

Mineral Identification Lab

Original Lesson by Marcella Welch

Focus on Inquiry

The student will use the physical properties of minerals to test and identify a group of minerals.

Lesson Overview

Students will review the physical properties that are used in identifying minerals (color, streak, cleavage or fracture, chemical properties, luster, etc.) They will then classify the minerals according to their properties.

Duration 80 min.	Setting Classroom	Grouping 3-4 students	PTI Inquiry Sub skills 3.3, 3.4, 3.7, 4.3, 5.2, 7.2, 7.3
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Lesson Components	Estimated Time	Inquiry Subskills Used	Technology Used	Level of Student Engagement	Brief Description
Engage	5-10 min.	3.7, 5.2	Projector or overhead may be used	2	Using pictures or samples of minerals the teacher will ask the students how are minerals identified.
Explore	40 min.	3.3, 3.4, 3.7, 4.3	Computer with Internet access	2,3	Students will test minerals for their physical properties in order to identify them.
Explain	15-20min.	4.3, 7.2, 7.3	None	3	Students will identify which properties were useful and not useful in identifying minerals.
Expand	10 min.	3.3	Computer with Internet access	3	Students will be challenged to identify a "mystery" mineral.
Evaluate	N/A	7.3	None	N/A	Teacher developed rubric for data collection and discussion.

Level of Student Engagement

1	Low	Listen to lecture, observe the teacher, individual reading, teacher demonstration, teacher-centered instruction
2	Moderate	Raise questions, lecture with discussion, record data, make predictions, technology interaction with assistance
3	High	Hands-on activity or inquiry, critique others, draw conclusions, make connections, problem-solve, student-centered

National Science Education Standards – Inquiry

Use appropriate tools and techniques to gather, analyze, and interpret data.
Develop descriptions, explanations, predictions, and models using evidence.
Think critically and logically to make the relationship between evidence and explanations.
Communicate scientific procedures and explanations.



National Science Education Standards – Earth Science

Some changes in the solid earth can be described as the "rock cycle." Old rocks at the earth's surface weather, forming sediments that are buried, then compacted, heated, and often recrystallized into new rock. Eventually, those new rocks may be brought to the surface by the forces that drive plate motions, and the rock cycle continues.

Louisiana Grade Level Expectations – Inquiry

- Gr. 8, Inquiry GLE#7 – Record observations using methods that complement investigations (e.g., journals, tables, charts) (SI-M-A3)
- Gr. 8, Inquiry GLE#12 – Use data and information gathered to develop an explanation of experimental results (SI-M-A4)
- Gr. 8, Inquiry GLE#13 – Identify patterns in data to explain natural events (SI-M-A4)
- Gr. 8, Inquiry GLE#19 – Communicate ideas in a variety of ways (e.g., symbols, illustrations, graphs, charts, spreadsheets, concept maps, oral and written reports, equations) (SI-M-A7)
- Gr. 8, Inquiry GLE#22 – Use evidence and observations to explain and communicate the results of investigations (SI-M-A7)



Louisiana Grade Level Expectations Earth Science

Answers To Minerals Identification Physical Geology Lab

Hans-Rudolf Wenk, Andrei Bulakh



Answers To Minerals Identification Physical Geology Lab:

Journal of Geoscience Education ,2005 Laboratory Manual for Physical Geology Sheldon Judson,Margaret Skillman Woyski,1966 **Physical Geology Laboratory Course** Charles M. Gilbert,Mark Newell Christensen,1962

Elementary Geology Laboratory Manual Bowling Green State University. Department of Geology,1971

Geological Survey Bulletin ,1949 **Environmental Geology Laboratory** ,2003-11-14 This easy to use easy to learn from laboratory manual for Environmental Geology employs an interactive question and answer format that engages the reader at the start of each exercise Taking a developmental approach to learning this manual emphasizes principles over rote memorization The entire manual is written in a clear and inviting style and includes scores of helpful hints to coach students as they tackle problems Geology William H. Matthews,2013-10-22 Geology gives a detailed study of rock forming minerals and the rocks that are formed by it The text analyses the forces which act on and within rocks This subject belongs to physical geology Historical geology is also covered in the book This study explores the fossil content of the rock and reconstructs the earth s history over the past million years The subjects encourage the reader to go out and examine his surroundings First chapter of the book focuses on the description of earth Topics such as the shape size and motions of the earth are discussed The second chapter of the text covers the chemical composition of minerals Crystal system crystallography and crystal habits are included in the chapter The physical properties and different types of minerals are also analyzed Volcanism and all aspects of volcanoes are reviewed The formation of soil and weathering is the topic of another chapter The book will provide useful information to geologists mineralogists volcanologists students and researchers of geology General Geology Laboratory Workbook University of Texas. Department of Geology,1958 Study Guide for Physical Geology, Geo 1001 (T451-W485) Robert Evan Sloan,E. C. Alexander (Jr.),1985 Minerals Hans-Rudolf Wenk,Andrei Bulakh,2004-04-01 Minerals Their Constitution and Origin is an introduction to mineralogy for undergraduate and graduate students in the fields of geology and materials science It has been designed for a one semester course and covers all aspects of mineralogy in an up to date and integrated style The book is divided into five parts that discuss structure and bonding within minerals mineral physics and optical properties modes of mineral formation and thermodynamics mineral groups within the context of mineral forming environments and the application of mineralogy for the exploitation of metal deposits gems and cement Identification of minerals in hand specimen and under the microscope are also covered Throughout the text emphasis is placed on linking mineral properties with broader geological processes and on conveying their economic value Containing beautiful colour photographs handy reference tables and a glossary of terms this textbook will be an indispensable guide for the next generation of mineralogy students

Embark on a breathtaking journey through nature and adventure with Crafted by is mesmerizing ebook, Witness the Wonders in **Answers To Minerals Identification Physical Geology Lab** . This immersive experience, available for download in a PDF format (*), transports you to the heart of natural marvels and thrilling escapades. Download now and let the adventure begin!

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Answers To Minerals Identification Physical Geology Lab Introduction

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