

Shakespeare & Science: The Elements

An open-ended activity connecting
scientific thoughts across the ages



Resources: (You'll need to create these):

Two sets of cards per group of four pupils ...

- Set 1 (Shakespearean Elements - Red): Earth, Air, Fire, Water
- Set 2 (21st Century Elements - Blue): Gold, Silver, Oxygen, Nitrogen, Carbon, Iron, Chlorine, Hydrogen, Sodium, Calcium (you can add more elements if you wish!)

Instruction Card, one per group, reading:

- Lay the four Shakespearean Elements / Red Cards out
- As a group, decide where each of the 21st Century Elements / Blue Cards should go.
- How many different ways are there of doing this?

Preparation:

1. Create a powerpoint slide with this quotation from Twelfth Night: *"Does not our lives consist of the four elements?"*
2. Lay all the cards randomly around the room.
3. Create a powerpoint slide showing the periodic table.

Introduction:

1. Show the pupils the Twelfth Night quotation. Ask them what they think it means.
2. Tell them that in Shakespeare's time, people believed that everything was made up of one or more elements, in different combinations: Earth, Air, Fire and Water.
3. Explain that they are going to work in groups – and that their first task will be to collect one of each of the cards (tell them how many there are in total). When they have collected the whole set, they need to come to you for further instructions.

Application:

- Split the class into groups of four – and begin the activity.
- Once a group can show you they have collected all the cards, give them an Instruction Card.
- There are no right or wrong answers – but pupils should be able to explain their choices. Oxygen, for example, might go with Air (as it's a gas) – but might go with Water (combining with hydrogen to make water).
- Once everyone has had a go at the activity, discuss the different choices that have been made.
- Show the pupils the Periodic Table – elements in the same vertical columns share some characteristics. Elements in Group 18, for example (the Noble Gases), are all inert gases – while those in Group 17 (the Halogens) are very reactive, some being solid, some liquid and others gaseous.

Going One Step Further:

In Periodic Tales, Hugh Aldersey-Williams tells of his attempts to secure examples of each of the naturally occurring elements in the Periodic Table. You mightn't want to go this far – but you could take one step further by challenging the pupils to collect everyday objects that contain particular elements, even if in combined forms. You could even assign different groups of elements to different groups of pupils ...

- Sodium and Chlorine – jar of salt / sea water
- Helium – helium balloon
- Tungsten – filament lightbulb
- Iron – magnet
- Copper – 2p coin
- Mercury – mercury thermometer

Get in touch and let
us know about your
experiences of using
Shakespeare and
Science with
your pupils at:
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