



SAMPLE TEACHING MATERIAL

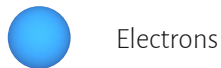
ELEMENTS

H_2O Water

^{16}O Oxygen

1_1H Hydrogen

COLOR SYSTEM



Electrons



Neutrons



Protons

HYDROGEN – OXYGEN – WATER

MAJOR CHEMICAL AND PHYSICAL PROPERTIES

Water is a liquid at standard temperature and pressure. It is tasteless and odorless. The intrinsic colour of water and ice is a very slight blue hue, although both appear colorless in small quantities. Water vapour is essentially invisible as a gas.

Since the water molecule is not linear and the oxygen atom has a higher electronegativity than hydrogen atoms, the oxygen atom carries a slight negative charge, whereas the hydrogen atoms are slightly positive. As a result, water is a polar molecule with an electrical dipole moment. Water also can form an unusually large number of intermolecular hydrogen bonds (four) for a molecule of its size. These factors lead to strong attractive forces between molecules of water, giving rise to water's high surface tension and capillary forces. The capillary action refers to the tendency of water to move up a narrow tube against the force of gravity. This property is relied upon by all vascular plants, such as trees.



Please cut out these „Tracking Markers“ and use them together with the Dáskalos app.

The app will show you different atoms. You can observe their core and electron configuration. Carefully take a look at the water molecule. Why do Oxygen and Hydrogen form such a strong bond?

