Title: Fahrenheit/Celsius Temperature Conversions

Objectives

Students will understand that there are two temperature scales used in the world, and that in some occupations in the U.S., conversion between the two is necessary.

Students will be able to convert Fahrenheit to Celsius temperature, and vice versa, and complete a worksheet with 80% correct.

Time frame to Complete

60 minutes

NRS EFL

4

Stackable Cert. Documentation	*Technology*	*Study / Life skills*	*EL-Civics*	*Career Pathways*	Police	Paramedic	Fire Rescue	Medical Asst.	EKG / Cardio	Phlebotomy	Practical Nursing	Healthcare Admin	Pharmacy Tech	IMT	AMT	HVAC	Welding	Other:					
X							X						X			X	X						

Standard(s) Addressed in Lesson

Use Math to Solve Problems and Communicate

Benchmark(s) Addressed in Lesson

M. 4.13 Convert fluently, within measurement systems (metric, customary, time), from one unit to another in order to solve contextual problems and express the conversions using appropriate unit labels.
M. 4.28 Confirm results with a calculator.

Materials

Worksheet with answers available from http://www.math-drills.com/measurement.shtml (attached)
Pencil
Calculator
computer with Internet access for extra work

Learner Prior Knowledge

The student should have a command of addition, subtraction, multiplication, and division.
The student should have basic knowledge of temperatures, such as body temperature, freezing and boiling points of water, etc., in Fahrenheit and Celsius.

Activities

Step 1 Teacher explains that there are two main temperature scales — Fahrenheit (used in the U.S.) and Celsius (used in most other countries). They use different numbers to measure temperature. Teacher writes °F and °C.

Step 2 Teacher states that the Celsius scale is based on the freezing and boiling points of water (0°C and 100°C). These two points are equivalent to 32°F and 212°F. Most measurements in medicine use the Celsius system. Pharmacy technicians may need to convert between the two systems. Fire rescue and welding personnel may also need to use both scales.

Step 3 To convert between the two systems, these equations are used:
To convert Celsius to Fahrenheit, use: (°C × 9/5) + 32 = °F
To convert Fahrenheit to Celsius, use: (°F - 32) x 5/9 = °C

Step 4 Teacher writes several problems on board, shows steps to solve. Class does 4 problems together:

a) Convert 25°C to °F Answer: 77°F
b) Convert 90°C to °F Answer: 194°F
c) Convert 86°F to °C Answer: 30°C
d) Convert 115°F to °C Answer: 46.1°C

Step 5 Teacher distributes worksheet and encourages students to do 20 problems, and, if time permits, continue on to complete all of the problems. Answer sheet will be distributed during last 15 minutes.
Worksheet problems taken from the following website:
http://www.math-drills.com/measurement.shtml
http://www.math-drills.com/measurement/convert_between_celsius_fahrenheit_001.pdf

Assessment/Evidence

Teacher monitors students as they work and checks for understanding. 80% correct shows mastery of concepts.
Student will have comprehension of Celsius and Fahrenheit thermometers.
Put students' completed papers in portfolio to demonstrate mastery of benchmarks related to the Basic Skills Stackable Certificate.

Adaptations for Beginning Students

Teacher checks for understanding and gives one-to-one instruction and additional problems.
Have beginning students work with a partner.

Adaptations for Advanced Students

Advanced students could be encouraged to complete the entire worksheet. Students can also be directed to the following website of temperature conversion problems:
http://www.mathsisfun.com/temperature-conversion.html

Teacher Reflection/Lesson Evaluation

Some students have been challenged by math. Re-teach and re-teach it, if necessary. Try to make it fun.

This lesson was created by Middletown ABLE.

Converting Fahrenheit and Celsius (A)

194 °F = _____ °C	210 °F = _____ °C	104 °F = _____ °C
67 °C = _____ °F	82 °C = _____ °F	76 °C = _____ °F
192 °F = _____ °C	131 °F = _____ °C	78 °F = _____ °C
112 °F = _____ °C	36 °C = _____ °F	99 °F = _____ °C
92 °F = _____ °C	201 °F = _____ °C	113 °F = _____ °C
63 °F = _____ °C	48 °C = _____ °F	104 °F = _____ °C
102 °F = _____ °C	0 °C = _____ °F	146 °F = _____ °C
135 °F = _____ °C	78 °C = _____ °F	32 °C = _____ °F
45 °C = _____ °F	17 °C = _____ °F	103 °F = _____ °C
44 °C = _____ °F	75 °C = _____ °F	116 °F = _____ °C
61 °F = _____ °C	18 °C = _____ °F	32 °F = _____ °C

M MATH-DRILLS.COM MATH-DRILLS.COM MATH-DRILLS.COM MA

Converting Fahrenheit and Celsius (A) Answers

194 °F = 90 °C	210 °F = 98.88 °C	104 °F = 40 °C
67 °C = 152.6 °F	82 °C = 179.6 °F	76 °C = 168.8 °F
192 °F = 88.88 °C	131 °F = 55 °C	78 °F = 25.55 °C
112 °F = 44.44 °C	36 °C = 96.8 °F	99 °F = 37.22 °C
92 °F = 33.33 °C	201 °F = 93.88 °C	113 °F = 45 °C
63 °F = 17.22 °C	48 °C = 118.4 °F	104 °F = 40 °C
102 °F = 38.88 °C	0 °C = 32 °F	146 °F = 63.33 °C
135 °F = 57.22 °C	78 °C = 172.4 °F	32 °C = 89.6 °F
45 °C = 113 °F	17 °C = 62.6 °F	103 °F = 39.44 °C
44 °C = 111.2 °F	75 °C = 167 °F	116 °F = 46.66 °C
61 °F = 16.11 °C	18 °C = 64.4 °F	32 °F = 0 °C

M MATH-DRILLS.COM MATH-DRILLS.COM MATH-DRILLS.COM MA