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| **Clarity for Learning** |
| **Standard KY.8.NS.2** Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram and estimate the value of expressions.  |
| **Concepts (Nouns)**rational approximationsirrational numbers number line diagramvalue of expressions | **Skills (Verbs)**usecomparelocateestimate |
| **Learning Progressions***Prerequisite Skills:** understand and use decimals
* add, subtract, multiply, and divide rational integers
* compare and order rational numbers
* simplify expressions

*Grade Level Skills:** use color tiles, dot paper, desmos, or other hands-on activities to understand why square numbers are actually square, (area of a square is side x side) and generate a list of perfect squares using hands-on materials.
* Use a perfect square to approximate a square root that is an irrational number.
* Use a number line to compare and order rational and irrational numbers.
* Understand the difference between terminating and repeating decimals and their relationship to rational and irrational numbers.

*Clarifications:* For example, by shortening the decimal expansion of √2 by dropping all decimals past a certain point and showing √2 is between 1 and 2, then between 1.4 and 1.5 and so on. Students recognize this process could be repeated an infinite number of times. KY.8.NS.2→ KY.HS.N.3  |
| **Learning Intentions (I am learning to...)** | **Success Criteria (I know I’m successful when...)** |
| Understand irrational numbers.  | * I can identify that a number is rational or irrational.
* I can determine if a decimal is terminating or repeating.
* I can compare and order rational and irrational numbers.
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