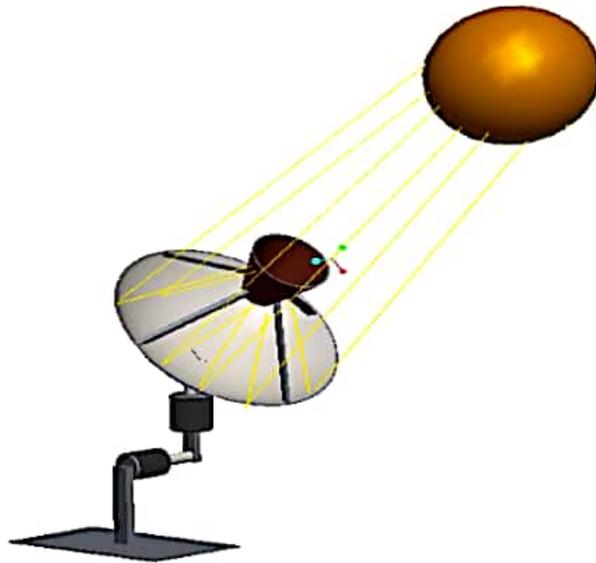
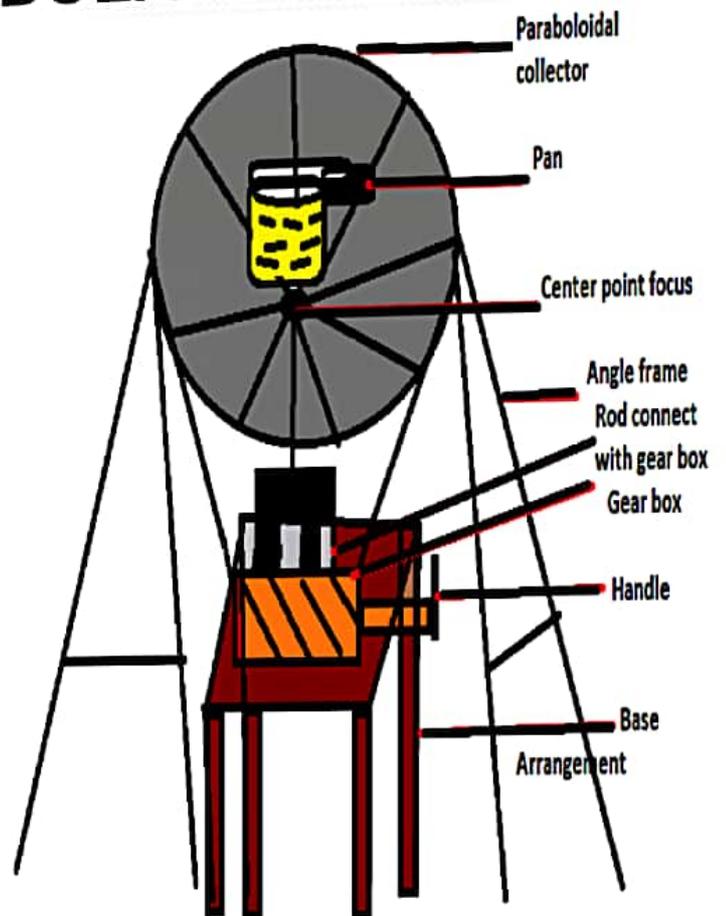
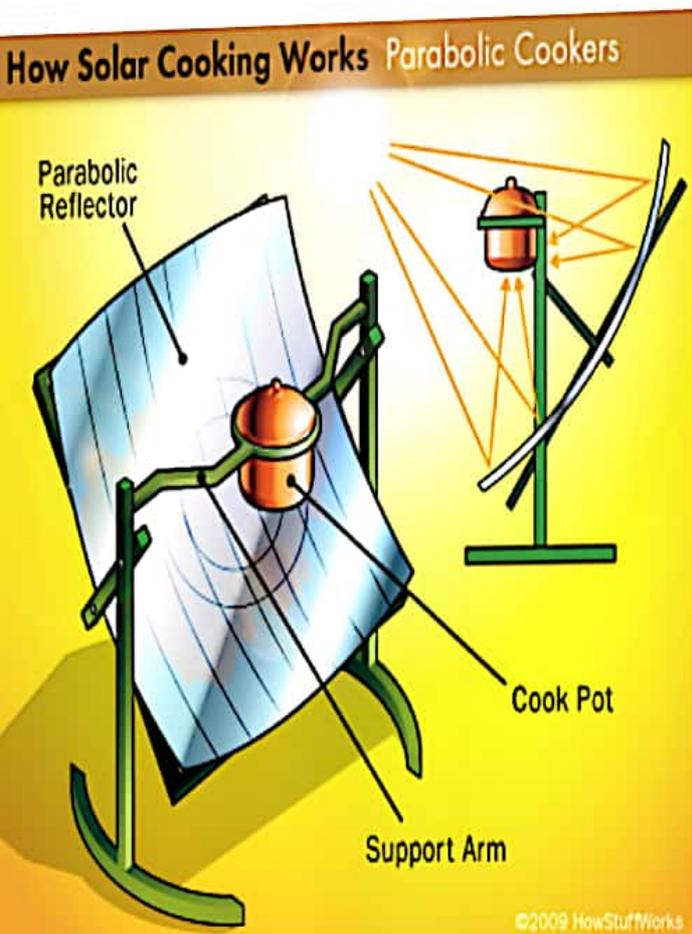


3D VIEW OF PROJECT



Layer State: SOLAR

COMPARE WITH PARABOLIC COOKERS



The aim of this project is to design a solar cooker using a paraboloidal dish collector. The dish is made up of aluminum material. Aluminum is chosen, as this material reflects sun rays more effectively compared to other materials. There is an arrangement for the cooking pot to be kept. This cooking pot area should be sharply at the focal point of the paraboloidal dish in this arrangement. The cooking pot should be kept so that the heat energy received will be high. As the earth rotates, the inclination of sun rays varies. Hence the sun rays reaching the dish decrease. This makes the system inefficient. So, in order to make the system efficient throughout the day, a mechanical setup is made to rotate the dish based on the inclination of the sun rays. The rotating axis passes through the reflector's centre of mass, allowing the reflector to be turned easily. The cooking vessel is located at the focus which is on the axis of rotation, so the mirror concentrates sunlight onto it all day.

The mechanical setup, to rotate the paraboloidal dish is done with a DC motor and a gear arrangement. The small gear is connected with the DC motor shaft and the large gear is connected with the shaft that rotates the dish. As the motor rotates, the small gear rotates, which in turn rotates the large gear. Based on the gear ratio, the speed of rotation of the large gear varies. If the gear ratio is 1:4, then for every 4 rotations of small gear, the large gear takes a rotation. This type of gear arrangement is made so that the dish moves slowly. The direction of rotation of the dish (motor) is done by key press. This can be made automatic, with the help of microcontroller. For every hour, the dish has to be rotated by 15 degree angle, in order to compensate the earth's rotation.