

MAVZU YUZASIDAN SAVOLLAR

1. 3D modellashtirishda ishlatiladigan dasturlarni sanab bering.
2. Blender dasturini yuklab olish rasmiy manzilini ayting.
3. Blender dasturi qaysi sohalarda qo'llaniladi?
4. UV Editor nima?
5. Blender dasturining Tinkercaddan farqli tomonini ayting.

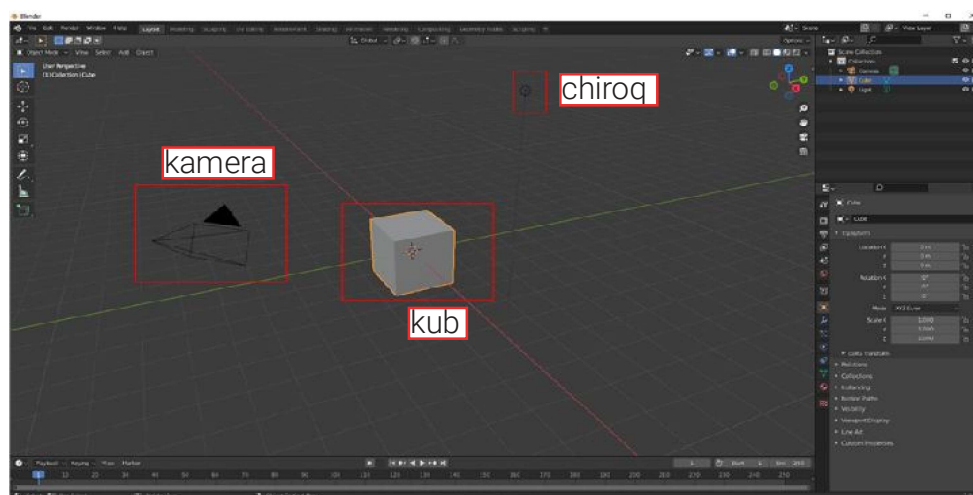
UYGA VAZIFA

1. Blender dasturini www.blender.org manzilidan yuklab olib, kompyuteringizga o'rnatish.
2. Blender dasturi interfeysini o'zingizga qulay holatda sozlang.
3. Blender dasturining muharrirlari bilan tanishib chiqing.

26-dars. 3D MODELLASHTIRISH DASTURIDA SAHNANI BOSHQARISH. 3D MODEL TRANSFORMATSIYASI

Blender dasturida 3D Viewport muharririning asosiy sohasi *sahna* yoki *3D* deb nomlanadi. Sahnalar – 3D model tashkil qilishning bir usuli. Har bir blend faylida bir nechta sahna bo'lishi, u obyekt va materiallarni o'zaro almashishi mumkin.

Blender dasturi yangi fayl sahnasi uchta obyekt: kub, kamera va chiroqni o'z ichiga oladi (1).

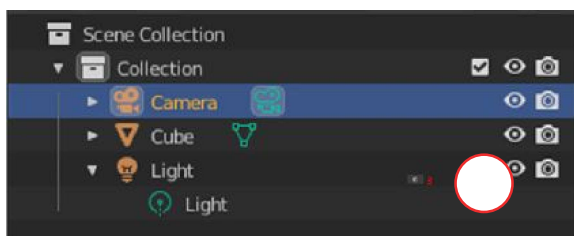


Kub dastur ishga tushishi bilan yorqin konturda faol bo'ladi.

Kamera yakuniy sahnada 3D modelning qaysi burchak ostida va qanday masofadan ko'rinishini sozlaydi. Animatsiya yaratish jarayonida obyektlar kamera yordamida harakatlantiriladi.

Chiroq – yorug'lik manbai. Uning yordamida yakuniy model yorug'likka ega bo'ladi. Blender dasturida moslamalarni tanlash sichqonchaning chap tugmachasini bir marta bosish orqali amalga oshiriladi.

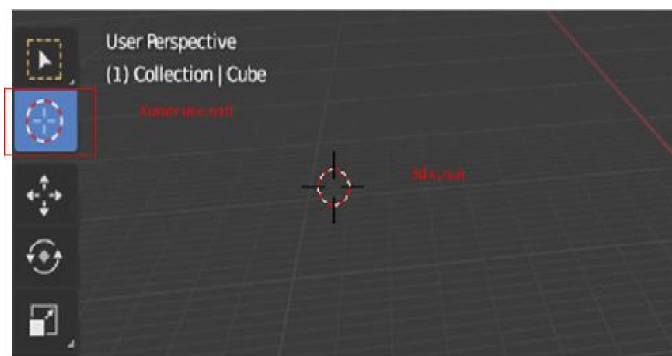
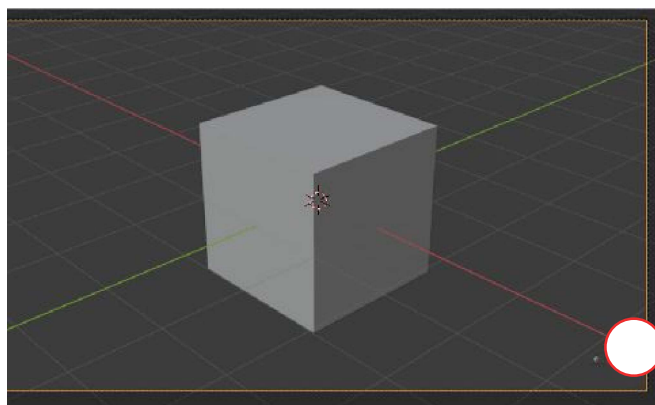
Tanlangan obyekt nomi interfeysning yuqori chap burchagida ko'rsatiladi (2).



Obyektlarni Outliner muharririda ham tanlash mumkin. Bu yerda ularni qayta nomlash, berkitish, saralash kabi amallarni bajarish mumkin (3).

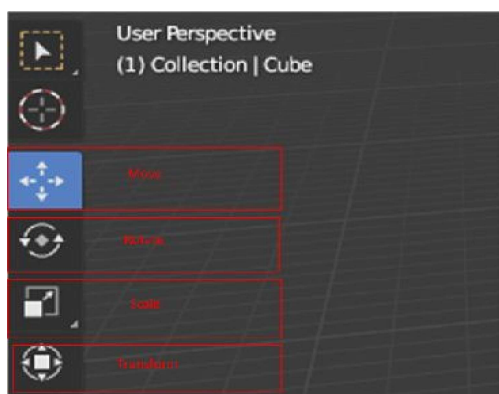
3D model oldindan qanday ko'rinishini ko'rish uchun klaviaturadan "F12" tugmachasi bosiladi. Ko'rish sahnasi alohida oyna ko'rinishida ochiladi. 3D Viewport sahnasiga qaytish uchun "Esc" tugmachasini bosiladi.

Kamera ko'rinishini klaviaturaning raqamli panelidagi 0 tugmachasini bosish orqali ham ko'rish mumkin. Ortga qaytish uchun yana 0 tugmachasi bosiladi (4).



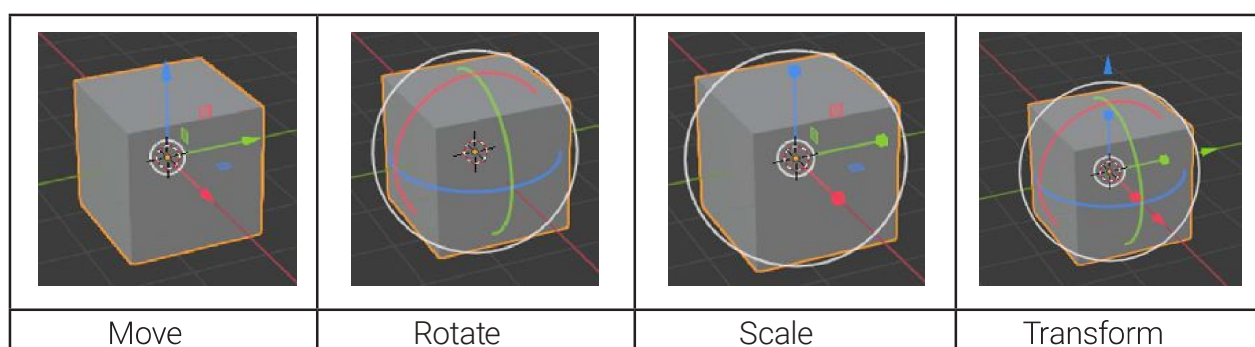
Blender dasturida obyektlardan tashqari, sahnada qizil X va yashil Y o'qlari bo'lgan 3D kursor mavjud. 3D kursor, asosan, yangi obyektни joylashtirish, obyektning markaziy nuqtasini siljitish uchun ko'rsatkich sifatida ishlatiladi. Faol holatda 3D kursor sahnaning markazida, X va Y o'qlari kesishmasida

joylashgan bo'lib, uni boshqa joyga ko'chirish uchun uskunalar panelidagi "Kursor" uskunasi tanlanadi va u 3D kursorni harakatga keltiradi (5).



Blender dasturidagi asosiy transformatsiyalar 3D modelni "Move" (harakatlantirish), "Rotate" (aylantirish) va "Scale" (masshtablash) vazifalarini o'z ichiga oladi. Bularning barchasini "Transform" uskunasi tanlab ham amalga oshirish mumkin (6).

Har bir 3D model transformatsiyasi tanlanganda, obyekt ustida markerlar paydo bo'ladi (7).



3D model transformatsiyalarini amalga oshirishda tezkor tugmachalardan ham foydalanish mumkin.

G, R, S tugmachalarini bir marta bosish (ushlab turmaslik, shunchaki bosish) orqali quyidagi transformatsiyalar bajariladi:

G – Move – tanlash / ko'chirish;

R – Rotate – aylantirish;

S – Scale – o'lchamini o'zgartirish.

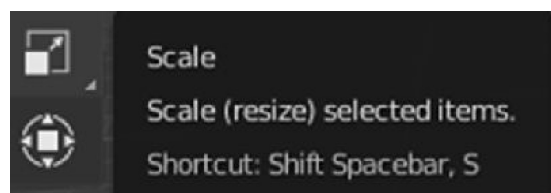
AMALIY MASHG'ULOT

Blender dasturini ishga tushuring.

"New File" bandidan "General" buyrug'ini tanlang.

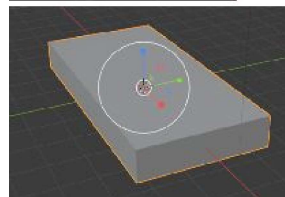
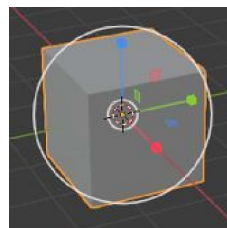


Uskunalar panelidan "Scale" uskunasi tanlang.

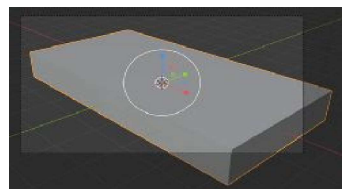


Kubning ustida hosil bo'lgan markerlar yordamida sichqonchaning chap tugmachasni bosib, quyidagi ko'rinishga keltiring:

Scale X	4.000
Y	2.000
Z	0.500

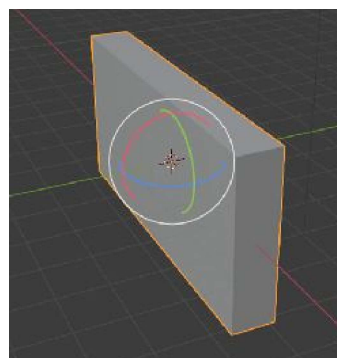


Klaviaturaning raqamli panelidagi 0 tugmachasini bosish orqali kameradan hosil bo'lgan modelni ko'ramiz.

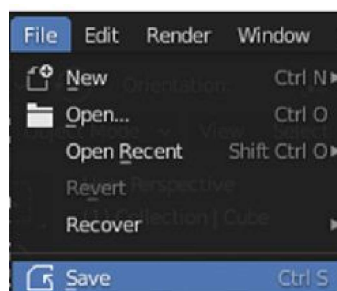


Uskunalar panelidan "Rotate" uskunasi tanlaymiz va 3D modelni X o'qi bo'ylab 90 gradusga aylantiramiz.

Rotation X	90°
Y	0°
Z	0°



Hosil bo'lgan 3D modelni 1.blend kengaytmasi bilan saqlab qo'yamiz.



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1. 3D modellashtirish sahnasidagi obyektlarni sanab bering.
2. 3D modelni kameradan ko'rish uchun qaysi tugmacha bosiladi?
3. "Rotate" uskunasi nima vazifasi?
4. "Scale" uskunasi nima vazifasi?
5. "Move" va "Transform" uskunalari farqini ayting.