Homonuclear Diatomic Molecules

Element	Form
Oxygen	O_2
Nitrogen	N_2
Chlorine	Cl_2
Fluorine	F_2
Bromine	Br_2
Iodine	I_2
Astatine	As_2
Hydrogen	H_2

UNITS

Prefixes for Naming Covalent Compounds Table 3.1, page 91			
Prefix	**Meaning**	**Prefix**	**Meaning**
Mono	one	**Hexa**	Six
Di	two	**Hepta**	Seven
Tri	three	**Octa**	Eight
Tetra	four	**Nona**	Nine
Penta	five	**Deca**	ten

SPECIFIC HEAT

SUBSTANCE	SPECIFIC HEAT, $c = \frac{J}{g \circ C}$
Copper	c = 0.3851
Iron	c = 0.4521
Glass	c = 0.8372
Aluminum	c = 0.9000

TEMPERATURE CONVERSIONS

TEMPERATURE UNITS		
Temperature scale	**Notation**	**Units**
Fahrenheit	$^\circ F$	$^\circ F = \frac{9}{5}(^\circ C) + 32$
Celsius	$^\circ C$	$^\circ C = \frac{9}{5}(^\circ F - 32)$
Kelvin	$^\circ K$	$^\circ K = {}^\circ C + 273.15$

UNITS

UNITS FOR HEAT FORMULA		
Element	**Notation**	**Units**
Specific Heat	c	$\frac{J}{g\,^\circ C}$
Mass	g	grams
Temperature	$T_{initial}$ or T_{final}	$^\circ C$
Heat lost or gained	q	J
Change in Temperature	ΔT	$^\circ C$

FORMULAS FOR MEASURING HEAT

FORMULAS WORKING WITH HEAT		
MISSING VARIABLE	**Notation**	**Formula**
Change in Temperature	$\Delta T =$	$\frac{q}{(m)(c)}$
Specific Heat of object	$C =$	$\frac{q}{(m)(\Delta T)}$
Mass	$m =$	$\frac{q}{(c)(\Delta T)}$
Heat lost or gained	$q =$	$(m)(c)(\Delta T)$
Initial or Final Temperature	$T_{initial}$ or T_{final}	$\Delta T = T_{final} - T_{initial}$

CALORIMETER PROBLEMS

FORMULAS WORKING WITH CALORIMETER PROBLEMS		
MISSING VARIABLE	**Notation**	**Setup the Problem**
An object in a liquid, ignore the calorimeter	$q_{object} = q_{liquid}$	$(m)(c)(\Delta T)_{object} = (m)(c)(\Delta T)_{liquid}$
An object in a liquid, do not ignore the calorimeter	$-q_{object} = q_{liquid} + q_{calorimeter}$	$-(m)(c)(\Delta T)_{object} = (m)(c)(\Delta T)_{liquid}$ $+ (m)(c)(\Delta T)_{calorimeter}$