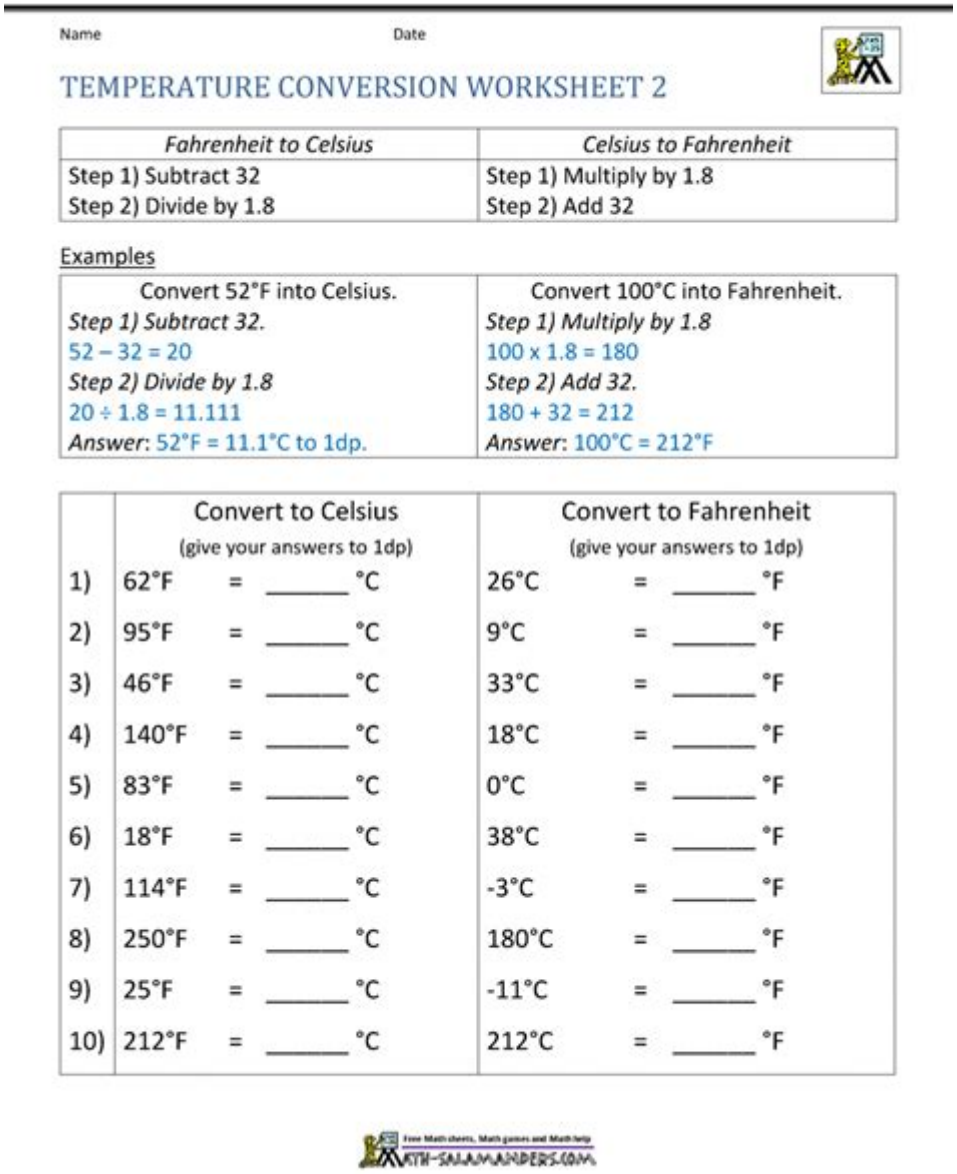
Temperature Conversion Worksheet With Answers



Name Date

TEMPERATURE CONVERSION WORKSHEET 2

Fahrenheit to Celsius	*Celsius to Fahrenheit*
Step 1) Subtract 32 Step 2) Divide by 1.8	Step 1) Multiply by 1.8 Step 2) Add 32

Examples

Convert 52°F into Celsius.	Convert 100°C into Fahrenheit.
Step 1) Subtract 32. 52 – 32 = 20 *Step 2) Divide by 1.8* 20 ÷ 1.8 = 11.111 *Answer*: 52°F = 11.1°C to 1dp.	*Step 1) Multiply by 1.8* 100 x 1.8 = 180 *Step 2) Add 32.* 180 + 32 = 212 *Answer*: 100°C = 212°F

	Convert to Celsius (give your answers to 1dp)	Convert to Fahrenheit (give your answers to 1dp)
1)	62°F = _____ °C	26°C = _____ °F
2)	95°F = _____ °C	9°C = _____ °F
3)	46°F = _____ °C	33°C = _____ °F
4)	140°F = _____ °C	18°C = _____ °F
5)	83°F = _____ °C	0°C = _____ °F
6)	18°F = _____ °C	38°C = _____ °F
7)	114°F = _____ °C	-3°C = _____ °F
8)	250°F = _____ °C	180°C = _____ °F
9)	25°F = _____ °C	-11°C = _____ °F
10)	212°F = _____ °C	212°C = _____ °F

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Temperature conversion worksheet with answers is an invaluable educational resource, especially for students and professionals dealing with scientific calculations. Understanding how to convert temperatures between different scales—Celsius, Fahrenheit, and Kelvin—is essential in various fields, including physics, chemistry, and environmental science. This article will provide a comprehensive overview of temperature conversion, a worksheet with practical exercises, and their corresponding answers to help reinforce learning.

Understanding Temperature Scales

Temperature is a measure of how hot or cold an object is relative to a standard. The three most

common temperature scales are:

Celsius (°C)

- The Celsius scale is based on the freezing point of water at 0°C and the boiling point at 100°C.
- It is widely used around the world, especially in scientific contexts.

Fahrenheit (°F)

- The Fahrenheit scale sets the freezing point of water at 32°F and the boiling point at 212°F.
- Predominantly used in the United States and a few Caribbean nations.

Kelvin (K)

- The Kelvin scale is an absolute temperature scale starting at absolute zero (0 K), the point at which molecular motion stops.
- The freezing point of water is 273.15 K and the boiling point is 373.15 K.

Temperature Conversion Formulas

To effectively use a temperature conversion worksheet with answers, it is essential to understand the formulas used for converting between the different temperature scales. Here are the key conversion formulas:

Celsius to Fahrenheit

$$
°F = (°C \times \frac{9}{5}) + 32
$$

Fahrenheit to Celsius

$$
°C = (°F - 32) \times \frac{5}{9}
$$

Celsius to Kelvin

$$
K = °C + 273.15
$$

Kelvin to Celsius

$$
°C = K - 273.15
$$

Fahrenheit to Kelvin

$$
K = (°F - 32) \times \frac{5}{9} + 273.15
$$

Kelvin to Fahrenheit

$$
°F = (K - 273.15) \times \frac{9}{5} + 32
$$

Temperature Conversion Worksheet

Now that we have a solid understanding of the temperature scales and the formulas for conversion, let's create a practical worksheet. Below is a list of temperature values that need conversion from one scale to another.

Worksheet Instructions

- Convert the following temperatures as indicated.
- Show your work for each calculation.

1. Convert 25°C to Fahrenheit.
2. Convert 68°F to Celsius.
3. Convert 100°C to Kelvin.
4. Convert 32°F to Kelvin.
5. Convert 300 K to Celsius.
6. Convert 212°F to Celsius.
7. Convert 0°C to Fahrenheit.
8. Convert 400 K to Fahrenheit.
9. Convert 50°F to Kelvin.
10. Convert -40°C to Fahrenheit.

Answers to the Temperature Conversion Worksheet

Now, let’s provide the answers to the worksheet with step-by-step solutions for clarity.

Solution to Each Problem

1. Convert 25°C to Fahrenheit.
- $°F = (25°C \times \frac{9}{5}) + 32$
- $°F = (25 \times 1.8) + 32$
- $°F = 45 + 32$
- Answer: 77°F

2. Convert 68°F to Celsius.
- $°C = (68°F - 32) \times \frac{5}{9}$
- $°C = (36) \times \frac{5}{9}$
- $°C = 20$
- Answer: 20°C

3. Convert 100°C to Kelvin.
- $K = 100°C + 273.15$
- $K = 373.15$
- Answer: 373.15 K

4. Convert 32°F to Kelvin.
- $K = (32°F - 32) \times \frac{5}{9} + 273.15$
- $K = (0) \times \frac{5}{9} + 273.15$
- $K = 273.15$
- Answer: 273.15 K

5. Convert 300 K to Celsius.
- $°C = 300 K - 273.15$
- $°C = 26.85$
- Answer: 26.85°C

6. Convert 212°F to Celsius.
- $°C = (212°F - 32) \times \frac{5}{9}$
- $°C = (180) \times \frac{5}{9}$
- $°C = 100$
- Answer: 100°C

7. Convert 0°C to Fahrenheit.
- $°F = (0°C \times \frac{9}{5}) + 32$
- $°F = (0) + 32$
- Answer: 32°F

8. Convert 400 K to Fahrenheit.
- $°F = (400 K - 273.15) \times \frac{9}{5} + 32$
- $°F = (126.85) \times 1.8 + 32$
- $°F = 228.33 + 32$
- Answer: 260.33°F

9. Convert 50°F to Kelvin.
- $K = (50°F - 32) \times \frac{5}{9} + 273.15$
- $K = (18) \times \frac{5}{9} + 273.15$

- $K = 10 + 273.15$
- Answer: 283.15 K

10. Convert -40°C to Fahrenheit.
- $°F = (-40°C \times \frac{9}{5}) + 32$
- $°F = (-72) + 32$
- Answer: -40°F

Conclusion

A temperature conversion worksheet with answers serves as a critical educational tool for students and professionals alike. Through understanding the different temperature scales and practicing conversions, individuals can enhance their skills in scientific calculations. Mastery of temperature conversion is not only vital in academic pursuits but also in everyday life, where weather forecasts and cooking temperatures often require accurate conversions. Utilizing such worksheets can significantly improve one’s proficiency in temperature conversion, reinforcing the underlying concepts through practical application.

Frequently Asked Questions

What is included in a temperature conversion worksheet?

A temperature conversion worksheet typically includes problems that require converting temperatures between Celsius, Fahrenheit, and Kelvin, along with a key or answer section for self-checking.

How do you convert Celsius to Fahrenheit?

To convert Celsius to Fahrenheit, use the formula: F = (C × 9/5) + 32.

Are temperature conversion worksheets suitable for all grade levels?

Yes, temperature conversion worksheets can be tailored to different grade levels, from basic conversions for elementary students to more complex applications for high school students.

What tools can help solve temperature conversion problems?

In addition to worksheets, online calculators and apps can help solve temperature conversion problems quickly and provide instant feedback.

Can temperature conversion worksheets be used for real-life applications?

Absolutely! Temperature conversion worksheets can be applied in various real-life contexts, such as cooking, weather reporting, and science experiments.

Where can I find temperature conversion worksheets with answers?

Temperature conversion worksheets with answers can be found on educational websites, in math resource books, and through teaching platforms that provide printable materials.

Temperature Conversion Worksheet With Answers

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