

Explore the Explosions

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Now that you've learned a lot about Exploding Dots and what it represents mathematically, let's play around with the machine a bit more!

1. Open a browser and go to www.geogebra.org. Once you're there search for exploding dots.
2. Click on the first link, the exploding dots book. Then click on Exploding Dots Apps on the left.
3. Try a few numbers in the $1 \leftarrow 2$ and $1 \leftarrow 3$ machine.
4. Now let's look at the $2 \leftarrow 3$ machine. What "base" does this represent? Fill in the chart below using the applet and your own machine.

Original Number	Number in $2 \leftarrow 3$ Machine
3	
17	
25	2121

5. Now for an even crazier machine: the $-1 \leftarrow 2$ machine! First off, what "base" does this machine represent? Fill in the table below using the applet and your own machine.

Original Number	Number in $-1 \leftarrow 2$ Machine
7	
24	
-5	1101

6. Now go back to the exploding dots search page and click on the exploding dots calculator (expanded form). Play around with a variety of bases and record your results below.

	Machines			
Number				