

# Heating a House in German

## Summary

With help from an illustration, students read about the operation of a warm-water, central heating system, typical of many German homes, and answer questions.

## Time Frame

4 class periods of 45 minutes each

## Group Size

Small Groups

## Life Skills

Thinking & Reasoning

## Materials

German/English dictionary drawing and writing tools paper

## Background for Teachers

The heating system of a home is an important and common use of science, engineering, and technology to meet human needs.

## Intended Learning Outcomes

Students learn the basic physics and technology of a home heating system.

## Instructional Procedures

Have each student draw a diagram and write a description of the heating system at the place where he or she lives by answering the following questions:

What are the main components of the system ?

What fuel is used ?

Where does the heating take place ?

How is heat transferred to each room ?

How is room temperature controlled ?

## **Wörter** (words):

A. der Öltank

B. die Saugleitung

C. das Ölbrenner

D. der Zentralheizungskessel

E. der Vorlauf

F. das Regulierventil

G. der Rücklauf

H. der Raumthermostat

J. der Heizkörper

K. der Ölstandzeiger

L. der Wasserstandmesser

M. das Kesselthermometer

das Einfamilienhaus

die Luft

das Haus

das Heizöl

die Heizung

der Kessel

die Temperatur

die Wärme

single-family house

air

house

heating oil

heating system

boiler

temperature

warmth

die Warmwasserheizung	warm water heating system
das Wasser	water
die Zentralheizung	central heating system
das Zimmer	room
der Zustand	status
abkühlen	cool down
aufspeichern	store
durchleiten	pipe
feststellen	measure
fließen	flow
isolieren	insulate
machen	make
regulieren	control
strömen	flow
als	as
automatisch	automatic
heiß	hot
man	one (a person)
nochmals	again
passieren	happen
unterirdisch	underground
wieder	again
zurück	back

**Instructions:** Read the following passage:

### **Die Warmwasserheizung eines Einfamilienhauses**

Die Familie Schilling wohnt in einem Einfamilienhaus. Die Warmwasserheizung macht ihr Haus warm im Winter wie folgt:

Man speichert das Heizöl in einem unterirdischen Öltank auf und leitet es durch die Saugleitung zum Ölbrenner am Zentralheizungskessel, wo das Wasser heiß gemacht wird. Das heiße Wasser fließt durch den isolierten Vorlauf und das Regulierventil zu dem Heizkörper jedes Zimmers. Da strömt die Wärme vom heißen Wasser in die Luft. Das abgekühlte Wasser fließt durch den Rücklauf wieder zurück zum Kessel, wo es nochmals heiß gemacht wird. Der Raumthermostat reguliert automatisch die Temperatur des Zimmers. Durch den Ölstandzeiger, den Wasserstandmesser, und das Kesselthermometer stellt man den Zustand der Heizung fest.

**Instructions:** In small groups clarify the meaning of the reading selection.

English:

### **Warm Water Heating of a Family House**

The Schilling family lives in a single-family house. The warm-water central heating system keeps their house warm in Winter as follows:

Heating oil is stored in an underground oil tank and is piped by suction to the oil burner on the central heating furnace, where water is made hot. The hot water flows through the insulated feed line and the control valve to the radiator of every room. There the heat flows from the water to the air. The cooled water flows through the return line back again to the furnace, where the water is again heated. The room thermostat automatically regulates the temperature of a room. With the oil level gauge, the water level gauge, and the furnace thermometer one can determine the status of the heating system.

**Kulturelle Unterschiede** (cultural differences):

	<u>Utah - Wasatch Front</u>	<u>Germany</u>
Heating fuel	natural gas	heating oil
Method of heat transfer	forced air	pipied water

## Extensions

Have each small group of students prepare in German a brief description of one of their own diagrams (prepared in the introductory activity).

## Assessment Plan

### **Fragen:**

Was passiert im Zentralheizungskessel ?

Warum kühlt das Wasser ab, als es durch den Heizkörper fließt ?

### Questions:

What happens in the central heating boiler ?

Why does the hot water cool as it passes through the radiator ?

### **Antworten:**

Der Ölbrenner macht das Wasser heiß.

Die Wärme strömt von dem Wasser in die Luft des Zimmers.

### Answers:

The oil burner heats the water.

Heat flows from the water into the air of the room.

## Bibliography

Dudenverlag, Der Große Duden - Bildwörterbuch der deutschen Sprache (Bibliographisches Institut, Mann, 1958) 84-85

## Authors

[Milton Beck](#)