

Lesson 4

Satellite technology undergoes a testing process to minimise risk of launch failure and ensure the reliability of components.

Goal

Before a satellite can be launched it has to go through a number of testing procedures. Space qualification is the formal proof that the design meets all requirements and is approved for space flight.=.

(Flipped Classroom) New Information Presented

Students view the presentation *Testing your CubeSat* at home prior to the lesson.

Students answer questions using the worksheet: *Questions – Testing your CubeSat* to aid in the understanding of the purpose of testing and relationship to space qualification

Access Prior Knowledge

Briefly discuss what students learned from the presentation, and what testing is in relation to space qualification

Application Task

Activities:

- Testing the Parachute
- Testing the GPS system
- Temperature testing

Class is divided into a number of groups to do the testing activities. The group sizes may cause some organisation issues as there is only one testing parachute available, and the CubeSat will have been assembled. There are some pre-experimental calculations for the parachute so students could do these and then test with the parachute in turns.

Note: You will need to be able to drop the parachute from at least 3m in height, such as a second story window or balcony. Care will need to be taken.

Goal Revisited

Class discussion of results, which should highlight the importance of testing.