Throwing the Hackaball around is an education

March 6 2015, by Nancy Owano

Last year, Christian Hernandez wrote in the *Guardian*: "I don't think every child in the world needs to know how to write or read Python or C++, but I do think that every one of them should understand the structure, the logic and the interconnection of technologies which allows them to play Angry Birds, watch a YouTube video or have mum and dad buy something on Amazon." Technologists who share this view say that

kids can benefit from an opportunity to learn beyond pressing start, shift and enter keys on a keyboard.

In doing so they will also gain confidence in understanding and even influencing how technology works on the inside. Now there's something new for a future generation of developers and makers: A ball that kids can program in order to invent and play games. They can learn by having fun and it was designed for children around ages six to ten. Hackaball is a ball that responds instantly to how you want to play with it. The ball is capable of lights, sounds, and even vibrations. You could say it's a computer that you can throw, said the video presenter. The idea is to introduce the kids to simple ways to program and make their own games. The video shows some examples of games the kids chose to play with Hackaball. You can tell Hackaball what to do by using the app. The video shows the kids tapping away on their devices. The apps are really easy, said the presenter. Once kids learn the basics, they can do more and play any way they want to and can even turn their Hackaball into an alarm clock.

How it works: Inside Hackaball, a computer talks to the iPad app wirelessly. The ball has sensors that detect motions like being dropped, bounced, kicked, shaken or being perfectly still. The team listed the ball's features including a gyro, accelerometer, vibration motor, nine LEDs, rechargeable battery and memory to store sounds and a speaker. The computer, sensors and displays sit inside a tough plastic case surrounded by a circular silicone membrane; this acts as a shock absorber, fitting between two translucent rubber hemispheres that snap together around it.

Then there is a stretchable outer jacket made from a silicone skin with perforated circles. This creates the playful pattern and allows LED lights to diffuse from the surface beneath it. Hackaball is splash-proof; the jacket and pod keep the computer safe. (At the same time, the creators
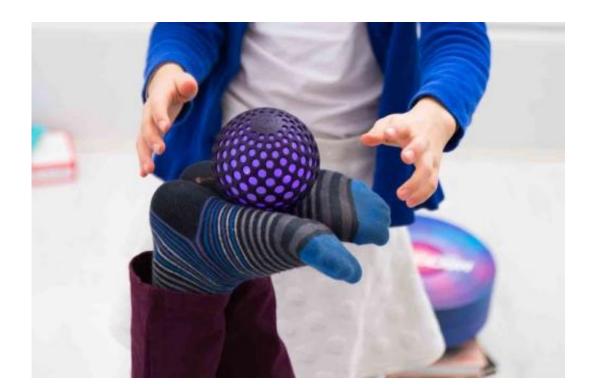
don't recommend using it for playtime in the bath.)

Children use an iPad app to change the behavior of Hackaball. The app comes pre-loaded with games that can be sent to Hackaball to get kids started. Once they master these games, kids can create new ones using a building-block interface, experimenting with sounds, LED lighting effects and patterns. Also, as a learning device, Hackaball, the more they play, offers unlockable features, and challenges them with broken games to fix.

The creators are ready to start production and have turned to Kickstarter. A pledge of $65 gets a ball and free app. The ball comes with a charging cable and a smart plug. Estimated delivery is December.

Will the programming interface ever run on more platforms than just the iPad? Said the team: "We want to make Hackaball as accessible as possible. That's why development of an Android app is one of our stretch goals. If you follow our project we'll be updating our progress on this soon." At the time of this writing they raised $41,889 out of a $100,000 goal with 27 days to go.

More information: — www.kickstarter.com/projects/h … for-active-and-creat

— www.hackaball.com/us

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