Assessment and Remediation Tool for English Language Arts (ELA) & Math K-8 Students

SPARK is a flexible and media-rich set of content-based assessment tools and instructional materials designed specifically to support the state standards for grades K-8. SPARK creates individualized and prescriptive learning paths based on each student’s specific level of skills mastery, providing them with extremely efficient and targeted skills practice and remediation.

**How it Works**

Each SPARK unit focuses on a single skill. SPARK utilizes Odysseyware's CRx (Credit Recovery) mode, assigning a pretest for each unit. Based on the results of the assessment, if a student passes, they are assigned the next pretest. If a student fails the pretest, they are assigned a remedial skill lesson, followed by a post-test.

“Thanks to SPARK, we know the ‘holes’ in each student’s math knowledge and can provide targeted instruction to ensure he or she masters required concepts.”

— Kyle McCartney, Principal
Oxford Middle School, Oxford, Alabama

**Benefits and Features**

- Promotes mastery of K-8 English Language Arts (ELA) and math skills
- 17-25 units (individual skill lesson and assessment) in both ELA and math per grade level
- Lessons utilize grade-appropriate texts
- More than 1,600 skill assessment questions
- Prescriptive learning paths
- Lessons are embedded with rich animations and multimedia, direct-instruction videos, and dynamic learning activities
- Can be utilized as a standalone or as part of a course of study
Most SPARK lessons consist of four sections, employing a number of instructional tools to teach each specific skill.

Section 1: Anticipatory Set, Objective & Vocabulary

Section 1 introduces the concept, then lists lesson objectives and associated vocabulary words. This section focuses on thoroughly covering the vocabulary associated with this standard.

- **OBJECTIVES**
  - Identify the root symbols.
  - Use these symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, (where $p$ is positive and rational).
  - Evaluate square roots of small perfect squares and cube roots of small perfect cubes.
  - Recognize that the square root of 2 is irrational.

- **VOCABULARY**
  
<table>
<thead>
<tr>
<th>Word</th>
<th>Definition</th>
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<tbody>
<tr>
<td>exponent</td>
<td>number that tells how many times the base is a factor</td>
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<tr>
<td>factor</td>
<td>number in a multiplication statement</td>
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<tr>
<td>irrational number</td>
<td>real number that is not rational; it cannot be expressed as either a terminating decimal or a repeating decimal</td>
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<tr>
<td>power</td>
<td>power in mathematics means the product of any number by itself</td>
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<tr>
<td>root</td>
<td>an equal factor of a number</td>
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<tr>
<td>x cubed</td>
<td>another way to say $x^3$</td>
</tr>
<tr>
<td>x squared</td>
<td>another way to say $x^2$</td>
</tr>
<tr>
<td>$x^2$</td>
<td>equivalent to $x$ times $x$ or $x$ to the second power</td>
</tr>
<tr>
<td>$x^3$</td>
<td>equivalent to $x$ times $x$ times $x$ or $x$ to the third power</td>
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**VOCABULARY AT WORK**

An irrational number is a real number that is not rational. It cannot be expressed as either a terminating decimal or a repeating decimal.

For example, the value of $\pi$ is $3.141592...$

This number continues forever without repeating. It is an irrational number.

Section 2: Direct Instruction

Putting learned vocabulary into action, Section 2 uses extensive audio and media to provide ample opportunity for students to hear and see the lesson within a real-world application.

Section 3: It’s Your Turn

Students work through learning activities, complete guided practice, and may go through a synopsis or review. Section 3 also includes significant media and dynamic learning activities, providing students time to practice what they have learned.

Key point!
The square root of a number is used in many applications. It is so common that if you encounter the symbol without a specified power, you can assume that the desired root is $\sqrt{}$.

\[ \sqrt{ } = \sqrt{2} \]

Once you have the perfect squares and square roots memorized, you will be able to solve many kinds of problems.

Morgan planted a square vegetable garden with an area of 625 square feet. What is the length of one side of the garden?

Area = 625 ft²

$S = ?$

Write an equation to describe the problem.

Use what you know about square roots to find a solution.

Section 4: Show What You Know

Now it’s time for students to demonstrate what they have learned. In Section 4, students are assessed with a quiz, using the problem sets associated with this lesson.

Below is a table of cubes and cube roots. Remembering these values is an important step in your study of math.

Be prepared to use your knowledge of the cube root to solve many kinds of problems.

\[ s^3 = 8 \]

\[ s = \sqrt[3]{8} \]

\[ s = 2 \]

Each side is 2 feet long.

One side of a shipping container measures 8 feet. The container is a cube. What is the container’s volume in cubic feet?

Select the correct answer:

- $\sqrt[3]{8}$ cubic feet
- 64 cubic feet
- 512 cubic feet