

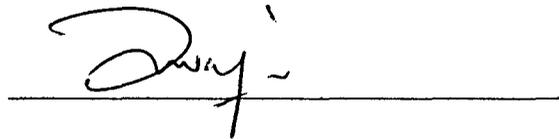
WHY THE SKY IS BLUE?

ROSILAWATI BT THMAN

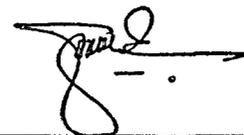
“Final Year Project Report Submitted in Partial Fulfillment of the Requirements for the Degree of Bachelor of Education (Hons) Science (Physics) in the Faculty of Education, Universiti Teknologi MARA”

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ABSTRACT

WHY THE SKY IS BLUE?

Sunlight is made up of seven colors such as red, orange, yellow, green, blue, indigo and violet. When all those colors are mixed up we get the color white. Light is a form of electromagnetic radiation. It also travels very quickly which is around 300,000 kilometers a second. Light can travel through space, air, water and solids like glass or Perspex. When the sunlight shines through the atmosphere most of the light passes straight through down to the ground. When light beams interact with particles suspended in air, the energy can be scattered or absorbed. Energy that is scattered causes a change in direction of the light path. The amount of light that is being scattered is a function of the size of the particle relative to the wavelength of the light falling on the particle. Particles that are tiny compared to the wavelength of the light scatter selectively according to wavelength. While all colors are scattered by air molecules, violet and blue are scattered most. The sky looks blue, not violet, because our eyes are more sensitive to blue light and the sun also emits more energy as blue light than as violet. At sunset and sunrise, the sunlight passes through more atmosphere than during the day when the sun is higher in the sky. More atmospheres mean more molecules to scatter the violet and blue light. If the path is long enough all of the blue and violet light gets redirected out of our line of sight, while much of the yellow, orange and red colors continue along the undeviated path between our eye and the sun. This is why sunsets and sunrise often are composed of yellow, orange and red colors.