



## LEGO® WeDo

*The sky is the limit*

*By Edwar Romero*

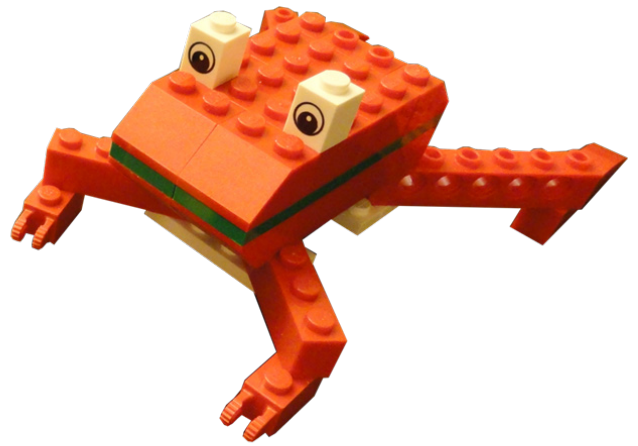
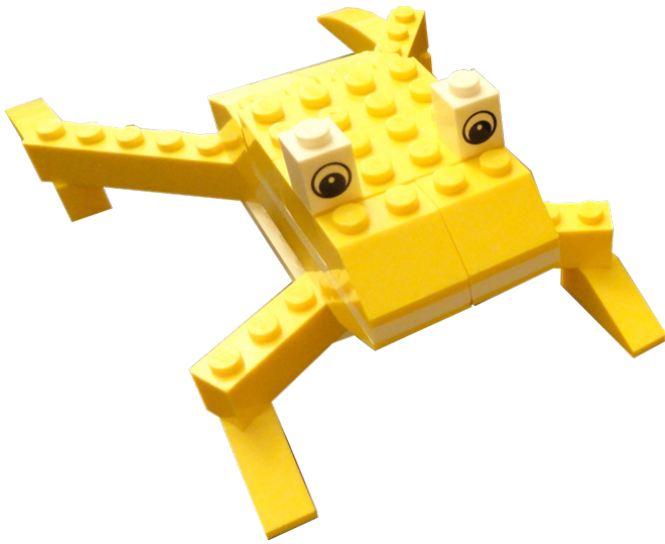
*Pictures by Osvaldo Romero*

LEGO® is a universe in itself; we can build our own worlds. We know it for sure. Give me a pool full of blocks and I would be able to make your dreams come true. The real challenge arises when we have few pieces, very few. From that point on, everything becomes intriguing, because now the question that comes into mind is how many models could I design?

That is where we are faced with the typical mental trap. A set with a limited number of pieces and designed for little kids in mind, must be limited as well in the amount of things we can build. Isn't it? We should think just the opposite, because that is what motivates our minds to go forward. That is why the programming language included with the software is designed so no previous programming experience is required to start working, or should I say playing? I have watched little kids from kindergarten to become experts with a little of play time. I would even dare to say that WeDo is designed with teachers in mind, not only with kids in mind. I know that teachers enjoy it more than the kids! It is incredible to observe how first or second grade students of elementary school can explain, as the best engineers can do, how mechanisms full of gears and levers work without any difficulties.

And that is not the only thing that we can think of when talking about the LEGO WeDo set. Diego Galvez summarized it nicely on the 16th edition of HispaBrick Magazine®. We usually think that WeDo is for the little ones and belongs only to the classroom. WeDo can be found in elementary schools around the globe. It has only 158 pieces, including the motor, two sensors and a handful of gears. Although it was designed for





the school, little by little is entering our homes.

When we think about LEGO®, we think about fun, hours and hours of fun time for everybody. When we think on educational robotics with LEGO, the first thing that comes into mind is one of the MINDSTORMS® versions. They have been so successful that are even used in universities around the world for engineering classes. That is partially the reason why there is a version for the kids, the LEGO WeDo. If MINDSTORMS can motivate many to go to the university and follow technical careers, imagine what you could achieve if you motivate them from a younger age. Everything starts with little steps, overcoming a challenge after another, building and programming, playing and learning.

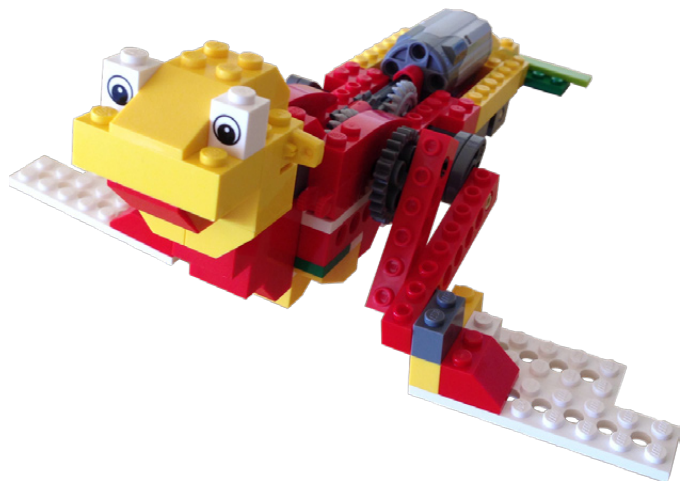
The WeDo set is not only for playing, the software includes classroom activities and a study plan covering math, science, technology, engineering and language. Yes, you read it right. Math, science, technology, and engineering make sense for this robotic kit, but language? LEGO calls it language, but it

is more like language and arts. At the end, it is a complete curricular program.

Simple machines, motion, transfer of energy, animal structures, programming, sequence of events, search for creative solutions, mathematical concepts; all this educational notions have a common term, a common connector, the communication process, the language. There is also a motivational agent behind, the artistic construction that motivates and guides us to represent the world. What a school curriculum, not bad, isn't it? It is really interesting that if we try to remember the time when we were kids, or when we observe kindergarten students, there is something in common, we learn best when we play with things. We learn more by manipulating objects than sitting down in a classroom.

This educational technique has a name, constructionism. Not by chance Seymour Papert developed it, and became so influential that he collaborated with LEGO in what today we know today as the LEGO MINDSTORMS. What a coincidence.





These sets were designed with an educational objective in mind. That must be the reason why we always end up learning something else and eager for more.

I need to mention that although there is only one commercial set of WeDo, there is also another version designed exclusively for Peru with 208 pieces (50 additional parts). The Government of Peru, OLPC (One Laptop per Child) and LEGO® reached an agreement to distribute more than 90,000 special sets of WeDo through schools around the country. In addition to the official WeDo set, and the special Peruvian version, LEGO also has available an additional set, called WeDo Resource Set (325 additional pieces).

However, what can you build with this set of LEGO? I would venture to say that almost everything. Simple and not so simple machines, your favorite bug and all kind of animals, among other things. The software includes 12 robot instructions ready to be assembled.

Since seeing is believing, the article is illustrated with a few samples of what can be achieved. The images used on the first and last page were assembled using additional bricks from WeDo Resource Set. The other included images were designed with the basic set of 158 pieces.

Although WeDo does not have the custom designed pieces of LEGO Technic® or the computing power (nor the batteries) of MINDSTORMS®, this set will challenge what you know about games for little kids. The colorful blocks are no less equipped than the sets designed for older kids. Many parents have felt under the magic spell that seems to be casted on them. At the end, WeDo is a good excuse to go back in time to remember



how fun was to play around with blocks imaging your own world. I would bet that at a few homes you could hear similar conversions when the father is found playing around with the WeDo set: For God's sake honey, I'm telling you that this robotic set is designed by LEGO to be used at school, there is nothing wrong to have it at home. You will not complain when our kid becomes an engineer!

So, do you accept the challenge? How many designs you think you are capable of doing?

Like everything related to LEGO, the sky is the limit.

You can find more information and assembly instructions for the designs presented here and many more at:

[www.wedobots.com](http://www.wedobots.com)

[www.facebook.com/wedorobots](https://www.facebook.com/wedorobots)

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