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“Egg-streme” egg crashes.

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Summary: Context based learning (CBL) is a powerful tool that utilises areas of student interest framed in meaningful contexts to foster development of new skills and understanding. For middle school students, engineering activities that relate to real-world problems provide suitable CBL contexts for acquiring conceptual scientific and mathematical understanding. CBL can be implemented in mathematics education through the teaching strategies associated with Realistic Mathematics Education (RME). In the activity presented herein students are tasked with designing a vehicle with sufficient safety features to protect its passenger (the egg). These safety features are tested by releasing the car at the top of an incline ramp, the base of which is up against a wall to simulate a “crash test” scenario. Utilisation of this vehicle engineering context and the engineering design process (EDP) allows students to develop concrete understandings of the relationship between angles, forces and speed before these concepts are abstracted to general mathematical relationships. This activity has been implemented extensively with school groups in Southern Tasmania. It introduces students to engineering as a mechanism for gaining a real-world understanding of key mathematical concepts, within the familiar context of vehicle safety. (ERIC)

Classification: D35 D45 M55

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