

## Design and Development of Collapsible Tricycle for Children of Age Group 2-4 Years



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**Abstract:**

Today many tricycles available in the market are difficult to carry whenever the people went for an outing where children's love to play. Since it needs a larger space in car, many people avoid carrying the tricycles with them. Also the tricycles occupy space in the home after the children's done with the playing.

This problem can be overcome by designing the collapsible tricycle which occupies less space so that it one can carry it wherever they want.

The complete study to design and development of collapsible Tricycle for children of age group 2-4 years focusing on the problems faced by the people those who trying to carry tricycles when they went out for family outing or trip. Market study shows the existing products available in the market. To determine the needs of the user, data collection was done through literature survey and ethnography study. Data analysis was done through QFD and PDS by considering the key elements from the research. Later concept generation was done through brain storming. Few concepts were shortlisted and feedback was taken for better results and final concept.

Final design is done by considering the ergonomics and no complex tooling in design kept the product cost low. A 1:1 prototype was developed to validate the design and the feedback results were positive.



**Expanded condition**



**Collapsed condition**

**Digital model of collapsible tricycle**



**Prototype of collapsible tricycle**