
Equivalent Forms of Decimals

Author: Illustrative Mathematics
Owner: Illustrative Mathematics

Subjects and Domains

- Math - Practice - 1. Make sense of problems and persevere in solving them
- Math - Practice - 2. Reason abstractly and quantitatively
- Math - Practice - 3. Construct viable arguments and critique the reasoning of others
- Math - Practice - 6. Attend to precision
- Math - Practice - 7. Look for and make use of structure
- Math - Numbers & Operations in Base Ten - Content

Common Core State Standards

- CCSS.Math.Content.5.NBT.A.3
- CCSS.Math.Content.5.NBT.A.3a

Grades

- 5 - Fifth Grade

Intended End Users

- Student
- Teacher

Intended Student Populations

- All Students
- English Language Learners (ELL)
- Students with Disabilities (SWD)
- Gifted & Talented (G&T)

Summary

This task addresses many parts of the "Understand the Place Value System" cluster within the Number and Operations in Base Ten domain. The purpose of this task is to help students develop the understanding that a single base-ten number can be represented in many different ways.

Attributes of the Formative Assessment Process

- Clarify Intended Learning
- Elicit Evidence
- Interpret Evidence
- Act on Evidence

Specific Connection to the Formative Assessment Process

This resource is appropriate for formative assessment to identify student understanding of the place value system. This standard is critical to comparing and ordering decimals based on the meaning of the digits in each place.

Student Engagement to the Formative Assessment Process

Student engagement in the formative assessment process is clearly evident throughout the entire resource. It promotes the students' continuous involvement in self- and peer-assessment. The students are owners of their work and provide descriptive feedback to peers.

Specific Connection to the Common Core State Standards

This resource addresses 5.NBT.A.3a Read write and compare decimals using base-ten numerals, number names, and expanded form. It also addresses the Standards for Mathematical Practice as students work with equivalent representations of decimals in word form and expanded form. Standard for Mathematical

Media Types

- Document

Educational Use

- Activity
- Assessment
- Peer Response
- Problem Solving

Geographics Settings

- Urban
- Suburban
- Rural

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Practice 1 Make sense of problems and persevere in solving them, Standard for Mathematical Practice 2 Reason abstractly and quantitatively, Standard for Mathematical Practice 3 Construct viable arguments and critique the reasoning of others, Standard for Mathematical Practice 6 Attend to precision, and Standard for Mathematical Practice 7 Look for and make use of structure.

Learning Goals

The student will: 1. Show that a single base-ten number can be represented in many different ways. 2. Write a number as a decimal and a fraction. 3. Write a decimal using number names 4. Write a decimal using expanded form 5. Communicate a strategy for comparing decimals and fractions

Success Criteria

I can... 1. Show equivalent forms of a decimal 2. Convert a decimal to a fraction 3. Write a decimal using number names 4. Write a decimal using expanded form 5. Explain how to compare decimals and fractions

Context(s) in Which the Resource Could Be Used

This resource may be used with a whole class, small group, or individual in order to identify students' ability to express equivalent forms of a base-ten number. The data collected from this task would be useful for teachers and PLCs in planning instruction.

Supporting Evidence

I have used many activities from Illustrative Mathematics in my classroom. Illustrative Mathematics™ was originally developed at the University of Arizona. It was started in 2011 as an initiative of the Institute for Mathematics & Education funded by the Bill and Melinda Gates Foundation and has operated since 2013 as a 501(c)(3) nonprofit corporation. According to their mission statement, Illustrative Mathematics is a discerning community of educators dedicated to the coherent learning of mathematics. We collaborate at illustrativemathematics.org, sharing carefully vetted resources for teachers and teacher leaders to give our children an understanding of mathematics and skill in using it. We provide expert guidance to states and districts working to improve mathematics education.

Principles, Literature, or Research

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council's report *Adding It Up*: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one's own efficacy).