**Rocks**

Gheorghe Tecuci

Learning Agent Center and Computer Science Department, George Mason University

tecuci@gmu.edu, <http://lac.gmu.edu>

**1. Introduction**

This exercise was adapted from:

Jonathan Osbome, Sibel Erduran, Shirley Simon, *Ideas, Evidence & Argument in Science* (IDEAS), King's College London, 2004, pp. 41-46, <https://www.stem.org.uk/elibrary/collection/3308>

<https://www.stem.org.uk/resources/elibrary/resource/28125/ideas-resources>

The aim of this exercise is to explore different types of rocks and to construct argumentations for why a particular rock is sedimentary, igneous or metamorphic. Section 2 presents the inquiries and Section 3 presents the corresponding argumentations developed with the sInvestigator system.

sInvestigator may be downloaded from <http://lac.gmu.edu/sInvestigator/>

The knowledge base containing the argumentation may be downloaded from

<http://lac.gmu.edu/sInvestigator/CaseStudies.html>

**2. Inquiries**: What type of rock is Rock1?

What type of rock is Rock2? etc.

You are presented with evidence about the several rocks ad asked to develop argumentations for determining the type of each rock.

Rock1 evidence:

* It is possible to carve a grove in the rock's surface using a fingernail.
* It is not as heavy as other rocks.
* It is light in color.
* It can be found at the top of a mountain.
* It wears off on your clothes easily.
* It contains fossils.

Rock2 evidence:

* It is multicolored.
* It has tiny holes and spaces.
* It is very hard.
* It contains crystals.
* It is difficult to scratch.
* It reflects light.

Rock3 evidence:

* It is very brittle and will snap fairly easily.
* It has some layers.
* It is almost black in color.
* It is quite hard to scratch.
* It can be used on tables.
* It doesn't smell.

Rock4 evidence:

* It is not particularly heavy.
* It is impossible to scratch with a fingernail.
* It is a dark color.
* It can found buried in the bottom of a stream.
* It has no crystals.

Rock5 evidence:

* This rock contains grains.
* It crumbles.
* It wears off on your clothes.
* It is easy to scratch.
* It can be found at the base of a mountain.

Rock6 evidence:

* It is light in color.
* It is very hard.
* It is quite difficult to scratch.
* It reflects light.
* It can be found at high altitude.
* It is regularly used by people in its natural form.

**3. Analysis**





