Presenting the non-metals

***Education in Chemistry***March 2020
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Use this resource to support lower achievers to explore the properties of non-metals.

## Properties of non-metals

Below is a list of non-metal elements. For each element, colour in the squares according to the following code:

Red = property is typical of a non-metal

Blue = property is typical of a metal

|  |  |  |  |
| --- | --- | --- | --- |
| **Element** | **Melting****Point (°C)** | **Appearance** | **Electrical conductivity** |
| Carbon (graphite) | Sublimes at high temp (3600) | Shiny grey solid | Very good |
| Oxygen | -219 | Colourless gas | No |
| Hydrogen | -259 | Colourless gas | No |
| Sulfur | 115 | Yellow solid | No |
| Nitrogen | -210 | Colourless gas | No |
| Fluorine | -220 | Colourless gas | No |
| Chlorine | -102 | Pale yellow gas | No |
| Phosphorus | 44 | Red or white solid | No |
| Bromine | -7 | Red brown liquid | No |
| Iodine | 114 | Shiny grey solid | No |
| Selenium | 221 | Shiny grey solid | Fair |
| Silicon | 1414 | Shiny grey solid | Fair |
| Helium | n/a no solid form at standard pressure | Colourless gas | No |
| Argon | -189 | Colourless gas | No |
| Neon | -249 | Colourless gas | No |
| Xenon | -112 | Colourless gas | No |
| Radon | -71 | Colourless gas | No |
| Krypton | -157 | Colourless gas | No |

1. Which elements have some properties of both metals and non-metals? *Carbon, selenium and silicon.*
2. Is there a clear trend with their location in the Periodic Table? Explain your answer.

*Selenium and silicon are near to the dividing line between metals and non-metals. Carbon is not, but the data given is only for one form of carbon. There are other forms that may display more ‘non-metal-like’ properties.*