Identifying Rocks

**Part 1**

Aim: To Identify rocks using physical and chemical properties.

Background:

To most geologists, the term "acid test" means placing a drop of dilute (5% to 10%) hydrochloric acid on a rock or mineral and watching for bubbles of carbon dioxide gas to be released. The bubbles signal the presence of carbonate minerals such as [calcite](https://geology.com/minerals/calcite.shtml) and [dolomite](https://geology.com/minerals/dolomite.shtml).

The bubbling release of carbon dioxide gas can be so weak that you need a [hand lens](https://geology.com/store/hand-lens/) to observe single bubbles slowly growing in the drop of hydrochloric acid - or so vigorous that a flash of effervescence is produced.

Materials

* One of each unlabelled rock chip
* Vinegar
* Watch glass
* Paper towel
* Magnifying glass
* Rock identification key

Method:

Place the first rock chip onto a watch glass.

Carefully put two drops of vinegar directly onto the rock chip.

Record your observation.

Carefully rinse the sample and leave it to dry on a piece of paper towel.

Repeat this for all three rock samples.

Use the magnifying glass and the rock identification key to determine the type of rock for each sample.

Results:

|  |  |  |  |
| --- | --- | --- | --- |
| Sample | Reaction with acid | Properties | Rock type |
| **A** |  |  |  |
| **B** |  |  |  |
| **C** |  |  |  |

Discussion:

1. Why do geologists test rocks using acid?
2. Which sample was the easiest to identify? Why?
3. How many of the samples could you correctly identify?

**Part 2**

Aim: To correctly identify as many rocks as possible using physical properties.

Materials:

* 10 Unlabelled rock samples
* Rock identification key
* Magnifying glass

Method:  
Using the rock identification key use the physical properties of each rock sample to identify them.

Write your results in the table below.

Results:

|  |  |  |
| --- | --- | --- |
| Sample Number | Physical Properties | Rock name |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| 7 |  |  |
| 8 |  |  |
| 9 |  |  |
| 10 |  |  |

Discussion:

1. How was it difficult to identify your rock samples?
2. Were there any samples you could not identify?
3. Compare your results with those of another group. Were there any differences between your results?
4. Check your answers with your teacher. How many rocks could your group correctly identify?