

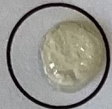













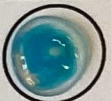
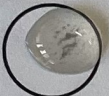




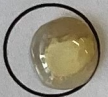




Ako učí inovatívny učiteľ









	Ag^+	Pb^{2+}	Ni^{2+}	Fe^{3+}	Cu^{2+}
$(\text{CO}_3)^{2-}$					
$(\text{PO}_4)^{3-}$					
$(\text{OH})^-$					
$(\text{SO}_4)^{2-}$					
I^-					

Pink or blue?

Think about condition changes. Write down what conditions can affect equilibrium.

You will be using cobalt(II) chloride to demonstrate shift of equilibrium.



You will need: sugar, water, HCl, KCl, AgNO₃, Bunsen burner, ice, salt

On the reaction mark down color of [Co(H₂O)₆]²⁺ and CoCl₄²⁻

Solubility and polarity

"Like dissolves like".

Equipment: 4 test tubes, marker

Chemicals: gasoline, water, iodine, KMnO_4



- What does the polarity of the substances depend on? Determine the polarity of water, gasoline (organic substance, mainly contains bonds C-C and C-H), iodine (I_2) and permanganate (KMnO_4).
- Does iodine dissolve in water? Does potassium permanganate dissolve in gasoline? Why?
- Does water mix with petrol? What determines the order of layers of liquids?
- In which substance was potassium permanganate dissolved, what is the solvent?
- Describe the definition „Like dissolves like“
- What happens when we combine the contents of both tubes together?

Determination of vitamin C in natural material

1. Equipment

- grater
- plastic cups
- strainer
- scales
- teaspoon
- filter paper
- dropper

2. Material and reagents

Natural material: Potatoes, parsley, oranges, kiwi, apples, bananas, lemons and other natural

material.

Reagents: Iodine disinfection Betadine, vitamin C tablets containing 100 mg vitamin C, starch solution.

3. Before you start working

Remember what you've heard or know about vitamin C. Write at least two different pieces of information.

Remember what you heard or know about starch. Write at least two different pieces of information in the box.

4. Reagent test

The agents listed above on this page are available for today's research. Now try it perform interactions between reagents. Box the results of the reactions.

The course of the reaction between the vitamin C solution and the starch solution:

Reaction between iodine disinfection Betadine and starch solution:

Reaction between iodine disinfection Betadine and vitamin C solution:

Reaction between the starch solution with the addition of vitamin C solution with iodine disinfection Betadine (Add Betadine until there is a significant change):

5. Design and implementation of an experiment with vitamin C based on the previous hypothesis of how vitamin C reacts with iodine, try to suggest how you would practically determined how many mg of vitamin C corresponds to 1 drop of iodine disinfectant Betadine. Describe suggested procedure with aids and reagents available to you:

Practically perform the proposed experiment in the previous box and determine how many mg of vitamin C corresponds to 1 drop of Betadine iodine disinfectant.

Think about how you succeeded in the determination and what you would do differently a second time.

6. Determination of the amount of vitamin C in natural material

Based on previous experiments and observations, try to suggest how could be determined vitamin C content in fruits and vegetables. Also take a very good look at the equipment you have. Write down your procedure:

Agree in a group and choose 2 or 3 types of fruit or vegetables in which to try. Determine the vitamin C content with the help of your design. Describe how the experiments took place and for what you have reached the results.

Think about how you succeeded in the determination and what you would do differently a second time.

Compare your measured vitamin C levels with average vitamin C levels in food. Try





