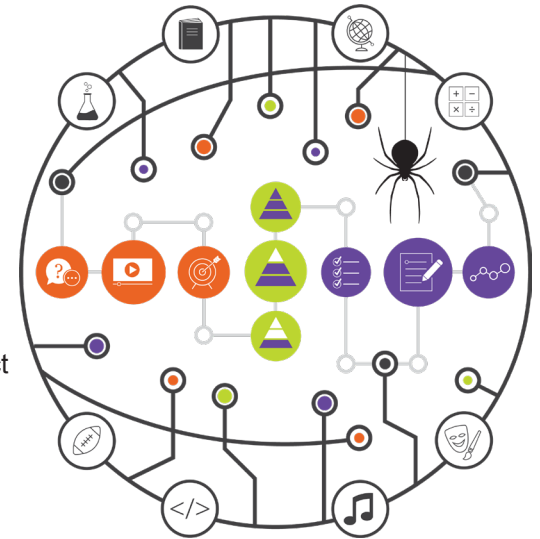# Spider Learning, Inc. WebCourses

Spider Learning's WebWeaver eCourses are comprehensive online courses housed within the BUZZ Learning Management System (LMS). We provide a structured and consistent flow of learning objects to each student: Pre-Test, Interactive Instructional Media, Objective and Introduction, Direct Instruction paired with Guided Practice Activities, Post-Test, Lesson Assessments, and OER/Teacher Resources. This consistent flow of materials helps to alleviate student anxiety and ensures that students know what to expect from each lesson.

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The **Pre-Test** is designed to be highly rigorous, measuring student knowledge of an objective before any content is presented, which will provide the teacher with formative data on the student's understanding of the content before they begin the lesson. Any Pre-Test questions missed will be presented to the student again before the Daily Assignment.

Challenge Questions Unit 1: Exploring Numbers: Rational, Irrational, Cube Roots, and Square Roots > Lesson 1: Classifying Rational Numbers

Bookmarks

1. Identify the type of numbers described by each definition. *The terms may be used more than once.*

Proper fractions and repeating decimals	
Positive and negative whole numbers and zero	
Positive counting numbers but not zero	
Any number that can be expressed as a ratio of integers	
Positive counting numbers and zero	

Rational numbers   Integers   Whole numbers   Natural numbers

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The design of our *interactive video* encourages educational segmenting, or the sectioning of information into smaller parts. Focusing on prerequisite knowledge to ensure that students are ready to master a new objective, each piece of the interactive media within the WebWeaver eCourses encourages a personalized path through the lesson video, based upon a student's individual responses.

Lesson Video Unit 1: Exploring Numbers: Rational, Irrational, Cube Roots, and Square Roots > Lesson 1: Classifying Rational Numbers

Rational Numbers

$\frac{a}{b}$, where a and b are integers

Which of the following should not be classified as a rational number?

- A. $3\frac{1}{6}$
- B. 4
- C. $\sqrt{3}$
- D. $\frac{4}{5}$

Submit Answer!

$\frac{1}{2}$ 1 $2\frac{1}{3}$

3π $\sqrt{5}$ $\frac{\sqrt{3}}{\sqrt{7}}$

01:09 / 01:09

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The activities developed within our lessons are designed to facilitate student agency. Each lesson contains an overview of the objective, and a *metacognitive prompt* that provides students with an opportunity to evaluate their individual learning styles, and take ownership of the manner in which they will work to achieve a greater understanding of the lesson content.
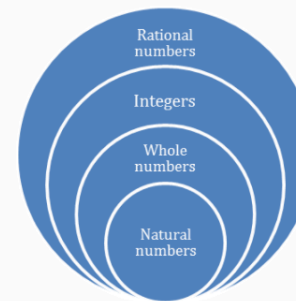
Objective & Introduction Unit 1: Exploring Numbers: Rational, Irrational, Cube Roots, and Square Roots > Lesson 1: Classifying Rational Numbers

Today's lesson objective is: **Students will classify types of rational numbers.**

The word rational is probably a part of your vocabulary. Perhaps you've made rational decisions or hopefully your friends are rational people, but did you know that people aren't the only entities that can be rational? Numbers can be rational, too! In fact, you see rational numbers every day, but do you recognize them? You will soon because rational numbers are the focus of this lesson.

Take a moment to think about this objective. What strategies will you use to learn how to classify rational numbers? Perhaps you could create a graphic organizer that represents rational numbers and then add to that graphic as you learn more throughout the lesson. Or you can choose another strategy. At this point, write down your learning strategy in your digital notebook. Make sure to update it as you learn more about classifying rational numbers.

The next figure contains a visual representation of rational numbers and their classifications.

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As students progress through each of the three **direct instruction** components of the lesson, they are progressing upward through Bloom's Taxonomy Levels to promote cognitive rigor that, when paired with the metacognitive prompt, helps students develop crucial problem solving skills and encourages stronger connections and a deeper understanding of the content that is presented. Traditional static content examples have been replaced by engaging lesson activities that have been developed to progress through Depth of Knowledge (DOK) Levels 1-3 by utilizing embedded **technology-enhanced items**, which can support the guided practice strategies established by each teacher.

Types of Rational Numbers
Unit 1: Exploring Numbers: Rational, Irrational, Cube Roots, and Square Roots > Lesson 1: Classifying Rational Numbers

$$-12054, \quad -32, \quad -5, \quad \frac{-3}{4}, \quad -0.6, \quad 0, \quad \frac{10}{3}, \quad 7.166\overline{6}, \quad 107, \quad 56900$$

What do these numbers have in common? Their similarity may not be obvious. Some of the numbers are positive and some are negative. Some are odd and others are even. Some are fractions and some are prime but others are not. Yet all of these numbers are rational because they can be written as a ratio or fraction. For instance, -32 can be written as $\frac{-64}{2}$ and 107 can be written as $\frac{107}{1}$. Even 0 can be written as the numerator over a denominator, $\frac{0}{1}$. Now use this similarity to create a definition for rational numbers.

A **rational number** is any number that can be expressed as a ratio.

Now let's look at different types of rational numbers.

Check out these examples:

Example 1: $\{\frac{-4}{5}, \frac{1}{6}\}$

These fractions are **rational numbers** because they are ratios. Any number that can be expressed as a ratio is a rational number.

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Students that missed a Pre-Test question before beginning the lesson have a second opportunity to interact with those items. Students will be presented with the **Post-Test**, which includes the exact same questions, in the exact same format, to *measure student growth* during the course of the lesson.

Types of Rational Numbers Unit 1: Exploring Numbers: Rational, Irrational, Cube Roots, and Square Roots > Lesson 1: Classifying Rational Numbers

🔖 Bookmarks

1. Match each term with the correct definition.

Integer	●	
Whole Number	●	
Rational Number	●	

∷ any number that can be expressed as a ratio   ∷ all positive integers and zero   ∷ a positive or negative without a decimal component

Check Answer

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The assessment items within our curriculum are technology-enhanced items that are designed to engage students and encourage thoughtful responses rather than guessing. Each lesson includes 34 assessment items, which are generated into *unique assessment pools* for each student. Not only do these assessment items promote interaction with the question, the real-time data collection helps to show the student's thought process as they answer the question.

Daily Assignment Unit 1: Exploring Numbers: Rational, Irrational, Cube Roots, and Square Roots > Lesson 1: Classifying Rational Numbers

🔖 Bookmarks

6. What type of number is represented by each scenario? Include all sets to which the number belongs.

Kennedy served one 1 cake to 8 party guests. What type of number is represented by the amount of cake received by each guest?	Jansen spent $100 on 2 outfits. If he spent an equal amount on each outfit, what type of number is represented by the cost of each outfit?

⁞⁞ Rational number   ⁞⁞ Integer   ⁞⁞ Natural number   ⁞⁞ Whole number

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Each lesson also contains a skill-based set of materials that can serve as an extension of the content for students. These *OER/Teacher Resources* can be used to reinforce concepts within the lesson, and provide enrichment opportunities for a more personalized learning experience.