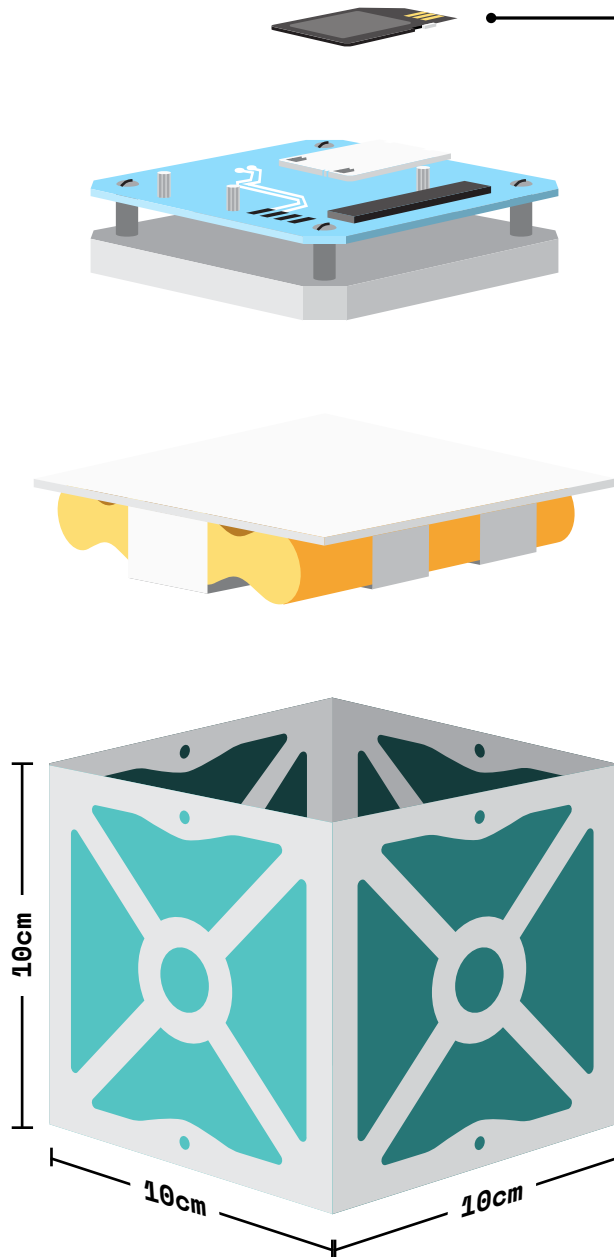# CTE Mission: CubeSat

Communication and data storage

Orbital CubeSats have communications systems to relay data between CubeSats and ground stations. However, since prototypes will be recovered after flight and some may be accessible during flight, data can also be stored on an SD card or downloaded via WiFi. These methods typically have lower costs and technical requirements than onboard communications and ground stations.

Computing and payload

A CubeSat's payload could be different sensors, a camera, or other components relevant to the mission. The command and data handling system (CDHS) is an onboard computer that interfaces with the payload to conduct various tasks such as image processing, data analysis, and data compression.

Prototypes can use more affordable computers, often designed in a modular way for student experimentation, and payloads will not be required to meet NASA's rigorous space-ready standards.

Power

Orbital CubeSats typically use solar panels to provide power during flight, but since prototypes will be deployed for only a few hours (for instance, on a balloon), power needs are significantly lower and finite power can be supplied by conventional batteries.

Structure

An orbital CubeSat's structure must meet very specific functional, environmental, and safety standards. However, prototype structures can be built from a much wider range of materials, as long as they are 10 cubic centimeters and can effectively hold payloads. A variety of starter kits are available for purchase, and 3D-printing blueprints are available for free download.

10cm
10cm
10cm