Minerals Webquest

Name:_____

Task 1: Introduction to Minerals

Use any method to watch A Brief Introduction to Minerals video by Michael Sammartano. As you watch, answer the questions below. Tiny URL: https://tinyurl.com/pkntmup
Full URL: https://www.youtube.com/watch?v=8a7p1NFn64s

1. What are minerals the building blocks of?_____
2. How many varieties of minerals are found on Earth?_____
3. What mineral is found in toothpaste?_____
4. Watch the Five (5) criteria of minerals and fill in the blanks below.
   i. The substance must exist as a _____ under normal conditions on Earth.
   ii. The substance must be _____ and not man-made.
   iii. The substance must be _____, not living or made from living things.
   iv. The substance must have a _____, made from specific elements.
   v. The _____ that make up the substance must be _____
5. In the box, draw and label a molecule of Silica Tetrahedra (4:43).
6. How many oxygen atoms does a molecules of Silica Tetrahedra have?___
7. How many silicon atoms does 1 molecule of Silica Tetrahedra have?_____
8. Write in the spaces below if each substance is a “mineral” or “not a mineral.”
9. Mercury:_____ Ice:_____
   Coal: _____ Sulfur:_____
10. What do all the physical properties of minerals result from?_____

_____

_____

11. What is the hardest mineral that exists on Earth?_____
12. What element is graphite and diamond made up of?_____
13. Why is the graphite softer than the diamond even though it is made up of the same substance?___

_____

_____

Task 2: Mohs’ Hardness Scale Video

Use any method to watch the The Mohs Scale of Hardness video by MooMoo Math and Science. As you watch, answer the following questions.
Tiny URL: https://tinyurl.com/y5rhnlwb
Full URL: https://www.youtube.com/watch?v=xZUgWzRpA-4

14. What is the Mohs Scale based on? _____

_____

15. Who developed Mohs’ Hardness Scale?_____
16. What is hardness a measurement of?_____

17. Fill in the table to the right. (Stop at 0:31 in the video)
18. What is the hardness of the average fingernail on Mohs' Scale of Hardness?_____
19. Circle the correct answer. Your fingernail can scratch minerals *harder* / *softer* than itself.
20. What is the hardness of a penny on Mohs' Scale of Hardness?
_____
21. What is the hardness of a streak plate on Mohs' Scale of Hardness?
_____
22. If a mineral can scratch Quartz, but cannot scratch Corundum, according to Mohs Scale of Hardness, what is the name of this mineral? _____

Mohs' Scale of Hardness	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Task 3: Mohs Hardness Scale Game

Use any method to play the Mohs Scale of Mineral Hardness game on the Purpose Games website. Play the game until you get all the minerals matched. Write your score and time in the space below. Full URL:
https://www.purposegames.com/game/mohs-scale-of-mineral-hardness-game
Tiny URL: https://tinyurl.com/ydca7hok

23. Score:_____ Time:_____

Task 4: Physical and Chemical Properties of Minerals Article

Use method to access the minerals website on the Brooklyn College Academic page. Read the information and answer the following questions.
Tiny URL: https://tinyurl.com/ybldwjrc
Full URL: http://academic.brooklyn.cuny.edu/geology/grocha/mineral/mineral.html

24. List Three (3) examples items in your home that are made of minerals._____
_____
25. By definition, a mineral is a_____
_____
26. The physical and chemical properties of a mineral depend upon
    a)_____
    b)_____
27. Which two minerals share the same chemical composition, but different atomic arrangements?
_____

Click on *Color*

28. Even though all varieties of a mineral have the same chemical composition, why do the same minerals have different colors? _____
_____
29. List Four (4) potential colors for calcite._____
30. List Three (3) minerals and their colors that have defining/constant colors._____
_____

31. Do you think one can identify a mineral based on color alone? Why or Why Not?_____

_____

_____

Go Back to the Main Page and Click on *Streak*

32. What the streak of a mineral? _____
33. Is streak always the same color as the actual mineral?_____
34. Give an example of a mineral on this page that has a streak color that is very different than its color. Write the name of the mineral, its color, and its streak color. _____

_____

Go Back to the Main Page and Click on *Hardness*

35. Circle the correct answer for each statement below.
    - A ***soft / intermediate / hard*** mineral can be scratched by a fingernail.
    - A ***soft / intermediate / hard*** mineral cannot be scratched by a fingernail but can be scratched by a steel nail.
    - A ***soft / intermediate / hard*** mineral cannot be scratched by a steel nail.
36. If a mineral can be scratched by corundum, but cannot be scratched by quartz, what is its hardness? _____
37. If a mineral cannot be scratched by a fingernail, but can be scratched by a copper coin, what is its hardness? _____

Go Back to the Main Page and Click on *Cleavage/Fracture*

38. Define Cleavage:_____

_____

39. Which two minerals shown have cleavage in one (1) direction?_____
40. Define Fracture:_____

_____

41. Complete the following table using the information on this page.

Mineral	**Type of Breakage**
Halite	
Calcite	
Gypsum	
Muscovite	
Feldspar	
Quartz	

Go Back to the Main Page and Click on *Reaction to HCL*

42. Carbonate minerals tend to do what when tested with Hydrochloric Acid (HCl)?_____
43. Which type of minerals do not react to HCl?_____
44. How can you distinguish calcite from feldspar without using HCl?_____
45. Could you distinguish chalk from kaolin without using acid?_____

Go Back to the Main Page and Click on *Density*

46. What is density/specific gravity?_____
47. What is the formula for density?_____
48. Write the steps to calculate the specific density of a mineral.
    1) _____
    2) _____
    3) _____

Go Back to the Main Page and Click on *Magnetism*
49. What is the most common magnetic material?_____

Go Back to the Main Page and Click on *Taste*
50. Which mineral has a salty taste?_____

Task 5: Mineral Properties Comparison
Use any method to access the Mineral Properties page from the Geology.com website. Choose Three (3) minerals from the site and compare and contrast their properties in the table below. Full URL: https://geology.com/minerals/
Tiny URL: https://tinyurl.com/y88ed6uo

Mineral Name	51.	52.	53.
Color			
Streak			
Hardness			
Specific Gravity			
Diagnostic Properties			
Uses			
Colored Drawing of Mineral (or screenshot)			