Children usually don’t like brushing their teeth. However, a new oral hygiene set, called the Tooth Hero, will encourage children to do so in a playful and interactive way. Shirin Fani, the inventor of the device hopes that the brush set will render the process of toothbrushing more entertaining for children and thereby more effective. The designer was born in Teheran, Iran, and studied industrial design in Austria. DT International editor Claudia Duschek spoke with her about the unusual device, for which she received this year’s national James Dyson Award, an international student design competition run in 18 countries.

Claudia Duschek: What was your intention behind developing a dental tool for children?

Shirin Fani: I graduated in June this year from the University of Applied Arts in Vienna. For my diploma project, I wanted to design something for children in order to make their lives healthier in a smart way. I started to spend a lot of time with them and found out that children don’t like brushing their teeth and when they do, they don’t do it correctly. Parents usually have to do a follow-up brushing to ensure that their children’s teeth have been cleaned properly.

An interview with designer Shirin Fani, Iran, about the Tooth Hero

The device gives children the opportunity to be the heroes of their teeth...

How can this be achieved with the Tooth Hero?

There are some common methods for encouraging children to brush their teeth, like toothpastes with different flavours, toothbrushes with images of comic heroes, and brushing timers, etc. With my project, however, I wanted to create a whole new experience of toothbrushing. Instead of them buying Batman, Spiderman or Hello Kitty toothbrushes, I wanted them to learn more about the micro-organisms that cause cavities and tried to make those bacteria visible for the children to identify them as enemies they can fight. This is why I came up with the idea of a brushing game in the form of an interactive brushing guide.

Could you please explain the design and function of your interactive device?

The Tooth Hero consists of a multifunctional brush set with three parts, including a pH meter, an ultrasonic toothbrush and an ultrasonic tongue cleaner, and comes with a projector. As acidic pH levels caused by some foods make one’s tooth enamel vulnerable, the pH meter measures whether it’s the right time to brush. When it turns green, the pH value in the child’s mouth indicates that he or she should brush but when it turns red, then he or she still has to wait. Furthermore, always having an acidic pH level can be a sign of caries and tried to make those children throughout, from the very young to their dentist. I showed a number of dentists the prototype and discussed the project and its approach with them a great deal.

The projector is the fun part. With a brushing game that can be downloaded from the Internet, it shows the bacteria depicted as coloured dots on any surface in the bathroom. The tip of the toothbrush communicates the brushing pattern through sensors. The game is not finished until all the dots have disappeared and all the teeth have been brushed.

Did you consult dental and educational staff for advice on designing the device?

Yes, of course. I read a lot and talked to dentists and parents about the Tooth Hero concept. I even accompanied some children to their dentist. I showed a number of dentists the prototype and discussed the project and its approach with them a great deal.

How has your project been received so far?

The brush set was tested by children from the start of the project. I received feedback from children throughout, from the very first idea of the product until the finished prototype. For them, using the Tooth Hero meant winning a game, which they loved. The device gives children the opportunity to be the heroes of their teeth by fighting the bacteria that live in their mouth. In this manner, brushing rules can be taught; for instance, high brushing pressure can result in losing points in the game.

What are your plans now?

Are you going to develop more dental products and market your idea?

I found it fun to design for children. Winning the award was a step towards converting my concept into a real product. I haven’t introduced the project to any company yet because I only finished the project at the end of June but I’m planning to approach some companies because I absolutely believe in this project and its potential to be a real product and new trend in oral care for children.