

Activities on reflection of light based on low-cost materials at eighth grade

Studying science through hands-on activities within the context of teaching and learning using local environments and resources has been recognized as one of the fundamental prerequisites of school curriculum in many developing countries, including Thailand. Accordingly, we are interested in implementing such concept in designing science teaching and learning suitable for students in the middle school level in which emphasizes the participation of students in the provision of materials and equipment for scientific activities. The purpose of this study was to design the hands-on activities using low-cost materials on the topic of reflection of light at 8th grade and later to examine the results after implementation to the students. The experimental group consisted of 30 students in 8th grade, randomly selected in 1 room. The instruments used in the experiment were 2 types of achievement tests worked as pretest and posttest on the subject of (i) light reflection on a smooth surface and (ii) light reflection on a curved surface. After collection of data through pretest and posttest, statistical analysis was carried out. Our results showed that the students actively engaged in hands-on activities and learn light reflection knowledge and skills through interaction and discussion with classmates. We highlighted the advantage of our study for science teachers in rural schools to ensure students developing the 21st Century Skills that is essential part of STEM Education.

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