

Student Name: Sarajeon Achilles

Date: 11/4/13

SEU Course: Content Area Literacy

Topic: Understanding Units

Grade Level: 4th

Subject: Math

Objectives

(4.14) Underlying processes and mathematical tools. The student applies Grade 4 mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to:

(4.15) Underlying processes and mathematical tools. The student communicates about Grade 4 mathematics using informal language. The student is expected to:

(A) explain and record observations using objects, words, pictures, numbers, and technology; and

(B) relate informal language to mathematical language and symbols.

Purpose

To help students better understand the concept of units. More specifically to understand what '1' is through identifying composing and partitioning units. This understanding will help students grasp mathematical concepts more easily as their mathematical literacy is expanded.

Materials

For the students	For the teacher
Math journals/ paper pencils	TED-ED video http://ed.ted.com/lessons/one-is-one-or-is-it#review Questions

Procedures/Activities

Introduction/Anticipatory Set/Engagement and Exploration: (< 5 min)

(Show students a hundred dollar bill)What do you think is the correct answer: this is 100, this is ten tens or this is 100 1's? The correct answer is, they are all correct!

Today we are going to learn about units. What is a unit? What does it mean? How do we use units in our everyday lives? This video is going to provide you with some answers to those questions and then we will discuss what units are and how we will use them in our math classroom. This video is by an educator named Christopher Danielson. I found this lesson on a site called TED-ED where educators and artists collaborate together to create informational lessons like this one. You will notice this topic is important to your mathematical literacy. When we need help understanding new ideas we can turn to others to provide some answers and explanations.

Technology is a great source for finding others with questions just like yours. This creator had students who were learning about units, just like you guys; in order to help provide answers he created this video! While learning more about Units, I also want you to gain insight on this use of technology and how it may be helpful for demonstrating ideas. We are going to answer questions throughout the video to check for understanding. I will stop the video and allow you some time to think about what

you are learning.
Model: (< 5 min)
<i>First we will watch a portion of the video and only pay attention without writing. Then, I will pause the video and ask you to take a moment to think. You will record your thoughts: what does this remind you of? What questions do you have for the author, yourself or for further research? You may draw a picture to help you remember the ideas. I will ask you to complete a question about what you just watched. These recordings each break will help you understand the complex information being thrown at you very quickly! The questions and your thoughts will revolve around the main theme of the video. As you watch you make ask yourself some questions such as; what is this author trying to tell me? What are the main concepts he is discussing? What is some vocabulary that may come up later? Then when answering your questions you may want to jot down the questions (and possibly answers) you asked yourself.</i>
Check for Understanding/Explanation:
Student one, what is the purpose of watching this video? Student two, what is the first thing we are going to do today? Student three, what should you be doing while watching the video? Who can tell me what we are going to do once I have paused the video? (answer questions, write down self-questions)
Guided Practice/Exploration: (< 5 min)
The video should play for 1 minute and 50 seconds. Stop the video and ask students to think for 30 seconds to a minute. Ask students to take another few moments to record their own thoughts, questions or pictures. Then pose the question what are composed and partitioned units? Could you list some examples? In addition, or as a modification ask students to write their own thoughts about the video. <i>This is what we are going to do each time I stop the video. Are there any questions? Would someone like to share one of their own thoughts they recorded, or a picture they drew?</i>
Check for Understanding/Explanation:
<i>Student one: what is a unit? Student two: what is a partitioned unit? (possible extension) Student three: what is a question you are left with after that first clip/ what do you want to know more about? (possible extension) Student four: can you make any guesses about the number one; is it a partitioned or composed number?</i>
Independent Practice/Elaboration:
Students will complete the rest of the video and recording of thoughts and questions. The students should be encouraged to create their own questions and ideas while watching the video, and record those ideas at the ending of each 'pause break' before teacher questions are asked. 1.) (1.49 minutes) What is a partitioned/ composed unit? Can you give examples? 2.) (2.39 minutes) What does portioning partitioned units and composing composed units have to do with math?

3.) (3.30 minutes) Is one-hundred 1 thing, ten 10's or one hundred 1's? What does it depend on?

4.) What have you learned about units and the number one?

As a group have students discuss for a few minutes. Have the group answer this question to help further their thinking

1.) In English number language groups of ten are important. The number names are irregular up to the number 20, then a solid pattern forms. What is that pattern? Can you think of some reasons why we use this pattern?

Re-teaching:

Video can be re-played for students to gain clarity. For further re-teaching have students use manipulatives to show composed units and partitioning units.

Closure/Evaluation: (< 10 min)

Student one: what is one thing we learned today?

Student two: what is an example of a partitioning unit?

Student three what is an example of a composed unit?

Student four: why are units, especially the number one important to math?

Planned Modifications and Differentiation:

Extensions can be made in the questioning to provide more rigid or more open support. Worksheets can be made ahead of time to eliminate exclusion of modified students. If necessary peruse students' answers to provide extra guidance or examples.

For students who need more guidance ask questions such as...

- The author uses an apple to show units in the video. What is another example of a unit?
- Partitioned units start as a whole and are "cut" into parts. What is a unit that you can partition?
- Is the number ten:
 - Made up of one ten
 - Made up of ten ones
 - Both options make the number ten

For students who need advanced options allow them to create a question, or evaluate what the author taught them. They can also be asked more open questions that require some extra thought such as....

- Can you make any guesses about the number one; is it a partitioned or composed number?
- What is a question you are left with after that first clip/ what do you want to know more about?
- What does the author mean by "one IS"?
- What could this information help you do in real life both inside and outside of the classroom?

Assessment of Student Learning:

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Students will be assessed by their responses to the questions on the worksheet and their participation in the group discussion.

Data collection and analysis:

Data can be collected by evaluating the responses to student's questions. This information could appear in a later assessment that may also provide data collection for student learning.

Resources:

<http://ed.ted.com/lessons/one-is-one-or-is-it#digdeeper> this website provided the video text used in this lesson. The questions for evaluating student understanding were also created out of inspiration from this website! The educator that created the concepts in the film is Christopher Danielson.