



**O'zbekiston Respublikasi Oliy ta'lim, fan va innovatsiyalar vazirligi,  
Chirchiq davlat pedagogika universiteti  
"Zamonaviy biologiyaning dolzarb muammolari: yechimlari,  
istiqbollari va o'qitishda fan-ta'lim integratsiyasi"  
xalqaro ilmiy-amaliy konferentsiyasi ilmiy ishlar  
TO'PLAMI**

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решения, перспективы и интеграция науки и образования в  
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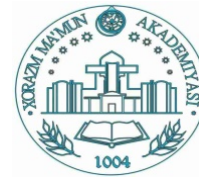
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ИНСТИТУТ ПОЧВОВЕДЕНИЯ И  
АГРОХИМИЧЕСКИХ ИССЛЕДОВАНИЙ



## XALQARO HAMKORLAR / МЕЖДУНАРОДНЫЕ ПАРТНЁРЫ / INTERNATIONAL PARTNERS



### Foydalanilgan adabiyotlar

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### USING THE “CLUSTER” METHOD IN PASSING THE SUBJECT OF THE SOIL SECTION

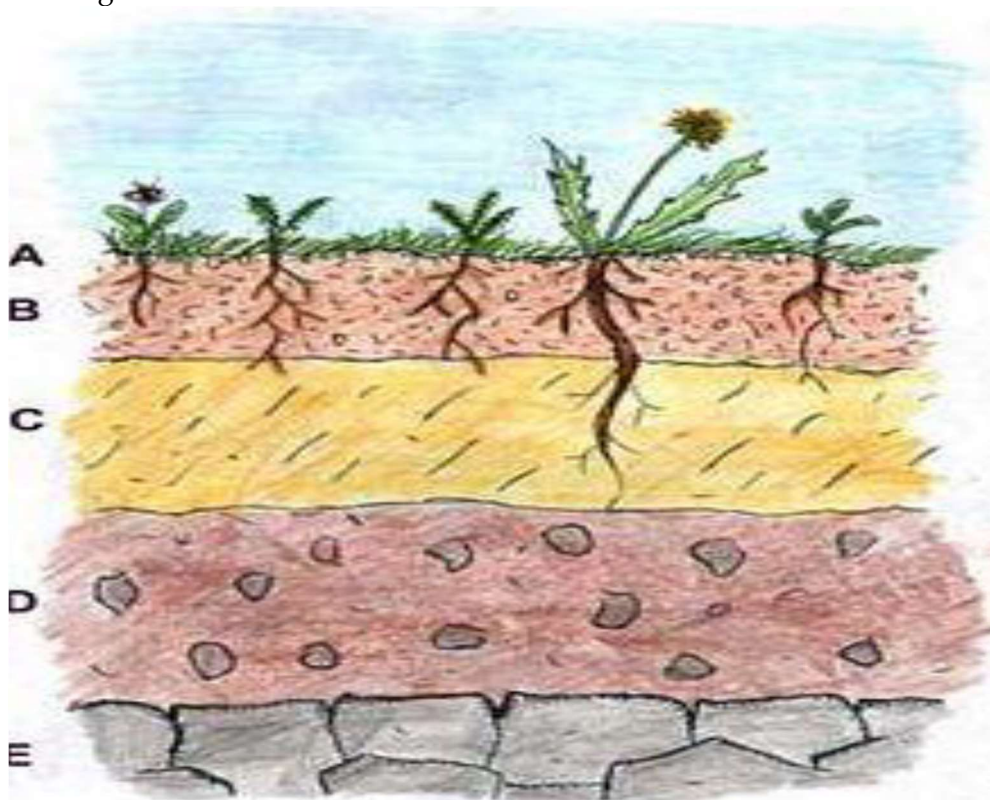
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Today, in a number of developed countries, opportunities are being created for the use of modern pedagogical technologies that guarantee the effectiveness of the educational process. Among the new pedagogical technologies that are widely used in educational institutions, the Cluster method is used to convey information in the educational process as a whole, to implement the sequence, to solve problems, to scientifically organize the lesson process, and to attract the interest of the learners by the teacher. learning, dividing the educational material into small parts and revealing their content, brainstorming, working in small groups, debate, an activity or problem, mutual debate, thinking, solving problems with unity shows the effect.

In the lessons, this method is manifested in the form of a set of ideas expressed by the group members. This creates an opportunity to harmonize the ideas put forward by each member of the group and to find connections between them.

A soil cross-section is excavated for a complete and detailed study of the properties and characteristics of the soil, and samples are taken from each soil horizon in accordance with the purpose of the investigation.



Soil samples are usually taken in the field for practical training to conduct various laboratory analyzes and to study the structure of soils. For this purpose, special pits called *razrez-kesma* are dug. There are three types of pits: full (main) pits, half pits and pits.

**Choosing a place:** Choosing the right place for a pit is one of the most important conditions in soil testing. The pit should be dug in a section that is more characteristic for the place under investigation. It is not possible to choose a place for pits from excavated lands, near canals or roads, in the corners of fields where cars turn. When choosing a place for a pit, the topography of the place is taken into account.

**Excavation procedure:** First, the shape of the pit is determined on the selected site. For this, a right angle with a length of 150-250 cm and a width of approximately 80-100 cm is drawn on the surface of the soil. The soil pit should not only eat the layers of the soil, but also reveal the upper part of the parent rock, so its depth should be 125-250 cm, sometimes even more (until the seepage water comes out). Pits are more superficial in places where seepage waters and the gravel layer are close to the surface of the earth.

When determining that the front wall of the pit to be inspected is vertical, it is necessary that this wall is as well lit as possible or that sunlight is falling. In order to make it convenient to work in the pit, stairs are placed on the opposite side of the vertical wall. The soil excavated from the pit is removed only to the sides. The upper layer with humus is thrown into one of the side trenches, and the soil from the deeper layers is thrown into the other.

**Soil profile:** consists of a series of genetic horizons. Soil horizons are soil layers that appear as a result of soil formation processes and are usually oriented parallel to the surface of the earth, have almost the same structure and are distinguished by their morphological features. Soil horizons differ from each other by their morphological features, such as color, structure, joint. A number of horizons are distinguished in the soil profile, and they are also divided into several horizons. Each horizon has its own name and letters.

Organogenic horizon consisting of organic remains of Ao-plants; T-peat organic horizon; A1-humus accumulative horizon; A2-alluvial; B-iluvial or transient; G-gley horizon; C-mother gender; D-bottom porous rocks; Ah-ploughing horizon.

Specific horizons are characteristic for each soil type, and sometimes these horizons may not be present in the profile of some soils.

**Sampling:** Samples are taken sequentially starting from the bottom layer. Immediately after digging, the first sample is taken from the parent rock or from the bottom layer with a shovel. At the end, a sample is taken from the upper layer. The weight of the sample taken from the upper layer should be around 300-400 g, it is enough to take a sample of 200-300 g from the remaining layers. In the middle of each layer, a layer thickness of about 10 cm is marked, and a soil sample is cut from it with a knife along the entire width of the front wall, and it is placed on thick paper. A sample of humus and arable layers is taken over the entire thickness of the layer. If the humus layer is more than 20 cm thick, then 2-3 samples are taken every 10 cm.

The region, district, village, area, field and pit number, the thickness of the layer, the depth at which the sample was taken, the date and the student's surname are indicated on the paper label, and the wrapped paper is wrapped around the sample. is placed. The sampled layer, its depth, and the date are also written on the paper [1-4].

**Completion of the work:** The pit, the soil is poured and reburied according to the previous location and condition.

**In conclusion,** it can be said that the use of innovative methods in order to increase the effectiveness of the lesson in the teaching process, improving the skills of teachers depends primarily on their special professional potential. However, the cluster method includes such universal components that pedagogues of various academic subjects can use these components, and in this

direction they can quickly achieve good results. It is also important that teachers are satisfied with the training and their work.

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## MAKTAB BIOLOGIYA FANI O'QITUVCHILARINING MASOFAVIY TA'LIM PLATFORMASIDAN FOYDALANISHGA OID KOMPETENTLIGINI RIVOJLANTIRISH

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Jahonda pandemiya va u bilan bog'liq iqtisodiy inqiroz bo'lishiga qaramasdan mamlakatimiz rahbari maktab ta'limiga alohida e'tibor qaratmoqda. Ta'lim - tarbiya - bu hayot - mamot masalasi. Prezident Shavkat Mirziyoyev raisligida 30 Oktyabr kuni bo'lib o'tgan videoselekt yig'ilishida mamlakatimizda ta'lim - tarbiya tizimini takomillashtirish, ilm-fan sohasini rivojini jadallashtirish masalalari keng muhokama qilindi [1]. Jumladan, maktab ta'limi bilan oliy ta'limning o'zaro uyg'unligini ta'minlash asosiy maqsadlardan biri etib tayinlandi. Har bir oliy ta'lim muassasi o'z ustivor yo'nalishlaridan kelib chiqib, maktab o'qituvchilarining malakasini oshirishga yaqindan ko'maklashishga katta e'tibor qaratildi. Ushbu vazifalar ijrosini ta'minlash sifatida, Chirchiq davlat pedagogika universiteti "Tabiiy fanlar" fakulteti ham Toshkent viloyati XTB ga qarashli o'rta umumtalim maktablarining biologiya fani o'qituvchilarining malakasini yuksaltirishga va pedagogik kadrlarga ilmiy - metodik yordam berib kelinmoqda. Bu hamkorlik bilan Toshkent viloyatida xalq ta'limini yanada rivojlantirish, o'quvchilarning oliy ta'limga qamrovini oshirishga katta hissa qo'shiladi.

Prezidentimiz tomonidan o'tkazilgan so'ngi barcha yig'ilishlarda ham yurtimizda uchinchi renessansning poydevorini yaratishdek ulug' vazifa qo'yildi, belgilandi. Ular ta'kidlaganidek, yangi O'zbekistonning ostonasi maktabdan boshlanadi degan ezgu g'oyalarini umummilliy harakatga aylantirish va ro'yobga chiqarish barcha fuqarolarning, jumladan, biz pedagoglarning sharaflari burchimizdir. Shuningdek, bugungi kunda ta'lim sifatini oshirish eng muhim vazifalarimizdan biridir [1]. Davlatimiz rahbari nutqlarida, avvalo maktablarda o'quvchilarni faqat yodlashga emas, balki fikrlashga chorlaydigan metodika yaratish zarurligini ta'kidladi. Bu borada Finlyandiya tajribasi misol qilib keltirildi. Ushbu mamlakat, tabiiy fanlar va matematika bo'yicha dunyoda eng ilg'orlardan biri. "Maktabda o'qitish metodikasi o'zgarmasa, ta'lim sifati ham, mazmuni ham, muhit ham o'zgarmaydi," dedi Shavkat Mirziyoyev [2]. Maktablardagi muammo - ta'lim sifati pastligi, moddiy - texnik baza va shu bilan birga oliy ta'limni bitirgan mutaxassislar tayyorgarligi talab darajasida emasligidir. Endi oliy ta'lim, maktabgacha ta'lim va xalq ta'limi tizimi o'zaro uyg'un tarzda ishlaydi. Oliy ta'lim tizimiga axborot kompyuter texnologiyalarini joriy etish juda dolzarb bo'lgan zamonaviy sharoitda, masofaviy va an'anaviy ta'lim shakllarini yangi usul va texnologiyalar bilan to'ldiradigan ta'lim muassasalarining soni o'smoqda. Masofaviy o'qitish shakli eng ommaviy va qulay shakl bo'lib hisoblanadi [7].

Masofaviy o'qitishga xos bo'lgan yangi yondashuvlar, metodlar va o'qitish vositalarini hisobga olgan holda, o'qituvchilar o'zaro munosabatlarning yangi shakllarini o'zlashtirishda qiyinchiliklarga duch kelmoqdalar. Shu sababli, oliy o'quv yurtlarining ushbu ta'lim shaklidan foydalanishga tayyorligi to'g'risida savol tug'iladi. Bu savolga javob nafaqat oliy o'quv yurtlari texnik jihozlanishining tayyorligi, balki professor-o'qituvchilar tarkibining masofaviy o'qitish

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