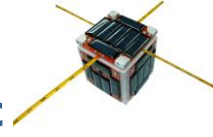


CubeSat Hyperdoc



Questions are on the left.

Your answers go on the right.

A. How do satellites communicate? Watch the video at <https://tinyurl.com/satcommvid>

1. What type of electromagnetic waves do satellites use to communicate?

2. Giving a general overview, explain how satellites communicate with Earth.

B. Read this short article about CubeSats. <https://tinyurl.com/littlesat>

3. When was the first CubeSat launched?

4. How did CubeSats begin?

5. How big is a CubeSat?

6. How did the original CubeSats communicate with Earth?

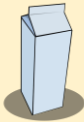
7. About how much do CubeSats cost to build and launch?

8. The article lists many uses of CubeSats. Describe 2 uses.

C. Check out NASA's Educational Launch of Nanosatellites (ELaNa) <https://www.nasa.gov/content/about-elana>

9. Look at About ELaNa. What is NASA trying to do?

10. Click on the map to the left. What are 2 of the colleges picked for this mission?

11. Choose one of these colleges and describe its CubeSat mission.	
12. What is the volume of the smallest CubeSat?	
13. Back on the main page, click on NASA Kennedy (menu on left). What is the CubeSat CLICK trying to do?	
D. Now check out Mars Cube One (MarCO) (https://tinyurl.com/marcojpl)	
14. Who launched MarCO?	
15. What is MarCO's mission?	
16. When were they launched?	
17. How far away from Mars were they when they took the picture posted at this source?	
E. Next, let's look at some statistics here (https://www.nanosats.eu/). CubeSats fit into a category of small satellites called nanosatellites.	
18. Find the Organization Types graph (3rd row to the right). Who are the top 3 launchers of nanosatellites?	
19. Find the World Map (top row, right side). Which 3 countries launch the most nanosatellites? Hint: See country names here .	
20. Click on Launches by Deployers (bottom row, right side). What questions do you have about these launches? Can you answer them with a Google Search?	
F. Now read about these middle or high school student CubeSat launches.	
21. Oak Ridge (https://tinyurl.com/oakridgelaunch) What is the mission of this CubeSat and how	

will they know what information it gathers?	
22. Weiss School (https://digitalcommons.usu.edu/smallsat/2018/all2018/477/) What was the WeissSat-I designed to do?	
14. Irvine High Schools (https://ipsf.net/irvine-cubesat/#irvine-cubesat) Choose 1 of the launches. What are the key features of this launch?	
G. Now that you've learned about CubeSats...	
Why would you want to launch a CubeSat? What might it do and what might you learn?	
Check out https://tinyurl.com/pumpkinshop . What would you buy and why? How much would your total cost be?	
What you pack onto your CubeSat is called a <u>payload</u> . There are some options at https://tinyurl.com/cubepayload . What would you include and why?	