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A baby mobile as a STEM activity for promoting students' learning and interest in a simple harmonic motion

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This paper presents an alternative approach to enhance students' understanding of a simple harmonic motion (SHM) in that baby mobiles were used as a hands-on activity through a game-based STEM lesson. The subject comprised 28 eleventh grade (mattayom five) students of a public high school in Chanthaburi province, Thailand. The activity was conducted in two consecutive parts. The first part started with a brief review of SHM followed by a simple pendulum experiment so that students learned how length of the string, mass of the bob and other quantities affect the period of an oscillating motion. For the second part, a baby mobile competition was assigned to groups of four students for which necessary materials were provided. Students in each group needed to brainstorm, plan, and create their own baby mobile that meets the competition criteria. The winner of the game would share the successful strategy and receive a tiny reward for positive reinforcement. Results, after the completion of this activity, shows a remarkable improvement of students' understanding after post-activity test (mean = 8.57 out of 10.00, S.D. = 1.61) when compared to pretest (mean = 2.93 out of 10.00, S.D. = 1.52). In addition, the satisfaction survey reveals that students felt more enjoyable and were engaged in the activity with an average score of 4.05 out of 5.00. These findings suggest that integrating a hands-on STEM activity with specific course contents may be one of the potential approaches that promotes students' engagement and conceptual understanding in physics.

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