**SUBJECT: SCIENCE CLASS: 7**

**LESSON: WATER**

1. Teacher – student conversation about different kinds of water in nature (5 minutes)

2. Worksheet about hard and soft water (attachment). Students work in groups of 3 or 4, take didactic tools and do the experiments. (20 minutes)

3. Students with teacher`s help check the answers and define concepts: hard water, soft water, distilled water, mineral water, seawater, rainwater, salt, mineral coating (scale) (10 minutes

4. Teacher explains the difference between soft water and hard water and explains how the hard water can be turned into soft water. (10 minutes)

Teacher`s support: interactive didactic material (bought by school)

**https://www.irokusplus.si/**

**Worksheet – Hard and soft water**

1. What remains in the container when the water evaporates?

What do you need? tap water, distilled water, mineral water, seawater, rainwater, 5 pcs of petri dish.

What to do? Put 10 drops of separate water sample into each petri dish. Mark each petri dish. Put the petri dishes on a warm place and wait for all the water to evaporate.

Describe the residue in each petri dish!

tap water: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

distilled water: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

mineral water: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

seawater: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

rainwater: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Where were the substances, now seen as residue in petri dishes, before the evaporation?

Which kind of water contained the most solids and which the least?

Has the residue the same look in all the petri dishes?

2. Foaming of soapy water

What you need? tap water, distilled water, mineral water, seawater, rainwater, 5 test tubes, 5 corks, test tube rack, 6 droppers, soapy water

What to do? Put 3 ml of separate water sample into each test tube. Mark the test tubes. Add 1 ml of soapy water in each test tube and cork them. Each test tube shake 10 times.

Which water produced the most foam and which the least?

The water with the most foam is the softest. The one with the least foam is the hardest. Arrange water samples from hardest to softest and write down their order.

3. How can you make soft water out of hard water?

What you need? bunsen burner, beaker 250 ml, beaker 50 ml, watch glass, tap water

What to do? Fill the larger beaker with 100 ml of tap water and heat it. After it boils, hold a cold watch glass over steam.

What do you see on the watch glass?

Tilt the watch glass to let water droplets slide down it. Catch them in a smaller beaker.

What kind of water accumulates in the beaker, hard or soft?

Where are the substances that were in the water before heating?