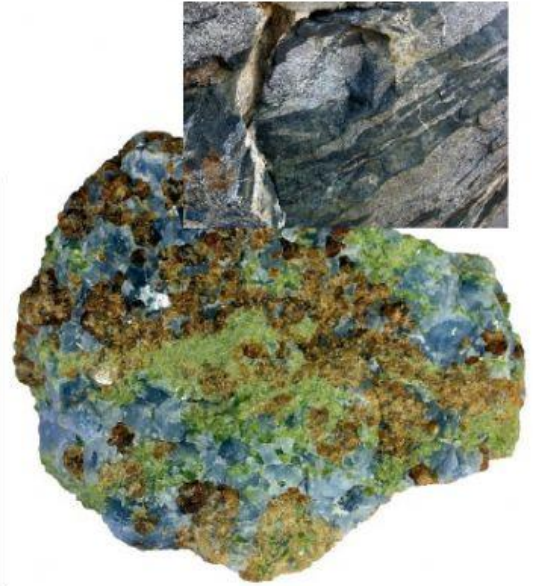
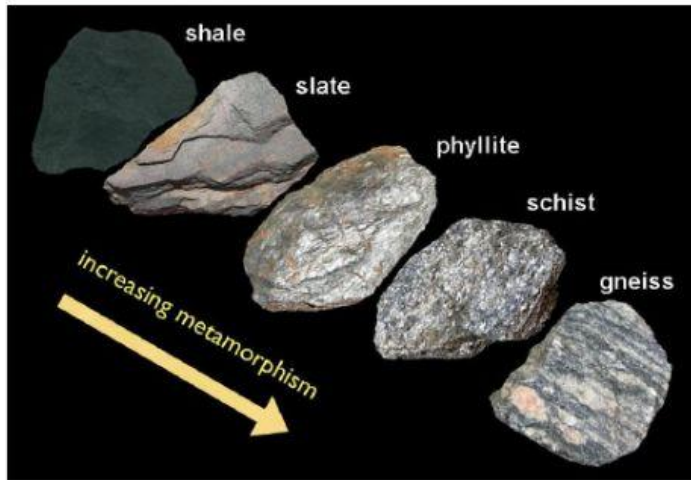


#### 4.14 Metamorphic Rock ClassificationRocks



| Texture                                                                                        | Characteristics                                                                                                                                                                | Protolith              | Metamorphic Rock Name |                                                                                       |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------|---------------------------------------------------------------------------------------|
| Foliated<br> | Very fine-grained rock, tends to split in parallel fragments (known as slaty cleavage)                                                                                         | Shale                  | Slate                 |    |
|                                                                                                | Fine-grained rock, with the grains only visible as a satin sheen. Similar to slate, but with a satin lustre and may have wrinkled cleavage                                     | Shale                  | Phyllite              |    |
|                                                                                                | Contains shiny muscovite (light) or biotite (dark) micas, may see other minerals, such as quartz, talc, garnet (note arrow), and amphibole. Has schistose pattern of foliation | Shale                  | Schist                |    |
|                                                                                                | Contains alternating bands of light- and dark-coloured minerals (usually biotite or amphibole), called gneissic banding                                                        | Shale or Igneous Rock  | Gneiss                |   |
| Non-foliated                                                                                   | Equigranular grains of quartz, which has a hardness of 7                                                                                                                       | Sandstone or Siltstone | Quartzite             |  |
|                                                                                                | Equigranular grains of calcite, which has a hardness of 4, reacts freely with dilute HCl                                                                                       | Limestone              | Marble                |  |

1. What does a foliated metamorphic rock look like?
2. How do slate, phyllite, and schist differ from each other? How are they the same?

3. What is quartzite?

1. How are metamorphic rocks classified?

2. How do metamorphic rocks form?

3. What is recrystallization?

4. Why are these rocks the most dense?

5. Where do metamorphic rocks form?

6. Where does regional metamorphism occur?

7. What is a foliated rock?

8. What does shale become when heated and put under pressure?

9. What is schist?

10. Describe gneiss.

11. What is the evidence for regional metamorphism?

12. What is contact metamorphism?

13. Where does contact metamorphism occur?

14. Describe non-foliated rocks.

15. Why is hornfels unique?