

For Teachers

Glass Raw Materials

Module 1

Objective: Understanding the role of each raw material on a glass composition

Necessities



Toolkit materials
Bottle with sand
Bottle with Salicornia
Bottle with fern
Bottle with shells
Several glass samples with different colours under daylight
Several glass samples with different colours under UV-light

List of materials/tools

- Periodic Table
- UV-light

Lab Procedure

There are two different activities. The first one is focused on discover natural raw materials to produce glass: Sand – SiO_2 source - Network former

Salicornia – Na_2O source - Network modifier

Fern – K_2O source - Network modifier

Shells – CaO source - Stabilizer

The second activity is focused on coloured and luminescent glasses, where each element gives a different optical property to the glass composition. The students will try to identify which element gives the observed colour. On the periodic table, they will place the glass on the correspondent element. The glasses will also be placed under UV light to observe if they have luminescence and if they have, the element that is giving luminescence should be identified.

Conclusions

Glasses can be produced using natural sources
Different elements give rise to different colours