

GED 2002 Teachers' Handbook of Lesson Plans

Area/Skill - Math	Cognitive Skill Level - Application	Correlation to Math Framework - 05.04	Lesson Number - 41
<p>Activity Title - Baby It's Cold Outside!</p> <p>Goal/Objective</p> <p>To teach students to convert Celsius to Fahrenheit.</p> <p>Lesson Outline</p> <p>Introduction</p> <p>Discuss that the GED Math Test requires students be able to convert Celsius to Fahrenheit and vice versa. This conversion requires the knowledge of addition, subtraction, and multiplication, plus the use of a basic formula.</p> <p>Activity</p> <p>Teach students how to convert Fahrenheit to Celsius:</p> <ol style="list-style-type: none"> 1. Ask students to think of a temperature in Fahrenheit. 2. Have them add 40 to that number. 3. Multiply the new number by .5555 (a decimal point followed by five 5s). 4. Subtract 40. <p>Teach students to convert Celsius to Fahrenheit:</p> <ol style="list-style-type: none"> 1. Ask students to think of a temperature in Celsius. 2. Have them add 40 to that number. 3. Multiply the new number by 1.8. 4. Subtract 40. <p>Debriefing/Evaluation Activity</p> <p>Have students complete the Handout - Baby It's Cold Outside! and share their answers.</p>			<p>Materials/Texts/Realia/Handouts</p> <ul style="list-style-type: none"> • Handout - Baby It's Cold Outside! • Paper, pencils • Calculators • Celsius and Fahrenheit thermometers
			<p>Extension Activity</p> <p>Have students research the history of Celsius versus Fahrenheit using the World Wide Web. Students should write a short essay on the history of the two types of measurement and how they are both used in today's world.</p>
			<p>ESE/ESOL Accommodations</p> <ul style="list-style-type: none"> • Allow students to work in pairs or small groups. • Write the formula for figuring Fahrenheit and Celsius on individual index cards for students to use. • Allow additional time for students to complete the project. • Provide students with calculators to figure Celsius and Fahrenheit.
<p>Real-Life Connection</p> <p>When is Fahrenheit used? When is Celsius used? Have students research the different uses of these two types of measurement. Discuss the use of measurement in the areas of earth science, lab science, technology, math, and even the daily weather reports.</p>			

GED 2002 Teachers' Handbook of Lesson Plans - Script

Area/Skill - Math	Cognitive Skill Level - Application	Correlation to Framework - 05.04	Lesson Number - 41
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Activity Title - Baby It's Cold Outside!

Introduction

Say: The terms Celsius and Fahrenheit are used on the GED Mathematics Test. In fact, you will need to know how to convert Celsius to Fahrenheit and Fahrenheit to Celsius.

Ask: What are Celsius and Fahrenheit? How do you convert one to the other? *Say:* The conversion of Celsius to Fahrenheit, or vice versa, is actually quite easy. All you need to know is how to add, subtract, and multiply, and how to use a simple formula. Let's see how it works.

Main Activity

Say: The following is the way to change Fahrenheit to Celsius.

1. Think of a temperature in Fahrenheit. (Write that temperature on the board.)
2. Now, add 40 to that number. (Do the calculation on the board.)
3. Multiply the new number by .5555 which is simply a decimal point followed by five 5s. (Do the calculation on the board.)
4. Subtract 40 and you have changed Fahrenheit to Celsius. (Do the calculation on the board.)

To change Celsius to Fahrenheit, you just reverse the process.

1. Think of a temperature in Celsius. (Write that temperature on the board.)
2. Now, add 40 to that number. (Do the calculation on the board.)
3. Multiply the new number by 1.8. (Do the calculation on the board.)
4. Subtract 40 and you have changed Celsius to Fahrenheit. (Do the calculation on the board.)

Distribute the Handout - **Baby It's Cold Outside!** *Say:* Complete the different calculations on the handout. Remember, practice makes permanent! Changing between Celsius and Fahrenheit really isn't difficult as long as you remember how to add, subtract, and multiply, and the simple formula.

Closure/Conclusion

Have students share their answers with the class by showing them how they got their answers. Discuss how Celsius and Fahrenheit are used in different areas of science, math, technology, and even the reporting of weather.

Follow-Up Lessons/Activities

Have students research the "invention" of Celsius and Fahrenheit and their uses in today's world. Students may wish to conduct a search of the terms on the Internet in order to obtain information. Students should share their findings with the class.

**GED 2002 Teachers' Handbook of Lesson Plans
Math Lesson 41 Handout**

Baby, It's Cold Outside – Temperature Conversion

The formula $f = C \frac{9}{5} + 32$ is used to convert a given Celsius (C) temperature to its Fahrenheit equivalent.

1. The boiling point of water is 100 degrees Celsius. What is the Fahrenheit boiling point of water?
2. What two operations are used in the formula: $F = C \frac{9}{5} + 32$?
3. Complete the table below using the formula.

Celsius	Fahrenheit
-30	-22
-20	
-10	
0	
10	
20	
30	
40	
50	

4. The table below lists the high temperatures for the first week of December in Orlando, Florida. Complete the table.

Celsius	Fahrenheit
25	
28	
30	
29	
27	
26	
25	

5. What was the average high temperature for the one-week period?
6. What temperature would you predict for December 20th? Explain your answer.
7. Transform the above formula to solve for Celsius given the Fahrenheit temperature. Check your table with your values in the above tables.

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Math Lesson 41 Handout
Baby, It's Cold Outside – Temperature Conversion
Answer Key

1. The boiling point of water is 100 degrees Celsius. What is the Fahrenheit boiling point of water?
212 degrees F
2. What two operations are used in the formula: $F = C \frac{9}{5} + 32$?
Multiplication and addition
3. Complete the table below using the formula.

Celsius	Fahrenheit
-30	-22
-20	-4
-10	14
0	32
10	50
20	68
30	86
40	104
50	122

4. The table below lists the high temperatures for the first week of December in Orlando, Florida. Complete the table.

Celsius	Fahrenheit
25	77
28	82.4
30	86
29	84.2
27	80.6
26	78.8
25	77

5. What was the average high temperature for the one-week period?
81 degrees F
6. What temperature would you predict for December 20th? Explain your answer.
Answers may vary
7. Transform the above formula to solve for Celsius given the Fahrenheit temperature. Check your table with your values in the above tables.
 $C = \frac{5}{9} (F - 32)$