033_eng

HispaBrick Magazine®

Redactores / Editor board

Lluís Gibert (lluisgib)
Jetro de Château (Jetro)
José M. Ruiz (Satanspoet)

Equipo HispaBrick Magazine® / HispaBrick Magazine® Team

Antonio Bellón (Legotron)
Adrian Barbour (BrickMonkey)
Jesus Delgado (Arqu medes)
Jesus G. Martín (manticore)
Luigi Priori
Oton Ribic
Vicente Lis (Otum)

En este número colaboran / Authors of this issue

Ahmad Sahar
Anuradha Pehrson
Arvind and Sanjay Seshan
Cara
David Koudys
Galaktek
Holger Mathes
Janos Roemer
Claire Kinmil Brickomotion
Sebastian Bachórzewski
Ted Andes
Vesna
Yu Chris

Nuestro agradecimiento a / Thanks to

LEGO® System A/S
Jan Beyer
Kim E. Thomsen

Puedes contactarnos / You can contact us at
info@hispabrickmagazine.com

Información legal
Los artículos y fotos en esta obra son propiedad de sus respectivos autores. Usted es libre de copiar, distribuir y comunicar públicamente la obra bajo las condiciones siguientes:
- Reconocimiento: usted tiene que atribuir la autoría de esta obra a "HispaBrick Magazine® y otros autores" (y con el siguiente link www.hispabrickmagazine.com en caso de referencia electrónica).
- Sin obras derivadas: no se puede alterar, transformar o generar una obra derivada a partir de esta obra.
- Al reutilizar o distribuir la obra, tiene que dejar bien claro los términos de la licencia de esta obra.
- Alguna de estas condiciones puede no aplicarse si se obtiene el permiso de los titulares de los derechos de autor.
- Nada en esta licencia menoscaba o restringe los derechos morales de los autores.
LEGO®, DUPLO®, MINDSTORMS®, EXO-FORCE®, BIONICLE® y el logotipo LEGO® son marcas registradas de The LEGO® Group. Copyright 2017, el cual no patrocina, autoriza o aprueba esta publicación.

Todos los artículos con marca de fábrica pertenecen a sus respectivos propietarios y poseedores de sus licencias.

Legal information
The articles and photos are property of their respective authors. You are free to share to copy, distribute, display, and perform the work under the following conditions:
- Attribution: you must attribute this work to "HispaBrick Magazine® and other authors" (with link www.hispabrickmagazine.com in case of electronic reference).
- No Derivative Works: you may not alter, transform, or build upon this work.
- For any reuse or distribution, you must make clear to others the license terms of this work.
- Any of the above conditions can be waived if you get permission from the copyright holders.
- Nothing in this license impairs or restricts the author's moral rights.
LEGO®, DUPLO®, MINDSTORMS®, EXO-FORCE®, BIONICLE® and the LEGO® logo are registered trademarks of The LEGO® Group, copyright 2017, which does not sponsor, authorize, or endorse this publication in any manner.

All trademarks in this publication are property of their respective owner

033

Portada por / Cover by
Yu Chris

In this issue of HispaBrick Magazine®

10

23

49

6

Editorial

by Jose M. Ruíz (Satanspoet)

We are back, and we bring you a new free issue of HispaBrick Magazine (yes, the magazine is still free XD). This issue comes out with many of you still on your summer holidays and others coming back from them. In any case, we hope this issue will provide some interesting summer reading.

Once again we wish to thank the many AFOLs who have collaborated with us and who are vital in creating each issue. Thanks to them we can enjoy their work and be inspired within the many different facets of our hobby. We want to continue encouraging you to collaborate with our magazine. If you have ideas, interests or creations you wish to share with the community, don't hesitate to reach out to us.

In the month of May we were privileged to be present at the LEGO Fan Media Days, meeting up with our colleagues from other fan media and getting a chance to interview LEGO designers who showed us some of their new products and and told us all about them. Some of the material resulting from those days has already been published on our Facebook page. The rest will appear in our magazine over the course of the year.

Finally, we would like to congratulate our friend and colleague on his recent paternity. Even so, he has still been able to help prepare this issue ;)

That's all, enjoy your summer!
#

Great creators of the world: Vesna

by HispaBrick Magazine®

pictures by Vesna

HispaBrick Magazine®: Name?

Vesna.

HBM: Nationality?

V: Slovenia.

HBM: What do you do normally?

V: I am a biochemist and I do research in oncology with a specific focus on cancer cell biology. Normally I get up early to be at work on time. Then I rush home to spend the afternoon with my two children, and in the evenings it's time to relax from the daily stress – either by building or sorting LEGO®.

HBM: When did you first start building with LEGO®?

V: I built and played with LEGO® from a very young age. Apparently, I already started discovering LEGO® at the age of one year, as I was taking them from my older sisters. During those early years, I played with a limited amount of bricks, as I got a hand-me-down box from my older sisters which I also shared with them. Interestingly, I never had a set as a child, just a mixed box of random parts, so I was making my own creations all the time.
As an adult, I got back into building with LEGO® in December 2009 when I got the Creator 3-in-1 set 4956 House as a gift from my partner. At that time, I was living alone away from family and friends, and had much more free time. Slowly, building with LEGO® became part of my de-stress routine.

HBM: When did you start posting your models online?

V: I joined the Slovenian LUG Kocke Klub in January 2010, and started by participating in different discussions about LEGO®. Later in 2011 I started posting MOCs, when I was also more actively building after discovering Bricklink and the many, many new parts. At that time, I was spending a lot of time online, discovering MOCs, sets, and parts I did not know existed. I was also very keen on reading comments from the online community, so it was an easy decision to go online.

HBM: What is the most recent set you have purchased?

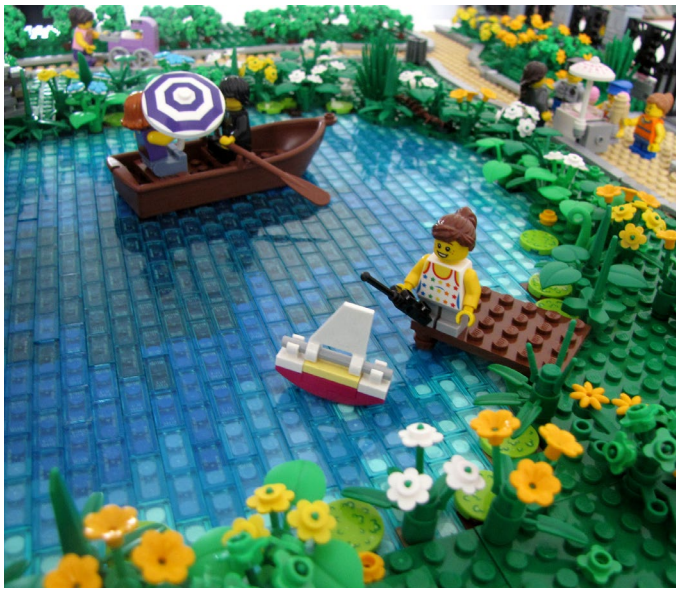
V: My last purchase included 70830 Sweet Mayhem's Systar Starship!, 75955 Hogwarts Express, 41193 Aira & the Song of the Wind Dragon, 41196 The Elvenstar Tree Bat Attack, and 70618 Destiny's Bounty.

HBM: What is your favorite commercial LEGO® building theme?

V: That is not an easy question considering that I like different themes, and sets from different themes. Some of my favourites are Friends and Elves, mostly for the wide selection of colours and some interesting parts, but not the minidolls. I enjoy LEGO® Architecture as well, as the sets explore many different techniques at microscale. However, my all-time favourite theme is Modular Buildings. Set 10185 Green Grocer was my first modular building, and after building it I was more or less hooked.

HBM: What is your favorite theme for building?

V: I try to build in different themes, including scenes from Elves, City life, or microscale. However, my favourite themes for building are still houses, interior details and landscaping. But this doesn't mean I won't try other themes. I am constantly thinking about building outside my comfort zone, such as building a boat or a spaceship. But it takes time and more effort to get more comfortable with that.




POST

HBM: If you had to choose just one from among all your creations, which would you choose and why?

V: It is hard to pick out just one creation, as many have a special place in my heart. I was proud of my first proper modular building MOC, a corner building from December 2011, built with a limited selection of parts from a small LEGO® collection. To choose just one creation, I would say Kingdoms Joust Day. This was my first larger creation, and also the only creation I built together with my partner. In addition to learning lots of useful tricks, like ordering more parts than planned and building modularly for easier transport, it was also a fun

challenge to plan and build with him.
HBM: What is the largest creation you've done?

V: The largest creation I have built alone was a Train Station with tracks in the back and a small square at the front. Its dimension were 96 x 128 studs. Considering the limited space I have for the hobby, I do not know when or if I will build

anything bigger than that.
HBM: What is your favorite LEGO® element and why?

V: I can not pinpoint just one single element, but some of my favourites are the different foliage parts.
I like that the selection of plants has expanded in the last year to include some of my favourite parts, such as Flower Stem with Bar and 6 Stems (19119), grass stem (15279) or Plant Plate, Round 1 x 1 with 3 Leaves (32607).
I used many of these in my Rainbow Park and would love to use even more in different colors.

HBM: Which part would you like LEGO® to produce?

V: I would certainly enjoy more new plant parts, as well as new recolours of the existing plant parts. I would also like a corner brick with masonry profile, and a trans-clear glass for Window 1 x 2 x 2 2/3 with Rounded Top (30044).

HBM: How many hours do you spend building with LEGO®?

V: I don't keep track of time when building, so I can only guess at the number. In general, I build more during the winter months as I spend more time indoors due to the bad weather. On the other hand, Slovenian LUG Kocke Klub holds at least two exhibitions per year, so I am forced to build all year round. When I am actively working on a project, I easily spend 2-3 hours each evening building and planning. Having small children and building MOCs can be challenging, so I generally build in the evenings, until I am too tired to continue.

HBM: What do your family/friends think about this hobby?

V: I am glad to say my family is supportive of the hobby. My parents find it a bit of a strange way to relax, but they see LEGO® as a great construction toy for grandchildren.
I do not discuss this hobby with my friends outside the AFOL community much, but they find it interesting, and some have even visited exhibitions where I've participated. On the other hand, I have made some great friends within the AFOL community, and we all agree this is a great hobby.

HBM: Do you draw or create predesigns before you start building?

V: Honestly, I am terrible at drawing. Sometimes I make some sketches for buildings or landscape to get a glimpse at the basic shape. More often I try predesigns with digital LEGO® software. However, the majority of my creations are built on the table from scratch with lots of trial and error.

HBM: What do you think about the use of nonofficial parts (stickers, modified parts, non LEGO® ® elements, etc.)?

V: I do not mind using nonofficial parts. Especially custom stickers, printed or even chromed parts which can have a great effect on the final creations, and I would use stickers for my creations. On the other hand, I am not a fan of modifying parts. So far, I have only cut a few flexible tubes I used for different

heights of trees. As for using non LEGO® elements, I have not tried any, but if made in sufficient quality they can be a nice addition. On the other hand, being limited to official parts can boost your creativity to work around a problem and still make a great MOC without nonofficial parts.

HBM: What inspires you to create your layouts and MOCs?

V: I find inspiration for my buildings both in real life as well as online in the AFOL community. Sometimes I see interesting façade detailing that I want to recreate with bricks, while other times I see interesting building techniques I want to try out. I also get inspired by some sets, wanting to expand them further. One of my last MOCs, Modern Villa, was inspired by an old raised baseplate (6092px2) I got as a gift from another AFOL. Another recent creation was built for the Eurobricks event in the style of LEGO® Architecture, a Skyline of my hometown Domžale.

HBM: What plans do you have for future builds?

V: I want to try different themes and different subject matter to get more out of my comfort zone. As mentioned, I am thinking about building a boat and a spaceship in the near future, but I also want to try a different approach to building more houses. However, I am currently actively working on a Ninjago City-inspired layout.

HBM: How do you see the evolution of the FFOL (Female Fan of LEGO®) phenomenon over the last couple of years?

V: Honestly, I never paid too much attention to the FFOL phenomenon. I do not even see it as something out of the ordinary. In general, I do not know many FFOLs and I would say the reason for this is that women in general have other interests than men, perhaps not being familiar with LEGO® in their childhood and then being less prone to start this hobby as adults. There are definitely less FFOLs active in the online community. I am one of the few women active in the Slovenian LUG Kocke Klub and I have never felt different from the rest of the AFOLs. This is also the reason why I would not tag myself with FFOL specifically, as I do not feel the need to emphasize my gender. My experience from international exhibitions is that many FFOLs come as visitors but not exhibitors. Mostly because they like building sets and seeing MOCs, but do not have confidence or time to make their own creations.
#

Interview: LEGO® Architecture

by HispaBrick Magazine®

pictures by HispaBrick Magazine®

Can you please tell us your name and position in the company?

My name is Rok Žgalin Kobe. I am a designer for the Architecture line, but I'm also on the team for Creator Expert for which Jamie Berard is the creative lead.

Who is the target customer for the Architecture line?

I'd like to believe that we are being very inclusive. Even though people would assume this is an adult-oriented line, we still do the building instructions in such a way that it is very approachable even for a younger-age audience. We keep in mind that it might not be the product for what is necessarily a LEGO® fan, so it could be for somebody who hasn't had a lot of exposure to LEGO® before who would pick up one of the Architecture sets. They are designed with that in mind too. Even though there is quite a lot of detail and many interesting building techniques, we still strive to keep them simple, with a nice building experience.

Do you see Architecture as something somehow apart from the normal LEGO® products?

We are celebrating ten years of Architecture now and I think that is quite an achievement for any LEGO® line. You might say we are an evergreen now, that we have finally matured. I am proud to put it next to other great lines, like Creator Expert, which also has an anniversary for their modulars.

Who chooses the buildings that you get to reproduce?

It's a group effort. We have a lot of factors to consider. From the look of the model, the price point, where it fits in our portfolio, whether we have models that are similar in colour already out there. There are plenty of factors to consider. You can imagine it as a big mixer board with levels going up and down that we can fine-tune in bringing the process forward.

How is the scale of the building decided?

Again, we do an exploration. What we would like to do and what I strive for is to deliver the best possible looking model and think about other things later on. But that is of course not the case in the real world. So these things go hand in hand. And marketing is also involved in this process.

The first buildings were very simple. Was it a proof of concept? Or was it something sought after?

The story behind it is basically that Adam Tucker started doing it on his own. It was kind of an experiment that LEGO® picked up on and then developed within a new business group which I was part of. It wasn't considered a mainstream product at that time. But now we are a proper line.

Step by step the buildings have gained detail. How is the level of detail defined?

Basically every model we have ever made was designed to outdo the previous one. To show the evolution of the line, we slowly started adding more and more detail to bring it into the direction of where it is today. In a way that makes it much more approachable. The beginnings, the small models were very nice, but at the same time they could be considered very niche. It actually took a bit of power of abstraction to actually recognise them as the buildings they represented, whereas the direction we are in today… You can see the difference between the two Guggenheim museums (21004 vs 21035). The bigger scale allows you not only to capture more of the detail, but more of the building ideas and underlying concepts as well. It is a fuller package.

Is this why you sometimes repeat a model? To give a better building experience because you can grow in size and in detail? Like the Guggenheim or the Burj Khalifa?

It's a magnificent building and we thought maybe we didn't do it justice the first time around. Or just to show how it would look now with the evolution in the line. Because the first model fits perfectly well with the concept of Architecture back in the day, but we actually wanted to give it another shot with full attention given to the details and shapes.

What are the limitations in construction techniques for a model to enter into the Architecture concept?

Part of the design decision for these models is to try and keep them as much a core LEGO® product as possible. That

is, to use the LEGO® that people are familiar with. One of the prime decisions here is that we are stepping away from specific moulds. For instance, people are asking for a face on the Statue of Liberty – some have made it Bionicle style or like Star Wars characters. That is not the point of the Architecture line. It is to showcase that you can still do amazing things with what is available and we are working within those limitations. That is the first reason. And then if you take it one step further, I prefer to keep it to the core of bricks. You can see we are not adverse to using specialised bricks, but we are not doing it just because we can, but rather where it is appropriate and where it fits.

Do you have any limitations on building techniques that you do not want to use?

Within LEGO® there are many ways that you can get the system wrong, so to say. There are many techniques that are considered illegal. But that is what we have model coaches for – to make sure the model is designed within the LEGO® system. They are the “guardians of the system” so to speak. But just like how real-life architecture is about pushing the boundaries – about thinking ‘oh, that’s impossible’ and then making it – some of that thinking applies to the LEGO® Architecture series as well. Because if we want to replicate certain things, then we have to use techniques which maybe haven’t been used before, and that’s part of the architectural level of our line.

Do you limit yourself in the type of parts you use in order to retain the simplicity of the model?

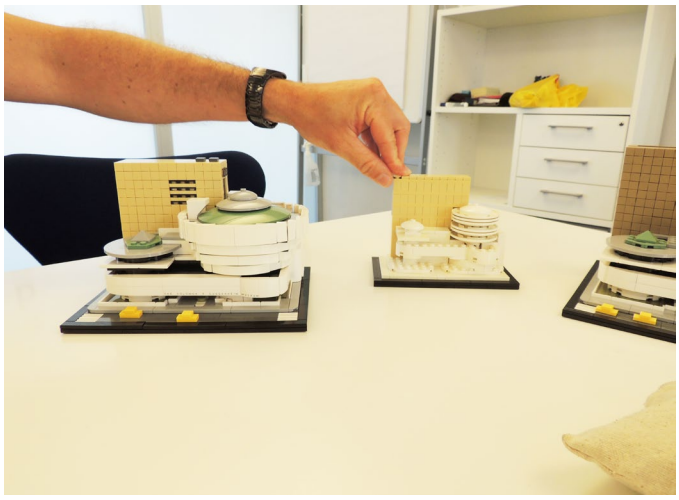
I do set limits on myself for that. I prefer System to Technic and Bionicle, but that doesn’t mean I exclude them. Far from it, because if the best solution for a form is from a different part of the portfolio then I am by no means afraid to use it. I’m not a purist in that way.
This hair part was the Minifigure, Hair Wavy and Windblown to One Side (Bricklink part 32602) from Pirates of the Caribbean. I had to ask permission from that line to use an element which was specifically designed for that line.

What has been the hardest building to reproduce?

They all have their own challenges. As you can imagine, more time was spent on the Statue of Liberty than on certain other sets. The size and complexity have an effect. But at the same time the Capitol was done rather quickly because they worked at the concept level already. So it can be very different. But if you are asking about the most difficult, you’d be surprised at the challenges. It might be a challenge to get something in a certain colour that is needed for the model. There are different challenges that pop up during the development.

Why are certain locations such as New York, Paris or London repeated?

We just did the first Asian skyline – Shanghai. Before that we had Sydney, Australia, we have the Great Wall of China. From my side I am actively trying to promote diversity in the sense that we should reach as many different places as possible. But of course, New York is New York.

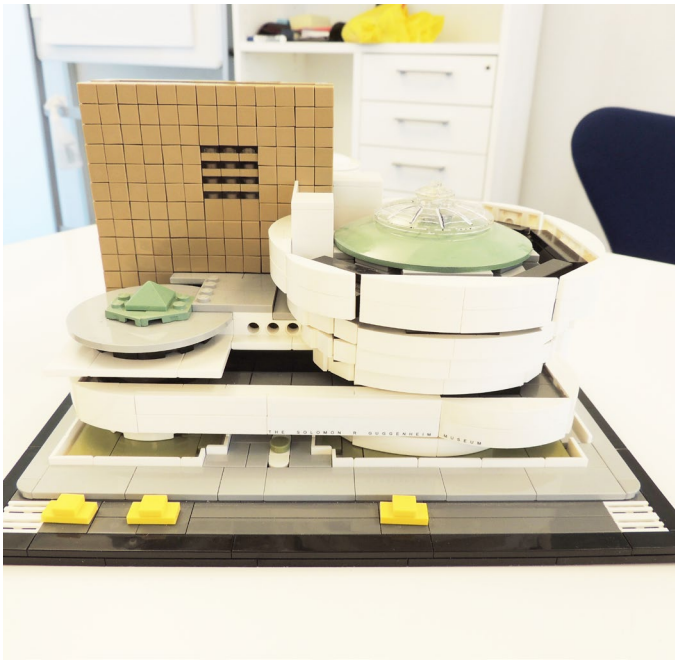


Have you ever thought about reproducing modernist buildings, based on curved elements? Do you think it is feasible to reproduce this kind of building with current LEGO® elements?

I will answer your question with a question: If you hadn’t seen the LEGO® Architecture Shanghai Tower, would you consider it feasible for that to be made in LEGO®? Or the Guggenheim, if you hadn’t seen it before? Or the Statue of Liberty. These are all organic shapes. I hope I have succeeded in answering your question.

The Skyline is a new concept that you are exploring. How did this concept arise?

It enables us to do many things at the same time. You get to do skyscrapers – that would be quite difficult or monotonous to reproduce as core models.
It would be a lot of the same, whereas in a skyline you have a collection of elements. You are doing justice to a whole city, which may not have a single masterpiece as the defining building, but which is still known.
You can create a great thing out of five landmarks, which aren't necessarily the Statue of Liberty but which are still recognisable as the city itself.
It gives you a different perspective and a different price point as well. So it really fits the bill and has been quite a success.



Is it difficult to work on such a small scale and still have the buildings continue to be faithful to the original?

It's quite difficult. Almost every brick in a skyline set is visible, so you have to juggle around quite a bit.
At the same time in every city there are multiple buildings that you can choose from.
You can go back and forth on the mixer table and add and remove where needed. Where it makes it hard in some aspects it makes it easier in others.

Do you need some kind of architectural background to design these kind of sets?

I'm an architect, and it certainly doesn't hurt. That's for sure. So far in the last seven years the sets were either designed by me or by another colleague, Lars Joe, who is also an architect. My design process is definitely easier because of my background.

Because even if you are not as talented as some of the guys I am working with, who are amazing and naturals with the bricks, they can build anything, you can still help yourself with your education, with the processes that you have learned in your previous work or in your career.
I was relatively old when I came to LEGO®, I was in my thirties, so I was established as a professional beforehand and I definitely lean back on that knowledge.

Do you visit the buildings you are going to reproduce?

I wish I could. I travel a lot with Google Earth :) Architecture was always my passion, so even before I started to work for LEGO® I visited almost all the buildings I have worked on, with one or two exceptions. So I can talk about cities and landmarks without having to pull out my smartphone, so I have a three-second advantage.

Do the box and the booklet have the same importance as the model itself?

It's part of the overall experience. It gears towards a fuller experience, a more premium experience if you like. But still without sacrificing the model. At the beginning we got a bit of a bad reputation as being really expensive line, especially for models with such a small piece count. Now we have improved on that. It is one of the issues we have tried to correct over the years.

Do you need permission to reproduce certain buildings?

It depends on the age of the building. I don't know the exact time, but there is a limit on how long an architect must have been dead before it becomes common property where there are no intellectual rights. Or sometimes there is a foundation or trust behind it that runs it, or if it is government or private property. So it differs. But there has to be a legal team on it as well.

Have you received any comments or feedback from the architect of a building?

Yes. We do involve them in the process. We ask for their feedback, their permission and their thoughts on the project. But of course that varies. Some might know the limitations of LEGO® very well, because they have played around with it. Others have no idea how it works.

What building would you like to reproduce?

The ones that I haven't done… I have sketches of some, but since I am hoping they may make it into a future product I won't answer you directly. Now everything is possible, but if I go ahead and say something I might seal its fate or spoil it.

Did you ever think about recreating constructions that have disappeared, like the lighthouse of Alexandria or other historical constructions of ancient times?

There are monuments that are not with us now but that have influenced whole generations and whole styles. The ancient monuments that you mention have their influence on architecture up to this day.

You have an example of a development model for the Guggenheim Museum as well as the smaller final product. Can you explain the difference?

They are actually both in the same scale, but the final product has been built and adjusted in such a way that it provides better value for the customer. You would otherwise have to pay a lot more money to arrive at what is basically the same set. It goes to show how we must perfect the model at a price point for better value perception. Not doing that one at the higher price point allows us to build a different one that can really benefit from a bigger version. Bigger isn't necessarily better, especially if you have to pay for it. This way we can make a model more accessible. #

Modular Integrated Landscaping System (IX)

by A. Bellón (Legotron)

Over the last few months we have received several questions about how we plan and build our MILS dioramas when we go to an exhibition. The way we build a diorama is closely linked to how the members of our LUG collaborate, and for this reason it can't be said that there is one way which is better than others, although we can offer some advice and clarification for those who are interested in working with MILS dioramas.

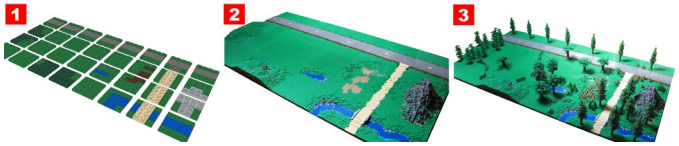
As mentioned in our first few articles about the MILS system, this modular construction system is based on the idea of creating a simple standard with few rules that could be compatible with baseplates or other landscaping systems. To this end, both the planning and preparation have followed the same reasoning: keep it simple, both during planning and while building the dioramas.

Before we start we should clarify that this is not a rule book or a new set of rules for the MILS system. In this article we will try to explain the system we have developed for planning and building our dioramas, based on the experience we have accumulated since we published the first article on MILS in HispaBrick Magazine® 013 (in 2012). In doing so, we hope to resolve some of the questions we have received about planning and building dioramas.

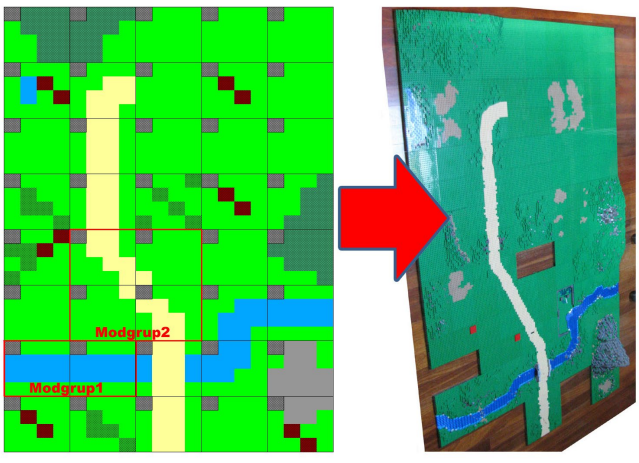
Planning

Planning is the stage where the diorama is designed. Logically, the starting point is knowing what the available space will be for the diorama, and gathering information about the modules that different participants will be contributing. In our case, for our HispaBrick Magazine® events, we work with full modules of 32x32 studs and sections of 32x16 studs, which is equivalent to 25x25cm and 25x12.5cm respectively.

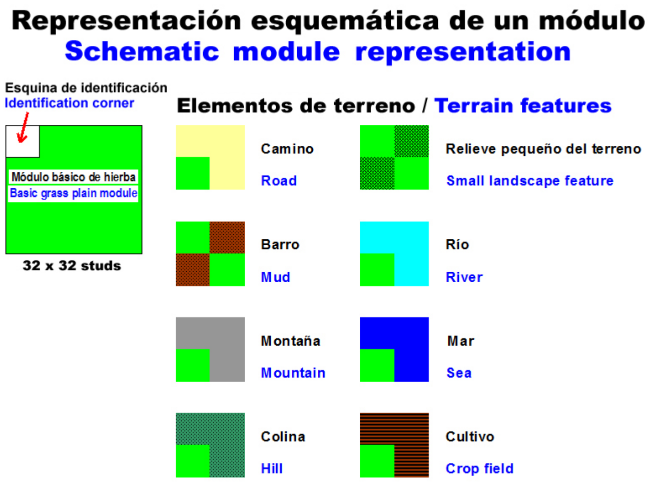
So all the dimensions of the diorama must be multiples of these sizes. Depending on whether the table we build on can be accessed from one or two sides, we limit the depth of the diorama to a distance that will allow us to place decorative elements on top of it. With these parameters in mind we can establish the maximum size of the diorama. At this point we ask collaborators in the diorama to indicate the number and type of modules they will be contributing.

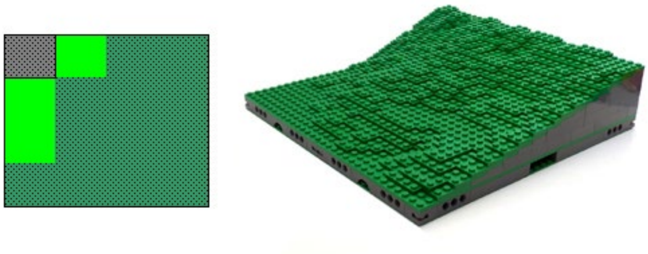


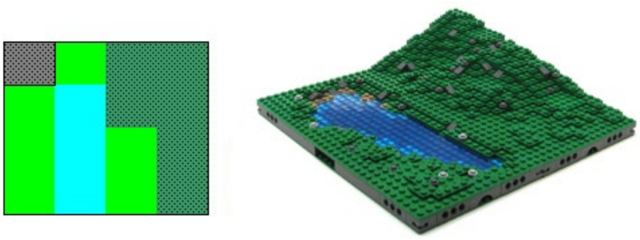
When all our collaborators have detailed the modules they will be contributing to the diorama it is time to start designing the layout. While we do use plans from previous dioramas as a reference, the design of each diorama is different. This layout is used to build the actual diorama at the exhibition or event. In order to carry out this planning, we have chosen a simple and easy-to-use tool. We plan the diorama in an Excel worksheet and upload it to Google Drive. This way we can consult and modify it at any time and from anywhere without having to print a new layout for every change we make. Although there are tools that allow you to make more beautiful and detailed maps, we need something simple that everyone can use, even from a smartphone or tablet, and which will allow us to make changes on the go.
In addition, we make the map as schematic as possible, to make it easy to interpret even by people not participating in the diorama. In our case we are frequently involved in three or four different dioramas at the same event, so we can't participate fully in building all of them.

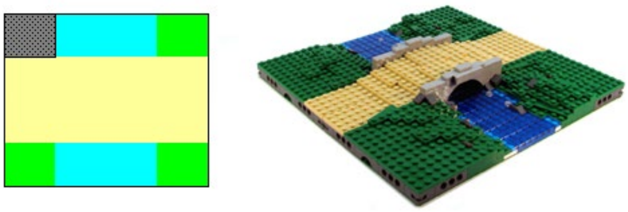


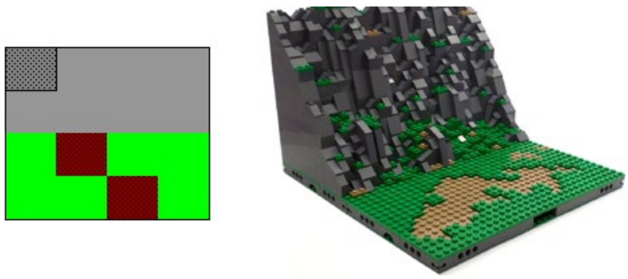
We have created a schematic representation of all possible modules we may have. It is very basic and easy to understand. Each module is represented by a 4x4-cell grid. The top left cell is an identifying brick indicating who the module belongs to. The rest of the cells are a schematic representation of the (32x32) module or (32x16) segment.











The representation is highly schematic so it is important to take care to differentiate any modules that form a modgroup (a MILS-compatible section made from non-MILS elements) or those which represent a very specific module. It is also important to take into account that you will need to represent modules that aren't BTMs (basic terrain modules) in all their possible orientations. In this way you can then simply copy and paste the different modules as you prepare the map.

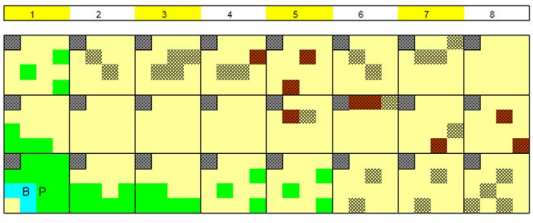
Template with examples of modules in an Excel file for creating layout plans:
http://www.abellon.net/MILS/img/MILS_modules_templates.xls

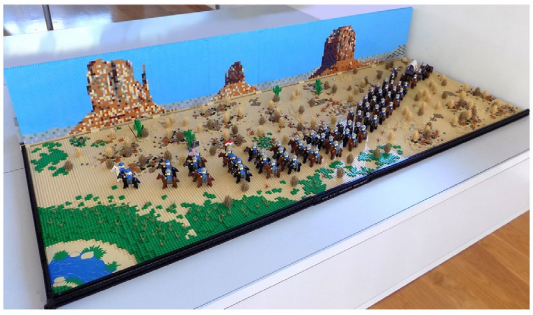
Now that we have enough modules, it is not necessary to use every single module each time we build a diorama, so we can make dioramas with more or less rivers, roads or mountains. We follow the rule of using completely flat Basic Terrain Modules (BTM) for at least a third of the diorama, and on these we place buildings and other elements that require flat surfaces. Having this flexibility when it comes to choosing from the available modules allows us to reuse small sections of plans we have used previously and that we especially liked in other dioramas. This of course reduces the planning work. The most complicated part is keeping track of the modules that have been used and those that are still available. One of the advantages of having additional modules is that if you've prepared a map with more modules of a certain type than you have available you can easily substitute them with the additional modules that you weren't initially going to use.

As mentioned previously, at some of our events several participants are involved in a number of dioramas, as well as in organisational duties, so we have needed help from other members to build the dioramas.
To be honest, the experience has been a big success. Even working with AFOLs from other countries and dealing with subsequent language issues, on more than one occasion AFOLs who were not involved in making the MILS modules were able to prepare the diorama following these plans. In just a few minutes we could explain what needed to be done so they could build without further help. This has saved us a lot of time.

One of the parts of the planning we have been most pleased with is that people who had never even heard of MILS were able to build a complete MILS diorama following a few simple instructions.

Western display



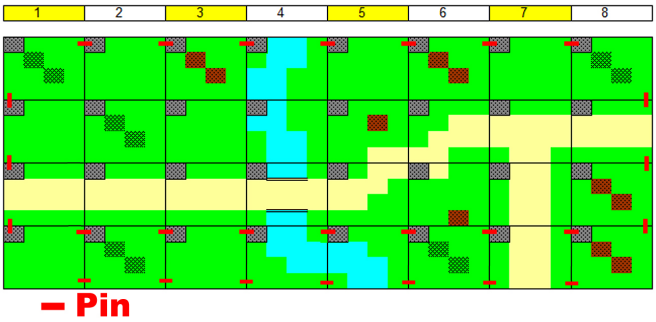


Building the diorama

We build the diorama following the plans we have prepared for each event. Despite all the preparation, sometimes there are unforeseen circumstances that need to be solved on the go. We try to lay out all the modules we are going to use and check to see if the width and the depth of the space we have corresponds to what was initially planned.

Before we start laying out the diorama, we stack the modules on one side of the table and then start laying them out from one side to the other, following the plan. We locate the modules that form the outer perimeter and link them with pins. Contrary to what many people who have asked about the MILS system think, We only connect a few modules with pins. By connecting only the outer perimeter, or even only the side facing outwards, we can then fill in the center with unconnected yet securely placed modules. Further pin connections can still be used to correct for variations in the underlying table surfaces or where tables meet.

However, minimizing the number of pin connections reduces complexity and makes it much easier to swap modules around without having to remove a whole lot of pins and surrounding modules.



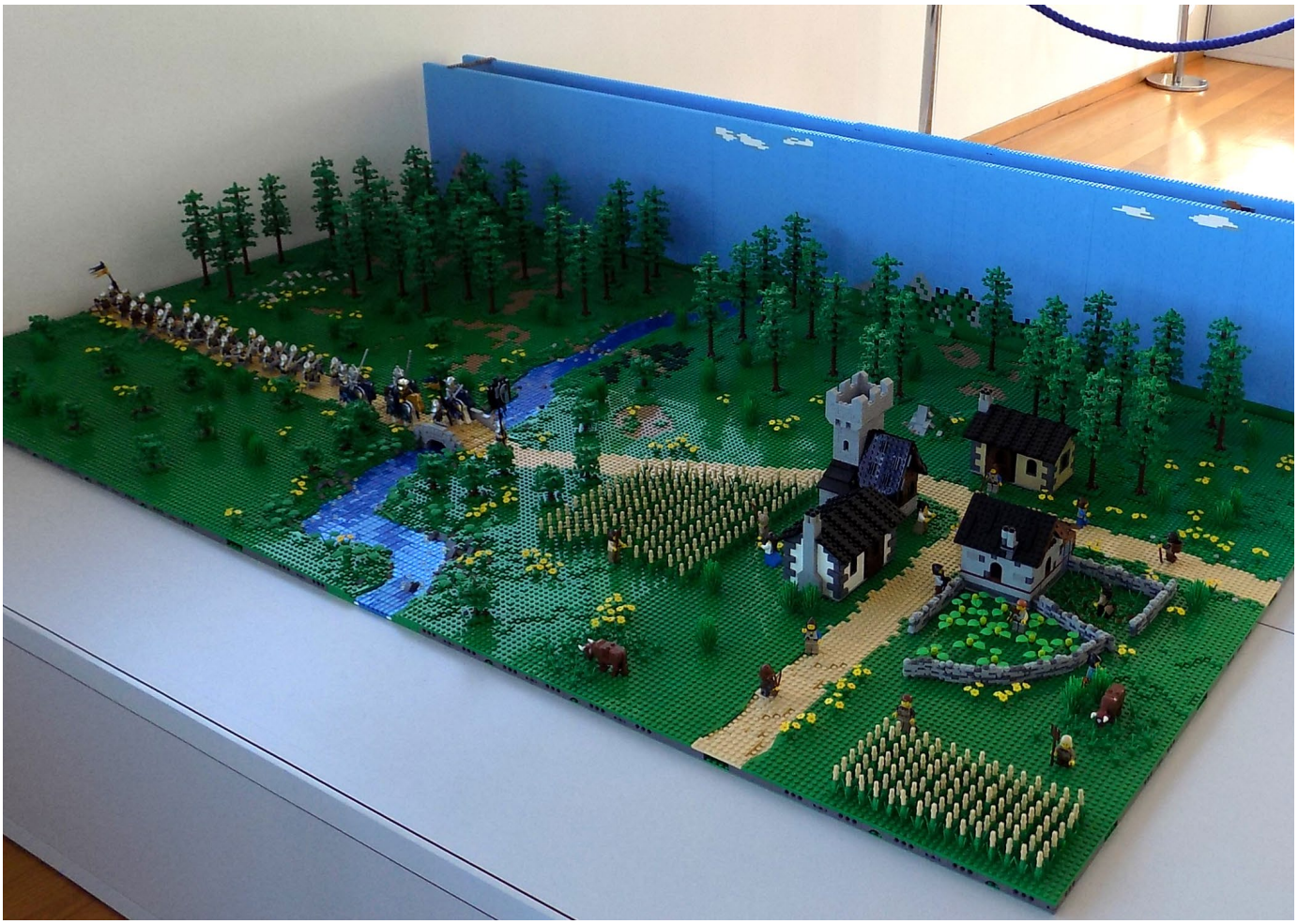
When all the modules are in place and we have cleared the construction area, we do a visual check. We particularly pay attention to areas where rivers and roads may cause too much clutter or where mountains may block parts of the diorama from view. These are things that can be hard to see on paper but stand out once the modules are in place. They can also be easily corrected by changing a few modules around or substituting them with remaining ones. For this reason we always bring a few extra modules along, just in case we need make any last minute changes. It can also happen that a participant forgets to bring along some modules. In that case, and if no additional modules are available, we may need to shorten the total length of the design.

On other occasions things can be more complicated, specifically when more than one module needs to be changed, since this may modify important structures in the diorama. Over time we have realised that one of the major issues is the placement of mountains, which involve the use of many modules. On paper the design may look good, but once it has been laid out on the table you might realise something doesn't fit. For this reason we try to place the mountains at the edges or corners of the diorama, making any later changes in their location less problematic.

When the placement of all the modules has been confirmed it is time to start putting buildings and other structures on top of it. After that we continue adding decorative elements and minifigs. Normally each contributor is in charge of providing

and placing the elements for a specific area of the diorama. To this end, the diorama is divided into different sections, delimited by rivers, roads or mountains. These divisions tend to be transversal so we don't get in each other's way. Each one takes care of decorating their assigned area so that we can keep separated the parts each participant brings along. This way, when it is time to pack up, there is no risk of trees or minifigs getting mixed up, and each person takes all (and only) their own elements back home. Since decoration is done by area instead of by module, the effect is much more realistic and we avoid the chessboard look of having modules that are highly decorated right next to others that are almost empty.

Unlike the task of placing the modules, much less planning goes into adding the decoration. After deciding which areas are forest, farmland or pasture, each person adds the pieces they have available following their own criteria, while trying to ensure the areas are reasonably similar to other areas of the same style to keep the diorama homogenous. Finally, when everything else is ready, we place the mosaic panels representing the background behind the diorama.
#



Programming the EV3 with Swift Playgrounds Lesson 3 – Curved Move

by Ahmad Sahar

Hi, It's Shah again. For those who don't know, I'm a professional trainer specialising in MacOS and iOS software and hardware, and I also conduct classes on iOS App Development and LEGO® Mindstorms.

In the last lesson, we built a robot and made it move forward and back. In this lesson, we're going to make our robot turn.

What you need:
An iPad with Swift Playgrounds installed.
LEGO® Mindstorms EV3 Education (set no. 45544) or Home (set no. 31313).

Before you begin

For this lesson you need to build either the Educator robot from the 45544 set or the DrivingBas3 from the 31313 set.

45544

31313

The instructions for the Educator robot can be found here:
http://robotsquare.com/wp-content/uploads/2013/10/45544_educator.pdf

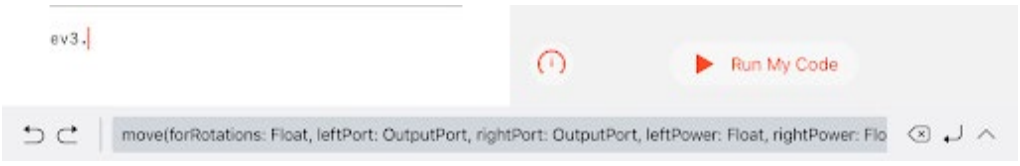
The instructions for DrivingBas3 can be found here:
http://ev3lessons.com/RobotDesigns/instructions/DrivingBas3.pdf

Make sure you have fresh batteries in your robot, and that your iPad is fully charged and paired to your robot.

Curved Move

You can use the template you used in the last lesson, or you can download a fresh copy. Remove all the code from the template, and connect to the EV3 brick.

Tap ev3 from the suggestions list. It appears on the page. Tap the dot in the suggestions list. Scroll through all the suggestions in the suggestions list until you see this one:



move(forRotations: Float, leftPort: OutputPort, rightPort: OutputPort, leftPower: Float, rightPower: Float, brakeAtEnd: Bool)

Tap it to insert onto the page.

This is a Swift function which is similar to the EV3-G Move Tank block.
It has a number of parameters:
forRotations: Number of rotations to execute
leftPort: The port the left motor is connected to. Can be .a, .b, .c or .d
rightPort: The port the right motor is connected to. Can be .a, .b, .c or .d
leftPower: The power level specified for leftPort.
rightPower: The power level specified for rightPort.
brakeAtEnd: Brake or coast at the end of the move.

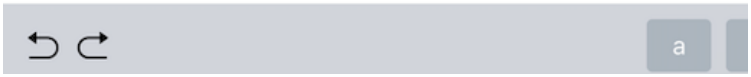
In general, to change the value for the parameters, tap a parameter, and you can either use the on-screen keyboard to enter the value, or choose from the suggestions list.

We'll start by changing the forRotations parameter. Tap the parameter, which is represented by the word Float. When the picker appears, choose 3. This sets the number of rotations to be executed to 3.

```
ev3.move(forRotations: 3, leftPort:
 OutputPort, rightPort: OutputPort,
 leftPower: Float, rightPower: Float,
 brakeAtEnd: Bool)
```

Tap the leftPort parameter, OutputPort and type a dot.

```
ev3.move(forRotations: 3, leftPort: .,
 rightPort: OutputPort, leftPower: Float,
 rightPower: Float, brakeAtEnd: Bool)
```



After you have done so, the motor ports a, b, c and d appear in the suggestions list. Choose b. This sets leftPort to Port B on the programmable brick.

```
ev3.move(forRotations: 3, leftPort: .b,
 rightPort: OutputPort, leftPower: Float,
 rightPower: Float, brakeAtEnd: Bool)
```

Tap the rightPort parameter, OutputPort and type a dot. Choose c from the suggestions list. This sets rightPort to Port C on the brick.

To make the robot turn we vary the power sent to the motors. We will set leftPower = 50 and rightPower = -50, which makes the left side move forward and the right side move backward, making the robot turn clockwise on the spot.

Tap the leftPower parameter, Float. Enter 50. This sets the power level of the left motor to 50.

Tap the rightPower parameter, Float. Enter -50. This sets the power level of the right motor to -50.

Finally, tap the brakeAtEnd parameter, Bool. Tap true from the suggestions list.

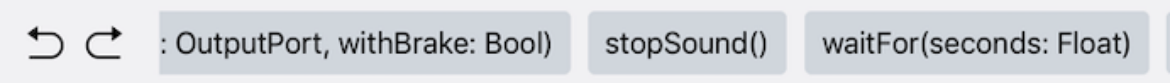
The command at this point should look like this:

```
ev3.move(forRotations: 3, leftPort: .b,
 rightPort: .c, leftPower: 50, rightPower:
 -50, brakeAtEnd: true)
```

ev3.move(forRotations: 3, leftPort: .b, rightPort: .c, leftPower: 50, rightPower: -50, brakeAtEnd: true)

Next we're going to make the robot pause using a wait function.

Tap on the space below the code you've entered and choose ev3 from the suggestions list. Tap the dot, and scroll through the list of suggestions until you find waitFor(seconds: Float). Tap it.



This is a Swift function which is similar to the EV3-G Wait block.
It has one parameter, seconds, which is the number of seconds to wait.

Tap the seconds parameter, Float. Type 1 to make the program pause for 1 second.

The function should look like this:

```
ev3.move(forRotations: 3, leftPort: .b,
 rightPort: .c, leftPower: 50, rightPower:
 -50, brakeAtEnd: true)
ev3.waitFor(seconds: 1)
```

ev3.waitFor(seconds: 1)

Select all the code you've typed in so far, and copy it. Tap below the existing code and paste. The result should be as follows:

```
ev3.move(forRotations: 3, leftPort: .b,
 rightPort: .c, leftPower: 50, rightPower:
 -50, brakeAtEnd: true)
ev3.waitFor(seconds: 1)
ev3.move(forRotations: 3, leftPort: .b,
 rightPort: .c, leftPower: 50, rightPower:
 -50, brakeAtEnd: true)
ev3.waitFor(seconds: 1)
```

ev3.move(forRotations: 3, leftPort: .b, rightPort: .c, leftPower: 50, rightPower: -50, brakeAtEnd: true)
ev3.waitFor(seconds: 1)
ev3.move(forRotations: 3, leftPort: .b, rightPort: .c, leftPower: 50, rightPower: -50, brakeAtEnd: true)
ev3.waitFor(seconds: 1)

For the second move command, set rightPower to 0. This makes the left side go forward,
pivoting clockwise on the stationary wheel connected to the right motor.

```
ev3.move(forRotations: 3, leftPort: .b,
 rightPort: .c, leftPower: 50, rightPower:
 0, brakeAtEnd: true)
```

ev3.move(forRotations: 3, leftPort: .b, rightPort: .c, leftPower: 50, rightPower: -50, brakeAtEnd: true)
ev3.waitFor(seconds: 1)
ev3.move(forRotations: 3, leftPort: .b, rightPort: .c, leftPower: 50, rightPower: 0, brakeAtEnd: true)
ev3.waitFor(seconds: 1)

Tap below the code you've typed in so far and paste again. The result should be as follows:

ev3.move(forRotations: 3, leftPort: .b, rightPort: .c, leftPower: 50, rightPower: -50, brakeAtEnd: true)
ev3.waitFor(seconds: 1)
ev3.move(forRotations: 3, leftPort: .b, rightPort: .c, leftPower: 50, rightPower: 0, brakeAtEnd: true)
ev3.waitFor(seconds: 1)
ev3.move(forRotations: 3, leftPort: .b, rightPort: .c, leftPower: 50, rightPower: -50, brakeAtEnd: true)
ev3.waitFor(seconds: 1)

```
ev3.move(forRotations: 3, leftPort: .b,
 rightPort: .c, leftPower: 50, rightPower:
 25, brakeAtEnd: true)
```

For the third move command, set rightPower to 25. This makes the left side go forward faster than the right side, making the robot turn turn gradually to the right.

Remove the last line of code, and you should get this:

ev3.move(forRotations: 3, leftPort: .b, rightPort: .c, leftPower: 50, rightPower: -50, brakeAtEnd: true)
ev3.waitFor(seconds: 1)
ev3.move(forRotations: 3, leftPort: .b, rightPort: .c, leftPower: 50, rightPower: 0, brakeAtEnd: true)
ev3.waitFor(seconds: 1)
ev3.move(forRotations: 3, leftPort: .b, rightPort: .c, leftPower: 50, rightPower: 25, brakeAtEnd: true)

Run the program. The robot should turn clockwise on the spot, pause for one second, pivot clockwise, pause for one second and finally make a gradual right turn.

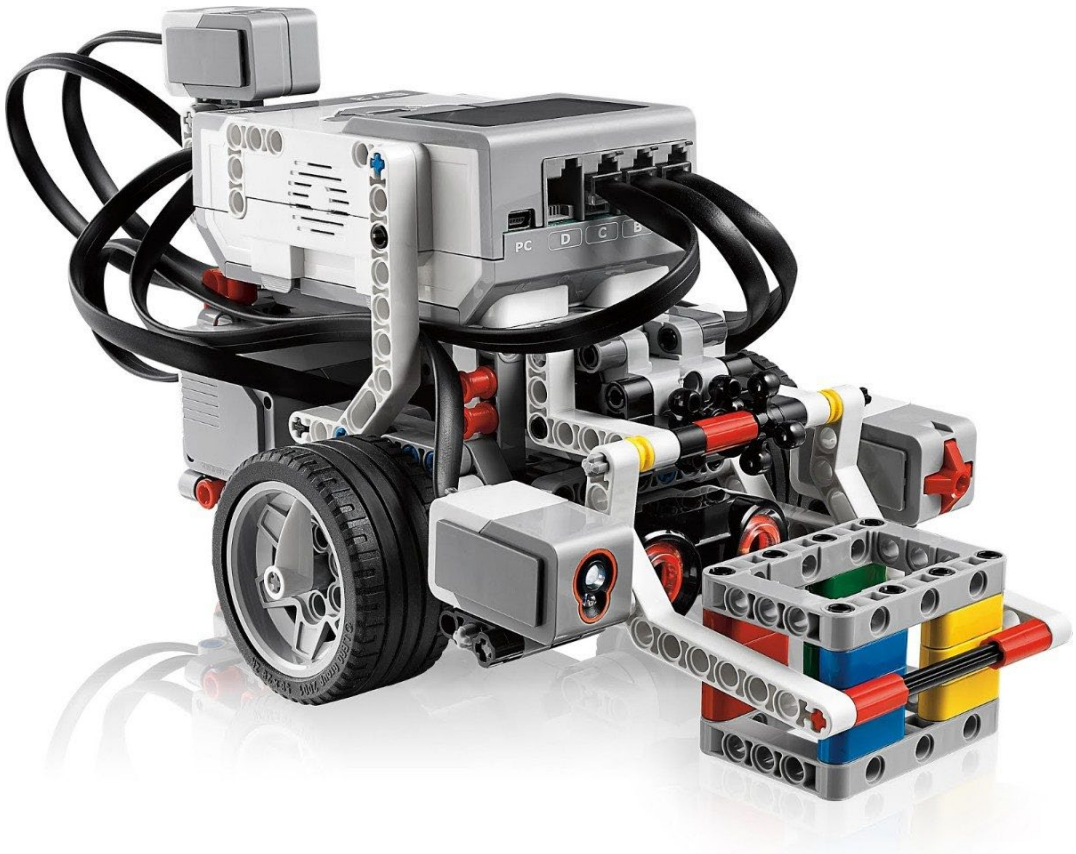
To make left turns, set rightPower to 50, and and leftPower to -50, 0 and 25 for each move command.

Can you figure out how to make the robot turn when moving backwards?

Great job! We've come to the end of the lesson. In the next lesson, we'll build and program a robot arm.

If you wish to know more about me and what I do, feel free to visit my company website, http://tomafuwi.tumblr.com, like my Facebook page at http://facebook.com/tomafuwi, follow me on Twitter at https://twitter.com/shah_apple and subscribe to my YouTube channel at https://www.youtube.com/c/CoderShah.

All the best and take care.
#



My SEQ story

by David Koudys

I have never known a time when LEGO® wasn't in my life and I've never had a 'dark age'. And yet my interests in our chosen hobby have changed over the years. When I was younger, the 357 Fire Station and 730 Steam Shovel with Carrier were my favourite and most rebuilt sets (yes, I'm older than the minifig – even the ones without moving arms). While in high school, Technic pieces were populating the floor of my bedroom and I built an interface card for my Commodore 64 to control the 4.5V Technic motors. Once in college, most of my friends were done with their LEGO® bricks. It was during this time that I found another key element for my love of the LEGO® hobby – the second hand market. I started off by acquiring my friends' collections, then I started looking at newspaper ads and hitting garage sales and flea markets. With the advent of the internet, I would pour over various websites like Kijiji and eBay.

When the RCX programmable brick came out in 1999, I was immediately hooked and already had an extensive parts inventory. The RCX got me into rtlToronto with their numerous robot competitions where I met so many wonderful people. Then I discovered LUGNET – wow – mind blown. LUGNET was the single defining point of my appreciation for the worldwide AFOL community, period. That's another aspect of the LEGO® hobby that explains why I've never had a 'dark age' – throughout the years I've got to meet all these awesome people and participate in so many great events.

Even today I still keep looking through various sources for anything 'LEGO® Cool'. And this is where my story really begins. I might not know everything about the 4.5 volt era of our LEGO® hobby, but I thought there wouldn't be much that would surprise me.

I was wrong.

One day late last year I was on my Facebook Buy and Sell when I came across a post that appeared to have an abundance of LEGO® 4.5 volt wires and 'C' size battery boxes. I wasn't that interested in expanding my 4.5 volt collection, but there was an intriguing addition in the lot for sale – a box labelled 'SEQ' which had what looked like 4.5 volt sockets. I immediately assumed it was some sort of precursor to the RCX. However, I had never heard of such an animal and when I googled SEQ I found nothing related.

A LEGO® mystery is something that will always pique my interest, especially on the secondhand market, so I just had to buy this lot. I picked it up for just 45 dollars – a bargain by any stretch, at least for me. Historically, I've occasionally found that a LEGO® lot which looked cool and unique turns out to be bland and disappointing after the purchase. But that didn't happen here. As soon as I got this lot home, I delved right in. Yes, the battery boxes (19 of them!) were a little 'meh', and the 4.5 volt wires were very dated (and almost ubiquitous in my collection), but the reason I wanted this lot was for these SEQs

(and there were four of them).

I grabbed one, put 3 'C' cells in one of the battery boxes, plugged it into what I assumed was the power input, and the unit turned on. One of the many good things about the SEQ is that there is no switch for on and off – you provide power and the unit just comes on.

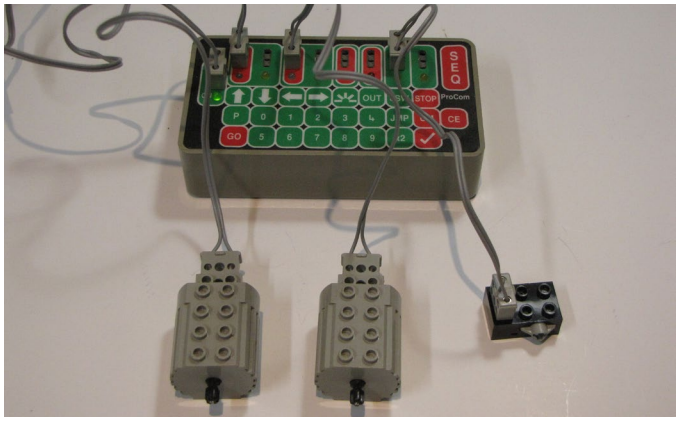
That was step 1. Steps 2 and beyond were trying to ascertain how this thing works. I disassembled one unit to see if I could get more information regarding who made it and how to use it. There was a sticker inside the case that listed a company name (ProCom), an address (somewhere in the UK), and a phone number. I thought maybe I could find this ProCom company and get some information – or at the very least a user manual (as one didn't come in the box). Unfortunately, the address and the phone number were no longer valid.

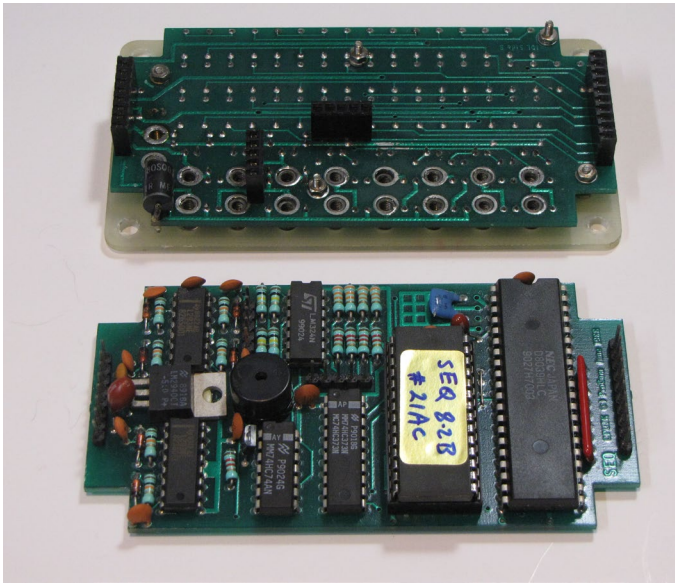
So I posted on LUGNET:

> *"I know I'm posting to what some would say is a very obscure site these days (LUGNET) about a very obscure finding (4.5 volt programmable brick) from a very defunct LEGO® Technic theme (4.5 volt), but there will be a few of us 'old timers' that may appreciate this."*

In that LUGNET post, I put a link to my first SEQ YouTube vid:

Day 1 with the SEQ – https://youtu.be/7NECA1q9-gU





This is where I detailed what I had figured out so far.

It turns out that there were still people out there getting updates from LUGNET. I was contacted by a good friend in the UK after he saw my posting. Over a plethora of emails back and forth, we figured out what the majority of the buttons do, and how to program the SEQ.

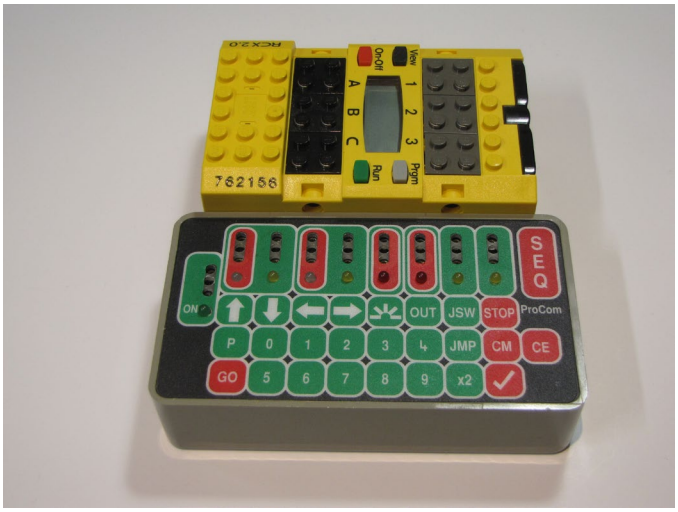
This led to subsequent videos:

Day 2 – https://youtu.be/BkBs5KvwV_0

In the second video, I detailed what we were finding out about the various buttons on the SEQ.
Day 3 – https://youtu.be/71g4hc_Qvms

This video shows the various button inputs on the SEQ and what they do, or at least what I think they do. I also discuss the programming aspect, with a few examples. I then used the SEQ to power an old TC Logo platform and got to see the programming in action.

Day 4 – https://youtu.be/KNNjYBnxPe0



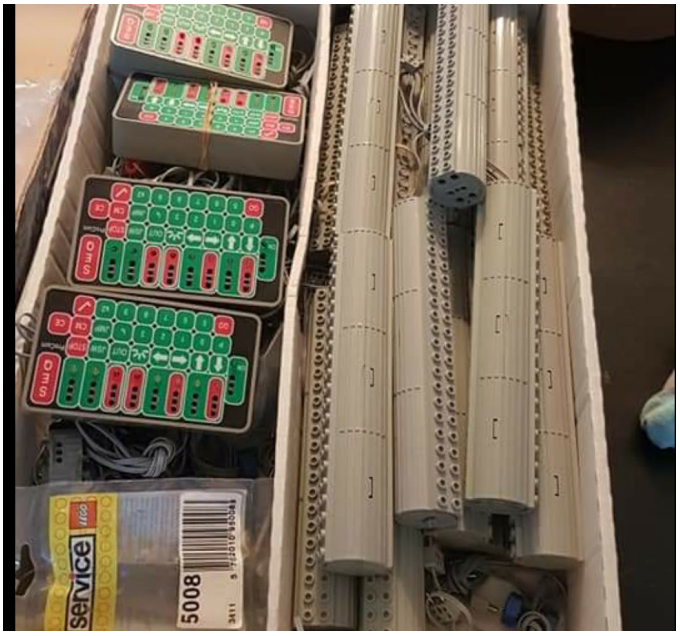
This is where I incorporated the SEQ entirely into a moving platform. I went back to my 'tried and tested' tank platform, and used a 9V battery box (the 6x 'AA' one, not the 9V battery version) with a 9V-connector-to-4.5V-connector to power the SEQ.

This was a very exciting moment for me – seeing the SEQ move itself around the table was awesome.

I've continued to use the SEQ but haven't found out much more. There are still a few remaining mysteries, as some buttons just don't seem to do anything that I can figure out. Also, out of the four SEQs, there are some which don't seem to function as well as the others. Maybe time wasn't so kind to them.

In the end, I have concluded that the SEQ was a third-party build made by a very intelligent fan in the UK. I don't know how far this person went with it, but obviously a few ProCom SEQs got as far as Toronto, Canada decades ago. I am just extremely happy to have come across the post last year. Finding the SEQ covered all my personal LEGO® hobby bases – acquiring cool LEGO® stuff in the second hand market, obscure electronic Technic, using LUGNET, and working closely with other fantastic AFOLs.

I have to thank my good friend, Malcolm, in the UK for his knowledge of circuits and his generosity in sharing his insights with me. Without him, I'd still be running 4.5 volts to the SEQ and nothing would be working at all. I would also like to thank HispaBrick Magazine® for allowing me to share my story and findings with other fans! It is so appreciated! Our chosen hobby has been utterly wonderful through the years, and I find it just keeps getting better.
#



The LEGO® Trains Book … the story continues

by Holger Matthes

Some time has passed since the initial German version of my LEGO®Train Book was released in May 2016. Since then things have evolved. LEGO® has introduced the new Powered Up electric system, and I have been successfully working on a new train project. Besides this, the book caught international awareness and various translations have become available.

International release

As with some other LEGO® hobby books, the original publisher offers licences to foreign publishers. Shortly after the release of the original German version, **dpunkt Verlag** (the German publisher) offered the licence, and publishers both in the USA and China showed interest in translating the book. Work on the Chinese version took a while and there was hardly any communication between the author and **Post and Telecom Press** (the Chinese publisher). Late 2018 I discovered the Chinese version on the publisher's website (http://www.ptpress.com.cn/shopping/buy?bookId=0ed0cd68-ca59-41fc-9bf9-193b06089996) and with the wonderful help of a LEGO® train fan from China I was happy to receive my own copy – even without understanding a single word.

All versions of Holger's LEGO® train book

Well known publisher **No Starch Press** from San Francisco (USA) took over the English version. LEGO® train fan Ronald Vallenduuk translated all the original German text and I helped out with some rearranged chapters and further photographs and renderings. The English version of THE LEGO® TRAINS BOOK was finally published in October 2017.

No Starch Press' marketing efforts went well and they were able to sell further licences for Spanish and Italian version of the book. So, in 2018 the Spanish version LEGO® TRENES, published by **Ediciones Anaya Multimedia** and translated by Eduardo Ventas Maestre, and the Italian version TRENI LEGO®, published by **Edizioni LSWR** and translated by LEGO® fan Francesco Spreafico, became available. Still ongoing is the work on a Russian version which will be published by **Eksmo**.

Time for an update

In autumn 2018 dpunkt Verlag discussed the opportunity for a second, revised edition of the original German version rather than just printing more copies of the existing book. The two main reasons for this updated second edition were the new electric system Powered Up and the well-received MOC of the Trans Europ Express which I finished in September 2018.

A core part of the book is its description of all the different power systems LEGO® have come up with in past decades, beginning with 4.5 Volt battery trains in the 1960s. Since Powered Up was announced, we also needed to add this system to the book. Despite not being a big fan of the new system, I purchased the new city train #60197 to get some hands-on experience with this new system. Bluetooth is great, but the non-compatibility with Power Functions, the fact that only one device (motor or lights) can be connected to the one output of the hub, and the battery-only approach make this system somewhat less interesting for most LEGO® train builders. Nevertheless, it is an electric system so it needed to be added to the book.

Trans Europ Express (TEE) by Holger Matthes

Sometimes a MOC may take a few years to be finalized: The idea for a LEGO® version of the iconic and well-known historic Trans Europ Express (TEE) started while I was working on the initial book, with two Brick, Round Corner 3 x 3 x 2 Dome Tops (88293) for the characteristic nose of the engine units. This sketch stood on my shelf for a month without any further development on how to capture the grey-silver stripe from the lower front lights up to the driver's cabin. For a while I favoured a solution using rigid hoses, but this didn't work out so I ended up with a plate-built variant, but at least I avoided using stepped plates.

The second edition of the book did not have space for full instructions for the TEE but a further chapter was added showing the design process from the real prototype towards the LEGO® model. Some WIP pictures and renderings of specific details were also included.

The timeframe was tight – too tight to make the second edition available for Christmas 2018. Reviews and production also took time so the new, revised edition was published on Valentine's day in February 2019.

Positive feedback

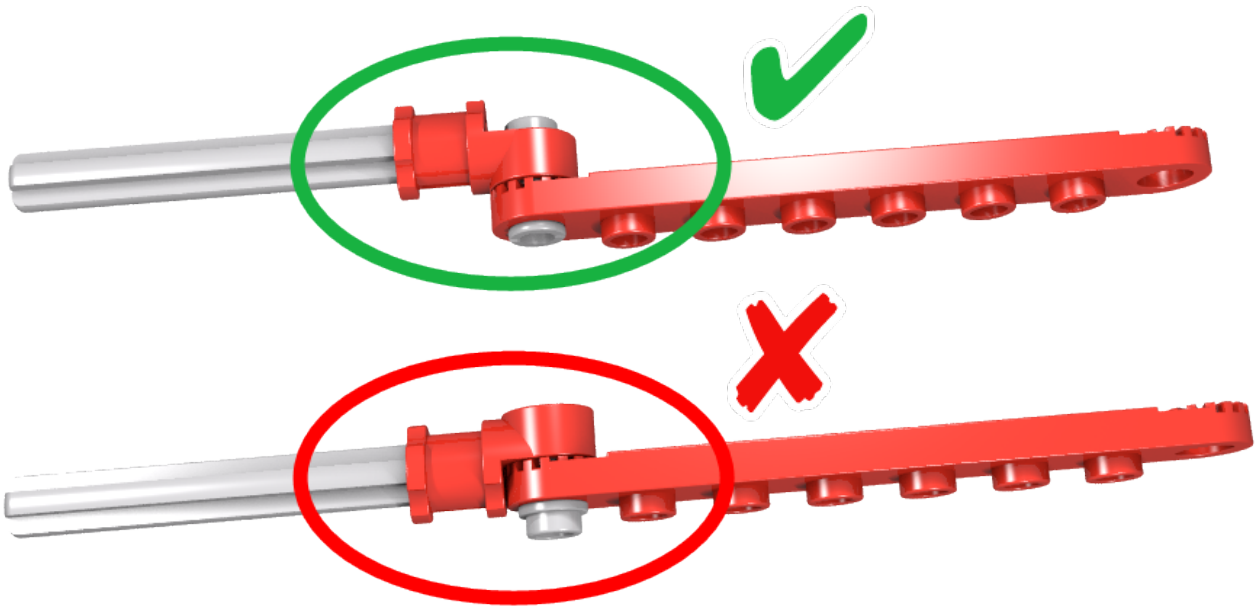
Although written primarily for experienced MOC builders and AFOLs, the book has also attracted interest from younger builders finding inspiration from its content. From the USA I received the following wonderful little story:

Our five-year-old son is both train and LEGO® obsessed. He got your book in 2017 for Christmas, and it has since been daily bedtime reading. He has learned so much and drawn so much inspiration from this book. Now he talks about you like a hero: "Holger Matthes builds his trains this way, does this, says this, etc."

I read the book cover to cover to him three times within the first few months of owning the book (I also have learned a lot about LEGO®s! ha!). Last summer, he taught himself to read, and now he reads and studies the book constantly on his own. The cover and pages are very worn; we may have to buy another copy. :-)

Unique Steam Train by five-year-old Hudson

And an eight-year-old boy from Germany fell in love with the BR10 steam engine which is featured in the book with instructions available on my website (https://holgermatthes.de/bricks/en/br10.php).



His mother contacted me saying that Jonathan was building the engine but could not get the drive wheels to spin. I mentioned the 90° offset for the wheels, but they were still not working. Jonathan and his mother were getting more and more frustrated, and I couldn't really help without seeing the real model on my desk. So I offered to have them send me their model and asked where they were living. To my surprise, they lived just around the corner – 15 minutes by car, so we arranged a visit at my LEGO® room. Due to schedule difficulties a few more days passed and Jonathan got more and more exited. Finally, they showed up and I was able to quickly discover the build error: the connectors for the rods were not in the correct orientation (I have since updated my website with a note on this potential problem).

Jonathan was so happy to have the large driving wheels spinning correctly that he completed building the rest of the locomotive the very next day after his visit.

A few weeks later I sat up a simple layout in my living room to see some of my trains in action and to test some 3D printed R104 switches from BrickTracks. Friends and family came, and old and young LEGO® fans played with LEGO® trains throughout an enjoyable afternoon. Axel, an AFOL, also showed up and brought his Dark Green, yes Dark Green(!), version of the Crocodile (https://flic.kr/p/SekFbF) engine featured in my train book.

And of course, Jonathan came with his completed model of the BR10 engine which he wanted to see running. It was really great to see two BR10 steam engines in the same layout. But running trains can reveal even more faults. This time a quality issue caused the connecting rods to fall off very easily. The full LEGO® build rods are attached to the Big Ben Bricks drive wheels using Technic half-pins. Attaching the studs of these pins to the underside of a new 1x4 plate didn't have as much clutch power as the older pins and plates I had used. So how could I fix this quickly to bring a smile back to Jonathan's face? I did what I would normally never do: glue (argh). You might wonder why I even had ABS glue on hand. I had to buy some to glue the ME-model rails to 2x8 plates, otherwise these large curves are so fragile that you can't even touch them without having them fall apart. But I promise, I had never glued original Danish plastic before.

Two tiny drops of glue on each side, a few minutes to let the glue set, and then the steam engine was back on track... and Jonathan was happy again. I told him not to tell anyone about this little cheat... but now our secret is out ;-)

For me as an AFOL it was great to meet Jonathan, and I am fascinated by how an eight-year-old boy could rebuild such a complex model as the BR10 steam engine. And my hat is off to Jonathan's mother. She became a real expert in ordering specific LEGO® elements through Bricklink.

While I was fixing some other minor issues on the cabin, I had to browse through the PDF instructions myself... Jonathan gave me directions: "This step is somewhere previous, at page 11, so turn back!" Wow, he knew the instructions by heart, even better than I did as their creator.
#

Holger Matthes
www.holgermatthes.de/bricks

Take control of your MINDSTORMS™ bricks

by Oton Ribić

Having assembled and sent our first messages to an EV3 brick last time, and making that motor finally turn, now it is about time to expand on this concept and establish a reliable communication sequence.

Replies and synchronization

Upon each message successfully sent to the EV3 Smart Brick, it will always reply, even if the message's instructions cannot be obeyed or they contain errors. This reply gets sent only after the instruction to be done by the EV3 is fully completed. This is the key to establishing a solid synchronized communication, i.e. ensuring that one instruction gets completely done before another one begins, which is essential in practice.

Replies from EV3 are received through a dedicated serial port as well, the one designated for incoming traffic (check the first article in the series to remind yourself what this is about). What you have got to do through your code is send a message to the EV3 Smart Brick and then, depending on your implementation, either wait until the computer gets notified (called back) that some data awaits reception, or keep checking repeatedly if there is any data to be read. Then get the message proper from the serial port, and interpret its contents if some value has been asked for, e.g. in the case of reading sensor values. Afterwards, the entire process can be repeated.

These replies by the Smart Brick follow the same structural rules as the messages send to it — the first two bytes indicate its upcoming size, and the rest is the message payload. We won't go into analyzing all possible replies yet as that would

BYTE NO.	00	01	02	03	04
BYTE VALUES	**03**	**00**	**00**	**00**	**02**
DESCRIPTION	Length		Message		OK

expand this edition into an encyclopaedia, but let's look at how the standard "Done, everything OK" message from the EV3 looks like.

So, it has a total length of 5 bytes, among which the first two indicate the remaining size of 3 bytes (in reverse!). Then, the next two indicate the message ID it refers to having been completed, and finally the value 02 confirms everything has been done. Remember, if there are multiple messages sent asynchronously, then the Message ID it refers to is useful — but if we follow the strict synchronized principle, then it can and will always only refer to one message in its "inbox", whose ID we had previously set to zero. Or, in two-byte chunks: 00, 00.

To sum up in general: unless you're asking for the EV3 to provide some value back, which we will be covering later, it will reply with 3, 0, 0, 0, 2 as a confirmation that everything is OK, or something else if some error happened. If you want to learn more about these error messages and interpret them, check here: http://ev3.fantastic.computer/doxygen-all .

Encoding values

Before we dive into more complex messaging next time, there is one necessary digression to make, regarding the system used for sending to and receiving numeric values from the EV3 Smart Brick. As long as we are dealing with small values, such as percentage of power to be used on a motor that needs to be rotated, it is simply directly encoded as a byte value. One of the examples was in the previous instance where we had converted the number 75 directly into its byte value, and sent it off packaged in the message.

The approach is different, however, when dealing with numbers that specify more complex parameters or larger values. The main example we will face is making the motor turn a specified number of degrees, i.e. a given angle. This value may be much too large to fit into one byte — even one full motor turn, of 360 degrees, would be too large to fit into one byte. Hence, EV3 uses C structures, specifically, 4-byte floating point C structures to represent numerical data.

Unless you're an experienced programmer, that probably doesn't mean a lot, but let's put it this way: there are various systems for encoding values into chunks of zeroes and ones, and decoding them back to "proper" numbers. LEGO® engineers chose that one among them, and unless you're working with C or some similar language where this is supported natively, it will be your code which needs to perform this encoding step. Fortunately, this is a fairly standard thing, and all popular languages have some way to elegantly perform it. E.g. if you are using Python, a struct library is readily available as a part of the standard package. (If you want to go into detail, you'll need struck.pack('f',value) function.)

In any case, a couple of queries on Google, with keywords for "C structs, number conversion" and your chosen language, should set you on the right track. Just make sure you're interpreting the number as a floating-point number, even if the value you are using does not need a decimal point. If you want to test whether your conversion works right, here are some examples; 360 should convert to 0, 0, 180, 67, and -360 to 0, 0, 180, 195. Zero converts to four zeroes, and 12.34 to 164, 112, 69, 65. This conversion will be essential for any further work, so make sure you've got it working well before proceeding.

And speaking of proceeding — we will use these very values in the next edition, where we will combine the knowledge from the previous articles and this one to fire off some more complex commands, such as controlled motor movements. Stay tuned!
#

2012 LEGO® Friends Minidolls

by Claire Kinmil Brickomotion

2012's the year we first got to play with the minidolls. The 29 LEGO® Friends sets came with a total of 44 dolls, 30 of which were unique. These are those 30:

Each one of them has a name and a personality. Olivia, Stephanie, Mia, Andrea and Emma make up the five main friends and the rest are fellow Heartlake City residents whose roles range from friends to family members. The LEGO® designers made sure that the forms and the colors used for the dolls reflected the character's personality and could still be mixed & matched to create new dolls. I'll try to reverse engineer how and why they did that. This line was designed primarily for girls. Therefore, the majority of the dolls are female. Peter's the only male representative and he's Olivia's father. That tells us a lot about the age of LEGO®'s intended builders. Young enough for the parents to still play a major role in their life, and not old enough to be interested in boys.

There are 24 Light Nougat, 6 Medium Nougat and 0 Nougat skin colored dolls. We had to wait till 2018 to get the first Nougat doll. And yes, those are actual LEGO® names for the colors used.

Heartlake City was invented for modern girls, so its residents wear modern clothes in vibrant colors. I've divided the pieces into triangles of similar hues to get a sense of how often a color was used. Most pieces contain multiple colors, so I allocated them depending on what color dominated. The process was by no means perfect, but it was worth doing. It brought to light a slight difference between the color distributions for the legs and the torso pieces and that they are both avoiding the earthly tones like they're the Kragle. On characters, the torsos and the legs pieces rarely create a monochrome outfit. Also, skirts and sleeveless tops are far more popular than pants and warm clothes. Seems like the locals get to enjoy an endless summer that's interrupted only by the short Advent Calendar season. It's that or they're freezing most of the time.

The personality of a character comes through in their shirt choice. Mia prefers blue tones with animal prints and Andrea likes green, yellow and music (but not the blues). If one of the main friends claims a shirt, no one else is allowed to touch it.

The legs pieces work differently. Here, reuse is encouraged.

There's not much variety among the face printings. Just like with the first minifigures, LEGO® gave us only smiles. And Peter. But there are several different eye colors which are again modeled after the real world. No purple eyes till 2015 and the LEGO® Elves theme. Obviously, a particular character's face doesn't change even when the clothes do.

The hair style and color combo is arguably the most recognizable part of a character. The style changes if the doll wears a hat but the color always remains the same. All hair pieces are made from a rubbery plastic and have minipin holes. That way the dolls can quickly put on a bow, a flower or a tiara. Accessorizing is important and LEGO® realized that. Good for them and for us.

The colors used for the hair pieces emulate the ones found on our heads here in the real world. As you can tell by the emptiness on the more adventurous part of the spectrum. I also need to point out the vacant elderly triangle. LEGO® apparently didn't think grey haired people would be too interested in the line.

Now that we are familiar with all building elements of a minidoll, can we build new ones? Using only the parts from 2012 and with no painting. Most of my test dolls have monochrome outfits, just because.

In my opinion, the designers upheld their promise that you would be able to mix & match the parts. The clothes colors all work together very well so it almost doesn't matter which ones you'll combine. However, you need to avoid uniting an element with visible skin with elements of a different skin color. Because that does not look good.

I fell in love with these "new LEGO® figures" as soon as I saw them, and now I have a better understanding why. They were basically made for a younger version of myself, but since I never really grew up, I picked them up and I've been playing with them ever since.

#

This article is an adaptation of the "All 2012 LEGO® Friends Minidolls" video on the BrickoMotion YouTube channel

BRICK QUIZ – A NEW HOPE

By: János Römer

Here is one more opportunity to prove your top-rank among LEGO fans by passing this quiz without mistakes! Jokes aside, you have already got this status by reading this magazine, and now, here are our new ten questions for you!

1

Per how many moulded LEGO parts are there on average 18 failed pieces?

a) per 10,000
b) per 100,000
c) per 1,000,000

2

EXO-FORCE was inspired by which culture?

a) Egyptian
b) Indian
c) Japanese

3

What was the first sport a minifig took part in?

a) soccer
b) basketball
c) hockey

4

Which sport has the minifig not played so far?

a) windsurfing
b) snowboarding
c) golf

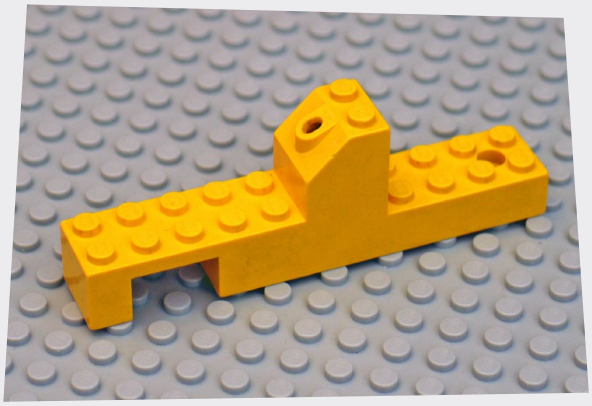
5

Mentioning sports, which one of these wanted to be a professional LEGO designer?

a) Lionel Messi
b) David Beckham
c) Davor Šuker

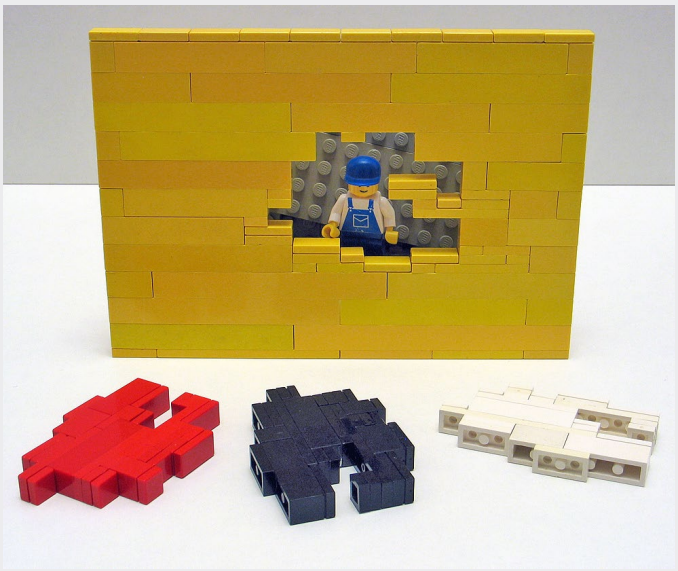
6

Archeological site! To which decade would you assign this artefact?



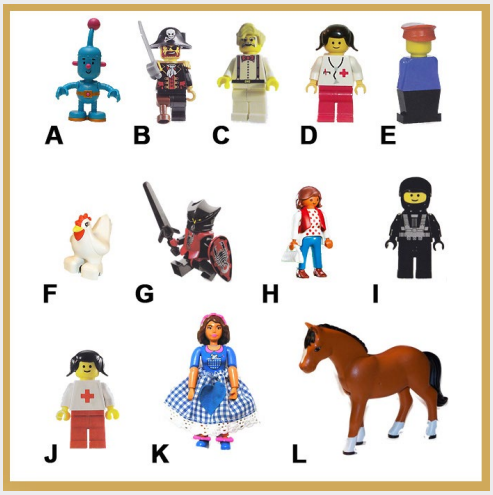
7

Puzzle: Steve the carpenter struck the wall a bit too hard! Which part will he use to fill the hole?



8

F & sort! welve creatures are sted below. Firstly, remove those that never appeared in a LEGO set, and afterwards, sort the remaining ones chronologically by the year they appeared for the first time, beginning with the oldest!



9

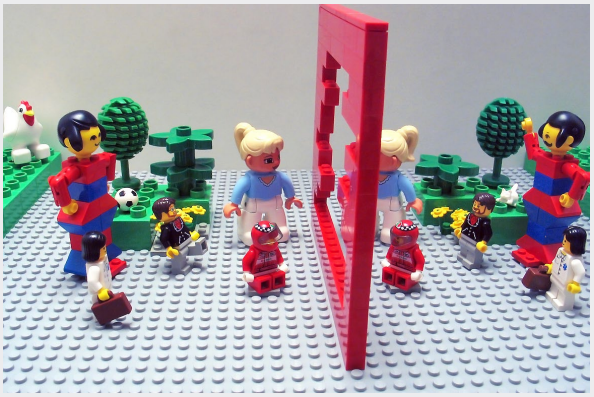
Reconstruct a set! From the parts on the photo, a set needs to be reconstructed, providing that only one extra part can be purchased from BrickLink!

Which set is it?

Which part would need to be ordered extra?
Will there be any surplus parts?
Which part did not appear in the original set but will be useful for the reconstruction?

10

What's wrong here? When this wall collapsed, Alice and her friends thought there was a mirror behind. But which 15 details assured them that's not the case?



Kockice Convention 2019

By Oton Ribic

Building up on the predecessor in 2018, Kockice LUG has held its Convention in 2019 as well. Instead of opting for a small town, this time it took place in Croatia's capital city of Zagreb, on April 6th and 7th. While the convention location has changed, the recipe which had proven itself to serve well has not — just like the year before, this was a combination of a public LEGO® exhibition and an AFOL event with a range of various activities for the participants.

Probably the most exciting such activity was the speedbuilding contest, and the workshop the most creatively demanding; there was also a series of lectures on topics ranging from a deep analysis of official LEGO® design process, via obscure Technic gearbox design, down to comprehensive modelling of real-world buildings. Of course, all that with a good measure of Croatian cuisine (but also several others), visits to the LEGO® Store, Zagreb's center, etc. Altogether there were about 70 participants from almost a dozen countries, including as many as five representatives from The LEGO® Group. As already customary, an anonymous poll among the exhibitors decided on the best displayed MOC's, while there was also a rich raffle so that everybody could get at least a cute souvenir to take back home.

As for the exhibition itself, it was to a certain degree different to the 2018 edition. This time the emphasis has been placed on smaller and medium-sized MOC's as well, which is not to say that there wasn't anything large (indeed, the huge Castle diorama in the hall center was spectacular), but rather that there weren't many very heavy exhibits. While the general population always likes being impressed by the sheer size of massive MOC's, the AFOL community appreciates small but clever constructions as well — and in that respect, this was an event for LEGO® connoisseurs. There was also perhaps a little bit less mechanical action, but compensated for with artistic exhibits.

Needless to say, this was a pure MOC event; no sets were displayed.

And while the exhibition as such was interesting, the main criticism for the Kockice Convention 2019 needs to be pointed at the premises. While the rough concrete floors, factory lights and segmented walls did give a certain “industrial” flavour to the event, which some people quite like, most visitors and partici pants found it a bit too dark and grey, at least compared to the past year’s cheery sport hall.

But altogether it should be considered a successful event, and overall, a better one than the year before. Now let’s see: perhaps these, so far independent events, could be turned into a regular (let’s avoid the phrase “establishing tradition”!) annual Conventions.
#

BRICK QUIZ – A NEW HOPE ANSWERS

1

c) per 1,000,000

Having been moulded, the parts undergo inspections of shape and colour: approximately 18 parts per million fail the inspection.

2

c) Japanese

More accurately, this LEGO theme was inspired by Japanese Mecha.

3

a) soccer

Some LEGO sets reach back to 1998, and LEGO Soccer and Football were released in 2000, followed by basketball and hockey in 2003.

4

c) golf

Snowboarding was present, e.g. on Cabana beach in Paradisa set 6410 from 1994, and snowboarding took place in 2003, in set 3538.

5

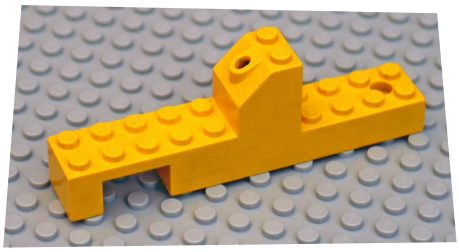
b) David Beckham

While building LEGO with his kids, he thought it would be nice to convert this hobby into a pro career. He was particularly inspired by the set 10189 Taj Mahal, which he admitted to never having built completely.

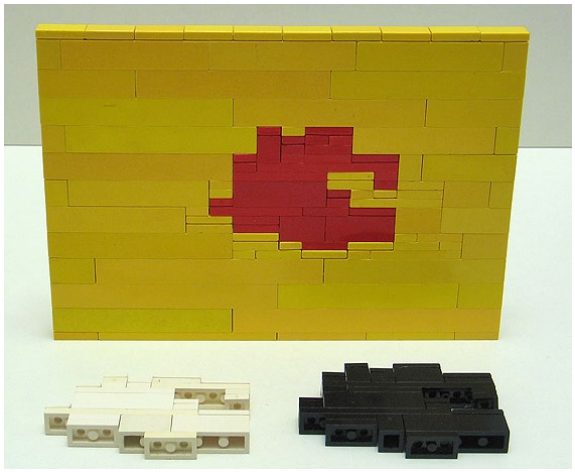
6

a) soccer

1970s! More precisely, that's the Tractor Chassis Base 11x2x3 that appeared between 1972 and 1977 in four sets and allowed turning the front wheels of the vehicle with a steering wheel, before Technic came along!



7



Red!

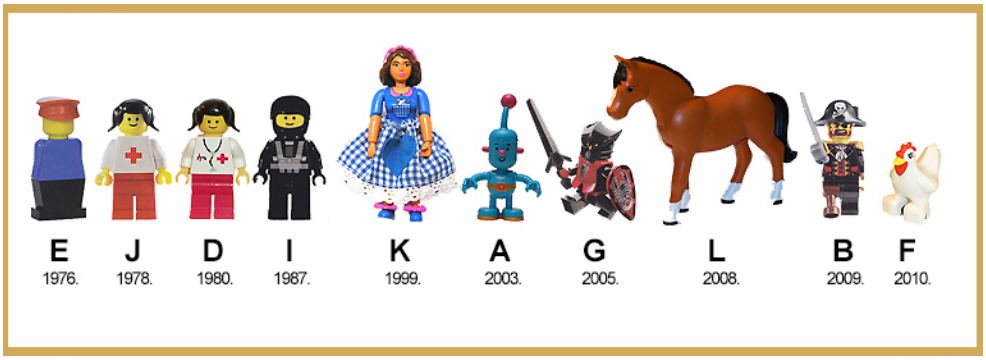
8

C H

C and H are the intruders!

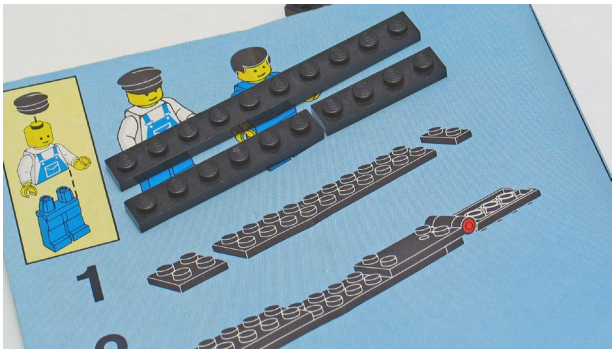
Minifig C is one of the Internet creations and never appeared in a set, and H is not LEGO at all. And the exact order is as follows:

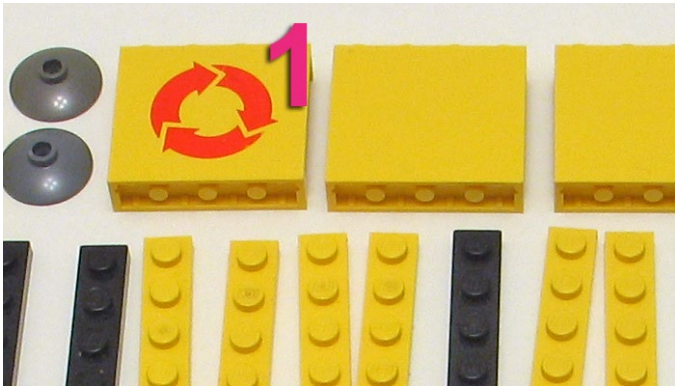
E - Legoland Old Type
J - Old Doctor
D – Doctor
I – Blacktron 1
K – Belville Female
A – Tiny, Little Robot DUPLO figure
G – Shadow Knight Vladek
L – Belville Horse
B – Captain Brickbeard
F – DUPLO Chicken

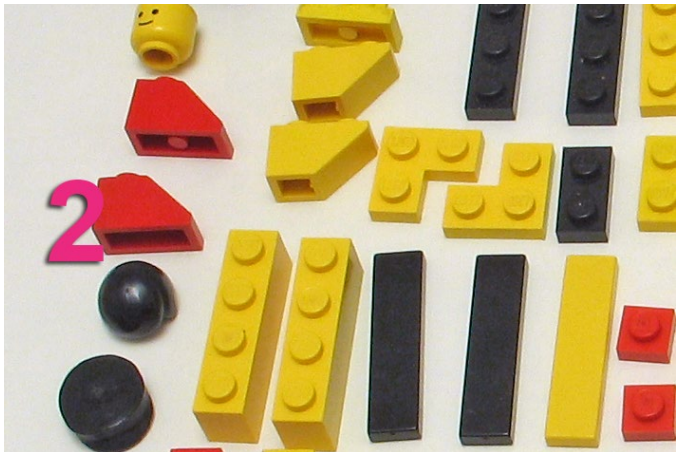


9 That's the 6693 Refuse Collection Truck.

One Black Plate 2x10 and Yellow Panel 1x4x3 with Recycling Arrows Pattern are missing, but since only one part can be ordered, Brick Plate can be assembled by combining 1x6, 1x4 and 1x10, and Panel can be ordered. That way nothing will be a surplus.



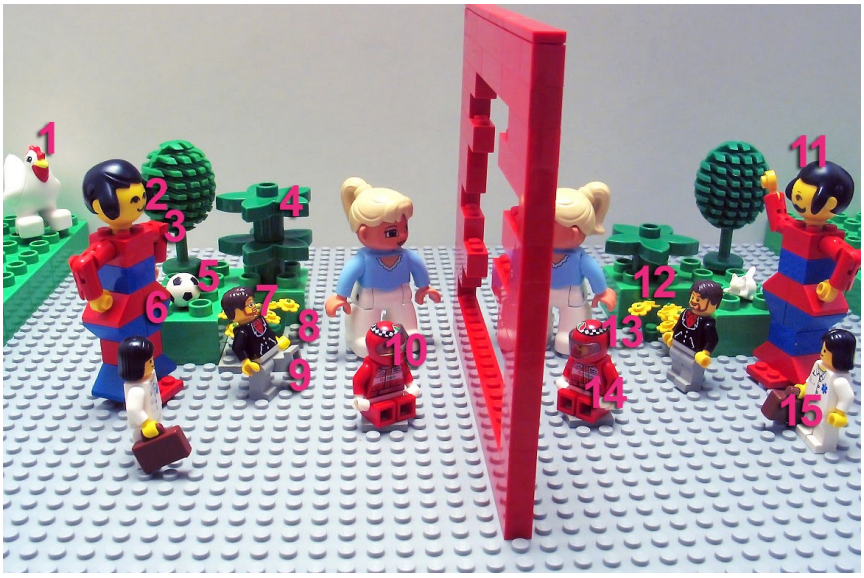




10

First ten differences relate to 'direct' differences, and the remaining ones do not obey the mirror symmetry!

1. - the chicken is missing at the right
2. - maxifig at the right has moustache
3. - maxifig at the right waves
4. - one flower is missing at the right
5. - the ball has been replaced by the cat
6. - the clothes' patterns do not match
7. - minifig at the right has no glasses
8. - flowers at the right have not been mounted on a plate
9. - the minifig at the right does not march
10. - the helmet visor is open at the left
11. - the hair crease is on the same side (not symmetrical)
12. - flowers aren't symmetrical
13. - the helmet is not symmetrical
14. - torso prints are not symmetrical
15. - the physician has her briefcase in the same hand



HispaBrick Magazine® Event 2018

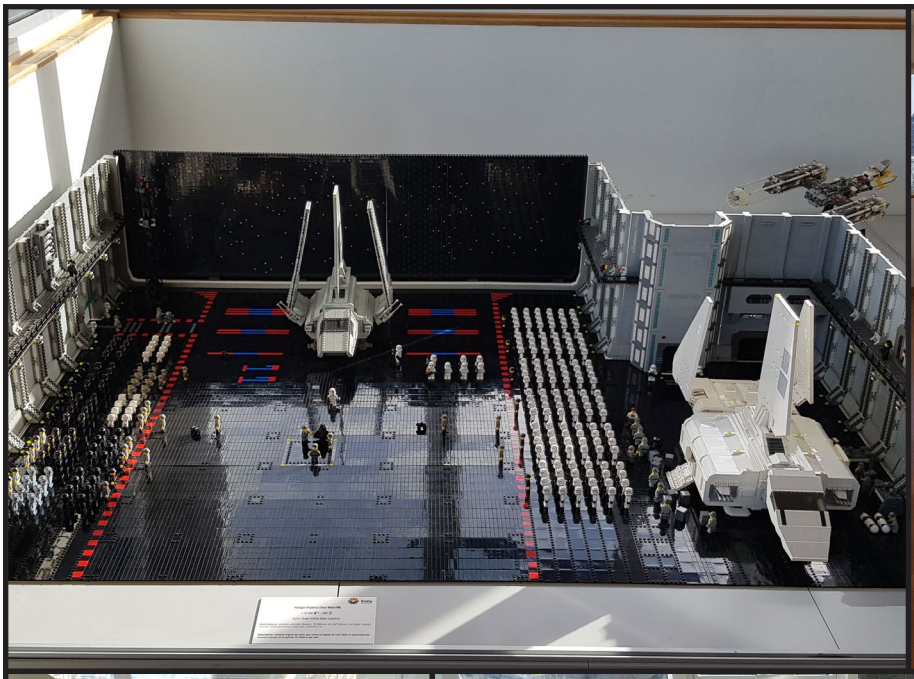
by HispaBrick Magazine®

On December 9th, 2018, we celebrated the 7th edition of the HispaBrick Magazine® Event, with an exhibition displayed on Rialia Museum (Portugale, Northern Spain). This time, the exhibition was open to visitors for 10 weeks, and many visitors enjoyed the exhibition, which mainly consisted of dioramas, original MOCs and rare LEGO® sets.

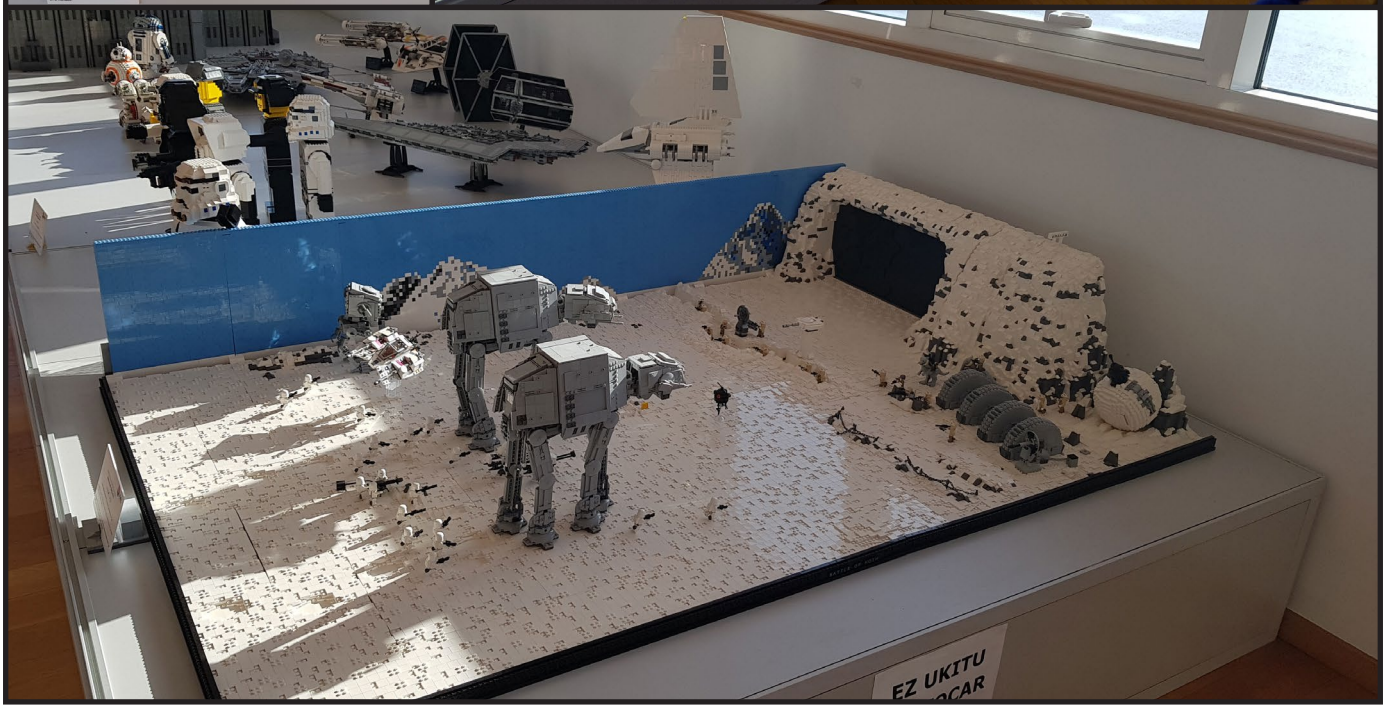
There were collaborative dioramas based on MILS, like the Battle of Hoth, The Lord of the Rings, Castle and Wild West. Of course there were also a City display, Friends displays, Star Wars UCS spaceships, a large collection of Panzerbricks armoured vehicles and a Formula 1 display, among other things.
#

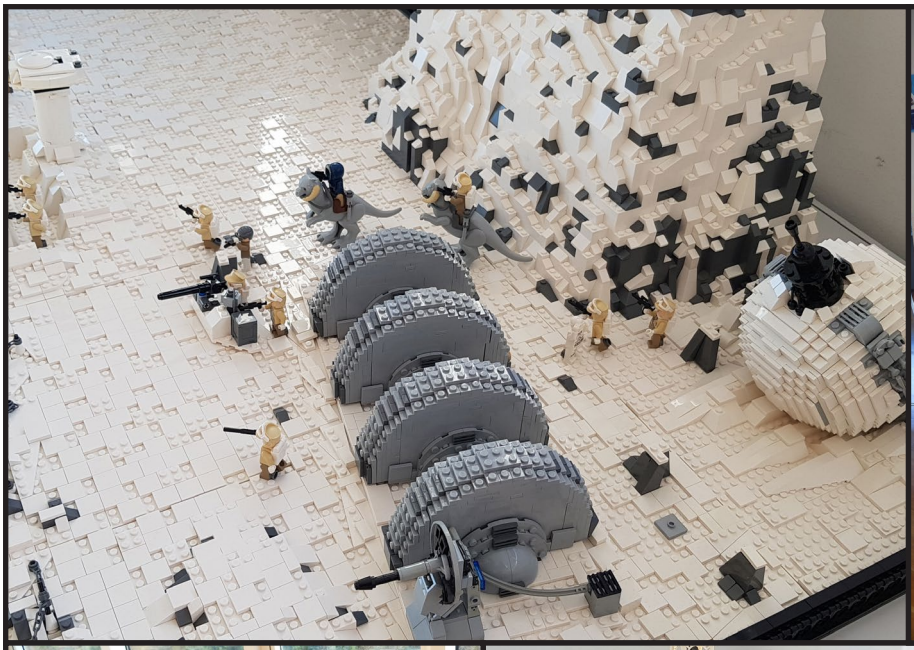

EZ UKITU
NO TOCAR


Rialia

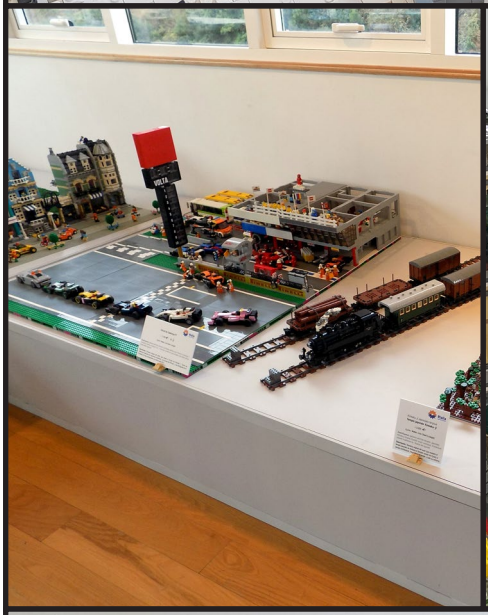



LEGO
10+
732


EZ UKITU

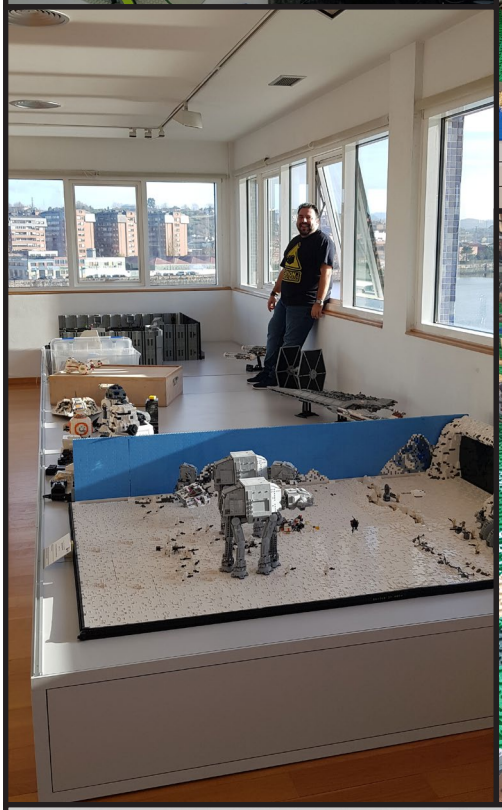



Rialia




DINER


Palace



Review: 70840 Welcome to Apocalypseburg!

by lluisgib

pictures by lluisgib & LEGO® System A/S

Set: Welcome to Apocalypseburg!
Set number: 70840
Element: 3178
Contains: 12 minifigures
Recommended Price: 299,99€

Well, well, well… what a surprise LEGO gave us with The LEGO® Movie 2. At the start of the movie you see the post-apocalyptic world that came after the end of the first LEGO® Movie – a city housing the survivors of the attack of the visitors from Planet Duplon. And that has generated an enormous and magnificent post-apocalyptic set.

This set is built around the remains of the Statue of Liberty, which reminds me a lot of the end of "Planet of the Apes". Different rooms are built against it to give the inhabitants of Apocalypseburg a place to live with minimum comforts.

There are twelve characters included in the set. All of them are apocalyptic evolutions of the characters we saw in the first LEGO® Movie… except for Emmet, who still dresses the same and has an indelible smile on his face.

The minifigures included in this set are:
Green Lantern™, Harley Quinn™, Emmet and Roxxi.

Scribble Cop, 'Where are my pants?' Guy, Larry the Barista, Chainsaw Dave. Mo-Hawk, Lucy, Batman™and Fuse.

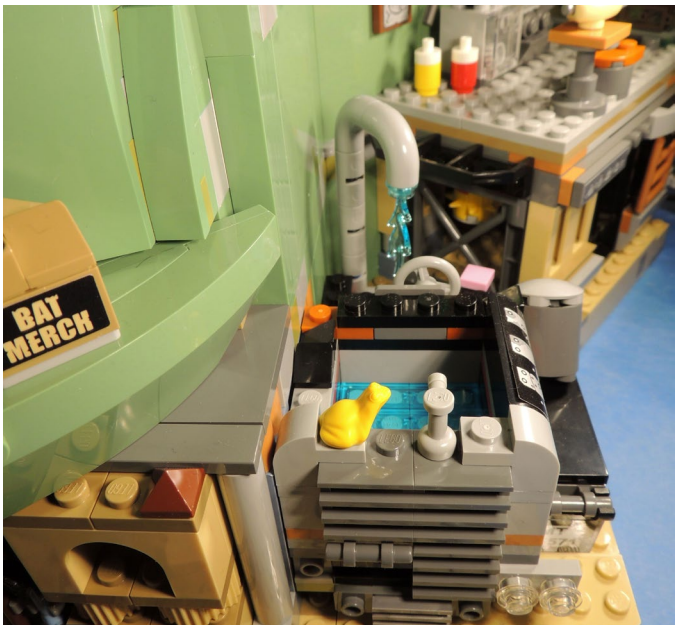
Mo-Hawk, Lucy, Batman™ and Fuse.

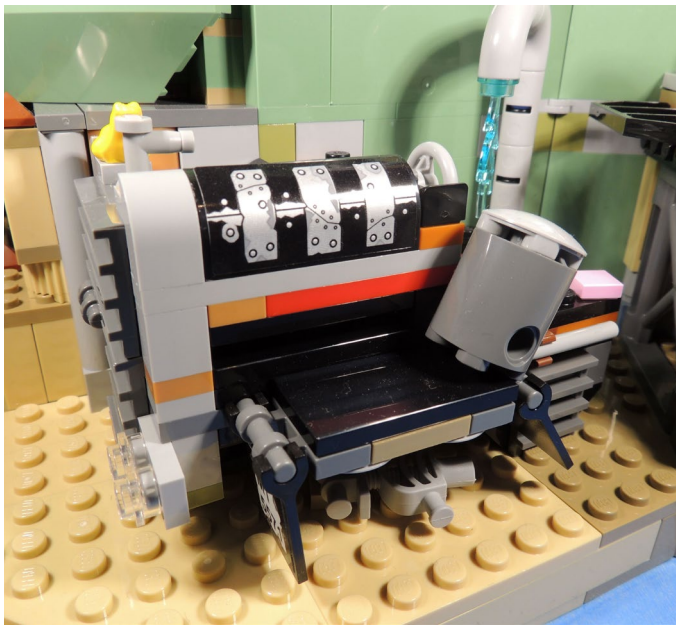
Except for Emmet and Lucy, the remaining characters are exclusive to this set and come with printing and accessories that match the theme of the set. A special mention for Batman and his breastplate that is injected with two materials.

The set has no less than 18 building stages comprising over 750 steps, and it can take between 4-6 hours to build it. There are lots of stickers. These are necessary since there are many decorated elements in a set this size.

I won't comment on the building process of the base of this set. It is just the infrastructure that allows the rest of the set to be built on it. I will take a closer look at the rooms from bottom to top:

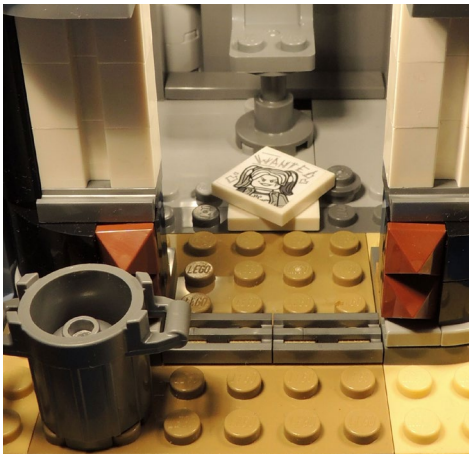
I will start with the truck that has been reconverted into a Spa. This is Roxxi's room. The engine from the front of the truck has been removed, turning it into a jacuzzi. In what is left of the cab, only the steering wheel remains and it now houses a water pipe.





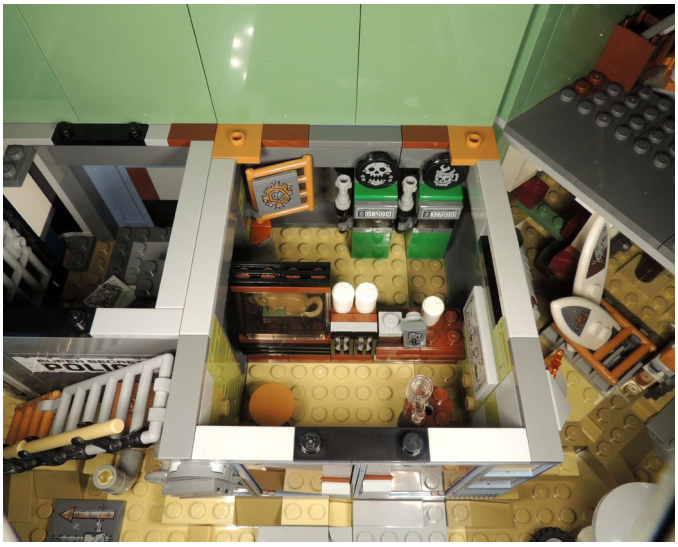
To the right there is a gym. Inside there is a weight bench and a punching bag. On top of that there is a kitchen where 'Where are my pants?' Guy prepares dinner. The ketchup, mustard and fries are an interesting touch (inherited from CITY and Friends).

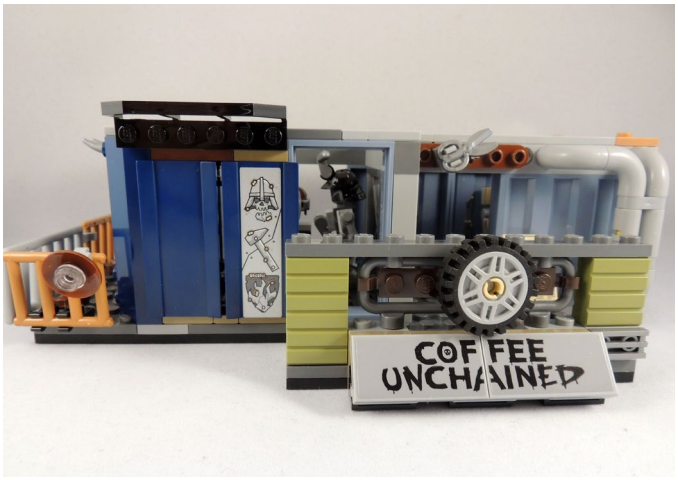
Continuing to the right there is a kind of bar with an awning, although that's really just decoration, as right behind the windows there is a wall. It's a filler element, but it has an interesting basketball hoop.



Next door is the police station where Bad Cop has his base. There is a mechanism in the room that makes Bad Cop's chair jump, as can be seen in one of the gags that appears in both movies. The room is small and contains nothing but the chair and a piece of paper that has a wanted notice for Harley Quinn.

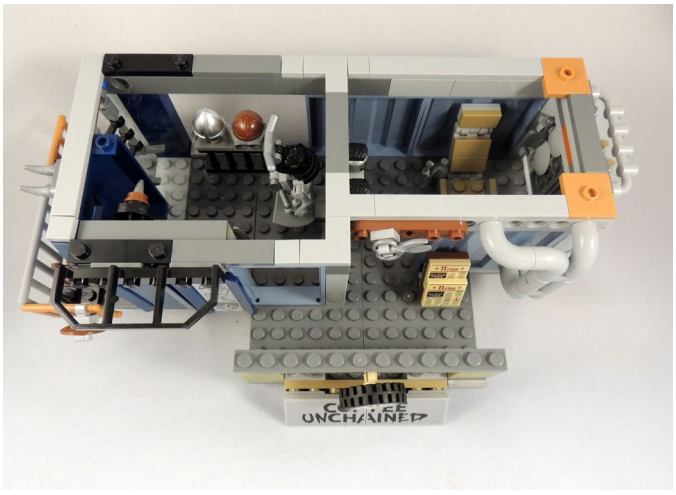
The Unchained Café is a much larger space with much more decoration. It has a bar with a food display, a cash register, two gas dispensers (I can't quite figure out if those are supposed to brew coffee), and, in front of the bar, a chair and a table.





Finally, to finish off the bottom part, there is a hippy van that has been converted into a surf shop. This is where Chainsaw Dave lives. You can climb on top of the van with a ladder.

There are two rooms on the first floor. The first of these is a shop with weapons and armor. You can find all kinds of protection in different styles and some medieval style weapons to defend yourself against attacks from visitors from Planet Duplon (or elsewhere…).

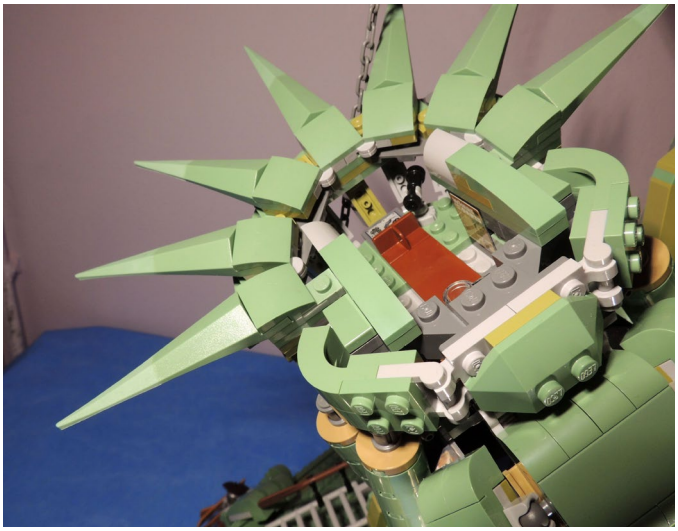


Next door there is a barber shop with barber's chair to cut and shave the inhabitants of the city… and with a blow torch serving as a tattoo machine and a sample of wigs… or severed heads.

On this level you can see the Declaration of Independence that "Miss Liberty" holds. It's on the roof of Dave's van and is used to provide access to the lookout that's part of the statue. I really like the way they have built the hand, as it effectively reproduces four fingers with very few elements.

On top of the barber's shop and the armoury there is a final room. This is Lucy's room. Inside you will find charcoal drawings. The charcoal pencil is a Friends lipstick in all black. There are also a pair of binoculars to see Emmet's house and a sofa that holds her most secret things.

The last room in the set is the head of “Miss Liberty”. It is a lookout with a spyglass, a bed and bedside table, and a poster with “Where are my pants?”. It is located in the crown, where the real Statue of Liberty has a lookout.



Anyway, that’s not all. You can also access the torch of the statue which holds another lookout, through a series of ladders that cross through different parts of the set. The whole set is built in such a way that you can gain access to any location one way or another, but always by means of ladders and platforms.

All the rooms in the set are decorated on the outside. Pipes, barbed wire, posters, lamps, signs, weapons… the set looks very “full” and wherever you look you will find an element that completes the scene.

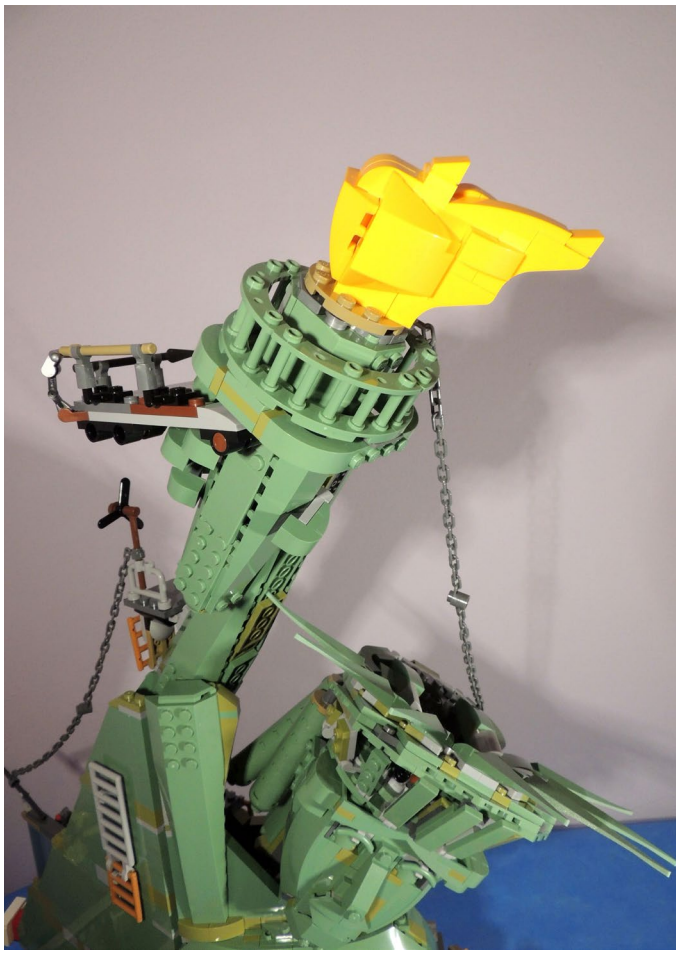
A special mention for the “Miss Liberty” part. The reproduction is excellent. Since the scale is quite large, the head, lifted arm, torch and declaration of independence (minus the date) and the hands have been perfectly recreated. Of all these elements, the ones that stand out to me are the head and the hands. The head has a very nicely built face (the eyebrows made with sausage parts are excellent), a crown and locks of hair. The hands have independently articulated fingers, so you can position them in such a way as to create maximum realism. There are lots of new elements in sand-green.

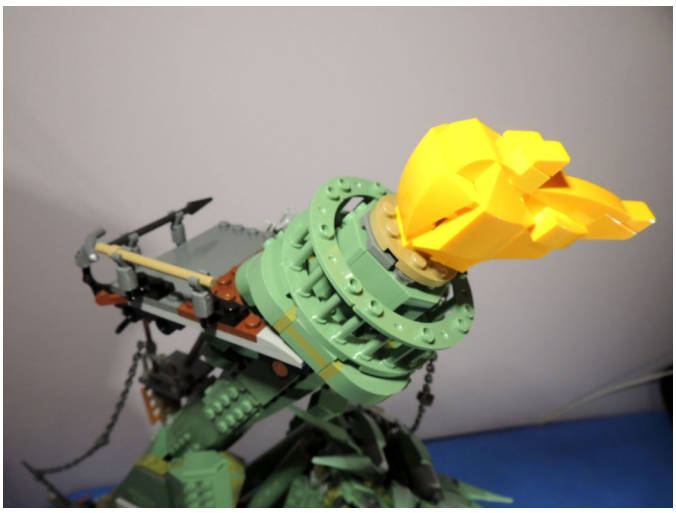
The set is large, heavy, spectacular and fun to build since there are no two equal steps. This means you have to pay a lot of attention since a slight error might mean you have to go back several pages to fix it.

The mix of the rooms, the statue, the decoration, accessories and minifigures is excellent. There is a lot of “everything”, which means that whether you like the movie or not, this set is a must-have. The post-apocalyptic theme is also a novelty that many fans were asking for.

The only “but” is that the set could have more playability. There is a mechanism to make Bad Cop’s chair jump, a trap door and little else. Some more moving elements to enhance interaction would have made the set even better.

We would like to thank LEGO for providing this set for review. However, LEGO neither approves nor endorses the opinions we publish.
#





SPIKE Prime

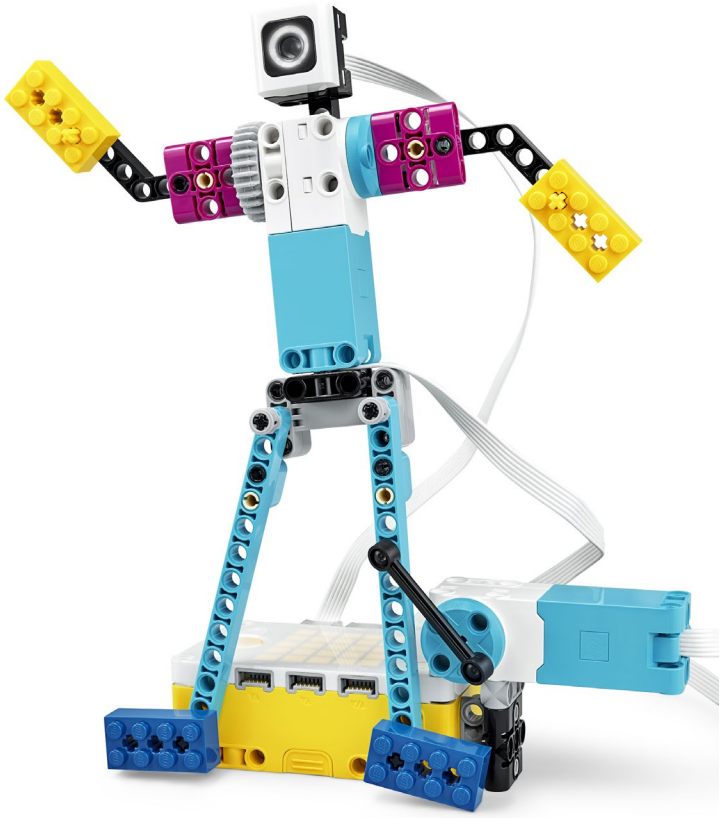
by Seshan Brothers

SPIKE Prime is the newest member of the LEGO® robotics family. It is marketed to students in grades six to eight, however, the product is just as accessible to younger students and provides interesting opportunities for older ones. The color pallet is bright (purple, blue, black and yellow) and gender-neutral, appealing to boys and girls alike.

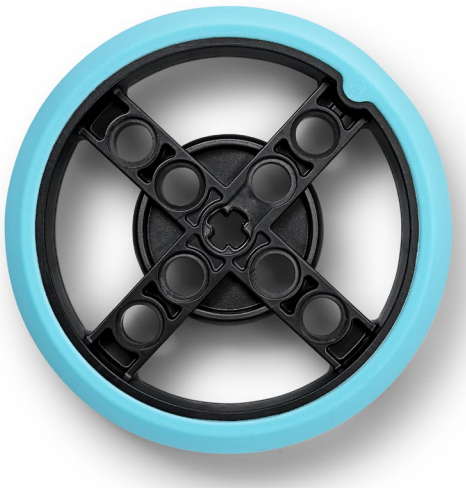
SPIKE Prime (#45678) features brand new elements and electronics. The new squarish form factor of the programmable hub, motors and sensors make the SPIKE Prime Hub easy to build. You can build a basic, sturdy robot within minutes. The SPIKE Prime Set comes with 2 Medium motors and 1 Large Motor. It also includes 1 Color Sensor, 1 Force Sensor and 1 Distance Sensor. In addition, the hub features a built-in gyro sensor. The SPIKE Prime Expansion (45680) set comes with an additional Large Motor and Color Sensor, perfect for a FIRST LEGO® League team. It also features a second ball/caster wheel and another large collection of elements including large frames and gears. The hub boasts six ports to which you can attach any motor or sensor to. There is a micro-USB port on the hub. You use this port to download programs and to charge the battery.

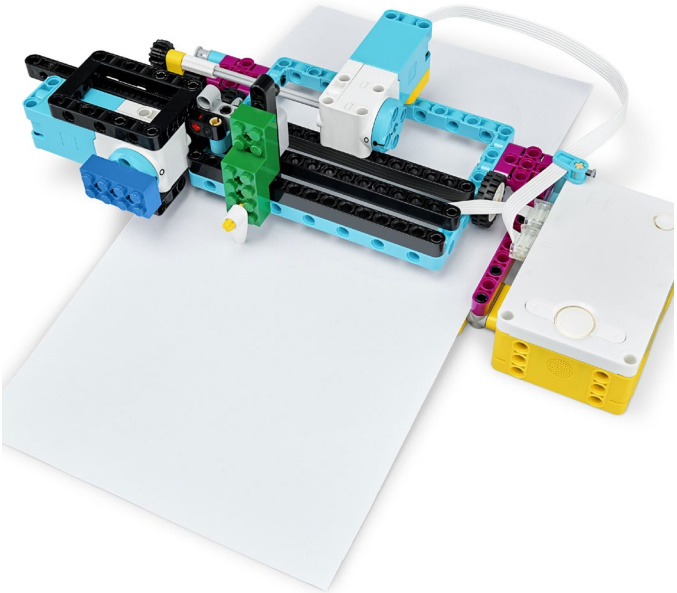
The new LEGO® elements in SPIKE Prime (listed below) make it even easier to build strong and fast. Of particular interest are the larger frames that make building large and strong incredibly easy.

Connector Beam 1x3x3 (39793)
Bright Yellow Technic Base Plate 11x19 (39369)
Magenta Technic Frame 7x13 (39794)
Medium Azur Technic Frame 11x15 (39790)
Small Wheel 57 x 14 Integral Medium Azur Tire (39367)
Large Wheel 88 X 14 Integral Medium Azur Tire (49295).
Ball (52629) and castor joint (39370) with a H-shaped liftarm
Wire Clips available in six colors (49283)
2x4 Brick with cross axle hole (39789)
Technic Gear 28 Tooth Double Bevel (46372)



Many competition teams will want to pay close attention to the new tires. The smaller wheel is 56mm X 14mm. This is the same diameter as the EV3 Education Core set wheel, but half its width. The wheel in the Expansion Set is 88mm or 11 modules in diameter and 14mm wide. The tire is molded into both the wheel hubs. This means that the rubber tire will not come off the rim. The new tire's material provides good grip on surfaces and the rounded tire tread creates only a small point of contact with the mat enabling more accurate turns. These tires provide some great new options for teams.





The programming environment is based on Scratch, but features custom blocks created by the developers. For example, SPIKE Prime features My Blocks in the same way that MINDSTORMS EV3 does.

Today, many schools are already teaching Scratch to their students. Hence, a programmable LEGO® platform based on Scratch will make both students and teachers comfortable. Support for Python is will also be coming soon which allows older students some new programming possibilities. The lessons within the App are geared towards the classroom, short lessons designed to be completed in under 45 minutes.

The lessons are project-based; hence, students build a simple model and learn to program using that model. This is great for teachers.

SPIKE Prime is well-suited to FIRST LEGO® League teams. It features a Competition Ready unit that guides students to build and program a robot that is designed for competition use.

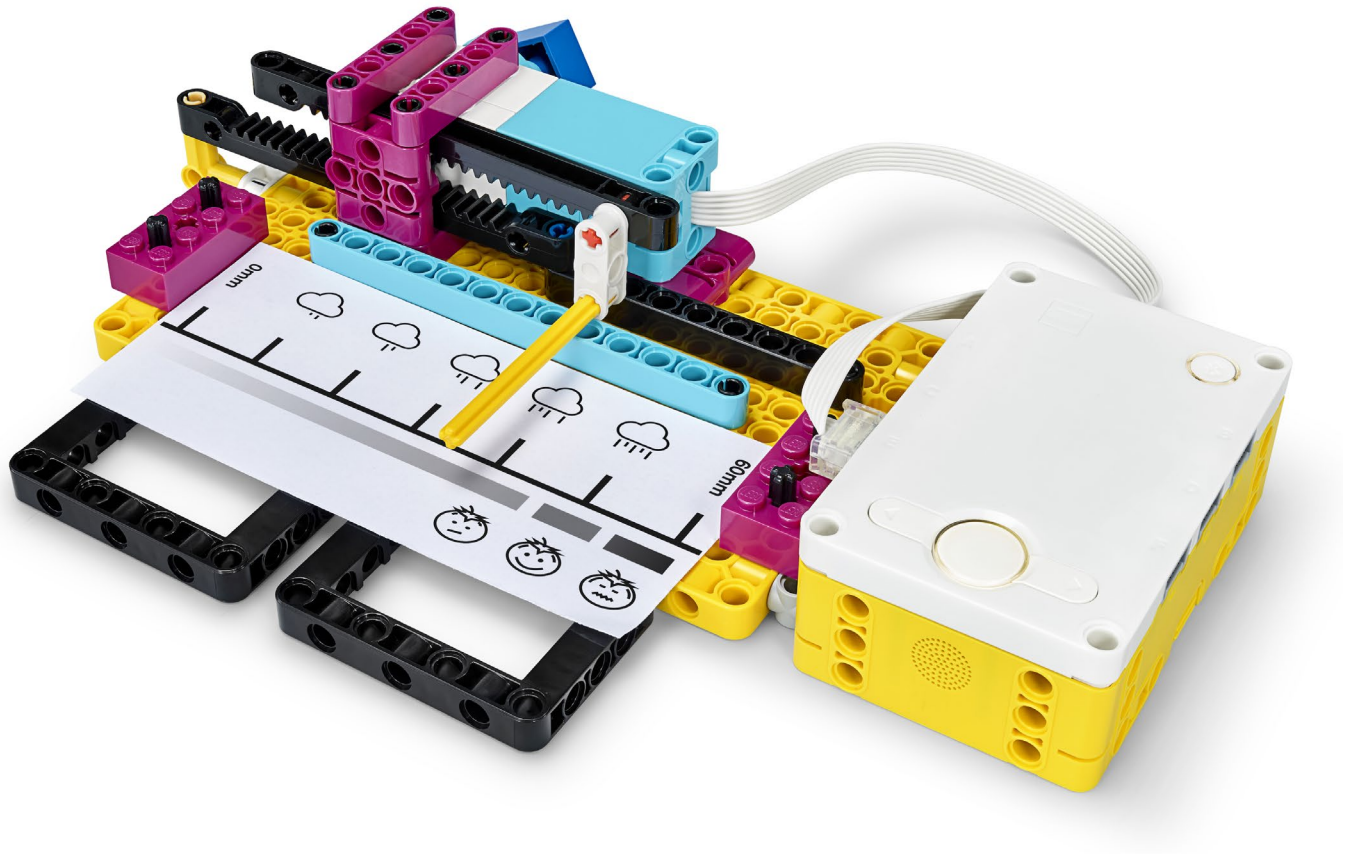
The Advanced Driving Base (ADB) is modular and can be built by team members simultaneously. It requires purchasing the Expansion Set Once the robot is built, students also build a few mission elements that simulate competition-style challenges.

This set of lessons along with the ADB robot is designed to boost student confidence and give rookie FIRST LEGO® League teams a great place to start. We couldn't agree more.

Overall, SPIKE Prime is a great addition to the LEGO® robotics family. It features absolute motor encoders, a built-in gyro sensor and a new form factor that makes building much easier. While it is not a replacement for LEGO® MINDSTORMS EV3, it does a great job in offering features that improve LEGO® robotics for middle school-aged students.

Even though there is not screen and less ports available to users, the SPIKE Prime proves itself to be more than capable for the student, the competitor as well as the LEGO® enthusiast.

SPIKE Prime will officially launch in early 2020, but is available for pre-order in many countries.
#



4999 - VESTAS Wind Turbine (2008) vs. 10268 - VESTAS Wind Turbine (2018)

by lluisgib

pictures by lluisgib & LEGO® System A/S

Many times, talking with Jose (aka satanspoet), one of the editors of the magazine, we have reached the conclusion that 4999 - Vestas Wind Turbine set marked a turning point in the LEGO® CITY theme. While it is true that it was an exclusive set for the company that makes these wind turbines, it was relatively easy to get one of those sets for a “reasonable” price. It was a set that had a bit of everything: a vintage style house, a purely 21st century CITY vehicle, a unique theme, Power Functions… We feel it was the “perfect” set and it has a special place in our memory.

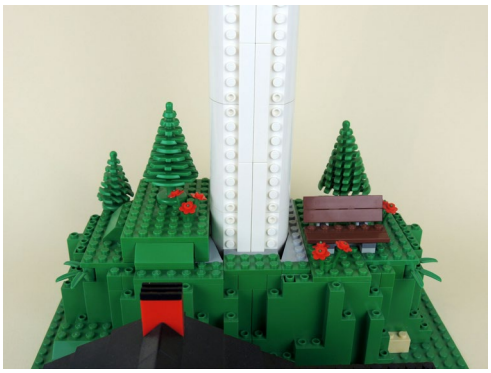
Last year, when the new VESTAS set was announced I had mixed feelings. On the one hand I always dream of a diorama with a wind farm going at full capacity. And also with the fact that everyone can get a splendid set without having to pay the extra price of a collectors’ item. On the other hand, I wasn’t sure if the memory of that first VESTAS wouldn’t be diminished by the new set. That is why I decided to do a side by side of these two sets to see the similarities and differences.

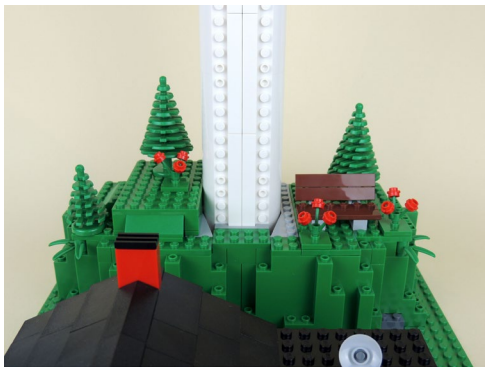
Editor’s note: the 4999 set was “bricklinked” together so some colours may not match.

Changes due to availability of elements

Some of the changes between the sets are due to the availability of certain elements in the LEGO® catalogue. The most striking example is the dog that accompanies the owner of the house. In 2008 it was a pretty simple German Shepherd, with no decoration except for the eyes that are marked in the plastic. In the new set you find the current German Shepherd, with printing and a rounder, more realistic style.

The other significant change is found in the vegetation, specifically in the flowers. The stems of the old flowers - an element with more than 30 years of history and that can be connected to a stud - were substituted by stems that a minifig can hold in its hand. This means you also need a Green Plate, Modified 2 x 2 with Groove and 1 Stud in Center (Jumper) to place the flowers on the stud.
This increases the number of elements by one and reduces the ability to connect to a stud. The flowers themselves have also changed, using a more modern element that came out last year.



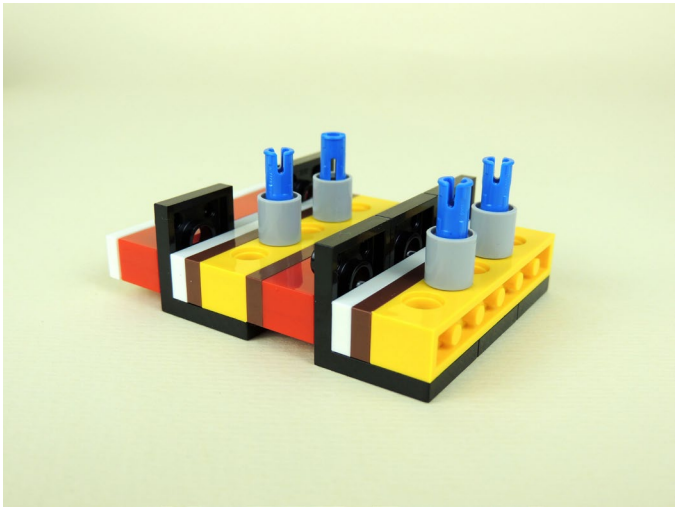


However, the most worrisome trend is the complete disappearance of flowers from CITY and Friends sets in 2019. Especially the latter tend to have quite a few.

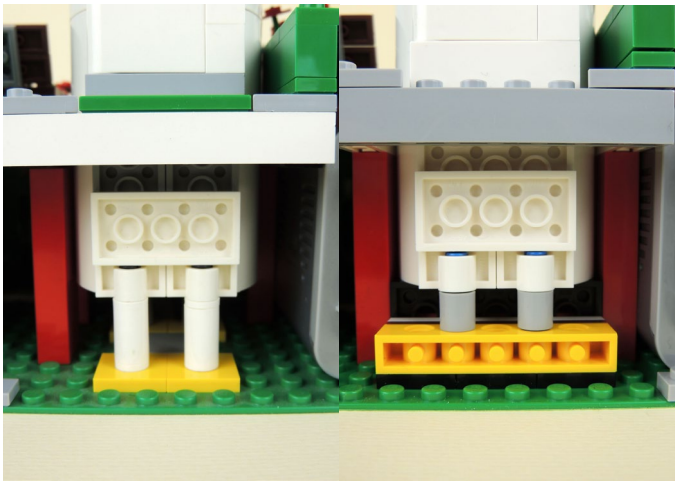
There have also been other small changes like the tools the VESTAS operators use, but those changes are less visible.

Structural Changes

Structurally there has been an important change. The way the tower is connected to the base. In the 4999 set this was done using only 4 Yellow Tile, Modified 2 x 2 with Pin which were connected to the tower with 4 Technic, Pin Connector Round 2L with Slot (Pin Joiner Round).
This made the connection to the base quite fragile. Picking up the set by the tower of the wind turbine was scary since the weight of the base meant you could end up with just the tower in your hands.
In the new edition of the set this connection has improved substantially using a structure built with Technic bricks, System bricks and brackets, as can be seen in the following picture:



The set is now more stable and safe to transport. This is how the connection compares between both sets:



Aesthetic Changes

This is probably the area that has the largest number of changes. The company that manufactures these wind turbines (VESTAS) changed its style guide between the two sets and this is reflected in different ways.

The blue line and white letters on the generator nacelle disappear to make way for a cleaner design, all in white with the VESTAS logo in dark blue letters. In addition, as a novelty , there is no sticker sheet and all decorated elements are printed.

This change to a cleaner design also affects the VESTAS repair van. The dark blue elements disappear completely and the van is now completely white except for the logo of the Danish company on both sides. The logo on the rear of van that was present in the old set also disappears.

The Minifigures

There are also changes in this department. As a matter of fact, only one of the three minifigures could be considered a direct evolution from the previous set. The only change in one of the operators is the colour of his hard hat.

On the other operator the facial expression has changed and instead of looking for a similar expression he now has a new personality, with a striking moustache and a more friendly face.

Just like in the rest of the decorated elements, the V for VESTAS has been printed on the torso of the new minifigures, instead of relying on stickers like in the old set.

The owner of the house has changed completely. She now wears a colourful shirt instead of a white torso, the colour of her trousers has changed as well, she is wearing makeup (lip liner and mascara) as she has a new hairstyle. While this is not really an inconvenience, it does break with the continuity of the rest of the set.

Conclusions

After analysing both sets, you can see there are no substantial changes from one to the next and most of the changes were in one way or another “forced” by the circumstances, because of the availability of elements and because of the company style change.

As you can see in the following images, when you compare both sets side by side the differences are minimal.

The spirit of the set and what it represents and has represented in the history of LEGO® has remained unaltered, leaving you with no excuse to let the set pass, especially if you couldn’t get one back in 2008.

As for the price, I have to say that back in 2008 while talking about the set with a LEGO® employee we tried to estimate the price. At that time we supposed it would have a retail price of around 150€.
The price of the 2018 set was 180€. Maybe the price per element rate is a little high, but bear in mind that many of the elements are big, compared to sets with 3000+ elements that contain many 1x1 and 1x2 elements. Also, the Power Functions elements add to the cost.

I believe the set hasn’t lost any of its virtues and look great in any CITY diorama. As I mentioned at the beginning, it is a set that has a bit of everything. When you turn on the generator, the movement of the blades is hypnotic, majestic. And with the new curved slopes you could finish off the curve of the column and make it even more realistic, if possible.

We would like to thank LEGO® for providing this set for review. However, LEGO® neither approves nor endorses the opinions we publish.
#

Happy summer holidays!

By HispaBrick Magazine®

HispaBrick Magazine®: Name?

Ted Andes. (www.flickr.com/photos/ted_andes)

HBM: Nationality?

TA: U.S.A.

HBM: How did you get started with LEGO® bricks?

TA: I received my very first LEGO® set on my birthday in 1977. It was the 'Police Units' 445 set, from before minifigures had movable arms and legs, or even printed faces for that matter. My aunt told me that LEGO® was from Denmark and that their building blocks were the "hottest toys around", but I was not impressed. That all changed when the 'Space Shuttle' 442 set flew into my life on Christmas Day in 1979 (as well as mini-figures with moving arms, legs, and faces). I swooshed that shuttle everywhere I could. I eventually stopped building around the age of 13, though I still stayed in touch with LEGO® sets by getting them for my younger brother and then for my nephew.

The Red Star Hotel, 2014

Sometime in 2002, I was flipping through the latest LEGO® catalog and there I saw it: the Santa Fe Super Chief. That's when I first thought, "Hey! Why not buy a LEGO® set for myself?" By the time I saved up enough money for it, along with a 9-volt track set up, the set was already retired. That got me searching online for what had happened to it, and I discovered the LEGO® Train builders forum on Lugnet. That was how I discovered the AFOL community, and I have been rebuilding my collection and building MOC's ever since.

HispaBrick Magazine®: Name?

Galaktek. (www.flickr.com/photos/galaktek)

HBM: Nationality?

G: U.S.A.

HBM: How did you get started with LEGO® bricks?

G: As a child I spent many hours with LEGO®, but I didn't start making MOCs again until 30 years later. I accidentally found the amazing AFOL community on Flickr, and have continued to be inspired by all the creativity and sharing there. I also exhibit at BrickCon, our local convention here in Seattle. My MOCs often have a humorous theme, as you can see here. Enjoy this Summer in Space!

Summer on Station Tau, 2015

HispaBrick Magazine®: Name?

Cara. (www.flickr.com/photos/brick_art/albums)

HBM: Nationality?

C: U.S.A.

HBM: How did you get started with LEGO® bricks?

C: I started after shopping for my kid's first LEGO®, and found myself attracted to the fantasy sets at that time. And after that, all I asked for were loose bricks to build my own creations.

Best Friends on Vacation, 2016

I Miss the Summer, 2017

HispaBrick Magazine®: Name?

Sebastian Bachórzewski (www.flickr.com/photos/LEGO®insomnia)

HBM: Nationality?

SB: Poland.

HBM: How did you get started with LEGO® bricks?

SB: I won't be original. As with many AFOLs it's all because of having a kid. When my son started getting his first LEGO® sets I built them for him.
The next thing I knew, I was posting minifig photos on Instagram and had discovered a huge LEGO® community there.
I started building some small MOCs from time to time, then some bigger ones, and now I'm hooked for life.

HispaBrick Magazine®: Name?

Yu Chris. (www.flickr.com/photos/123907272@N02)

HBM: Nationality?

YC: Taiwan

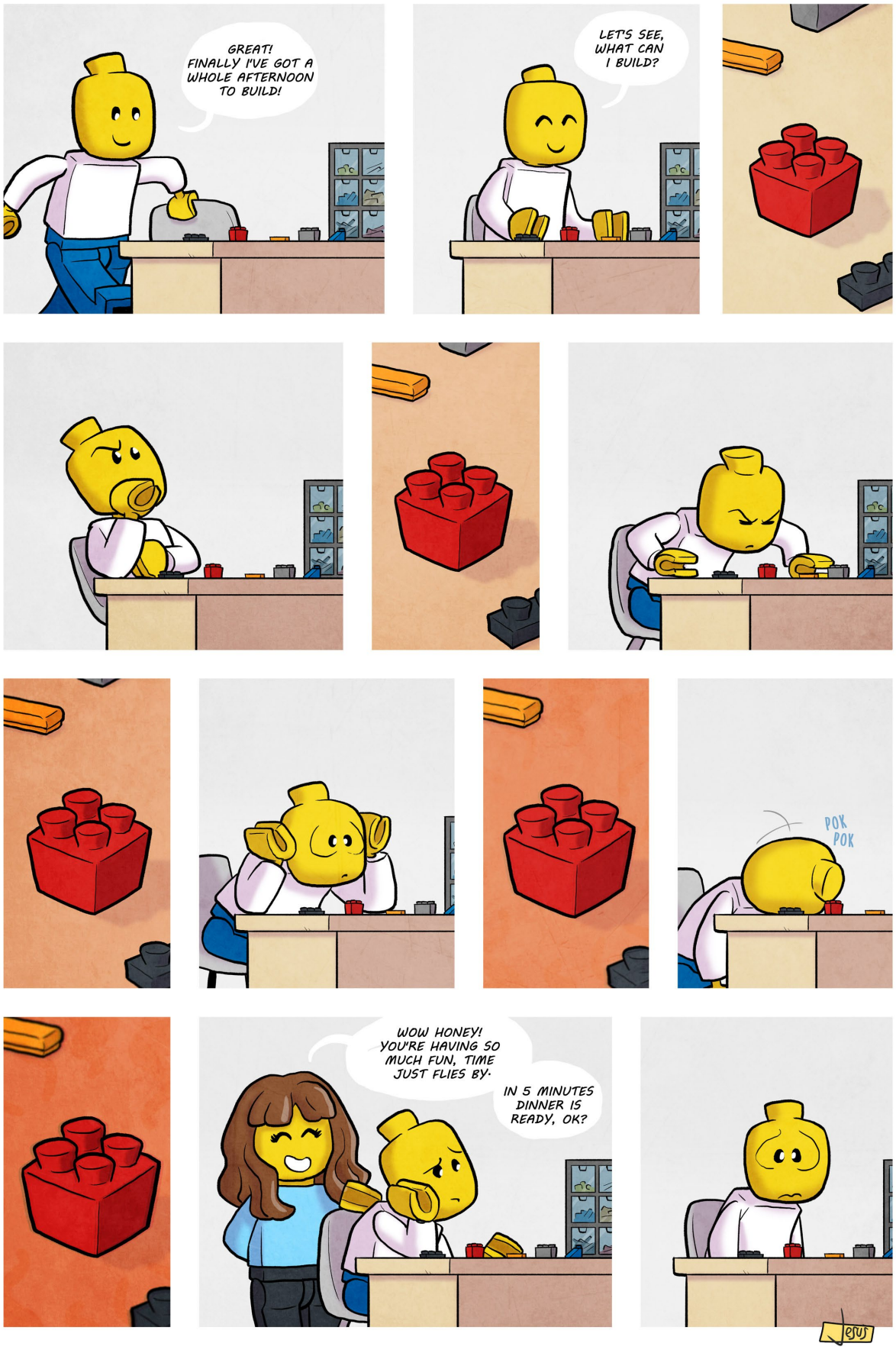
HBM: How did you get started with LEGO® bricks?

YC: I have returned to playing with LEGO® bricks through my kids (back from a very long dark age!).
I have been trying various themes for 5 or 6 years so far.
I am particularly fond of the classic space series. For me, they are the most classic.

Santa's Vacation, 2017

Benny's Corner by Luigi Priori

Desmontados by Arqu medes



How to collaborate with us

Collaborating with HispaBrick Magazine® is very easy, just send an email with your ideas to **info@hispabrickmagazine.com** and we will help you to “build” your article.

If your native language is not Spanish or English, don´t worry, we will fi nd a solution. Contact us now!

You can also fi nd us at Facebook: http://www.facebook.com/hispabrickmagazine and Twitter: @H_B_Magazine
#

Our collaborators on the Internet

Adrian Barbour	https://www.bm-mocs.com
Ahmad Sahar	https://tomafuwi.tumblr.com/
Antonio Bellón (Legotron)	http://www.abellon.net/Panzerbricks
Anuradha Pehrson	https://www.flickr.com/photos/anupehrson/
Arvind and Sanjay Seshan	EV3lessons.com
Cara	https://www.flickr.com/photos/brick_art/albums
David Koudys	https://www.flickr.com/photos/sparky1701/albums
Galaktek	https://www.flickr.com/photos/galaktek
Holger Mathes	https://www.holgermatthes.de/bricks/index.php
Janos Roemer	https://www.kockice.hr
Claire Kinmil Brickomotion	https://www.kockice.hr
Jesús Delgado (Arqu medes)	http://debiologoadibujante.blogspot.com/
Jetro de Château (Jetro)	http://www.brickshelf.com/cgi-bin/gallery.cgi?m=linmix
José (Satanspoet)	http://www.brickshelf.com/cgi-bin/gallery.cgi?m=satanspoet
Lluís Gibert (lluisgib)	http://www.brickshelf.com/cgibin/gallery.cgi?m=lluisgib
Luigi Priori	https://www.flickr.com/photos/priovit70/albums
Oton Ribic	https://www.kockice.hr
Sebastian Bachórzewski	https://www.flickr.com/photos/legoinsomnia
Ted Andes	https://www.flickr.com/photos/ted_andes
Vesna	https://www.flickr.com/photos/redhead1982
Yu Chris	https://www.flickr.com/photos/123907272@N02

033

Free download from www.hispabrickmagazine.com
You can buy printed issues only at www.bubok.com
You will pay only the printing and shipping costs

ISSN 1989-0982