



Recommended Grades:

Intermediate Level (5-8)

Objective:

Convert volcano elevation levels from feet to meters.

Prerequisite Skill:

Multiply with whole numbers and decimals.

Applicable National Math Standards:

- Standard 6.3 (Extend understanding of whole number operations to decimals).
- Standard 7.1 (Compute whole numbers, fractions, decimals, integers, and rational numbers).
- Standard 13 (Develop formulas and procedures for determining measurements to solve problems).

Instructional Delivery:

Whole Group, Cooperative Group, Flexible Group, or Independently

Materials Needed:

Volcano Handout (calculators are optional)

*** Please note that all links provided within this lesson are found at the end of the page.**

Activity Procedures:

1. It is recommended that the students review multiplication skills with whole numbers and decimals to introduce the length conversion formula.
2. The teacher should determine instructional delivery, but should work the first problem as a whole group. The teacher should also determine the number of random problems the students should be given for practice.
3. The following examples are randomly selected numbers and serve as examples only.

[Example – Multiply a four digit whole number by a three digit whole number.]

$$4,898 \times 255 = \underline{\hspace{2cm}}$$

[Example – Multiply a five digit whole number by a three digit whole number.]

$$15,672 \times 532 = \underline{\hspace{2cm}}$$

[Example – Multiply a four digit whole number by a two digit decimal number.]

$$2,345 \times 0.25 = \underline{\hspace{2cm}}$$

[Example – Multiply a five digit whole number by a three digit decimal number.]

$$18,974 \times 0.348 = \underline{\hspace{2cm}}$$

4. Introduce the length conversion formula. In order to convert feet (ft) *to* meters (m) **multiply** feet by 0.3048 to determine meters. [**ft. x .3048 = m**]
5. The students are to use the Volcano Handout to convert volcano elevation levels from feet to meters by using the length conversion formula.

The Volcano Handout for practicing conversions is provided on the World Wide Web (WWW), as well as a separate Portable Document Format (PDF).

Volcano Handout:

<http://eosweb.larc.nasa.gov/EDDOCS/Aerosols/math_act.html>

Volcano Handout Answers:

<http://eosweb.larc.nasa.gov/EDDOCS/Aerosols/math_answers.html>

Links to useful sites	
World Volcano Index (individual volcanoes and images)	This web site lists volcanoes from all over the world. The World Volcano Index provides volcano illustrations plus additional information. The students may enjoy seeing the elevation of the volcano that they compute from feet to meters.
Conversion Factors - Length (formulas to convert length, area, volume)	The Conversion factor web site offers a list of formulas that are frequently converted. This list also includes formulas to convert area, volume, mass, pressure, and much more.
Math Conversions (automatic conversion system)	The Math Conversion web site automatically converts length, temperature, weight, and volume.

****Links within the lesson available over the WWW:***

Handout for Practicing Conversions:

http://eosweb.larc.nasa.gov/EDDOCS/Aerosols/math_act.html

Handout Answers for Practicing Conversions:

http://eosweb.larc.nasa.gov/EDDOCS/Aerosols/math_answers.html

World Volcano Index:

http://volcano.und.nodak.edu/vwdocs/volc_images/sorted_by_volcano.html

Conversion Factors – Length:

<http://www.wsdot.wa.gov/Metrics/factors.htm#length>

Math Conversions:

<http://pages.prodigy.com/VDJW65A/convertold.html>