

# Modular magic in the classroom

Bring engineering to life with Infento











# How do you truly inspire your students with STEM education?

The world is changing quicker than ever before, and schools are trying their best to keep up. Everyone in the education space agrees that we need to enhance what kids learn and how they learn. By doing so it will allow students to develop all the necessary skills to thrive in the future.

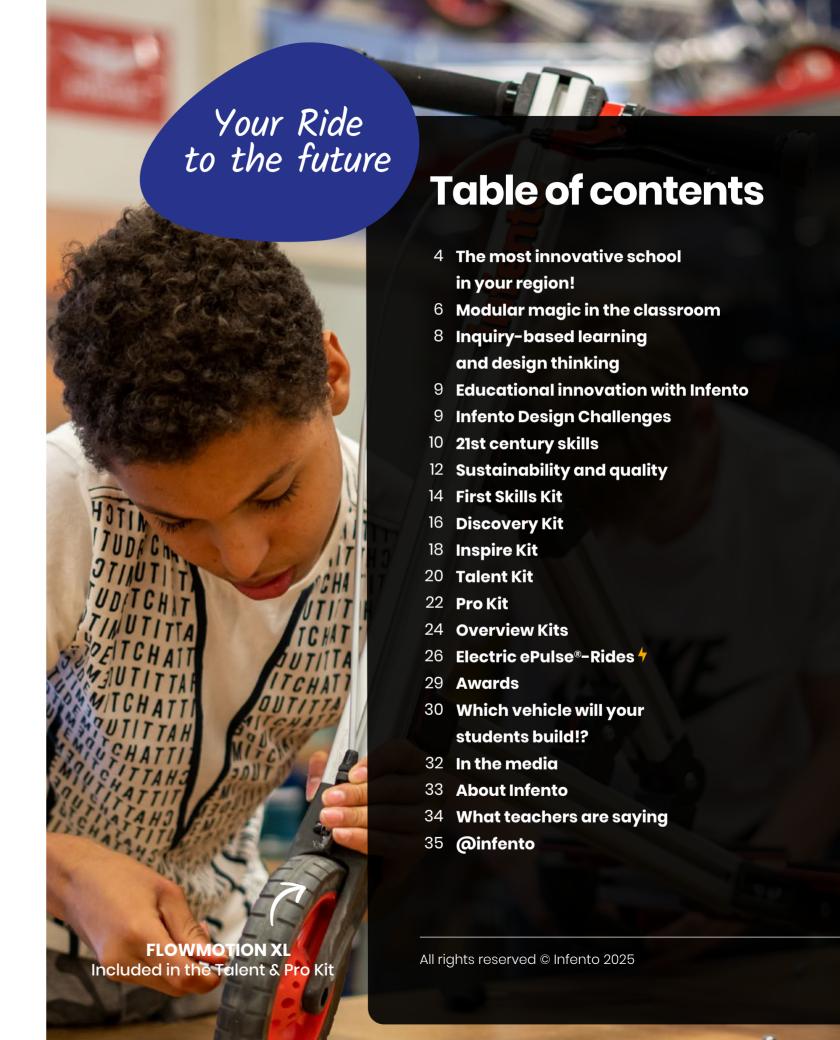
A lot of buzz words have popped up over the last decade that promise to contribute towards the education solution. 21st century skills, STEM, inquiry-based learning, design thinking, etc. But do they live up to their promise?

We think they most certainly can! But it all boils down to the materials and tools that are being used. Most often students get a one-off experience that fails to inspire. They make something that is out of their realm of experience or that they can't really use in real life settings. Given these problems we would like to introduce our company, Infento. With our life-size construction kits, STEM education finally becomes truly inspiring for students of all ages and gender!

What student wouldn't want to build their own life-size electric vehicle? Make their own eSports gaming chair or racing scooter. And what if you could shoot a water rocket 100 feet up in the air from your self-made launch pad? Welcome to the world of Infento. Hop on our ride to the future and discover all the possibilities.

#### **Education Team Infento**







# Modular magic in the classroom

Infento has developed modular parts for your students to create life-size vehicles and science builds. You can build a skateboard, recumbent bicycle, water rocket, fitness machine, electric motorbike or electric kart. Anything is possible with Infento!

While students build together, they will acquire new skills that they can benefit from throughout their entire life. Students will learn about mechanics, realizing a design plan, assembling, tools, braking systems, electric mobility and much more.

As soon as they finish their custom design (electric) Ride, it's time to drive it! Steer like Max Verstappen, let the young pit crew change tires and continue the race. Who's clocking the fastest lap? Infento connects into the child's world, bringing engineering to life.



# Why Infento?



**Powerful STEM lessons** 



Effective tool for getting every child involved in STEM



Learn about technology through play



Complete teaching solution for any teacher



High quality materials that will last many years



Teaches students important 21st century skills

# Teaches students the importance of 21st Century Skills

AFTER-SCHOOL PROGRAM Infento will make your after-school program a big hit, guaranteed.

Lay out an indoor or outdoor course and let students race their life-size (electric) vehicles. Inform students that they can build these vehicles themselves. You will definitely see an increase in new students wanting to join the after-school program to enjoy their time with Infento.

FOR EVERY LEVEL Any student at any age can get started with Infento. No basic knowledge is required. Infento can therefore be used perfectly class by class. Students can start with easy and fun constructions that can be realised within one school lesson. Build a robot, chair, ab roller scooter or push cart. Everything is possible!

PROJECT-BASED

More time to work on a larger project over several sessions? Have a group of students build their own electric go-kart, motorbike or recumbent bike! Or start with the Infento Design Challenges and build a crane, exercise bike, game chair, stretcher, wheelbarrow or launch pad for a water rocket. With the 100% modular parts, you really can create anything!

# Inquiry-based learning and design thinking

STEM education encourages students to be curious and experiment as lifelong learners. Inquiry-based learning and design thinking are excellent frameworks for STEM since it promotes critical thinking and innovation.

Inquiry is an approach to learning where students are provided with opportunities to explore the natural or material world, ask questions, look for solutions, make observations and test out ideas in search for a new understanding.

Design thinking and inquiry-based learning overlap each other in many ways. The big difference is that your end goal with design thinking is to come up with the best possible product for a specific end user while inquiry-based learning is about moving students from a position of curiosity and wondering to a position of enacted understanding and further questioning by letting them generate questions, ideas and observations.

These two processes can help students systematically learn and apply these techniques to later solve real world problems in a creative and innovative way. In both their future jobs and lives, Infento is ideal to kickstart this type of learning.



Inquiry-based learning cycle that is also used in Infento's Design Challenges.

"Tell me, and I'll forget.
Show it to me,
and I'll remember it.
Let me experience it,
and I will understand it."

- Confucius



Infento helps your school take a big step towards innovative education. Our educational Kits and teaching programs are in line with the methods of inquiry-based learning and design thinking and stimulates the development of engineering skills. Infento challenges and appeals to the creativity and thinking skills of students.

The unlimited possibilities that Infento offers thanks to our modular parts, enables kids to build virtually anything they can think of. This is inquiry-based learning at its best. On the Infento website you and your students can access exciting Science Builds, the coolest Rides and amazing Design Challenges.

# Infento Design Challenges

Infento has developed unique Design Challenges that unleash all creativity in children. The fact that students can design and build something that they can then actually test and use afterwards, guarantees plenty of enthusiasm amongst your student population.

## What will your design look like?! Ready, set, go!

- Prosthetic leg
- 2 Vehicle with sidecar
- 3 Electric recumbent bike
- 4 Horse for the princess
- 5 Popemobile 2.0
- 6 Merry-go-round
- 7 Fitness machines
- 8 Mobile desk and chair
- 9 Electric Formula 1 car
- 10 Hospital stretcher and many more Challenges!



#### Done?

Test your design. Have a go with the entire class!



# 21st century skills

Our society continues to rapidly change in the 21st century. There are massive technological, economical and societal developments occurring that will influence the future of work and living environment of children.

To prepare students for their future, it is critical that 21st century skills take up a key role in education at your school. Teaching needs to stimulate a curious, inquisitive and problem solving attitude amongst children. Infento will help you accomplish this goal.

**CREATIVE THINKING** 

Enhance your creativity by using 100% modular parts to create your own vehicle or any other construction you can think of.



### COMMUNICATION



# **PROBLEM SOLVING**

Infento's modular parts offer students the opportunity to reach several different solutions to a problem.



# **CRITICAL THINKING**

Infento encourages children to first come up with a design, followed by a systematic approach on how to



realize your design.



## **COLLABORATION**

Assembling your own vehicle means students need to (learn to) cooperate. Complementing each other and dividing tasks is essential to reach this goal.

## **INFORMATION LITERACY**

Students can independently use the step-by-step materials and manuals to build the technical construction of their choice.



# **SELF REGULATION**

Independently building a large technical construction or vehicle is an in-depth task and requires plenty of effort and perseverance.





# Sustainability and quality

#### 100% RECYCLABLE

The aluminum profiles are 100% recyclable and this makes them a very sustainable material.

# **INDESTRUCTIBLE ALUMINIUM**

The profiles are made of anodized aluminum. This material is light, indestructible and does not corrode.

# **GLASS FIBER REINFORCED PLASTIC**

All plastic parts are reinforced with glass fiber, making them extra strong.

#### **BEST POSSIBLE BRAKES**

The disc brakes function well in any circumstance, wet or dry. Safety comes first.

## **DURABLE PARTS**

Year after year our modular parts maintain their durability even after intensive usage.

We don't use an oily metal chain, but a belt that is clean, safe and will last for years.





# **Overview**

### 16x FIRST SKILLS









90° constructions

Multi-Angle

L-connection blocks









Connecting Blocks

Axles & Wheels









Castors & Wheels

7 inch wheel

Stabilization system

Shaft clamp







Seat or standing board

Swivel wheel

T-connector

Coupler

### learn about: • The basic techniques - how to build

With the First Skills Kit students will

Learn the basics of building and technology

The First Skills Kit is specifically

designed to teach students important

basic technological skills. Suitable for

Girls, boys, skilled or two left hands. The

ready-to-use learning method makes

The students start directly on their own due to the unique learning material.

use in classes from the age of 8+.

Accessible to all types of students.

the Kit suitable for any teacher, no matter how technically savvy they are.

- all the different types of designs
- Measuring assembling a part at a specific point along the profile.
- Reading comprehension carrying out the instructions. Basic knowledge about materials
- and assembly techniques. Working together - two students working together.
- Names and measurements of professional materials.
- Angles, wheels, axles and much more!

This Kit consists of 16 boxes with different tasks for a team of two students. Each team will build all 16 boxes over the course of the year. Each task has a separate box with all the materials, a textbook with instructions and a content plate so everything can be prepared again for the next team. Each student receives a separate workbook with tasks. The lessons are taught according to the sections: Build, Review, Know, Discover, Ask and Quiz. Have you mastered the First Skills? Then proceed to the next level of the continuous learning path: the Discovery Kit.

CONTENTS

32x Workbooks

• 16x Content plates

Associated tools

**SUITABLE FOR** 

Age 8+, max. 32 students

**YOU CAN BUILD** 

• 16x First Skills storage boxes • 16x Teaching materials

• 1x Teacher's manual (online) · All necessary durable parts

16x small technical constructions

20-30 minutes per Basic Skill

**DURATION PER ASSIGNMENT** 

# 16x TEACHING MATERIALS







# 1x MANUAL





With the Discovery Kit, students build inspiring engineering constructions. The tasks deal with engineering and science topics in an inspiring way. For example, build a real electric motor, a windmill or a vehicle and discover the associated scientific and technical principles through play. Each task is connected to the student's real world experiences, automatically making them enthusiastic about STEM topics.

With the Discovery Kit they learn:

- Building real engineering constructions such as an electric motor, a vehicle, a windmill, a sundial and much more!
- **Insights** into important technical and scientific basics through experiments.
- **Working** with technical materials that are also used in practice.
- Investigative and design learning.
- Collaboration two students working on a discovery build.
- 21st century skills such as problem solving and creative thinking.

The Discovery Kit consists of 14 boxes with complete tasks for a team of two students. Each team will build all 14 boxes during a selfdetermined time. Each task has a separate box with all the materials, a textbook with instructions and a content plate so everything can be prepared again for the next team. Each student receives a separate workbook with tasks and can start independently. This means that little guidance is necessary. The aim is that every teacher can work with this. The lessons are taught according to five fixed sections: Build, Review, Know, Discover, Ask and Quiz.

· Associated tools

**SUITABLE FOR** 

**YOU CAN BUILD** 

Age 8+, max. 28 students

14x inspiring engineering constructions

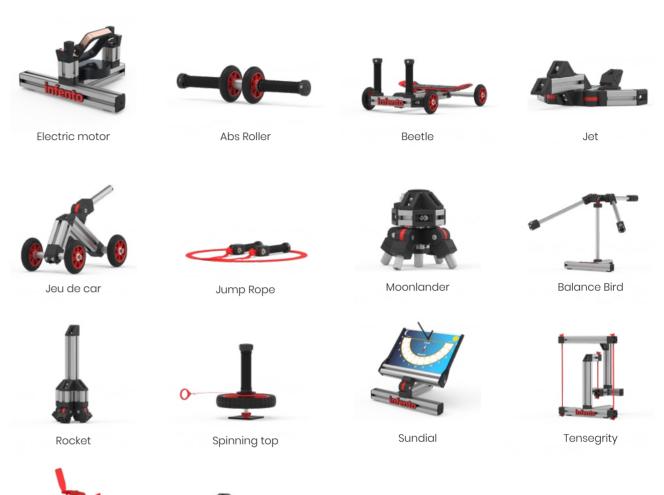
**DURATION PER ASSIGNMENT** 

40-60 minutes per Discovery Build

# **Overview**

# 14x DISCOVERY BUILDS Q

Windmill





Dino

16



The Inspire Kit is the perfect way to introduce children aged 9 to 12 to the exciting world of STEM. Through hands-on learning, students can build life-size vehicles they can proudly race and ride, sparking curiosity and creativity in every step of the process.

This Kit doesn't just focus on the technical—it also encourages collaboration and social cohesion. Older students can design and construct smaller life-size Rides, like tricycles, scooters and ride-ons, for younger children in lower grades. The younger kids can enjoy riding their creations on the playground, while the older students experience a sense of pride and achievement in building something meaningful for the youngsters. This dynamic fosters teamwork and strengthens community bonds across the school.

#### **DURATION PER ASSIGNMENT**

1-3 hours, with option for multiple sessions

€595

A maximum of four students can work together on a single Inspire Kit, making it ideal for small group projects. Projects typically take 1 to 3 hours, with the flexibility for multiple sessions, allowing educators to adapt activities to their schedules and goals.

With the Inspire Kit, students explore STEM in a hands-on way, foster a sense of community within their school, and discover the power of teamwork and imagination. This Kit truly inspires the next generation of innovators.

# 39X RIDES



# **Overview**











Balancer G2

Breeze

Caterpillar Caterpillar XL

Cruiser







Cyclone

Dash

Flowmotion

Flowmotion XL

Funboard

Gaia



Gecko XL



Hiker



Knee Racer XL



Low Rider



Mini Bender

Gecko

Pepper





Primo

Sirocco









Moxie



Scooty







Streamer





Tornado

Trailer

Wheeler





Turtle

ZigZag

Shopper



Twister

Zoom





Wallaroo





Wheelbarrow Racer

Wheelbarrow Racer XL

**5x DESIGN CHALLENGES** 

Animal Robot

Scooter

**Three Wheels** 

Game

21



The Talent Kit is widely applicable and accessible for any type of student. No basic knowledge is required to build constructions, neither for the students, nor for the teachers. The students can directly get to work using the clear instruction manuals and user friendly teaching materials.

A maximum of eight children can be occupied at the same time with one Talent Kit. You can use this Kit as an individual project or have two groups of two or four kids create different inventions for example our Funboard, Flowmotion or Cruiser. As soon as your cool new skateboard or scooter is finished, the time has come to organize a race between the groups! Prefer to work with the entire class? With three or four Talent Kits, the whole class can build at the same time!

The Kit consists of 714 modular parts that are very robust and durable. This makes intensive use possible over a period of several years. Thanks to the high number of parts, students can get creative with the special Design Challenges. The Talent Kit comes with five sturdy storage boxes that have a clear layout. The creative and technical talent of your students will emerge in no time with this Kit!

• Endless own creations

**DURATION PER ASSIGNMENT** 

2-3 hours, with option to split it up

# **Overview**

## 7x RIDES 🚎



# 10x DESIGN CHALLENGES 💆

Horse for the princess

Flying carpet

Fairground turntable

Catapult

Flying Dutchman

Exercise bike

On stilts

Shuffleboard

Mobile desk & chair High striker

# 4x SCIENCE BUILDS 🕹



Bottle Rocket (2x)



Archimedes Screw



Balancer



Crane + Pulley

20



The Pro Kit is, just like the Talent Kit, widely applicable in middle school and high school. All types of students and teachers can start working with it, without any prior knowledge. The big attraction of the Pro Kit? The amount of Design Challenges, a huge amount of parts for your own creations and... the ePulse electric motor! Is the new Henry Ford or Elon Musk at your school? Infento can spark the engineering fire in any child. Who doesn't like building their own electric vehicle to race at the schoolyard afterwards!?

With one Pro Kit, a maximum of eight students can be put to work. A group of four can build an electric vehicle or a Science Build together. Two groups of four can build a smaller vehicle at the same time, such as a skateboard or scooter. Of course it's also possible to work individually on an Infento project or with a smaller group. When using multiple Pro Kits you can have the entire class work with Infento, or divide the Kits over several grades.

The Pro Kit consists of 1,110 modular parts that are conveniently stored in nine high quality, mobile storage boxes. Students can let their imagination go wild constructing the Design Challenges, thanks to the enormous amount of parts. Build an electric recumbent cycle, a special gaming chair, a futuristic pedal go-kart or a fitness machine. Anything is possible! The Pro Kit ensures educators that their students will become familiar with critical 21st century skills, all while building inventions full of passion and enthusiasm!

**YOU CAN BUILD** 

• 4x Science Builds

• 20x Design Challenges

· Endless own creations

2-8 hours, with option

to split it up

• 12x Life-size Rides (5 ePulse® Rides)

**DURATION PER ASSIGNMENT** 

# **Overview**

## 12x RIDES 🚑



# 20x DESIGN CHALLENGES

Horse for the princess	Fairground turntable	Flying Dutchman	On stilts	Shuffleboard
Flying carpet	Catapult	Exercise bike	Mobile desk & chair	High striker
Formula 1 car	Stretcher	Pope Mobile 2.0	Prosthetic leg	Fitness Mania
Wheelchair for Unicef	Vehicle with a sidecar	Drill machine powered vehicle	Vehicle with vertical drive	Electric recumbent bike

# 4x SCIENCE BUILDS



have a 3D printer? Cool! Print the Infento 3D parts and build these 3 Science Builds!

Does your school



Screw

Balancer



Crane + Pulley

Bottle Rocket (2x)

# FIRST SKILLS KIT

Learn the basics of building and technology.



#### **AGE RECOMMENDATION**

8+

#### **TEACHING METHOD**

Classwide & project-based

#### **MAX. STUDENTS**

32

#### **DEPLOYABLE IN MANY WAYS**

One student per assignment Team of two per assignment

#### **YOU CAN BUILD**

#### 16x First Skills

Discovery Builds
Inspire Kit Rides
Talent Kit Rides
Electric Pro Kit Rides
Science Builds
Design Challenges
Endless own creations!

#### **DURATION PER ASSIGNMENT**

20-30 minutes

## Continuous learning path

# **DISCOVERY KIT**

Build engineering constructions with themes from science, technology and play.



#### **AGE RECOMMENDATION**

0.1

#### **TEACHING METHOD**

Classwide & project-based

#### MAX. STUDENTS

28

#### **DEPLOYABLE IN MANY WAYS**

One student per assignment Team of two per assignment

#### YOU CAN BUILD

First Skills

#### 14x Discovery Builds

Inspire Kit Rides
Talent Kit Rides
Electric Pro Kit Rides
Science Builds
Design Challenges
Endless own creations!

#### **DURATION PER ASSIGNMENT**

40-60 minutes

# Continuous learning path

# INSPIRE KIT

Inspire Lifelong Skills with Engaging STEM Projects.



#### AGE RECOMMENDATION

9-12

#### **TEACHING METHOD**

Project-based

#### MAX.STUDENTS

1

#### **DEPLOYABLE**

One student per assignment Team of two per assignment Team of four per assignment

#### **YOU CAN BUILD**

First Skills
Discovery Builds

39x Inspire Kit Rides
Talent Kit Rides
Electric Pro Kit Rides
Science Builds

## 5x Design Challenges

∞ Endless own creations!

#### **DURATION PER RIDE**

1-3 hours, with option for multiple sessions

# TALENT KIT

Build your own life-size vehicles together.



#### **AGE RECOMMENDATION**

10+

#### TEACHING METHOD

Project-based

#### **MAX. STUDENTS**

8

#### DEPLOYABLE

One student per assignment Team of two per assignment Team of four per assignment

#### YOU CAN BUILD

First Skills Discovery Builds Inspire Kit Rides

- 7x Talent Kit Rides
  Electric Pro Kit Rides
- 4x Science Builds
- 10x Design Challenges
- ∞ Endless own creations!

#### **DURATION PER RIDE**

2-3 hours, with option for multiple sessions

## Continuous learning path

# PRO KIT +

Build your own life-size electric vehicles together!



#### **AGE RECOMMENDATION**

10+

#### **TEACHING METHOD**

Project-based

#### **MAX. STUDENTS**

8

#### **DEPLOYABLE IN MANY WAYS**

One student per assignment Team of two per assignment Team of four per assignment

#### **YOU CAN BUILD**

First Skills
Discovery Builds
Inspire Kit Rides

- 7x Talent Kit Rides
- 5x Electric Pro Kit Rides
- 4x Science Builds
- 20x Design Challenges
- ∞ Endless own creations!

#### **DURATION PER RIDE**

2-8 hours, with option for multiple sessions



Electric engines will power the future. Cars, bicycles, motorcycles, boats and even planes. Imagine how exciting it is to let kids build their own electric vehicle! Infento enables this.

Students can first use the manuals to build an electric quad, go-kart or a motorcycle. If they get the hang of it, they are ready for the next step; making their own electrified creations! An electric recumbent bicycle, scooter, wheelchair, or racing car. The options are endless!

The powerful ePulse® motor has a 4 Ah lithium-ion battery that can be placed in various positions. Modular is the magic word!

The battery is ready for 60 minutes of continuous run time. After only two hours of charging it will be ready for action again!





## QUAD

Build a Quad with a group of two or four students. Lots of kids have probably already experienced driving a quad once. Now they can make one themselves! They will learn to connect the electric drivetrain and mount the disc brakes. Surely the children will be proud when driving their quad around the schoolyard! This is the perfect way to get them enthusiastic about engineering.







## **BUSTER**

This is the SUV amongst go-karts.

Assemble the front and back
axle. Set the seat at the right position and off you go! Test your
result at the schoolyard with
classmates. Who will set the
fastest lap time?



26



## **GO-KART**

Go-karting is a loved activity amongst kids. Now it's time they build a go-kart with their own hands! The ePulse System motor will provide 60 minutes of fun when your students are driving around. The disc brake will enable a safe stop at all times. Even backing up is not a problem, just press the green button. Are you the new go-kart pro?

## **HOT ROD**

Meet our tribute to an iconic vehicle: the Hot Rod. This lowrider beauty will definitely turn some heads as the students whizz by. With 20nm of torque available, they'll zoom away at 7 mph all while the students discover the power of torque!



# **MINIBIKE**

Electric fun on two wheels.

A real minibike for the biker minded students! This is one of the favorite models of the Infento fans. It's a great experience to build an electric bike together, and afterwards learn to drive it.





# **Bett Design Award**

"Infento brings STEM learning to life in a truly unique way!

Our jury is really impressed with the idea of a team coming together to build awesome life-sized vehicles with just one Kit.

It really is an empowering experience for students to build their own life-size electric go-kart, scooter or bike together and then to actually ride it afterwards!"



#### **Red Dot Award**

"The Kits are remarkable: it makes children do something useful together which is fun and develops essential skills. The modular parts offer countless possibilities and have an important function: they spark children's creativity and give them technical skills."



# German Design Award

"This comprehensive kit allows children to create their own functional and roadworthy vehicles, with virtually no limits to the imagination. The technical look and feel appeals both to the young and the old, plus it encourages real social contact in an era when games and communication are increasingly taking place on a digital level."



## **Buster**

Our good friend **Jake (10)** built the Buster.

## Bender

**Jayden (11)** likes action and chose the Bender.



# In the media

Infento's innovative concept was embraced by the international media. The unique idea was praised for its versatility and educational value.

#### BBC

In the world of convertible, growing locomotion, the most drool worthy must be Infant. From trike to bike and beyond: the transforming-transport trend reaches its zenith with the multi-talented Infento.

"

#### **Forbes**

Infento is inspiring the next generation of makers and innovators to make the world a better place.

"

# Treehugger

The emphasis here is on a modular design that promotes ease of use and assembly, and do-it-yourself goodness that is sure to inspire curious youngsters to tinker and make more of their own stuff.

"

# De Telegraaf

BUSINESS INSIDER

# WIRED

**Forbes** 

deVolkskrant



NOS

GEARJUNKIE



Stuff



Treehugger

Outside WANT

INSIDEH(3)K designboom









**GEARHUNGRY** 

**HICONSUMPTION** 

DER SPIEGEL





Make:

**NEW ATLAS BIKERUMOR** 

# **About Infento**

The Dutch company Infento was founded in 2010 by Sander Letema and Spencer Rotting. The idea for life-size modular vehicles arose when Spencer worked as a volunteer at youth organizations. He and the kids built cool soapboxes to have races with.

Spencer was amazed by the resourcefulness the kids showed and dreamed how cool it would be if they had multifunctional parts available. Like LEGO and Meccano but then life-size! His brother in law Sander was equally intrigued by the idea and started designing. After a long period of drawing, testing and developing, the first modular construction kit for schools was the result!

#### INTERNATIONAL BREAKTHROUGH

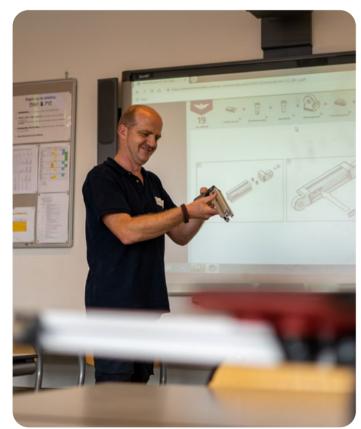
The big international breakthrough came in 2015. Infento launched a consumer Kit on Kickstarter (world's largest crowdfunding platform) that year. This became one of the biggest educational campaigns worldwide and Infento was covered by media like the BBC, Wired, Forbes and Der Spiegel. The Infento video went viral on social media and has been watched by 25 million people. In 2018 Infento ran another Kickstarter campaign that was so successful, that it was awarded the most heavily funded STEM project the crowdfunding platform had all

Infento is a quickly growing company. Our team now consists of 25 creative Infentors. We design and produce all the construction Kits in our own factory in Amsterdam. We are very proud our Kits are sold worldwide in over 50 countries. Our mission: "Raise a generation of children that has the skills to build a better future."



# **Wat teachers** are saying





"User friendly and accessible. Students can work autonomously and they are enthusiastic because it links perfectly into their world!"

#### - J. Weckhuysen

"When I was first introduced to the Infento Kits, I was impressed by the possibilities that they offered. These kits have been perfect for the hands-on applications that I needed. Students must follow the instructions of their projects on PDF's that we have downloaded on our laptops. The most impressive part about what this does for us is the interactive aspect of building full size models instead of small ones. They are very proud of their builds. Parts work well together, instructions are visual. I have bought several kits, and will continue to recommend them to my STEM colleagues."

## - Daley Toney

"Order process flawless, manuals clear and detailed, everything works as it should! The parts are strong and sturdy."

#### - J. Greiner









# **@infento**

Thousands of children all over the world enjoy building super cool Infento creations!

You can find examples and inspiration on our Facebook and Instagram.











# Do you want Infento at your school?

Contact our education team via +31 (0) 20 261 64 50 or send us an e-mail to: edu@infento.com

We look forward to hearing from you.

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