



5 sites & ten videos about
Fireworks

Fireworks explode in the sky over Dubai

LittleClickers is made possible by Computer Explorers. Safe, fun Internet explorations for children.

LittleClickers is brought to you by Computer Explorers, who is offering camps on programming. Visit www.computerexplorers.com to learn more. The web-based (html) version of this page is at <http://www.littleclickers.com> with live links, plus a place to report any errors. Note that CTR and COMPUTER EXPLORERS do not have commercial interests in the sites listed on this page. Librarians and teachers are permitted to copy this page for non-profit use. To suggest a future topic or to report a bad link, please contact the editor, Warren Buckleitner [WB] warren@childrenstech.com, or the web editor, Megan Billitti [MB] megan@childrenstech.com; or call 908-284-0404 (9 - 3 PM, EST).

Did you know that a typical 20 minute forth of July fireworks display can take a year to plan, and it costs more than a new car? Not only that, each show is programmed with computers and remote controls used to ignite the fuses. Want to learn more? Let's test your knowledge of fireworks displays.



1. We all know what a fireworks shell looks like in the night sky. But what does it look like BEFORE it explodes? At popular mechanics <http://bit.ly/1qpuCdr> you can see that fireworks shells come in all shapes and sizes. Smaller shells are the size of tennis balls, but they can get as big as a basketball. To launch one, you put it into a pipe (called a Mortar tube) light the fuse and run away.

2. Where are fireworks made? CNN <http://cnn.it/TIpkgv> visited a fireworks factory in China, located in Iuyang in the Hunan Province, where nearly all the world's fireworks are made. Have a look, and you'll see how it earned it's nickname of "Boomtown."



3. Who holds the world record for the largest, most expensive fireworks display? According to the Guinness World Records, at <http://bit.ly/1o6AaG9> the United Arab Emirates put on a fireworks display in December of 2013 that used half a million fireworks, costing between \$50 to \$100 each. Do the math... that's a lot of money. Read more about this amazing show, here <http://bit.ly/1k53LAT> or watch it in the video playlist, below.



4. How much does a fireworks display cost? To find out, we visited Michigan-based Ace Pyro <http://www.acepyro.com/Faqs> where we learned that the average cost of a 20 minute fireworks show is between \$5,000 and \$30,000. A big show, like the Macy's show in New York City can cost between \$5 to \$10 million. Each time you see a fiery burst, think "there goes \$100."

5. How do you design a fireworks show? It takes many people, including choreographers, laborers, technicians, and city officials, plus about 4 hours per minute for the design. Many designers use a program like Finale Fireworks (\$1000, from www.finalefireworks.com) on a Windows computer to mix and match as many as 6,000 different effects. The best thing about the software is that you can preview the show with the click of a mouse instead of by lighting the fuse.

6. How are colors made when a shell explodes? At the University of Wisconsin, <http://bit.ly/RVImxu> you can learn all about the different chemical compounds scientist use to create different color fireworks. There is even a chart with the compounds needed to create nine different color combinations. The people who use the chart are called pyrotechnic engineers, and they make about \$90,000/year. Learn more about the job, here <http://bit.ly/1nL7RtS>.

You Tube Megan's fireworks videos

Want to look inside a fireworks shell, or see the largest fireworks display in the world? Here's a set of hand picked videos from Youtube: http://www.youtube.com/playlist?list=PLcBVHzUUEKwmdhNYDoJz-x6PEB5d_vaXY

Interact with this page online, at <http://www.LittleClickers.com/fireworks2>