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| **Content: Math** | **Grade Level: 8th**  |
| **Standard: 8.EE.2**Use square root and cube root symbols to represent solutions to equations of the form x² = p and x³ = p, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational. |
| **I can statements:**• Use square root symbols to represent solutions to equations in the form x² = p where p is a positive rational number.• Use cube root symbols to represent solutions to equations in the form x³ = p where p is a positive rational number.• Recognize that squaring a number and taking the square root of a number are inverse operations.• Recognize that cubing a number and taking the cube root of a number are inverse operations.• Evaluate square root of a perfect square.• Evaluate the cube roots of a perfect cube.• Explain why the square root of a non-perfect square is irrational. |
| **Score 4.0** | **In addition to Score 3.0, in-depth inferences and applications that go beyond what was taught.** | **Sample Activities** |
| * $5x^{3}+2x^{2}-10=2x^{2}+10$
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|  | **3.5** | In addition to score 3.0 performance, in-depth inferences and applications with partial success. |  |
| **Score 3.0** | **The student:*** Use inverse operations to solve $x^{2}=p$ and $x^{3}=p$ equations where p is a positive rational number.

• Explain why the square root of a non-perfect square is irrational.**The student exhibits no major errors or omissions.** | * $x^{2}=6$ • $y^{3}=30$
* $\left(\frac{1}{3}\right)^{3}$ • $\sqrt[3]{\frac{1}{27}}$
* What is the side length of a square with an area of 49 ft2?
* Is $\sqrt{10}$ rational or irrational? Explain why.
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|  | **2.5** | No major errors or omissions regarding 2.0 content and partial knowledge of the 3.0 content. |  |
| **Score 2.0** | **There are no major errors or omissions regarding the simpler details and processes as the student:*** recognizes or recalls specific terminology, such as:
	+ square/square root
	+ cube/cube root
* performs basic processes, such as:
	+ Evaluate square root of a perfect square.
	+ Evaluate the cube roots of a perfect cube.

**However, the student exhibits major errors or omissions regarding the more complex ideas and processes.** | * $\sqrt{16}$
* $4^{2}$
* $\sqrt[3]{125}$
* Give an example of a number that is a perfect square.
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|  | **1.5** | Partial knowledge of the 2.0 content, but major errors or omissions regarding the 3.0 content. |  |
| **Score 1.0** | **With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.** |
|  | **0.5** | With help, a partial understanding of the 2.0 content, but not the 3.0 content. |
| **Score 0.0** | **Even with help, no understanding or skill demonstrated.** |