

Pre-Observation Conference

Use the questions below as a guide to prepare for a pre-observation conference with the school's principal. Please upload and share any materials that the students will be using during the lesson with the principal before the pre-conference meeting.

Teacher:	Miss Teacher
Grade Level/Subject(s):	5th Grade
School:	Ocean View Elementary
Principal/Designee	Dr. Towns
Name of Observer:	Dr. Towns
Date of Pre-Observation Conference:	10/27/14
Date of Scheduled Classroom Observation:	11/6/14
Lesson Topic/Content:	Introduction to decimals

Questions for discussion:

1. How does this lesson relate to the Virgin Islands Curriculum Frameworks (Guides4Learning at <http://guides4learning.com/>)? (Danielson Framework Components 1c: Setting Instructional Outcomes, 1e: Designing Coherent Instruction)

This lesson focuses on Guides4Learning Scope and Sequence for Mathematics Grade 5

Unit: Unit 2 Estimation and Calculation

- Write and interpret numerical expressions.
- Understand the place value system.
- Represent and interpret data.

It also address a Supporting Standard in Literacy

- SL.5.1d Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

2. Which standards are embedded in this lesson? (In addition to content-specific standards, include Common Core ELA Standards for Science, Social Studies, and Technical Subjects; technology literacy standards; and Next Generation Science Standards, as appropriate.) (Danielson Framework Components 1a: Demonstrating Knowledge of Content and Pedagogy, 1e: Designing Coherent Instruction)

The following standards and practices are addressed in this lesson:

COMMON CORE STATE STANDARDS FOR MATHEMATICAL CONTENT

- **5.NBT.3** Read, write, and compare decimals to thousandths.
- **5.NBT.3a** Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$

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- **5.NBT.3b** Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons. Next generation Science Standards 4-ESS3-1 Earth and Human Activity

COMMON CORE STATE STANDARDS FOR MATHEMATICAL PRACTICE

- **MP.1.** Make sense of problems and persevere in solving them.
 - Students apply their understanding of operations with whole numbers and fractions to decimal concepts.
- **MP. 2** Reason abstractly and quantitatively.
 - Students consider decimal place value and how a number in one place represents 10 times as much as it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left.
- **MP. 3** Construct viable arguments and critique the reasoning of others.
 - Students tell and show how to represent decimals when the “whole” changes.
- **MP. 6** Attend to precision.
 - Students communicate precisely with others when they discuss and decide how they can represent 1 whole, 1 tenth, 1 hundredth, and 1 thousandth in the same model.
- **MP. 8** Look for and express regularity in repeated reasoning.
 - Students consider whole number place value and how it relates to decimal place value.

COMMON CORE STATE STANDARDS FOR ENGLISH LANGUAGE ARTS - LITERACY

SL.5.1.D Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

3. How does this lesson support student understanding of important concepts or ideas? (Danielson Framework Components 1c: Setting Instructional Outcomes, 1e: Designing Coherent Instruction)

Fractions and decimals are often difficult for students. One reason may be because instruction tends to rush to the operations without taking the time to build strong conceptual understanding. Another reason might be because fractions and decimals are often taught as separate, isolated skills rather than as connected concepts. While fractions can represent any partitioning, decimals are another notation for fractions and represent partitions of tenths and powers of tenths (hundredths, etc.). In addition to linking the ideas of decimals and fractions, decimal concepts should also build on whole number place value. Students should be able to read, write, and represent fractions and to compare fractions using the benchmarks of 0, $\frac{1}{2}$, and 1. Students should also understand whole number place value.

This lesson builds skills across a content progression chart supported by the National Math and Science Initiative and the CCSS for Mathematical Content. The learning in this lesson continue to build upon key skills learning in third and 4th grade and provide a foundation for skills to be learned in 6th grade.

3 rd Grade Skills/Objectives	4 th Grade Skills/Objectives	5 th Grade Skills/Objectives	6 th Grade Skills/Objectives
Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., $9 \times$	Use place value understanding to round multi-digit	Read and write decimals to thousandths using base-ten numerals,	Interpret and compute quotients of fractions, and solve word problems

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80, 5×60) using strategies based on place value and properties of operations.	whole numbers to any place.	number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.	involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.
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In addition, students need to be able to participate in learning discussions and explain their reasoning related to numerical representation, model representation and problem solving. To maximize student opportunity to develop and use these skills, integration of speaking and listening tasks and math learning and problem solving is critical. For this reason, I integrated specific speaking and listening tasks into the activities.

4. How did analysis of student data shape the content of this lesson? (Danielson Framework Components 1a: Demonstrating Knowledge of Content and Pedagogy, 1c: Setting Instructional Objectives)

The students in my class have varying skills in math. In addition, they have a variety of learning styles based on a learning style inventory that my students completed in the beginning of the school year. The content of the lesson was based on the CCSS for Mathematical Content and the learning progression for math development. In addition the lesson provides multiple strategies and models for using physical, verbal, analytical, numerical and graphical representations to introduce, explore, and reinforce mathematical concepts and to enhance conceptual understanding.

Although my students have been participating in discussion during math instruction in previous year, purposeful connections between content learning and English language arts skills and practice are needed to encourage generalization of skills and practice across content areas.

5. Briefly describe the students participating in this lesson. Describe any unique or special needs. (Danielson Framework Component 1b: Demonstrating Knowledge of Students)

There are two students who are considered gifted and talented. These students have mastered skills through the thousandths place and need to be challenged to demonstrate skills beyond the thousandths place.

There are three English language learners participating in this lesson. They need concrete examples of everyday use of fractions and decimals and vocabulary scaffolding and reinforcement

There are two with disabilities on IEPs and they have not mastered skills in place value, need vocabulary support and scaffolding for writing math explanations and reasoning.

6. What are the learning outcomes for this lesson? What will the students learn and be able to demonstrate? (Danielson Framework Component 1c: Setting Instructional Outcomes)

Students will

- Compare fractions to decimals
- Explore and build decimal models

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- Explain reasoning for model representations
7. How will the learning outcomes be measured? (Danielson Framework Component 1f: Designing Student Assessment)

I used the Guides4Learning and identified the following formative assessments:

- Activity 2 – Are students able to use the Base Ten Blocks to model the different decimals?
- Activity 3 – Are students able to explain their thinking? Are they clear in the difference between tenths, hundredths, thousandths? Are all students contributing to the building of the decimal models and understanding what the models represent?

In addition, a Venn diagram and an Exit slip will be used as summative assessments at the end of the lesson.

8. How will students be engaged in the learning? (Danielson Framework Components 1a: Demonstrating Knowledge of Content and Pedagogy, 1b: Demonstrating Knowledge of Students, 1d: Demonstrating Knowledge of Resources, 1e: Designing Coherent Instruction)
- What instructional practices will be used?
 - a. Activating prior knowledge and sharing of real life examples of fractions and decimals
 - b. Use of base ten blocks with modeling and key questioning
 - c. Cooperative learning with students working in pairs or trios
 - d. Practice with concrete representations and models
 - What resources will be used?
 - a. Base Ten Blocks (at least 1 cube, 10 flats, 10 rods, 10 units per set) – 1 set per small group
 - b. Chart paper
 - c. 100's grids – 2-3 sheets per small group
 - d. Scissors – 1 or 2 pairs per group
 - e. Scotch tape – 1 per group is best
 - f. Crayons, colored pencils or markers – 1 per group
 - g. Venn diagram – 1 per student
 - What will the students do?
 - a. Activity 1: Students will think about when they have seen or heard fractions or decimals in the world around them; at home, in stores, at a sports games, etc. and provide examples of a fraction or decimal and how it was used.
 - b. Activity 2: Students will be given three key questions and the base ten blocks. Students will work with a partner to model the question with their cubes, discuss their answers and sharing with the class explaining their reasoning. The whole is then changed and students will change their model and explain their reasoning for the changed representation.
 - c. Activity 3: Students work in pairs or trios and build decimal models to show thousandths using hundred grids.
 - Will the students work individually, in small groups, or as a large group?

Students will have opportunity to work in a large group and small groups as pairs or trios.

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9. How will instruction be differentiated to meet the needs of individuals or groups of students participating in this lesson? (Danielson Framework Component 1e: Designing Coherent Instruction)

There are two students who are considered gifted and talented. These students will be engaged in activities to

- Create a model to represent ten thousandths and
- Demonstrate knowledge of place value beyond the ten thousandths' place.

There are three English language learners participating in this lesson. Scaffolding will be included to provide

- Concrete examples of the use of fractions and decimals in everyday life and place;
- Grids and place value charts to keep track of decimal vocabulary such as tenths, hundredths and thousandths; and
- Opportunity to work with student partners in small groups.

There are two with disabilities on IEPs and they will be provided

- Grids and place value charts to keep track of decimal vocabulary such as tenths, hundredths and thousandths,
- Opportunity to discuss ideas before writing using a graphic organizer, and
- Prior practice with the special education teacher before the lesson.

10. How will student learning be monitored during and after the lesson? (Danielson Framework Component 1f: Design Student Assessments)

During each activity students share their reasoning and demonstrate the concepts through modeling. I will note student misconceptions and provide cues, model and scaffolding to address misconceptions.

11. Is there any additional information to share or specific things the observer should look for during the lesson?

Through my professional growth plan activities I have learned the differentiation strategies I am applying during the lesson, so I would appreciate any feedback related to student response to the strategies.