b>	<b>41</b>	<b>22</b>	<b>10</b>
<b>Avg. Performance Range</b>	<b>2 - 4</b>	<b>2 – 6</b>	<b>4 - 6</b>	<b>6 - 9</b>	<b>20 - 28</b>	<b>10 - 16</b>	<b>22 - 31</b>	<b>13- 18</b>	<b>5 - 8</b>

\*”Your score on this test qualifies for ETS Recognition of Excellence”

**GENERAL SCIENCE**

**Graduate 1: Subscores received on General Science (2004-05) Score Range: 100-200, Average Performance Range: 155-181**

<b>Year 2004-2005</b>	<b>Scientific Methodology, Techniques and History</b>	<b>Physical Science</b>	<b>Life Sciences</b>	<b>Earth Science</b>	<b>Scientific Methodology, Techniques and History</b>
<b>Score</b>	<b>6</b>	<b>6</b>	<b>14</b>	<b>17</b>	<b>9</b>
<b>Possible Points</b>	<b>12</b>	<b>12</b>	<b>24</b>	<b>24</b>	<b>12</b>
<b>Avg. Performance</b>	<b>7-10</b>	<b>7-10</b>	<b>12-19</b>	<b>13-19</b>	<b>7-10</b>

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**Graduate 2: Sub-scores received on General Science #0435    Score Range: 100-200, Average Performance Range: 153-180**

**Overall score: 131**

**NH Required Passing Score: 147**

**Status: Not Passed**

<b>Year 2005-2006</b>	<b>Fundamental Concepts in Physical Science</b>	<b>Fundamental Concepts in Life Science</b>	<b>Fundamental Concepts in Earth/Space Science</b>	<b>Scientific Methodology, Techniques, and History</b>	<b>The Physical Sciences</b>	<b>The Life Sciences</b>	<b>The Earth Sciences</b>	<b>Science, Technology, and Society</b>
<b>Points Earned</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>6</b>	<b>18</b>	<b>13</b>	<b>11</b>	<b>8</b>
<b>Points Available</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>12</b>	<b>48</b>	<b>24</b>	<b>24</b>	<b>12</b>
<b>Avg. Performance Range</b>	<b>2 - 6</b>	<b>3 - 7</b>	<b>3 - 6</b>	<b>7 - 10</b>	<b>22 - 33</b>	<b>15 - 21</b>	<b>12 - 18</b>	<b>9 - 11</b>

**Graduate 3: Sub-scores received on General Science #0435    Score Range: 100-200, Average Performance Range: 154-180**

**Overall score: 154**

**NH Required Passing Score: 147**

**Status: Passed**

<b>Year 2006-2007</b>	<b>Fundamental Concepts in Physical Science</b>	<b>Fundamental Concepts in Life Science</b>	<b>Fundamental Concepts in Earth/Space Science</b>	<b>Scientific Methodology, Techniques, and History</b>	<b>The Physical Sciences</b>	<b>The Life Sciences</b>	<b>The Earth Sciences</b>	<b>Science, Technology, and Society</b>
<b>Points Earned</b>	<b>4</b>	<b>6</b>	<b>5</b>	<b>6</b>	<b>25</b>	<b>18</b>	<b>16</b>	<b>8</b>
<b>Points Available</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>12</b>	<b>48</b>	<b>24</b>	<b>24</b>	<b>12</b>
<b>Avg. Performance Range</b>	<b>3 - 4</b>	<b>3 - 6</b>	<b>4 - 6</b>	<b>7 - 10</b>	<b>23 - 34</b>	<b>16 - 20</b>	<b>13- 19</b>	<b>9 - 11</b>

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**Graduate 4: Sub-scores received on General Science #0435    Score Range: 100-200, Average Performance Range: 153-180**

**Overall score: 161**

**NH Required Passing Score: 147**

**Status: Passed**

<b>Year 2006-2007</b>	<b>Fundamental Concepts in Physical Science</b>	<b>Fundamental Concepts in Life Science</b>	<b>Fundamental Concepts in Earth/Space Science</b>	<b>Scientific Methodology, Techniques, and History</b>	<b>The Physical Sciences</b>	<b>The Life Sciences</b>	<b>The Earth Sciences</b>	<b>Science, Technology, and Society</b>
<b>Points Earned</b>	<b>2</b>	<b>6</b>	<b>6</b>	<b>8</b>	<b>23</b>	<b>20</b>	<b>16</b>	<b>11</b>
<b>Points Available</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>12</b>	<b>48</b>	<b>24</b>	<b>24</b>	<b>12</b>
<b>Avg. Performance Range</b>	<b>2 – 6</b>	<b>3 – 7</b>	<b>3 – 6</b>	<b>7 – 10</b>	<b>22 – 33</b>	<b>15 – 21</b>	<b>12- 18</b>	<b>9 - 11</b>

**Graduate 5: Sub-scores received on General Science #0435    Score Range: 100-200, Average Performance Range: 154-180**

**Overall score: 151**

**NH Required Passing Score: 147**

**Status: Passed**

<b>Year 2006-2007</b>	<b>Fundamental Concepts in Physical Science</b>	<b>Fundamental Concepts in Life Science</b>	<b>Fundamental Concepts in Earth/Space Science</b>	<b>Scientific Methodology, Techniques, and History</b>	<b>The Physical Sciences</b>	<b>The Life Sciences</b>	<b>The Earth Sciences</b>	<b>Science, Technology, and Society</b>
<b>Points Earned</b>	<b>2</b>	<b>4</b>	<b>7</b>	<b>8</b>	<b>24</b>	<b>10</b>	<b>17</b>	<b>6</b>
<b>Points Available</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>12</b>	<b>47</b>	<b>24</b>	<b>24</b>	<b>12</b>
<b>Avg. Performance Range</b>	<b>2 – 4</b>	<b>3 – 6</b>	<b>4 – 6</b>	<b>6 – 10</b>	<b>21 – 33</b>	<b>12 – 18</b>	<b>13- 19</b>	<b>7 - 10</b>

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**Graduate 6: Sub-scores received on General Science #0435    Score Range: 100-200, Average Performance Range: 154-180**

**Overall score: 154**

**NH Required Passing Score: 147**

**Status: Passed**

<b>Year 2007-2008</b>	<b>Fundamental Concepts in Physical Science</b>	<b>Fundamental Concepts in Life Science</b>	<b>Fundamental Concepts in Earth/Space Science</b>	<b>Scientific Methodology, Techniques, and History</b>	<b>The Physical Sciences</b>	<b>The Life Sciences</b>	<b>The Earth Sciences</b>	<b>Science, Technology, and Society</b>
<b>Points Earned</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>20</b>	<b>20</b>	<b>18</b>	<b>8</b>
<b>Points Available</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>12</b>	<b>48</b>	<b>24</b>	<b>24</b>	<b>12</b>
<b>Avg. Performance Range</b>	<b>3 – 4</b>	<b>3 – 6</b>	<b>4 – 6</b>	<b>7 – 10</b>	<b>23 – 34</b>	<b>16 – 20</b>	<b>13- 19</b>	<b>9 - 11</b>

**Graduate 7: Sub-scores received on General Science #0435    Score Range: 100-200, Average Performance Range: 153-180**

**Overall score: 161**

**NH Required Passing Score: 147**

**Status: Passed**

<b>Year 2007-2008</b>	<b>Fundamental Concepts in Physical Science</b>	<b>Fundamental Concepts in Life Science</b>	<b>Fundamental Concepts in Earth/Space Science</b>	<b>Scientific Methodology, Techniques, and History</b>	<b>The Physical Sciences</b>	<b>The Life Sciences</b>	<b>The Earth Sciences</b>	<b>Science, Technology, and Society</b>
<b>Points Earned</b>	<b>2</b>	<b>6</b>	<b>6</b>	<b>8</b>	<b>23</b>	<b>20</b>	<b>16</b>	<b>11</b>
<b>Points Available</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>12</b>	<b>48</b>	<b>24</b>	<b>24</b>	<b>12</b>
<b>Avg. Performance Range</b>	<b>2 – 6</b>	<b>3 – 7</b>	<b>3 – 6</b>	<b>7 – 10</b>	<b>22 – 33</b>	<b>15 – 21</b>	<b>12- 18</b>	<b>9 - 11</b>

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**Graduate 8: Sub-scores received on General Science #0435 Score Range: 100-200**

**Graduate’s score: 196\*(E)**

**NH Required Passing Score: 147**

**Status: Passed**

<b>Year 2008-2009</b>	<b>Funda- mental Concepts in Physical Science</b>	<b>Funda- mental Concepts in Life Science</b>	<b>Funda- mental Concepts in Earth/ Space Science</b>	<b>Scientific Method- ology, Tech- niques, and History</b>	<b>The Physical Sciences</b>	<b>The Life Sciences</b>	<b>The Earth Sciences</b>	<b>Science, Tech- nology, and Society</b>
<b>Points Earned</b>	<b>9</b>	<b>2</b>	<b>6</b>	<b>10</b>	<b>40</b>	<b>20</b>	<b>24</b>	<b>10</b>
<b>Points Available</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>12</b>	<b>48</b>	<b>24</b>	<b>24</b>	<b>12</b>
<b>Avg. Performance Range</b>	<b>2 – 4</b>	<b>2-10</b>	<b>5 – 7</b>	<b>7 – 10</b>	<b>21 – 31</b>	<b>16 – 20</b>	<b>12- 17</b>	<b>9 - 11</b>

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**EARTH/SPACE subscores**

**Graduate 1: Sub-scores received on Geology #0571 Score Range: 100-200**

**Graduate’s score: 192**

**Required Passing Score: 148**

**Status: Not Passed**

<b>Year 2008-2009</b>	<b>Basic Scientific Principles of Earth and Space Sciences</b>	<b>Tectonics and Internal Earth Processes</b>	<b>Earth Materials and Surface Processes</b>	<b>History of the Earth and Its Life Forms</b>	<b>Earth’s Atmosphere and Hydrosphere</b>	<b>Astronomy</b>
<b>Points Earned</b>	<b>7</b>	<b>18</b>	<b>25</b>	<b>12</b>	<b>20</b>	<b>8</b>
<b>Points Available</b>	<b>10</b>	<b>18</b>	<b>25</b>	<b>14</b>	<b>20</b>	<b>11</b>
<b>Avg. Performance Range</b>	<b>4 - 7</b>	<b>10 – 14</b>	<b>14 - 19</b>	<b>8 - 11</b>	<b>13 - 17</b>	<b>5 - 8</b>