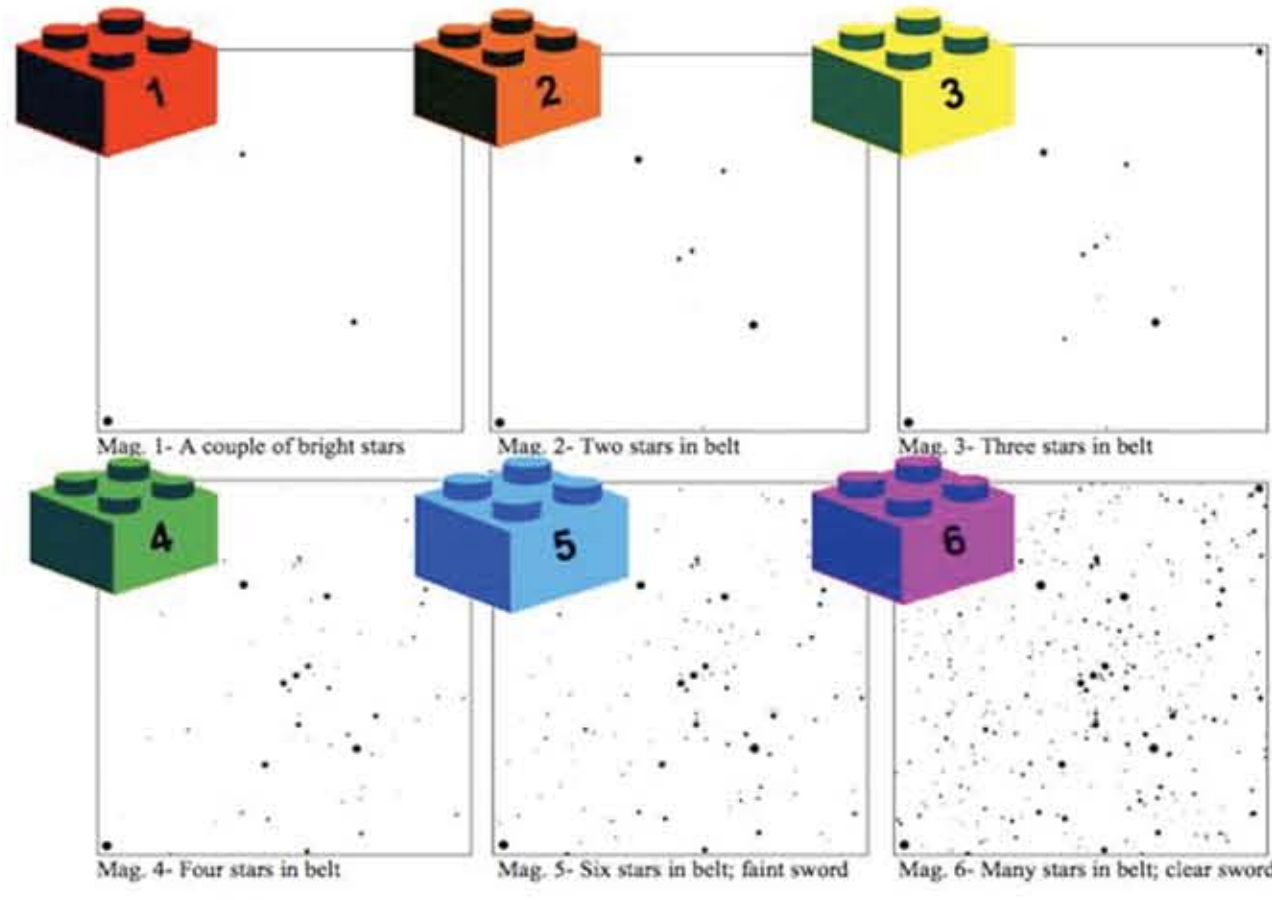


Let There Be Night

For two weeks in March 2009, over **3,400 students** observed the constellation Orion the Hunter and compared their backyard view to six star charts.



The colors of the dots on the PHM school district map (right) indicate the level of light pollution seen from each student's home. For example, blue dots (magnitude = 5) represent sites with dark skies and many stars, while red dots (magnitude = 1) represent sites with lots of sky glow and few stars. →



To show visually how much of the night sky has been lost to light pollution, teams of students from 14 schools placed stacks of LEGO® blocks that represent the average observed magnitude for each area.

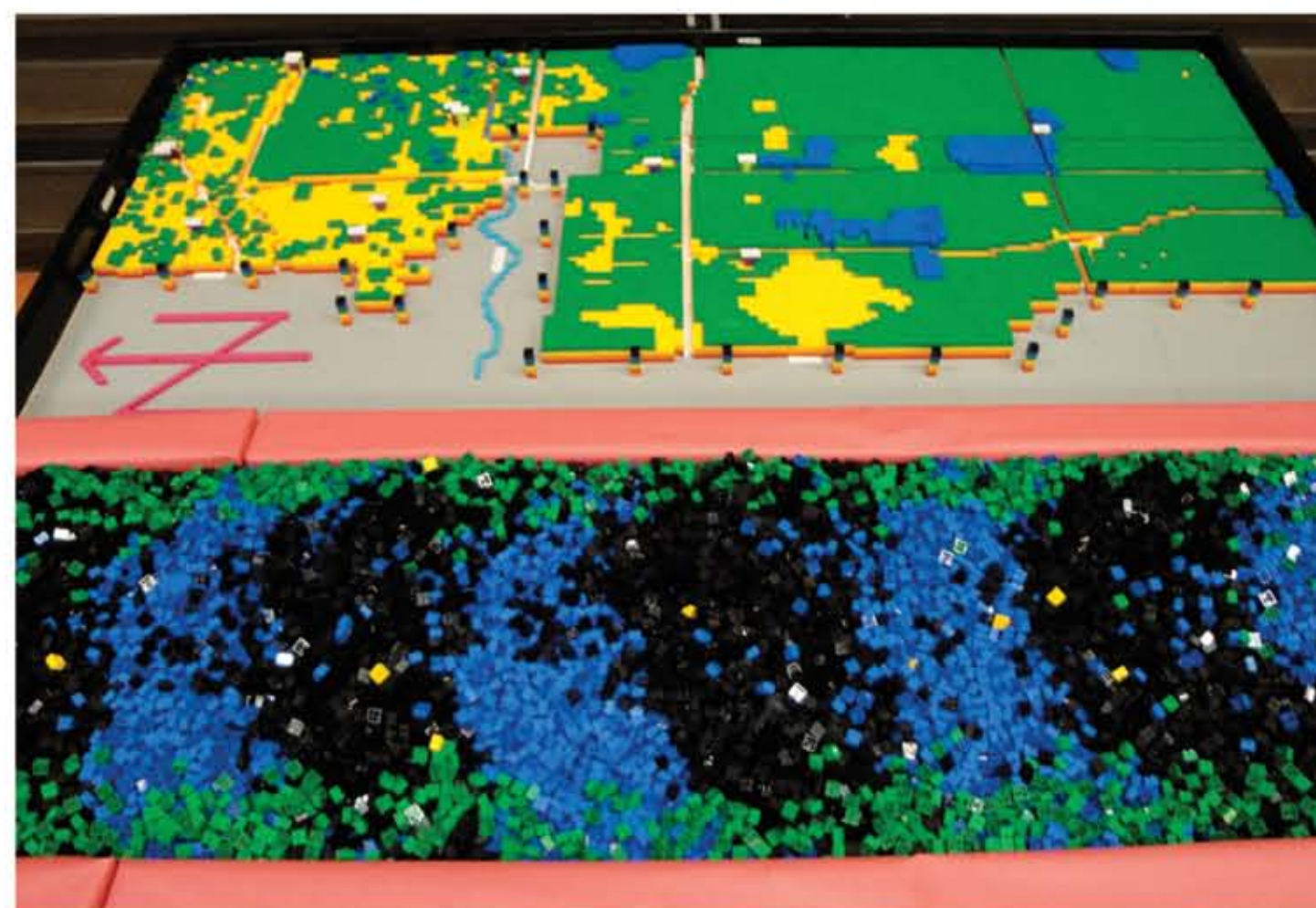


The higher the LEGO® stack, the darker the sky. An ideal sky with no light pollution would be magnitude=6, topped with black* LEGO® blocks across the entire region. The 3-D model for an ideal sky on this map would contain **35,000 LEGO® blocks**.



*Note: For the 3D model we use black LEGO® blocks to represent the ideal sky instead of the purple LEGO blocks shown on the charts because of product availability.

However, the actual night sky is less than ideal. As you remove the darkness, you have to remove LEGO® blocks. **More than 12,000** black blue, green, and yellow LEGO® blocks were essentially removed and put in the "debris pile" to represent what has been lost to light pollution.

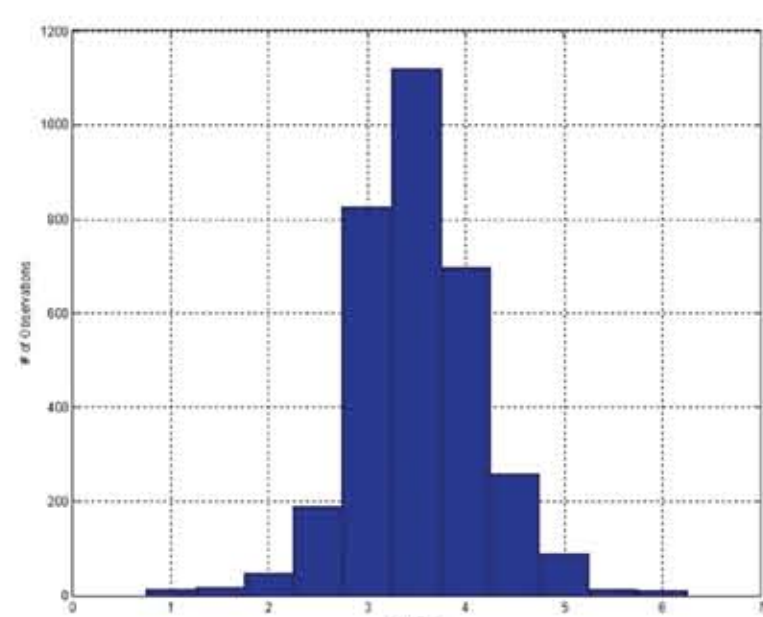


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Tips for Dark Skies

- Aim lights downward.
- Shield all lights.
- Use timers and motion detectors.
- Lower the lumen output.
- Turn off excess lights.
- Look up and enjoy the night sky.

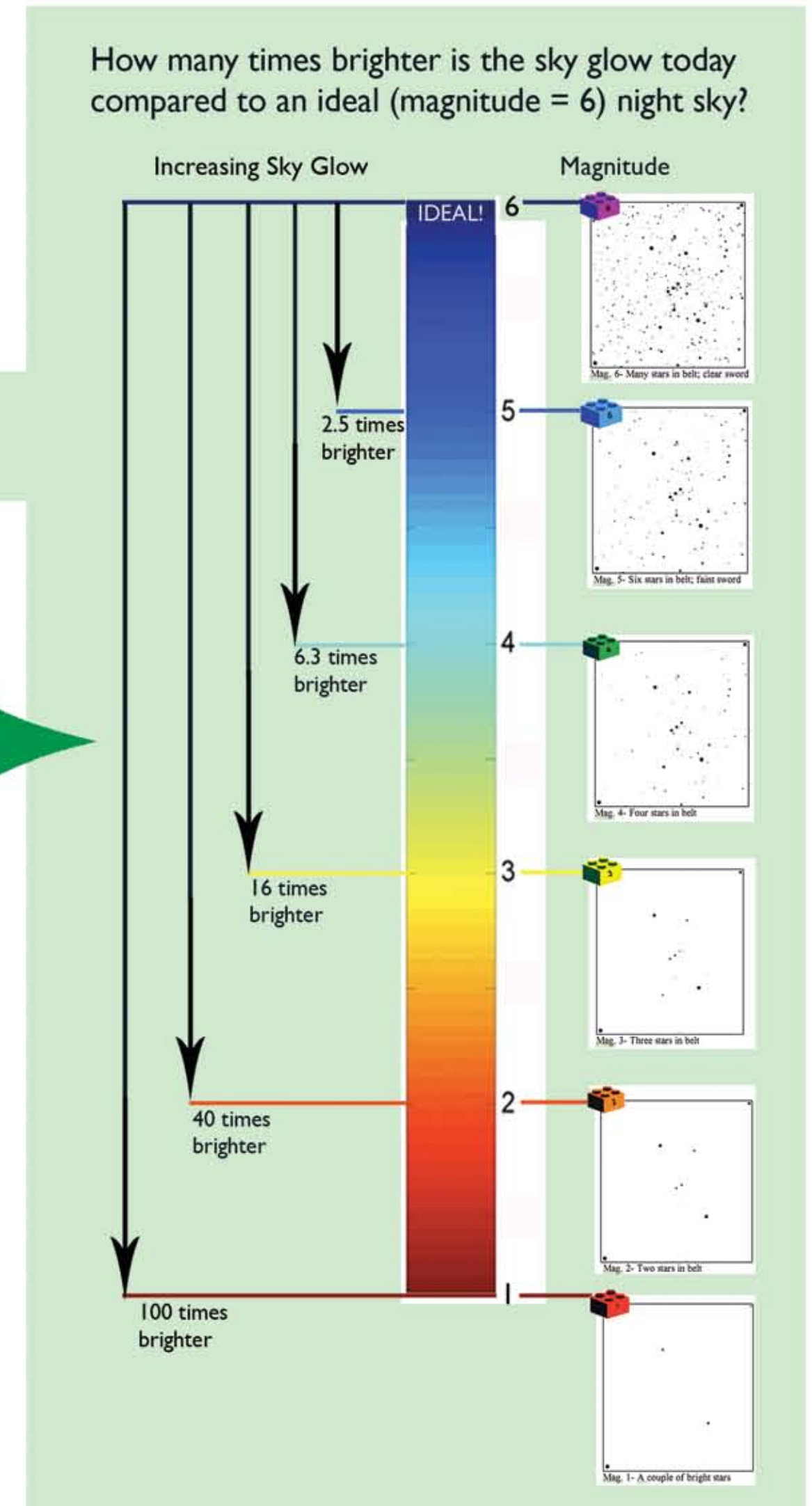
So how much brighter is our sky now?



According to the 3,400 observers (left), the average Orion sky chart is only **magnitude=3.53**, down from the ideal magnitude=6.

Using the scale at right, you can see that the night sky is now about **nine times brighter** than an ideal, natural sky with no light pollution.

Doing the Math:
To calculate the increase in brightness, take 2.51 to the xth power, where x is ideal magnitude minus the new observed magnitude. With an average observed magnitude of 3.53, the sky is brighter by 2.5 to the (6 minus 3.53) power. Again, the night sky is now about **nine times brighter** than the ideal night sky.



With thanks to:



www.LetThereBeNight.com