Earth Science UbD – 9th Grade – Minerals: December

Stage 1 - Desired Results

ESTABLISHED GOALS (CCSS)

RST 9.3 - Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.

RST 9.4 - Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 9-10 texts and topics*.

WHST 9.2f - Provide a concluding statement or section that follows from and supports the information or explanation presented

RI 9.4 - Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.

Transfer

Students will be able to independently use their learning to…

Use various physical characteristics of minerals to identify and classify them.
Identify the basic crystal shapes.

Meaning

UNDERSTANDINGS
Students will understand that…

Different elements and different chemical bonds result in different minerals.

Minerals are homogenous substances that are solid, have a highly ordered atomic arrangement, with a definite chemical composition.

Physical characteristics such as color, hardness, luster, streak, and cleavage can be used to identify minerals

ESSENTIAL QUESTIONS:

What is a mineral?

What common ways do minerals form?

What are minerals used for?

What can you look for and what steps would you follow to identify an unknown mineral?

Acquisition

Students will know…
Minerals are classified into 9 different types.
Minerals belong to one of 6 basic crystal shapes.

There are a variety of minerals that form in the crust and many can be used as a resource to make products we need and use.

A systematic method of mineral identification.

Students will be skilled at…
Classifying minerals into their various types and crystal shapes.

Identifying items they see or use every day that contain minerals.

Identifying a number of silicate and nonsilicate minerals.

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Stage 2 - Evidence	
Evaluative Criteria	**Assessment Evidence**
PERFORMANCE TASKS	**CURRICULUM EMBEDED PERFORMANCE ASSESSMENT (PERFORMANCE TASKS):** List 50 things you see or use every day that contain a mineral, and identify at least one mineral contained in each. Identify and create 3-dimensional models of each of the 6 basic crystal shapes. Correctly identify 25 mineral samples of both silicate and nonsilicate minerals.
CLAIMS	**CLAIM 1** **CLAIM 2** **CLAIM 3** **CLAIM 4**
DEPTH OF KNOWLEDGE LEVELS	**DOK 1** **DOK2** **DOK 3** **DOK4**
ACHIEVEMENT LEVEL DESCRIPTORS	**ALD 1** **ALD 2** **ALD 3** **ALD 4**

Stage 3 – Learning Plan

Notes/discussion on what a mineral is, how they form, how they are classified, what they are used for, and how they are identified.

Minerals Uses list.

Crystal System activity.

Mineral Classification lab.

Silicate lab.

Nonsilicate lab.