Exploding Dots™

Only have 15 minutes in your class?

Try this!

SHOW – or conduct the content yourself on a board – THESE THREE SHORT VIDEOS

1. http://gdaymath.com/lessons/explodingdots/1-2-1-leftarrow-2-machine/ [2:40 minutes]
2. http://gdaymath.com/lessons/explodingdots/1-3-machines/ [2:02 minutes]
3. http://gdaymath.com/lessons/explodingdots/1-4-1-leftarrow-10-machine/ [2:56 minutes]

Briefly discuss what is going in with your students after each video.

Looking for a bit more?

The two questions on the next page can provide interesting discussion.

Guided exercises and student handouts appear here https://www.theglobalmathproject.org/teaching_guides. (Choose the Experience 1 guide.)

Exploding Dots

Experience 1: The Machines

Access videos of all *Exploding Dots* lessons at: http://gdaymath.com/courses/exploding-dots/

DISCUSSION QUESTIONS

Here are some "big question" investigations you might want to explore and think about.

EXPLORATION 1: WHAT ARE THESE MACHINES DOING?

Can you figure out what these machines are actually doing?

Why is the code for two hundred and seventy-three in a 1 ← 10 machine, "273"? Are all the codes for numbers in a 1 ← 10 sure to be identical to how we normally write numbers?

If you can answer that question, can you then also make sense of all the codes for a 1 ← 2 machine? What does the code 1101 for the number thirteen mean?

Comment: Experience 2 answers these questions.

EXPLORATION 2: DOES THE ORDER IN WHICH ONE EXPLODES DOTS SEEM TO MATTER?

Put nineteen dots into the rightmost box of a 1 ← 2 machine and explode pairs of dots in a haphazard manner: explode a few pairs in the right most box, and then some in the second box, and then a few more in the rightmost box, and then some in the second box again, and so on. Do it again, this time changing the order in which you do explosions. And then again!

Is the same final code 10011 **sure to appear each and every time?**