**Mixtures, Elements and Compounds**

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**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. 34-36, <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 the concepts of elements, and of mixtures and

compounds, and the criteria for distinguishing them by developing evidence-based argumentations.Section 2 presents the inquiry and Section 3 presents the corresponding argumentation 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/MixturesAndCompounds.zkb>

**2. Inquiry: Which statement is true and which is false?**

For each of the of the following statements develop an evidence-based argumentation to determine whether it is true or false:

* Salty water is a compound.
* Air is a mixture of different elements and/or compounds.
* Elements have only one type of atom in them.
* Elements can join together to form compounds.
* Pure substances are substances that don't have harmful things in them.

**3. Analysis**

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