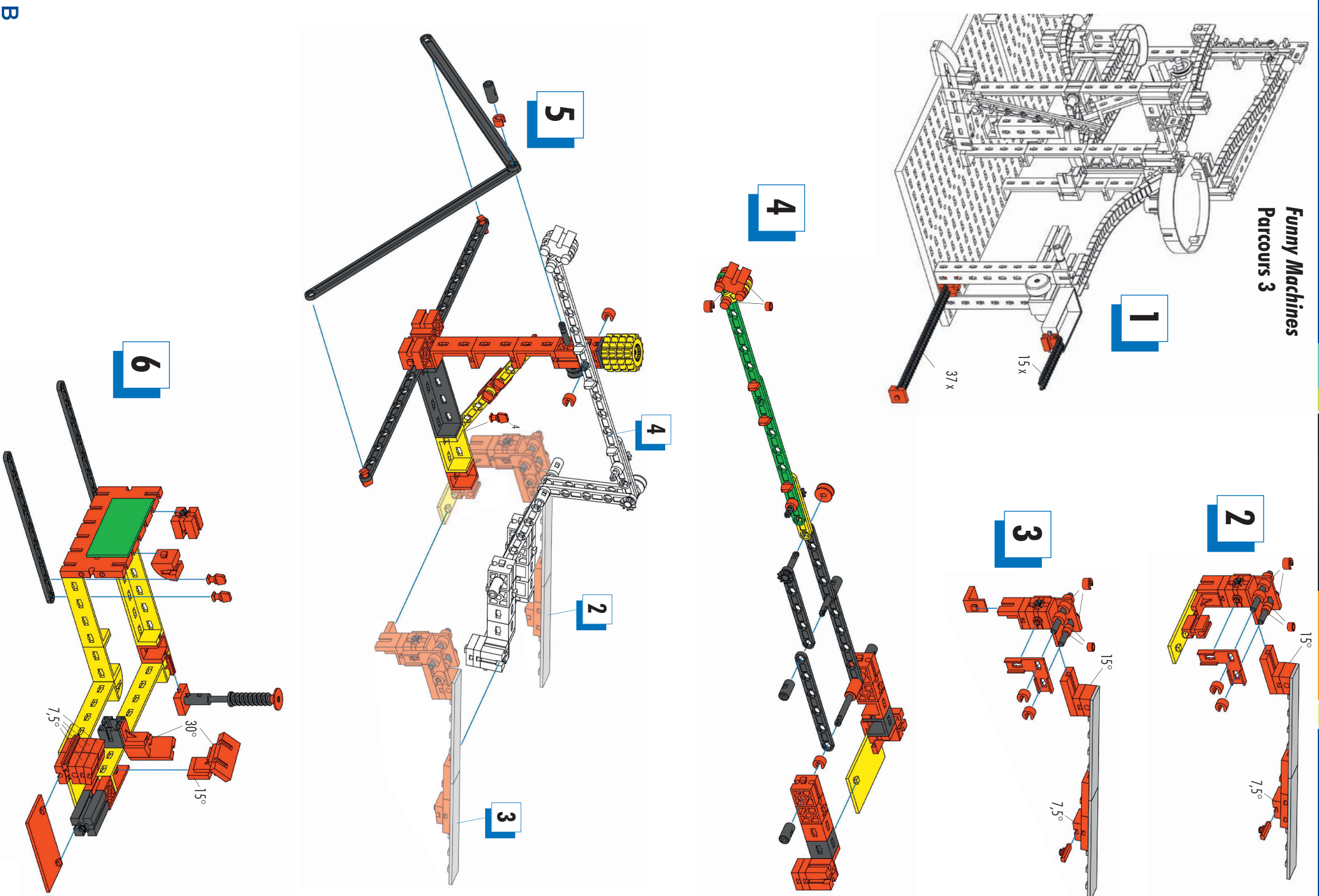
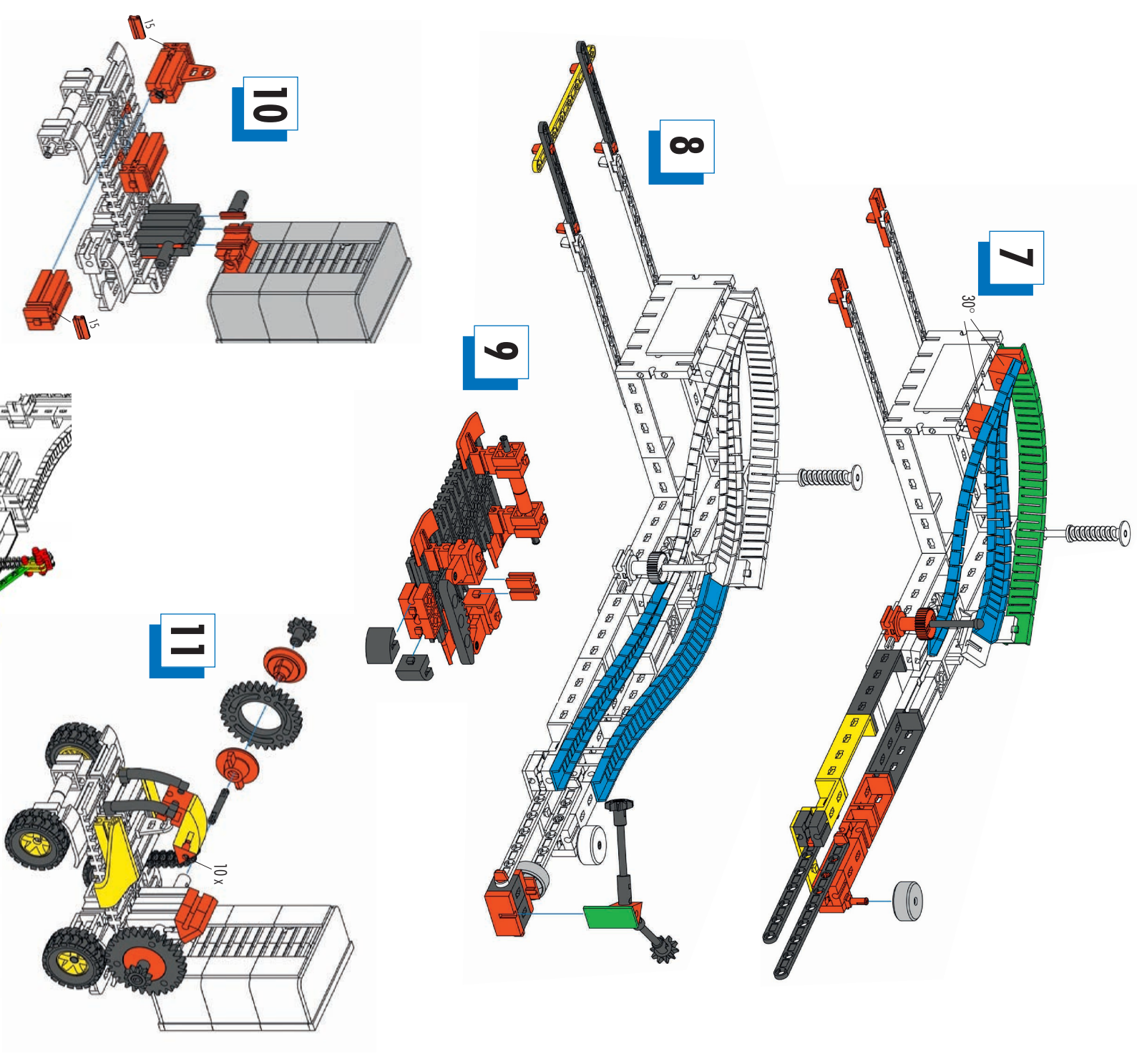


# Funny Machines Parcours 3



B



C



# FAN CLUB NEWS

## fischertechnik

EDITION 02/19



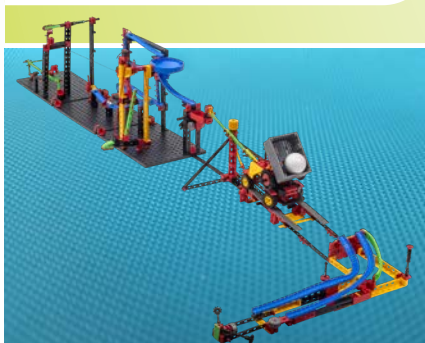
PAGE 2: ACTUAL  
award for Funny Machines



PAGE 2: ACTUAL  
Experimental kits from  
fischertechnik and KOSMOS



PAGE 3: ACTUAL  
Long-time fischertechnik fan  
becomes new sales partner

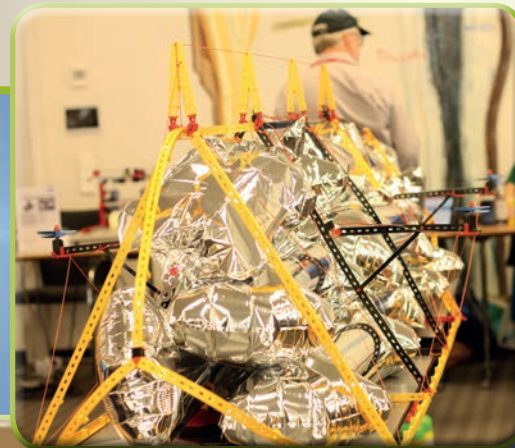
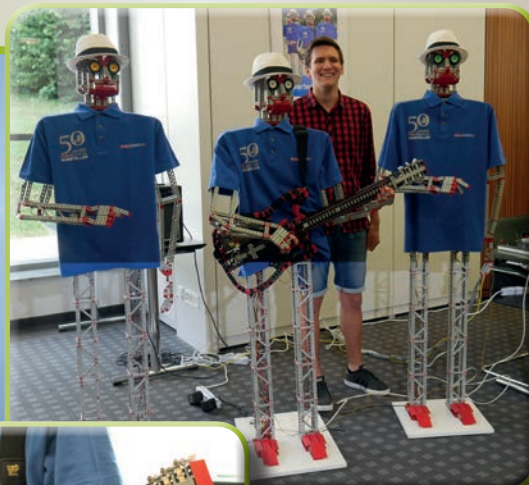


PAGE 7: ASSEMBLY  
INSTRUCTION  
FAN CLUB model:  
Funny Machines supplement

## Fan Club Day 2019

a complete success!

You guys are really great! This year's fischertechnik Fan Club Day was a complete success, with 1,300 attendees! Once again, the highlight was our model exhibition: The creations you all conjure up from our products every single year are unbelievable! With around 90 creatively designed models – including a belt of building blocks that played the fischertechnik song, a large zeppelin, a long bridge, etc., you once again showed how creative you are and how versatile fischertechnik products can be. In addition, popular training sessions on different topics, like "Robotics for beginners" or "Industry 4.0" offered valuable tips. Participants also enjoyed using the shuttle bus, which ran regularly to Salztetten: There, the attendees could assemble their own fischertechnik building kits, take a tour, or take advantage of the special sale. In line with our new PROFI Hydraulic, attendees also got the chance to prove their skills with the excavator. In addition, live alpacas offered a cute and cuddly surprise. During the trainee info day held at the same time, 20 other stations provided many opportunities to learn about our company, try out our products, and gain a better understanding of the fischer world.



## DEAR FANS,

Quite a lot happened this year. We have summarized the most important information for you in our second edition of 2019. On the **title page**, you can see some of the great fan models that brightened our Fan Club day. On **page 2**, we will be reporting on our victory in winning the golden rocking horse. Funny Machines was named the most popular model by attendees. This page also introduces a cooperative product from fischertechnik and KOSMOS. The technology workshop experimental kit is a great product from both of our brands. Many of you are familiar with

our new, exclusive sales partner Franz Santjohanser. Further information on him is available in the interview report on **page 3**. Four boys from Karlsruhe developed a great model. You can read more about it in a report on **page 4**. Have you always wondered what an internship with fischertechnik would be like? Then read the report from Magnus Fox on **page 5**. In addition, he also developed the FAN CLUB model in this edition for you (**page 7**). I hope you enjoy reading and have lots of fun with the newest issue of FAN CLUB News! Sincerely,





# ACTUAL

2

## YOU CAN REACH US:

Mondays to Fridays  
from 8.30-12.00 and  
13.00-17.00 (German time)  
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www.fischertechnik.de/newsletter

## Benefits:

- free of charge and up to date
- information on new products
- important topics & dates
- sweepstakes

## Victory for Funny Machines Golden rocking horse award

We were nominated for the distinguished toy award "The golden rocking horse" in three different categories. "The golden rocking horse" award is given out each year, and is considered one of the most important prizes in the toy industry. Editors at the "Familie & Co" magazine and the Deutschen Verbands der Spielwarenindustrie (DVSI - German Toy Industry Association) select several new products each year, and nominate these for the audience prize. This year, 58 new products that the editorial staff found particularly well designed, child appropriate and innovative were selected. fischertechnik made the final round of competition in three categories:

### "Play and technology" category:

ADVANCED Funny Machines  
Build fun chain reactions



The ADVANCED Funny Machines building kit impressed the audience jury and was selected as the best product in the "Play and technology" category. We are very pleased and proud to receive the award. If you want to learn more about the winning product, then check out our homepage at [www.fischertechnik.de/FunnyMachines](http://www.fischertechnik.de/FunnyMachines). We have assembled all the most important information, cool videos, functions and key features for you there. In addition, you will find several honest product test reports on the page. We hope you enjoy reading and discovering them!

### "Everything for a child's heart" category:

JUNIOR Easy Starter Set S  
building fun with trucks, cranes, and much more  
for children 3 years of age and up



### "For adults" category:

PROFI Hydraulic  
Impressive, hydraulically  
operated crawler excavator and more



[www.fischertechnik.de/FunnyMachines](http://www.fischertechnik.de/FunnyMachines)

## Technology is great with KOSMOS and fischertechnik

Yes, you read that right. :) Soon, you will be able to find fischertechnik in a KOSMOS experimental kit. We have decided to combine the strengths of our two companies to create one new product, jointly developing the "Technology workshop" physics experimental kit. The experimental kit, designed for children 8 years and up, provides a simple introduction to the world of physics. You can use 20 models to complete experiments on force, speed, inclined planes, energy storage, levers and pulses.

### 20 functional models explain the underlying principles

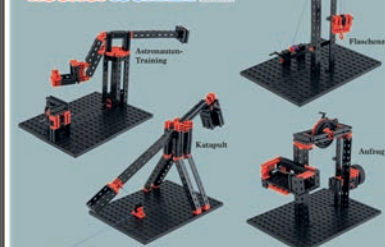
Without physics, there would be no pyramids! For thousands of years, physics has been helping people make their lives simpler. There were no cranes in ancient Egypt. How were people able to stack up heavy stones to create gigantic pyramids? They used a clever trick – the inclined plane. You can discover what exactly that is, and the physical phenomenon behind it, using 20 models made of fischertechnik components and lots of exciting experiments.

After building the models and completing the experiments, you will be much more familiar with terms like gears, mechanics, speed and energy storage.

We hope this building kit is an entertaining experimental set for our fischertechnik fans, and that it properly shows off our combined 150 years of experience in design and experimentation.

TECHNIK  
-WERKSTATT

Das Starter-Set mit  
fischertechnik



20 Funktions-Modelle aufbauen und Technik  
anhand von Experimenten verstehen

## DATES 2019

### Fairs Germany:

INFA, Games for Families	Hanover	10/12 – 10/20/2019
Science Days, Europapark	Rust	10/17 – 10/19/2019
Modellbau	Vienna (AT)	10/24 – 10/27/2019
Consumenta, Games for Families	Nuremberg	10/26 – 11/03/2019
Faszination Modellbau	Friedrichshafen	11/01 – 11/03/2019
Süddeutsche Spielmesse	Stuttgart	11/21 – 11/24/2019

### From Fans for Fans:

Fan Model show	Münster / Hilstrup	01/19/2020
fischertechnik Clubdag	Schoonhoven (NL)	10/26/2019

### Special sales:

Salzstetten	Wolfäcker 1, 72178 Salzstetten	11/30/2019
	9:00 AM – 12:00 PM	



### Technology workshop

- 8 years and up
- 20 models
- 72 components
- Prize: 54.99 EUR
- Teaches basic principles, for instance, regarding Gears, mechanical components, speed and energy storage

fischertechnik  + KOSMOS



## New distribution partner with many years of fischertechnik experience

"fischertechnik is our passion". That's the motto of our long-time fischertechnik fan, and new fischertechnik partner Franz Santjohanser. Mr. Santjohanser grew up with fischertechnik, and can proudly say that he has over 40 years of experience with fischertechnik. He was excited about our fischertechnik construction kits even as a small child. Today, with his extensive technical knowledge, he even believes that our construction kits offer lots of untapped potential. He has been our exclusive distribution partner for sales of single fischertechnik pieces in Germany since July. However, Franz Santjohanser doesn't just sell our wide selection of building blocks and special parts; he also has brand new modules in his product range. In addition, he also offers older building kits no longer available in retail stores and historical

fischertechnik components. He doesn't neglect fischerTip either: You can find all of our fischerTip products in your fan and colleague's product range! Mr. Santjohanser also offers an extensive range of consulting services. He can find the right product for any fischertechnician big or small, thanks to his many years of experience with our products. Occasionally, he also launches a sales promotion with different special offers. His homepage is certainly worth a visit.



## FRANZ SANTJOHANSER INTERVIEW

### 1. What building set did you get for Christmas when you were a child?

-ft-Hobby 1 (basic set) and ft-Hobby 2 (mechanics)

### 2. How old were you?

-I was a late starter at 12, but we also had fischertechnik products at school

### 3. Were you excited about fischertechnik right from the start?

-Yes, the organizational system in particular (everything has a place in the building set) and so many parts in such a small space fascinated me

### 4. Did you spend a lot of time with fischertechnik as a child?

-Yes, definitely. My parents always supported my inquiring mind

### 5. Did you spend a lot of your allowance on fischertechnik products?

-No. I didn't get an allowance :- ( But as an altar boy at church we always got a couple of marks we could spend on components and replacement part packages

### 6. What was your first model?

-A lifting platform with gear rack from Hobby 1 (I skipped over several pages of the introductions)

### 7. Is there a picture of the models?

-Unfortunately not, just one picture (1976) of me standing under the Christmas tree, proudly holding a 50 piece box and not wanting to give it up. Who would have thought this building system would accompany me throughout my life

### 8. What memories do you connect with fischertechnik?

-Many, many hours of building fun. But also good insight into technology, which also shaped my professional career later on

### 9. What do you find so fascinating about fischertechnik?

-A building system that is well thought-out and still fits together after over 50 years, and still always reflects current technology

### 10. What building set is your favorite, and why?

-The building set system from 1975 (50, 50/, 50/2, 50/3). It starts off very small, and you can buy more depending on your budget and even try out the bigger models. The Hobby1 box was just all in one

### 11. What self-designed models are you particularly proud of?

-Many years ago, I built a complex model of a factory (like the simulation model today). Many of it was controlled with electromechanics. Unfortunately, there are no pictures of it (we didn't have smartphones yet). Components were processed and transported on belt conveyors - just phenomenal.

### 12. In your opinion, what makes fischertechnik building sets good teaching and development materials?

-Their clear focus on what's most important. They don't focus on creating flashy effects, but rather on playing and fun. You learn as you play, and learning is fun. fischertechnik always has its finger on the pulse of the times (3D printing, SmartHome, etc.) and you learn patience and endurance. The quality and service life of the components is another good argument. The construction manuals are a first step, but your creativity knows no bounds (the fischertechnik Fan Club day and the many different models are impressive proof of that)

## Students develop digital process model

### A cooperative project with fischertechnik

A project staged by the Schüler-Ingenieur-Akademie (SIA - Secondary school engineer academy) responded to the trends of digitization and automation. Four students at the Heinrich-Schickhardt-Schule in Freudenstadt partially automated, designed and programmed a process model from fischer fixing systems (anchors) with the help of fischertechnik components as part of a school project. The new, digitized process model illustrates the sales process through to logistics. The model explains all stages of the sales process.

The SIA is a proven cooperative model between secondary schools, universities and companies to support technically-minded students and give them insight into engineering sciences fields.

We have been supporting this project since 2009 by offering students the opportunity to visit our company and supporting them in their projects.

We are excited to see the creativity, technical understanding and commitment of the students. It is amazing to see what fischertechnik can do with just a little bit of curiosity and technical know-how.





# FANS

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## Record

### We are wowed by Germany's longest fischertechnik marble run

The Karlsruhe fischertechnik Day was held on May 30th, 2019 for the fourth year in a row.

A total of 64 teams from ten elementary schools in Karlsruhe gathered at the Karlsruhe Gartenschule (garden school). All of the teams were prepared and brought along a fischertechnik marble run. A total of 64 marble runs were assembled at the fischertechnik Day. These then combined to form one giant marble run with different mechanisms like chain lifts, pneumatic catapults, loops and many more used to transport the tiny metal spheres.

The individual marble runs were developed at fischertechnik working groups in response to a common task. The working groups were supplied with materials in advance, and on May 30th, all of the models were combined to form one giant marble run. The build was successful, and the 25m (or 24.85m, to be precise) machine was the longest fischertechnik marble run ever built in Germany. We'd like to congratulate everyone on their success. The event also included a model show demonstrating what is possible with fischertechnik: From a microcontroller-controlled transfer line with sorting system (developed and built by an eight-year-old) to a rope bridge to a fischertechnik drone that filmed the fischertechnik Day from above, there were lots of other interesting models as well. The 130 students were rewarded for their work with high-quality building sets to add to the fischertechnik working groups' parts stashes. Cool, right? Why don't you go join a fischertechnik working group yourself!



## Awesome teamwork

### fischertechnik component sorter BA(RM)<sup>2</sup>

We were proud to see all the great things four students at the Bismarck Gymnasium in Karlsruhe were able to do. Veit Fromm, Leo Liu, Yannik Tausch and Jakob Vollmer developed, built and programmed the component sorter BA(RM)<sup>2</sup>. You might be asking yourself what the name BA(RM)<sup>2</sup> means. According to the boys, it's a little complicated. Essentially, it is a modified form of a designation for a past model BRM-ARM (which stands for BRM cleaning machine), written in a mathematical style. To put it more simply, they call this model the "fischertechnik component sorter" or the "fischertechnik part sorting machine."

#### Here is a report from the four boys on how they came up with the model:

Our building sets from the fischertechnik working group had to be re-sorted regularly, which took a lot of time and effort each time. That gave us the idea to build a sorting machine to handle the task. Our sorting machine has a modular design, meaning it is flexible and can be expanded or divided into smaller units with very little work and as needed. The sorting process can be divided roughly into three parts: Separating, detecting and sorting.

At the start of the sorting line, the unsorted parts are brought into the sorting system by an elevator. Then the building blocks are separated from one another by independent conveyor belts operating at different speeds. The first conveyor belt that transports the building blocks first runs very slowly, creating a lower flow of building blocks at the second, adjacent conveyor belt. The second conveyor belt is operated at a higher speed, which separates the components to great distances.

Light barriers are installed at each transfer between conveyor belts to stop the flow of components once one component is being analyzed by the software, or if a component falls onto the next conveyor belt. An image is then taken on the third conveyor belt with a fixed USB camera. The image is then analyzed with machine learning and assigned to one of the previously specified component types. After a component has been recorded and recognized, it is moved to a hopper by another belt conveyor, under which

there is a storage system that functions like a turntable. It can turn in two different directions, and is equipped with one small sorting box for each type of component. We have a total of twelve different sorting boxes, which can be precisely activated via a light barrier counter. Sorting box zero, where all parts that are not clearly recognized are sorted, is also equipped with a feature detectable via light barrier for initial calibration of the counter. Two independently operated ftDuinos handle hardware activation; essentially, these are fischertechnik-compatible Arduinos that communicate with one another in the form of a master and slave system using the I<sup>2</sup>C protocol. Image recognition is completed using a laptop connected to the Master-ftDuino and the part camera via USB. The software used to activate the hardware is written in C/C++ (Arduino), while the PC controller, which also has a graphic user interface to teach in new components, and the part recognition are written in Python.

The Tensorflow library currently uses the "Inception" model for image categorization in conjunction with a pre-trained neural network. New components must be trained in first before they can be sorted. The graphic user interface on the computer supports a person, who saves training images using simple operations and can sort out incorrect images.

Around 100 training images are required for each new component. We have been working on our sorting machine as a four-person team for more than one whole school year. We meet for at least two hours every Friday during the fischertechnik working group at our school, the Bismarck Gymnasium in Karlsruhe. Currently, we are adding some extra features to the image recognition system to achieve the highest possible detection rate, including for similar parts. In addition, we are planning to create even more training images of other types of parts, so we can sort even more different parts as precisely as possible. In the medium term, we want to add a high-bay shelving system and gripper arm to the sorting system, so that full sorting boxes can be stored automatically, which takes less human intervention.



Do you want to see the model in action? No problem. Just go to [www.fischertechnik.de/Fan-Projekte](http://www.fischertechnik.de/Fan-Projekte). We are excited to see what these four boys have accomplished - hats off to you!





# Internship at fischertechnik

A report from Magnus Fox

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# FANS

Hi,

I'm Magnus. I am 17 years old and I come from Karlsruhe.

I started my BOGY internship (Berufs Orientierung am Gymnasium - secondary school career orientation) at fischertechnik at the beginning of this year. Since I like to ride bikes in my free time, I brought along my bike and found a place to stay at a vacation home in the neighboring town of Neunufra for two weeks. Every morning I woke up around 7:30, ate breakfast and then rode uphill and downhill with my bike through the woods to Salzstetten, about a 15 minute ride. There weren't any set work hours. I could start anytime between 6:00 and 9:00 AM and leave in the evening whenever I had used up all my creativity.

When I arrived the first day, I met my contact person, Mr. Knecht. I got a brief introduction to the company and the location, and got my first duties right away. Since I was working in product development, most of the tasks I received over the two weeks involved testing new components or new building set ideas created in cooperation with other companies, or even developing new models.

It was definitely a lot of fun!

I sat in the development and model building room all day, surrounded by big shelves completely full of fischertechnik components.

All of the components here are sorted by article number. I usually hopped on the racetrack, um ... I mean the path to Tumlingen every day around 12:00 to go to the cafeteria. Almost the entire office was dead between 12:15 and 1:00, since everyone was at lunch.

Since I was an intern, I got a meal card with free lunches. That was really cool, and the food was always delicious! Typically, my plate was completely full when I got to the cash register. Once the whole carpool was done eating, we took the narrow road back to Salzstetten and spent another roughly four hours "letting our creativity run free." My work day was generally over by 4:30/5:00 PM. I went home over the weekend, which was no problem at all. I got done on Friday around 4:30, rode my bike from Salzstetten to Horb for around half an hour, and got on the train there. On Sunday I rode back to Horb in the evening and rode the bike back to my vacation home.

This allowed me to relax at home on the weekends and still work at fischertechnik. The two week internship was really cool! I decided to do another internship at fischertechnik a couple of months later during my school holiday.

This time it was just one week, but even this short time went by too fast. I got to play every day, and I even got paid for it ... ;)

Anyone who has ever wanted to peek behind the curtains at fischertechnik product development will not be disappointed, I think. If you are interested, just send an inquiry to fischertechnik!



## Open fischertechnik workshop

at the Materials handling technology adventure museum in Sinsheim

The fischertechnik workshop was created to not only exhibit technology to visitors, but to make it tangible in the truest sense of the word.

Creativity and an inventive spirit are on display here every Sunday: Marble runs, vehicles, theme parks, conveyor systems and robots are just a handful of the projects children have created using our components at the workshop. Every visitor can feel like a real inventor every Sunday between 12:00 and 4:00. And if that's not enough time, no problem! Children 9 years and up can attend fischertechnik Workshops as part of the Kinder Erfinder

Kreis Sinsheim (KEKS - Sinsheim Child inventor group) Participants can complete larger projects taking several weeks here with the support of pedagogically trained personnel. Since fischertechnik can demonstrate physical laws and technical solutions, children learn about topics like statics, mechanics, pneumatics, sensors, computing and much more while they play.



## SüdConvention in Sinsheim

The annual Südconvention was held this year on 09/21/2019 at the Fördermuseum in Sinsheim. A fischertechnik association created for the purpose handled organization and staging for the event. We'd like to say thank you to them once again, and to commend them for the event. With around 70 exhibitors and over 100 fischertechnik models, there were plenty of amazing models to marvel at. From standard models to completely self-designed specialty models from every field of technology, there was something for everyone. Once again, we saw how the unlimited possibilities of the ft-System can be used to create custom models. A variety of specialty talks were held on fischertechnik during the event. The convention is one of the highlights for fischertechnik each year, and a time for the whole fischertechnik community to come together.





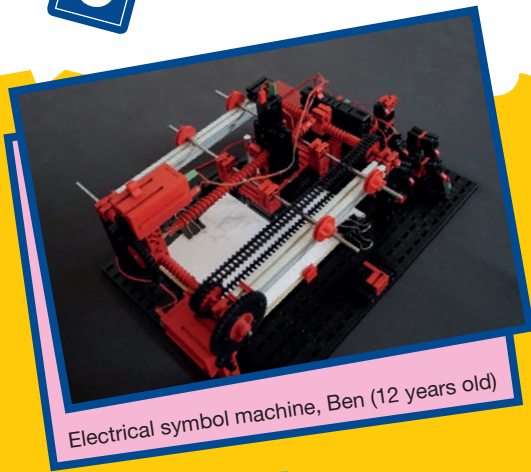
# FUN

6

## GALLERY, GALLERY, GALLERY



YOUR picture could be here!



Electrical symbol machine, Ben (12 years old)



Marble run model, Leo (10 years old)



Remote controlled bucket wheel excavator, Martin



Forklift



Eiffel tower, Jonathan & his grandfather

Thank you very much for the funny and interesting models you sent us. Are you creative, industrious, and often build your own models? Are you able to construct different creative models even without instructions? Do you always have really cool model ideas?

It would be a shame if no one ever saw them besides you and your family! Just send a picture of your original model creations to [info@fischertechnik.de](mailto:info@fischertechnik.de).

We will publish your picture on our homepage under "Playing - Fan Club"! In addition, we always show the best-looking models here in Fan Club News.

Have fun building, and we look forward to receiving your great model photos!



Four-wheel drive with engine



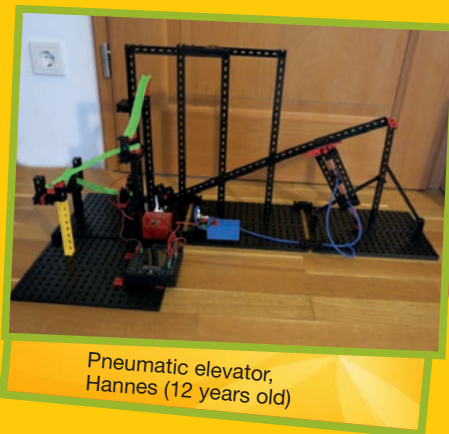
Sugar vending machine, Adrian



Card vending machine, Nils (8 years old)



Glass ball run, Frank



Pneumatic elevator, Hannes (12 years old)

## CONGRATULATIONS!

We think it's great how you always solve our riddles and find the right answers. The solution for the crazy image in the last issue of the Fan magazine on 01/2019 was JUNIOR. Corinna from Brandenburg has a good reason to celebrate. She knew the right answer in our "Universal4" quiz and can look forward to receiving a building set of the same name. We'd like to wish the winners lots of fun with their new building sets.

## Brain teaser

This math riddle is a little mixed up. If you flip over one component, this fischertechnik riddle will make sense once again. Send us the number of the component that needs to be changed by December 16, 2019 by e-mail with the subject "Brain teaser" to the e-mail address [gewinnspiel@fischertechnik.de](mailto:gewinnspiel@fischertechnik.de). We're looking forward to your solutions! Your math skills will be rewarded with an "outstanding" technology building set, specifically the PROFI Hydraulic.

Good luck solving the puzzle!



## Search for fischerTiP

It looks like a few fischerTips were hidden throughout the pages of our Fan Club News. Can you help us find them? Send us your answer with the number of fischerTips you found by December 16th, 2019 by e-mail with the subject "fischerTip search" to the e-mail address [gewinnspiel@fischertechnik.de](mailto:gewinnspiel@fischertechnik.de). We're looking forward to your answers! You can win an ADVANCED Funny Machines set. Good luck in your search!



The winners will be notified in writing. Not subject to legal claims.



Einzelteilübersicht  
Spare parts list

	31 010		32 870		36 299		38 428		146 535
	31 011		32 879		36 323		38 432		152 249
	31 016		32 881		36 334		38 472		156 106
	31 020		32 882		36 576		38 474		156 502
	31 058		32 985		36 586		38 541		156 504
	31 060		35 031		36 819		38 544		161 691
	31 061		35 039		36 920		38 546		163 201
	31 124		35 049		36 921		78 728		163 202
	31 426		35 053		36 922		116 251		163 203
	31 436		35 061		36 923		116 252		163 433
	31 597		35 063		36 950		119 753		163 435
	31 667		35 064		36 952		121 641		165 793
	31 668		35 065		36 973		122 950		172 539
	31 670		35 066		37 237		127 471		172 540
	31 671		35 073		37 238		127 472		172 541
	31 674		35 088		37 468		128 659		172 542
	31 690		35 129		37 636		130 593		172 543
	31 843		35 405		37 679		136 528		172 544
	31 848		35 797		38 240		136 775		172 545
	31 981		35 945		38 241		142 251		172 546
	31 982		35 977		38 242		142 252		172 547
	31 983		35 981		38 249		143 234		172 548
	32 064		35 998		38 253		144 262		173 572
	32 071		36 227		38 258		145 897		173 573
	32 085		36 264		38 263		146 375		173 574
	32 263		36 273		38 413		146 531		174 118
	32 330		36 294		38 414		146 532		146 533
	32 850		36 297		38 423		146 538		

# ASSEMBLY INSTRUCTION

NO. 55

To collect

FAN CLUB model  
Funny Machines extension

As we wrote earlier, Magnus Fox, our intern, developed the current Fan Club model for you. He combined the two building sets ADVANCED Funny Machines and Universal 4. This created a huge chain reaction, thanks to the large number of parts. The model is 1.6m long, with each action triggering a subsequent reaction.

