

Newsletter



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Why is coding and robotics important?

Meet Ms Badenhorst

Dear Parents

Why is coding and robotics important as a school subject?

The words coding and programming are buzz words nowadays and people want to know more about the what's and why's thereof. Coding, or scripting, is the general computer language used to provide a set of step-by-step instructions for a computer, robot and internet browser or to perform specific tasks.

Learning to code is almost similar to learning a new language, the only difference being you don't have to remember all the codes forever. There are a couple of different coding languages. They all have similar rules that the scripts must follow, but each family of scripts also have its own set of rules. Every phone app, website, computer programme or game, even household appliances rely on coding to work. Home automation is another example where coding is needed and is becoming increasingly popular.

Coding can be seen as the framework for the modern digital world and coders act as the architects for these applications. Each of the different coding languages is applied to a different field, for example Java is used for desktop software, Android apps and websites; Javascript was designed for in-browser applications like Gmail and eBay; C is used for writing computer operating systems and device drivers and C++ works mostly for 3D gaming software. The newest coding language on the market is Python and is used to introduce scripting to the learners before they make a choice for later specialization.

Is there a difference between coding and programming?

Programming is an exercise for your brain that eventually improves your **problem solving** and **logical ability**, for example you program a robot to complete a given route – like the GPS application. You follow a specific set of rules which automate tasks. Learning to **code** will teach you to **understand this world**, to solve the problems we encounter every day in our life and that is the best thing you can do **to change this world**; for example code apps or websites to make life a better or easier place.

Programming is also connected to mechanical and electrical engineering as a subject. You have to be able to build your machine to complete a mission, whether it is a robot to avoid obstacles or a mechanism to help during medical operations or a machine that





can automate functions in a factory or change your house into an IT environment. You need to have a physical product that you can manipulate with programming. Apart from the normal IT career opportunities in computer sciences like IT workers, scientists, artists and designers, and engineers, there is a huge field of opportunities opening in places like finance and manufacturing for coding. It is important to note that if you consider a career in coding you have to stay up to date with the continuous changes in technology and keep researching topic specific software for your chosen field of interest, for example those interested in architecture, graphic design, or engineering should understand AutoCAD programs, etc.

It is a known fact that IT/coding jobs need a Bachelor's degree eventually; the big question however is: where or when do we start with coding?

It is an advantage to start coding at a younger age because that is where we always lay a great foundation of new skills. This is the time and place where the younger generation have a bit more time to play and explore and are willing to make mistakes. Coding can however, be covered from any age. Coding as a skills set differs from learning a language in the sense that you can always look up codes on the internet. You do not have to remember it when you are a full time coder. What you learn at school is the basic syntax of codes, the rules of this new digital world – how the “DNA” of coding is put together. Once you understand how to put a code together, you will be able to read (and write) codes from the other families of coding languages as well. In a school environment there will be a set curriculum and a set of rules to follow to reach certain outcomes, but in the real world of coders, coding focuses primarily on the solving of problems. At that stage the basics of following the scripting rules are in place and can the coder apply the next level of knowledge by adding something unique to solve the problem, using their own creativity with passion. A developer once said: “Getting something working is just the first step of building software. The next step is to make code clear, reusable, and neat.” This is where the challenge comes in.

Coding is a process that will be introduced at schools. You can either hate it or you can embrace it. Coding develops logical thinking, improves problem solving skills, encourages creativity and opens up job opportunities. In short coding empowers your life. Embrace it!

-Zelda Pretorius – Trophy Robotics

Meet Ms Janelle Badenhorst

Janelle studied BSC Maths and Computer Sciences at Stellenbosch University. After that she completed her Postgraduate Certificate in Education with honors. “I love working with children and I believe that teachers can make a big difference in the lives of our youth” said Ms Badenhorst. She will teach Mathematics and Natural Sciences.

