
My NASA Data - Maps, Graphs, and Data

Creating Images from Numbers

Scientific data are often represented by assigning ranges of numbers to specific colors. The colors are then used to make an images which allow us to see patterns more easily. Students will make a false color image using a set of numbers.

Mini Lesson

Materials:

- Colored pencils or crayons: White, Orange, Red, Yellow, Green, Blue, Black
- Piece of 8.5 x 11-inch paper
- Metric ruler

Procedure:

Step 1) From your color 'pallet', select each color to represent numbers in the indicated ranges:

Number Range	Color
0 - 5	Black
6-10	
11-15	
16-20	
21-25	
26-30	
31-35	White

Step 2) Draw a 100-cell, square grid with 10 cells (pixels) on a side, and each cell 1-centimeter on a side.

Step 3) Using the number grid below, color-in the cells on your grid with the colors you selected from your color pallet in Step 1.

Problem 1 - If the numbers represent temperatures in degrees Celsius, where are the hottest and coldest areas in the false-color image?

Problem 2 - If the numbers represent the speed of a gas in kilometers per hour, where is the gas moving between 6 - 10 km/h?

20	16	11	6	2	21	23	27	28	29
17	18	12	8	1	22	22	26	33	28
14	13	15	7	3	23	23	28	28	27
14	12	13	9	4	24	24	23	24	25
6	7	8	10	5	25	25	24	24	24
21	22	21	22	22	25	24	25	24	23
23	24	25	24	21	4	10	8	6	8
26	27	26	24	21	2	8	15	14	12
27	33	26	23	22	3	7	13	20	18
26	27	27	24	23	1	6	13	22	17

Sources:

1. Space Math - <https://spacemath.gsfc.nasa.gov/>
2. Landsat Math - <https://landsat.gsfc.nasa.gov/landsat-math-2/>

Sphere(s)

- [Atmosphere](#)
- [Biosphere](#)
- [Cryosphere](#)
- [Geosphere](#)
- [Hydrosphere](#)

Phenomenon

- [Acid Rain](#)
- [Blizzard](#)
- [Changes in Land surface](#)
- [Changes in Migration Patterns of Biomes](#)
- [Changes in Snow and Ice Extent](#)
- [Changes in Sunlight \(Daylight\)](#)
- [Changing Air Temperatures](#)
- [Changing Albedo Values](#)
- [Changing in Clouds Fraction](#)
- [Creation of Urban Heat Islands](#)

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 - [Drought](#)
 - [Earthquakes](#)
 - [El Nino Southern Oscillation](#)
 - [Flood](#)
 - [Forest Fires](#)
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Crosscutting Concepts

- [Patterns](#)

Tags

- [False Color](#)
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- [Satellite Image](#)
- [Using Mathematics and Computational Thinking](#)
- [Landsat](#)
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- [Common Core](#)

Related Links

- [Landsat math](#)

Document Resources

Document Resources

- [Creating an Image from Numbers](#)