

Review of articles for FY1M class
J. Erhart

Scopus - **thermodynamics**

Vollmer M., Möllmann K.-P.
Thermodynamics of gases: Combustion processes, analysed in slow motion
(2013) Physics Education, 48 (1), pp. 22 - 27

De Bernardis G., De Paz M., Pilo M., Sonnino G.
Thermodynamic experiments on gases with a computer on-line
(1994) Physics Education, 29 (4), art. no. 008, pp. 222 - 229

Jones A.R.
Combustion physics
(1985) Physics Education, 20 (6), art. no. 006, pp. 292 - 298

Whelan P.M.
Introduction to the mole in the teaching of ideal and real gases
(1977) Physics Education, 12 (5), art. no. 002, pp. 279 - 284

Ng L.M., Ng Y.S.
The thermodynamics of the drinking bird toy
(1993) Physics Education, 28 (5), art. no. 014, pp. 320 - 324

Erol M., Kuzucu M.E.
Measurement of specific heat by using non-isolating container and Arduino: a novel teaching method
(2024) Physics Education, 59 (3), art. no. 035023

Everett D.H.
The second law of thermodynamics: Heat engines and refrigerators
(1967) Physics Education, 2 (4), art. no. 310, pp. 211 - 213

Laranjeiras C.C., Portela S.I.C.
The Carnot cycle and the teaching of thermodynamics: A historical approach
(2016) Physics Education, 51 (5), art. no. 055013

Liley P.E.
Misleading thermodynamics [4]
(1994) Physics Education, 29 (1), art. no. 001, pp. 7

Trout J.J., Jacobsen T.
'The Science of Ice Cream,' an undergraduate, interdisciplinary, general education course taught in the physics program
(2020) Physics Education, 55 (1), art. no. 015009

Vollmer M., Möllmann K.-P.
Vapour pressure and adiabatic cooling from champagne: Slow-motion visualization of gas thermodynamics

(2012) Physics Education, 47 (5), pp. 608 - 615

Studnička F., Šlégrová L., Voglová K., Šlégr J.
Heat index, wet-bulb temperature and psychrometrics: what to expect in the 21st century
(2023) Physics Education, 58 (2), art. no. 025003

Ivanov D., Nikolov S.
Measuring Boltzmann's constant with carbon dioxide
(2013) Physics Education, 48 (6), pp. 713 - 717

Helsdon R.M.
The zeroth law of thermodynamics
(1982) Physics Education, 17 (3), art. no. 305, pp. 114 - 115

Giulotto E., Malgieri M.
Suggestions on the teaching of atmospheric pressure at university and secondary school levels
(2022) Physics Education, 57 (6), art. no. 065022

Poggi V., Miceli C., Testa I.
Teaching energy using an integrated science approach
(2017) Physics Education, 52 (1), art. no. 015018

da Silva W.P., Precker J.W., E Silva D.D.P.S., E Silva C.D.P.S.
A low-cost method for measuring the specific heat of aluminium
(2004) Physics Education, 39 (6), pp. 514 - 517

Moore G.S.M.
First law of thermodynamics . . .
(1994) Physics Education, 29 (2), art. no. 001, pp. 62 - 63

Cottle D., Campbell R.
Investigating the efficiency of air-source heat pumps in the secondary school physics laboratory
(2024) Physics Education, 59 (1), art. no. 015023

Yeadon W., Quinn M.
Thermodynamics education for energy transformation: A Stirling Engine experiment
(2021) Physics Education, 56 (5), art. no. 055033

Pathare S.R., Pradhan H.C.
Students' misconceptions about heat transfer mechanisms and elementary kinetic theory
(2010) Physics Education, 45 (6), pp. 629 - 634

Musilová P.
Physics entrance exams and main student problems
(2025) Physics Education, 60 (3), art. no. 035034

Prasitpong S., Phayphung W., Rakkapao S.
Investigate the physics of instant noodles in a hot cup using Arduino temperature sensors
(2023) Physics Education, 58 (2), art. no. 025005

Pathare S., Huli S., Ladage S., Pradhan H.C.
Understanding first law of thermodynamics through activities
(2018) Physics Education, 53 (2), art. no. 025013

Wu G., Wu A.Y.
A new perspective of how to understand entropy in thermodynamics
(2020) Physics Education, 55 (1), art. no. 015005

Pathare S., Huli S., Nachane M., Ladage S., Pradhan H.
Understanding thermal equilibrium through activities
(2015) Physics Education, 50 (2), pp. 146 - 158

Kincanon E.
How I teach the second law of thermodynamics
(2013) Physics Education, 48 (4), pp. 491 - 496

Deacon C.G., Goulding R., Haridass C., De Young B.
Demonstration experiments with a Stirling engine
(1994) Physics Education, 29 (3), art. no. 013, pp. 180 - 183

Butler C.
Thermodynamic analysis of a heat engine: experiments with the Stirling cycle
(2024) Physics Education, 59 (5), art. no. 053002

Jones H.G.
Thermodynamics - A practical subject
(1984) Physics Education, 19 (1), art. no. 001, pp. 15 - 18

Johnstone A.H., MacDonald J.J., Webb G.
Misconceptions in school thermodynamics
(1977) Physics Education, 12 (4), art. no. 011, pp. 248 - 251

Wang D., Khan H.
Understanding the thermal efficiency of heat engines: A graphical approach
(2013) Physics Education, 48 (2), pp. 169 - 175

Onorato P., Mascheretti P., De Ambrosis A.
Mechanical sensors and plastic syringes to verify the gas laws without neglecting friction
(2010) Physics Education, 45 (6), pp. 586 - 593

Tupec V., Šlégrová L., Šlégr J.
Contrail or chemtrail? Challenges and opportunities for educators
(2024) Physics Education, 59 (3), art. no. 035025

Strnad J.
The second law of thermodynamics in a historical setting
(1984) Physics Education, 19 (2), art. no. 317, pp. 94 - 100

Barzi F., Fethi K.

Reformulation of classical thermodynamics from information theory
(2025) Physics Education, 60 (2), art. no. 025501

Greaves C.
The direct conversion of chemical energy into electricity
(1970) Physics Education, 5 (1), art. no. 003, pp. 18 - 24

Reed B.C.
Recompressing a freely-expanded ideal gas and violating the second law of thermodynamics
(2024) Physics Education, 59 (5), art. no. 055017

Malgieri M., Onorato P., Valentini A., De Ambrosis A.
Improving the connection between the microscopic and macroscopic approaches to thermodynamics in high school
(2016) Physics Education, 51 (6), art. no. 065010

Reed B.C.
A deeper look at entropy change in the free expansion of an ideal gas
(2022) Physics Education, 57 (5), art. no. 053001

Gillham E.J.
Some notes on the teaching of A-level heat and thermodynamics
(1995) Physics Education, 30 (2), art. no. 009, pp. 100 - 103

Azevedo E Silva J.F.M.
The thermodynamics of a refrigeration system
(1991) Physics Education, 26 (2), art. no. 006, pp. 115 - 119

Senft J.R.
Proofs of the Carnot theorems of classical thermodynamics
(1978) Physics Education, 13 (1), art. no. 315, pp. 35 - 37

Costa D.C., Mata A.S., Nascimento F.S., Silva S.L.L.
A thermodynamic analysis of alternative cooling options for beverages
(2024) Physics Education, 59 (3), art. no. 035022

Zhu L., Xiang G.
Investigating student understanding of a heat engine: A case study of a Stirling engine
(2022) Physics Education, 57 (1), art. no. 015011

Kemp H.R.
The concept of energy without heat or work
(1984) Physics Education, 19 (5), art. no. 003, pp. 234 - 235

Leff H.S.
Removing the mystery of entropy and thermodynamics - Part III
(2012) Physics Teacher, 50 (3), pp. 170 - 172

Ogawara Y.
Teaching Thermodynamics Using a Vacuum Container for Food

(2020) Physics Teacher, 58 (3), pp. 186 - 190

Timberlake T.

The statistical interpretation of entropy: An activity

(2010) Physics Teacher, 48 (8), pp. 516 - 519

Sobel M.

Teaching thermodynamics and the nature of matter

(2007) Physics Teacher, 45 (8), pp. 511 - 515

Kiatgamolchai S.

A graphical proof of the positive entropy change in heat transfer between two objects

(2015) Physics Teacher, 53 (2), pp. 95 - 96

Mohazzabi P.

The Physics of "String Passing Through Ice"

(2011) Physics Teacher, 49 (7), pp. 429 - 431

Koser J.

Laboratory activity: Specific heat by change in internal energy of silly putty

(2011) Physics Teacher, 49 (9), pp. 574

Knight R.

All about Polytropic Processes

(2022) Physics Teacher, 60 (6), pp. 422 - 424

Melander E., Haglund J., Weiszflog M., Andersson S.

More than meets the eye - infrared cameras in open-ended university thermodynamics labs

(2016) Physics Teacher, 54 (9), pp. 528 - 531

Feldman B.J.

A physicist's view of the automobile engine

(2004) Physics Teacher, 42 (9), pp. 543 - 547

Goy N.-A., Denis Z., Lavaud M., Grolleau A., Dufour N., Deblais A., Delabre U.

Surface tension measurements with a smartphone

(2017) Physics Teacher, 55 (8), pp. 498 - 499

Leff H.S.

Removing the mystery of entropy and thermodynamics - part V

(2012) Physics Teacher, 50 (5), pp. 274 - 276

LoPresto M.C., Hagoort N.

Determining planetary temperatures with the Stefan-Boltzmann law

(2011) Physics Teacher, 49 (2), pp. 113 - 116

Lincoln J.

Lab activities on temperature and thermodynamics

(2022) Physics Teacher, 60 (1), pp. 74 - 75

Kaufman R., Leff H.

Interdependence of the First and Second Laws of Thermodynamics

(2022) Physics Teacher, 60 (6), pp. 501 - 503

Chang W.

Teaching the first law of thermodynamics via real-life examples

(2011) Physics Teacher, 49 (4), pp. 231 - 233

Dittrich W., Minkin L., Shapovalov A.S.

Measuring the specific heat of metals by cooling

(2010) Physics Teacher, 48 (8), pp. 531 - 533

Lipscombe T.C., Mungan C.E.

Breathtaking Physics: Human Respiration as a Heat Engine

(2020) Physics Teacher, 58 (3), pp. 150 - 151

Stevens R.E., Stevens K.E., Grady R.L., Stricker L.A.

Measurement of Work and Power in a Coffee-Mug Stirling Engine as a First-Year Physics Laboratory

(2023) Physics Teacher, 61 (5), pp. 396 - 400

Lancor R., Lancor B.

Solar Cookers in the Physics Classroom

(2018) Physics Teacher, 56 (9), pp. 607 - 610

Bohren C.

Commentary on "figuring physics/rapid evaporation"

(2007) Physics Teacher, 45 (8), pp. 470 - 472

Dittrich W., Drosd R., Minkin L., Shapovalov A.S.

The law of entropy increase - a lab experiment

(2016) Physics Teacher, 54 (6), pp. 348 - 350

Jadrich J., Bruxvoort C.

Investigating diffusion and entropy with carbon dioxide-filled balloons

(2010) Physics Teacher, 48 (6), pp. 388 - 390

Browning F., Moore K., Campos J.

Exploring Negative Absolute Temperature Using NetLogo

(2019) Physics Teacher, 57 (1), pp. 26 - 27

Kutzner M.D., Plantak M.

Complete cycle experiments using the adiabatic gas law apparatus

(2014) Physics Teacher, 52 (7), pp. 418 - 421

LoPresto M.C.

A simple statistical thermodynamics experiment

(2010) Physics Teacher, 48 (3), pp. 183 - 185

Silva M.R., Martín-Ramos P., Da Silva P.P.

Studying cooling curves with a smartphone
(2018) Physics Teacher, 56 (1), pp. 53 - 55

Leff H.S.
Removing the Mystery of Entropy and Thermodynamics - Part II
(2012) Physics Teacher, 50 (2), pp. 87 - 90

Leff H.S., Kaufman R.
What if Energy Flowed from Cold to Hot? Counterfactual Thought Experiments
(2020) Physics Teacher, 58 (7), pp. 491 - 493

Berger R.
Some interesting thermodynamics of the thermos flask
(2007) Physics Teacher, 45 (5), pp. 270 - 273

Leff H.S.
Removing the mystery of entropy and thermodynamics - part IV
(2012) Physics Teacher, 50 (4), pp. 215 - 217

Oss S., Gratton L.M.
An extension of the imploding can demonstration
(2006) Physics Teacher, 44 (5), pp. 269 - 271

Mungan C.E.
Thermodynamics of a block sliding across a frictional surface
(2007) Physics Teacher, 45 (5), pp. 288 - 291

Leff H.S.
Removing the Mystery of Entropy and Thermodynamics - Part I
(2012) Physics Teacher, 50 (1), pp. 28 - 31

Newburgh R., Leff H.S.
The mayer-joule principle: The foundation of the first law of thermodynamics
(2011) Physics Teacher, 49 (8), pp. 484 - 487