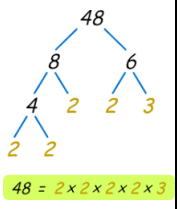
<table>
<tr><td>Textbook</td><td></td><td>Class/Grade</td><td>6th grade</td></tr>
<tr><td>Author</td><td></td><td>Time</td><td>40 mins</td></tr>
<tr><td>Subject</td><td>Math</td><td>Date</td><td>December 4, 2019</td></tr>
<tr><td>Topic</td><td>Unit 1.2 Prime Factorization:
Factor Trees</td><td>Teacher</td><td>Joshua Cratic</td></tr>
<tr><td>Aims/Values</td><td colspan="3">1. Students build up their cognitive development to understand prime and composite numbers.
2. Students understand the efficiency of how prime factorization is useful in everyday life.
3. Students are able to see that there are many ways to divide composite numbers.</td></tr>
<tr><td rowspan="8">Objectives</td><td colspan="3">CONTENT objectives</td></tr>
<tr><td>Prior knowledge</td><td colspan="2">Subject-specific knowledge</td></tr>
<tr><td>Students have already had prior skills in dividing and multiplying numbers.</td><td colspan="2">Students will be able to identify prime and composite numbers and how they relate to factor trees by using division and multiplication.</td></tr>
<tr><td colspan="3">COMMUNICATION (Language objectives)</td></tr>
<tr><td>Language related to content learning</td><td colspan="2">Language for learning (language skills)</td></tr>
<tr><td>1. New vocabulary symbols
multiply, times: X
divide: ÷
prime: 2,3,5,7
composite: 4, 6, 8, 9
answer
factor tree:

2. Key expressions/ sentences
Is this prime or composite?
Why?
How do you know?
What do you see?
 
</td><td colspan="2">1. Asking questions
What do you see?
What’s the answer?
Is this right or wrong?
Is this prime or composite?

2. Group discussion/work
Can you help me?
Is this right or wrong?
Is this prime or composite?
What’s the answer?

3. Other language skills
How to say that? What does this mean?
What does…mean?</td></tr>
<tr><td colspan="3">COGNITION</td></tr>
<tr><td colspan="3">1. Memorizing the basic function and meaning of repeated division.
2. Understanding that multiplication can be used to check the answer when using division.
3. Understanding how division and multiplication are related in math.
4. Analyzing the procedures and noticing the differences of the calculating process.
5. Being able to apply math and language skills in class activities and in homework.
6. Being able to use different strategies to solve math problems.</td></tr>
<tr><td colspan="3">CULTURE</td></tr>
<tr><td colspan="3">1. There are different mindsets in putting the groups in order when dividing and multiplying.
2. The final target of division and multiplication are highly emphasized by identifying what they are, as well as their relations to each other.</td></tr>
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<tr><td rowspan="2">Use of L1</td><td colspan="3">TRANSLANGUAGING</td></tr>
<tr><td colspan="2">For teachers</td><td>For students</td></tr>
<tr><td></td><td colspan="2">1. All the teaching materials are in English, but the teacher can explain the content with the help of the L1.
2. Using both L2 and L1 to explain how to do activities or other group discussions.
3. Try to use only L2 if the students are familiar with how the activities should be processed.</td><td>1. Students are encouraged to ask questions, answer questions, or discuss with group members in L1.
2. Encourage students to complete the learning sheets or homework using L2.
3. Try to help those who have difficulties doing homework or learning sheet in L2 (by translating the key words into L2, leading the students to learn step by step).</td></tr>
<tr><td>Learning outcome</td><td colspan="3">The students are able to:
1. Know the basic function and meaning of repeated division.
2. Understand that repeated division can be more efficient if multiplication is applied to check answers.
3. Understand the more abstract significance of factor trees.
4. Become aware between the differences of the calculating process between the L1 and the L2.
5. Understand how to apply math and language skills in class activities and in homework.
6. Apply different strategies to solve math problems using both L1 and L2, as well as what they have previously “acquired” through the math class.</td></tr>
<tr><td rowspan="3">Procedures & Activities</td><td>Warm-up
5 minutes</td><td colspan="2">Teacher will begin class with morning greeting and today’s topic, as well as have students introduce today’s date. Teacher will also present a picture and ask students:
Target Question: What do you see?
Answer: I see_____.
Student’s answer will vary.</td></tr>
<tr><td>Introducing new vocabulary
10 minutes</td><td colspan="2">Teacher will introduce vocabulary words to students and have them work on their pronunciation. Students will first hear and then repeat. Teacher will adjust which vocabulary word to use based on the level of the student.
New vocabulary words for the lesson:
prime, composite, factor tree, right, wrong, answer, multiply, times, divide</td></tr>
<tr><td>Practice or activities
10 minutes</td><td colspan="2">The teacher will show a picture and ask students:
Target Question: Is this right or wrong?
Answer: Students will respond by saying right or wrong.

Students will also have the opportunity to explain their answers. The goal is to activate prior knowledge and prepare them for today’s lesson.
Teacher will introduce a math game to students.</td></tr>
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		The first game is named **"<u>Is this Prime or Composite?</u>"** Each student will have a prime or composite number. To check for understanding, teacher will say stand up if you have a prime number or raise your hand if you have a composite number. Teacher will also ask additional questions to check for understanding. This activity is the foundation for the next activity. The next activity is called **"<u>Student Factor Tree.</u>"** For this activity, teacher will display a number on the PowerPoint and with the numbers that that students already have, they must find other students to create a factor tree. The group that finishes first must raise their hand. If the answer is correct, teacher will have students say the answer by using English. An example of this would be: Number displayed on PowerPoint: 16 **Target Question:** **Teacher:** What's the answer? **Students' answer:** 2 X 2 X 2 X 2 = 16 Two **<u>times</u>** two **<u>times</u>** two **<u>times</u>** two **<u>equals</u>** sixteen. Number displayed on PowerPoint: 24 **Target Question:** **Teacher:** What's the answer? **Students' answer:** 2 X 2 X 2 X 3 = 24 Two **<u>times</u>** two **<u>times</u>** two **<u>times</u>** three **<u>equals</u>** twenty-four.

	Production 10 minutes	Students will then practice on a math worksheet. After students are finished, they will then work on their speaking practice with partners in their groups using the target questions. Once students have reviewed with their partners, teacher will provide a speaking review in class. **Target Question:** Is this prime or composite? **Answer:** Students will either say prime or composite. Number displayed on PowerPoint from a worksheet: 27 **Target Question:** **Teacher:** What's the answer? **Students' answer:** 3 X 3 X 3 = 27 Three **times** three **times** three **equals** twenty-seven. --- ***For Advanced Students:** **Target Question:** Is this a prime or composite number? **Students' Answer:** This is a prime number. This is a composite number.
	Wrap-Up 5 minutes	Teacher will provide the final summary of class and prepare for dismissal of students.
Evaluation/ Assessment	**Content**	1. Students complete their worksheets with prime factorization questions. **(Summative)** 2. Observing how students solve the given questions with their partners and **readjust the pace of instruction. (Formative)** 3. The teachers try to identify the "gaps" of learning related to the content.
	Language	1. Observing how students use the sentence stems for prime factorization to answer questions with their partners. (**Formative**) 2. Observing how students utilize the vocabulary and practice with an activity/game/worksheet provided by the Teacher. **(Formative)** 3. The teachers understand how each student performs in his/her language skills and then identifies the "gaps" of learning.