Stimulating Mathematical Thinking Through the System of Geometric Exercises and Games Designed by Scratch Programming

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After doing a survey about Math learning of grade 8 and 9 students at our school, we found that the level simulating the interest of students in Math and the ability to solve real-life problems was not high enough. That is the reason why we wanted to change this situation and began our project. Starting with the basic idea of Nigel Calder about using Scratch to stimulate Mathematical thinking, our group has tried our best to develop, improve and complete our project. To do that, first and foremost, each member in our group learned Scratch programming by ourselves, studied our grade 8 and 9 Vietnamese math curriculum, and searched for a variety of practical problems, which can be solved by what they have learned. These exercises are related to the Right prisms, Equilateral pyramids, Trigonometric ratio in right triangles, and Circles. Besides, we also designed 4 Mathematical games incorporating each Math knowledge, which are Quadrilaterals, Polygons, Additions and multiplications between polynomials, Right prisms, and Regular pyramids. Then, by using Scratch programming, we designed a system of our products in the most engaging way. In order to deploy our product to 278 students at school, we chose to create our own math bilingual website (in English and Vietnamese). After experiencing the website, we were really happy to receive a lot of positive comments on the interest in Math. Thanks to their suggestions and feedback, we have improved and completed our product up to the present. Personally, we believe that our product has achieved the original goal in our school. Our friends have a tendency to love studying Math and solve real problems more effectively. In the future, we want to spread our website to make Math highly applicable and connect people together.

Awards Won:
American Mathematical Society: Certificate of Honorable Mention