

Chapter 2 Properties of Matter

Melting and Boiling Points**Math Skill:
Data Tables**

You may want to read more about this **Math Skill** in the **Skills and Reference Handbook** at the end of your textbook.

Melting and Boiling Points of Some Substances		
Substance	Melting Point	Boiling Point
Hydrogen	-259.3°C	-252.9°C
Nitrogen	-210.0°C	-195.8°C
Water	0.0°C	100.0°C
Acetic acid (found in vinegar)	16.6°C	117.9°C
Table salt	800.7°C	1465°C

Which of the substances in the table above are solids at a temperature of -40°C ?

1. Read and Understand

What information are you given?

Temperature = -40°C

The melting and boiling points of five substances are listed in the table.

2. Plan and Solve

What unknown are you trying to find?

Which of the five substances are solids at -40°C ?

What guideline can you use?

Any substance that is a solid at -40°C must have a melting point greater than -40°C .

Check the melting point of each substance in the table to find out whether it satisfies the guideline.

Water, acetic acid, and table salt are solids at -40°C .

3. Look Back and Check

Is your answer reasonable?

Because water, acetic acid, and table salt have melting points equal to or greater than 0°C , they will all be solids at a temperature well below 0°C .

Math Practice

On a separate sheet of paper, solve the following problems.

- Which substance in the table is a liquid at 105°C ? _____
- Which substance in the table has a melting point closest to room temperature (20°C)? _____
- Which substance in the table boils at the lowest temperature? _____
- Which substance has the smallest temperature range as a liquid, hydrogen or nitrogen? _____