



The LEGO® Technic Idea Book

FANTASTIC CONTRAPTIONS

Yoshihito Isogawa



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LEGO® Inspiration for All Ages

The LEGO Technic Idea Book: Fantastic Contraptions

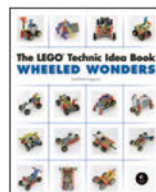
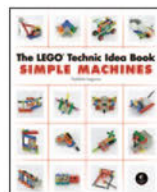
is a collection of hundreds of working examples of simple yet fascinating Technic models that you can build based on their pictures alone. Colors distinguish each part, showing you how the models are assembled. Each photo illustrates a different principle, concept, or mechanism that will inspire your own original creations.

The Technic models in *Fantastic Contraptions* include working catapults, crawling spiders, and bipedal walkers, as well as gadgets powered by fans, propellers, springs, magnets, and vibration. You'll even learn how to add lights, pneumatics, and solar panels to your own models.

This visual guide, the third in the three-volume *LEGO Technic Idea Book* series, is the brainchild of master builder Yoshihito Isogawa of Tokyo, Japan. Each title is filled with photos of Isogawa's unique models, all of which are designed to fire the imaginations of LEGO builders young and old.

Imagine. Create. Invent. Now, what will you build?

Visit <http://nostarch.com/technic/> to view videos of many of this book's projects and to join the discussion!



VOLUME 3

The LEGO® Technic Idea Book
FANTASTIC CONTRAPTIONS

Yoshihito Isogawa



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*This book is full of little seeds for ideas.
It is you who will cultivate those seeds
so they grow into wonderful masterpieces.*

Yoshihito Isogawa

Contents

Introduction xi

Note to Parents xii

Where to Find Parts xii

Part 1



4

Four-Legged Walkers

A spider 4

An ant 4

A dog 6

A dynamic walker 8

A smooth walker with big feet 10



12

Six-Legged Walkers

A six-legged walker 12

An insect-like creature 14



16

Two-Legged Walkers

A simple walker 16

Chicken legs 17

A walker with square legs and one motor 18

A walker that shifts its center of gravity 20

Part 2



24

Using Wind

A simple electric fan 24

A propeller that creates wind 24

A hand-cranked fan 24

A black electric fan 26

Increasing rotational speed nine-fold (3×3)	26
Increasing rotational speed twenty-seven-fold ($3 \times 3 \times 3$) . . .	27
A wind-powered car	28
Gentle lifting power	30
A big electric fan	32
An electric fan that moves up and down	34
An oscillating electric fan	36



38

Using Weights

Making your own weights	38
Pulley-powered cars	38
A car that moves as a weight descends	40
An old mechanical clock	42
A pendulum-powered clock	44



46

Movement Through Vibration

Vibration causes motion	46
Vibrating on shafts	48
A vibrating sled	50
A larger spinning mass means more vibration	52
Directing vibrational energy with wheels	54



56

Using Springs

A rocket launcher	56
A ballista	58
A Ping-Pong ball pitching machine	60
An electric Ping-Pong ball pitching machine	62
A pullback windup car	64

Part 3



68

Using Magnets

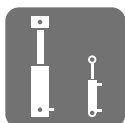
Various magnet bricks	68
A seesaw	68
A clutch	70
A dancing minifig	70
Magnetic vehicle suspension	72



74

Using Lights

Light bricks	74
Switching six colors of light	76
Electric plates	77
Fiber-optic art	78
Multicolored light	79
A lighthouse	80
A pop-up sports car headlight	81
Disco lights	82
A Morse code transmitter	84



86

Using Pneumatics

Pumps, cylinders, air tanks, and switches	86
Basic pneumatics	86
One end goes down, one end goes up	86
A pneumatic poking device	88
Creating rotational movement	89
A double-jointed arm	90
Moving the arm with a pneumatic cylinder	92
Using pneumatics with motors	93
Using a gear clutch to prevent damage when rotation stops forcibly	96
Using two pumps with one motor	98



100

Using Solar Panels

Solar panels	100
A solar-powered car	100
Making wind power	102

Part 4



106

Chairs and Tables

A folding chair and a height-adjustable table	106
A reclining chair and a turntable	108
Another folding chair	110
A beach lounge chair	112
An office chair	114



116

Off-Center Axis of Rotation

Placing the axle off center	116
A propeller that changes its rotational speed	116
The piston pumps when you turn the handle	116
The propeller only turns when two gears touch	117
A car that changes speed (and height)	118
A car with a traveling propeller	120
A propeller that changes its speed	122
Twin propellers	124
A wiggling car	126



128

Intermittent Movement

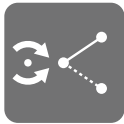
Mechanisms for intermittent movement	128
Cars that start and stop	130
A gear that looks like a flower	136
Using chains and tracks to start or stop rotation	138



140

Changeover Mechanisms

With a switch	140
With a lever	142
With a steering wheel	144
A four-way changeover with a steering wheel	146



148

Changeover by Switching a Motor's

Rotational Direction

Using a gear that shifts position	148
Spin the propeller or move forward	150
Using a worm gear	152
Move the arms or move forward	154
Using a differential gear	156
Spin the antenna or move forward	158



160

Mystery

A mechanically animated face	160
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INTRODUCTION

LEGO® Technic is designed to allow builders to create advanced models with moving parts, like those built with LEGO MINDSTORMS®. The *LEGO Technic Idea Book* series is a collection of unofficial LEGO building guides that offer hundreds of ideas and examples for building mechanisms with Technic. This volume focuses on using propellers, weights, magnets, and other parts to create all sorts of moving contraptions.

Building with LEGO

LEGO bricks aren't designed to fit in just one specific place, one particular way. Your imagination is your guide when building with LEGO, and you can put bricks and other LEGO pieces together in many ways to build an almost infinite number of creations. After building a model according to the instructions included with your set, try taking the model apart and using its pieces to create a variation of the model—or build a new one altogether. That's where the real world of LEGO begins.

My hope is that this book will give you some ideas to help you build your own original creations.

You Are the Creator

The LEGO Technic Idea Book: Fantastic Contraptions is full of photographs of mini-projects designed to show you various ways to build with LEGO bricks. Combine these projects, add decorations, and change them to create your own unique masterpieces.

The Use of Color

The examples in this book are made with parts of various colors to make it easier for you to see the individual brick shapes. Judicious use of color can add real beauty to your models, and I've tried, wherever possible, to use colors in an artistic way. You don't need to use the colors I've chosen in your models; use whichever colors you want to use to make your projects your own.

Where Are the Words?

Other than this brief introduction and the table of contents, this book has almost no words. Instead, you'll find a series of photos of increasingly complex models that are designed to demonstrate building techniques. This is an idea book; it's about imagination. Rather than tell you what to see or think when you look at each photograph, I encourage you to interpret each one in your own way. If I were to tell you what to see, you would see things through my eyes. My hope is that you will see my models through your own eyes and that your interpretations will lead you to invent your own LEGO creations.

Join the Discussion!

View videos of many of this book's models, ask questions, and share your own designs at <http://nostarch.com/technic/>.

NOTE TO PARENTS

Praise Your Child

When your child shows you their creations, take the time to really look at them together. Ask your child what they were focused on when building their model or what they wanted to accomplish. Offer your child sincere praise about their work and address aspects of the model that impress or surprise you. Talent is fostered by praise. Encourage and praise your child, and watch their talent shine through.

Express Your Feelings

Talk to your child about their creations. Ask them to show you how things move and how the parts fit together. Have them explain how they came up with their design. Your words can serve as hints or advice for your child, planting the seeds for new ideas.

Play with Your Child

Make things with your child. Offer ideas and build together. For a challenge, compete against each other to build different versions of a model. It can be inspiring for your child to see what an adult can do. When competing with your child, always encourage them and explain your creations so that they can learn from your experience.

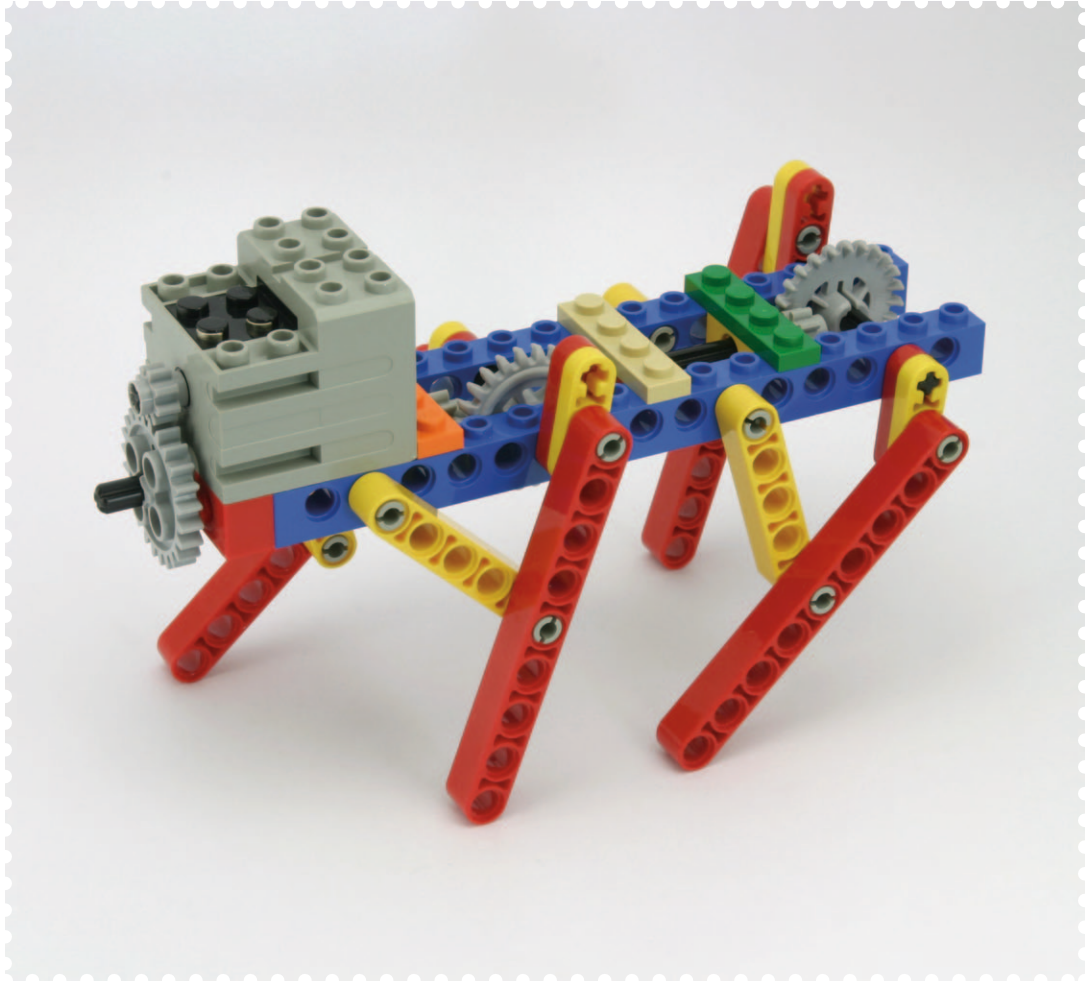
WHERE TO FIND PARTS

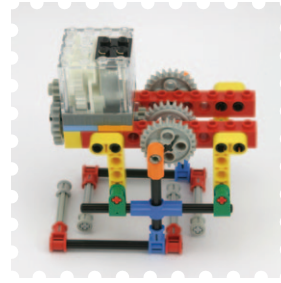
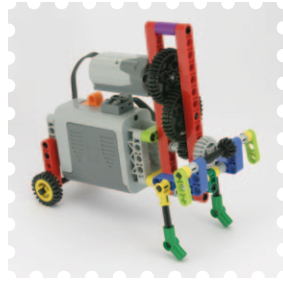
There are hundreds of models in The Lego Technic Idea Books, and you may not have all of the parts you need in order to build a particular model. If you are having trouble finding a specific piece, please visit [**http://nostarch.com/technic/**](http://nostarch.com/technic/) for a list of parts and answers to questions that you may have (the information on this page is dynamic so check back for changes).

The parts list includes various Technic pieces used in this series, from basic gears and pins to harder-to-find treads, springs, and electric motors. Each part is accompanied by a picture and a link to the BrickLink website, where you can easily browse for and order any part you desire. For the more unique parts, I have also included some purchasing tips as well as specific page references to where each part is used in each book.

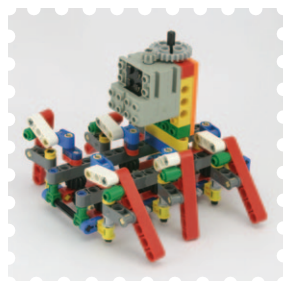
If you prefer to purchase a LEGO Technic set, please visit [**http://nostarch.com/technic/**](http://nostarch.com/technic/) for a recommended list on the parts list page. This list will change as the LEGO Group frequently replaces their Technic sets, so check back for updates.

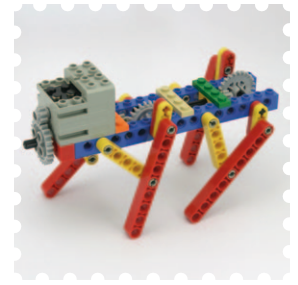
If you still cannot find a particular piece used in one of my models, try substituting your own parts. The models in this series are meant to inspire, and there is no one right way to build. I encourage you to explore and have fun.





PART 1





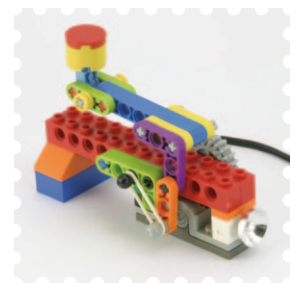
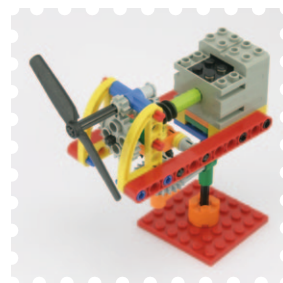
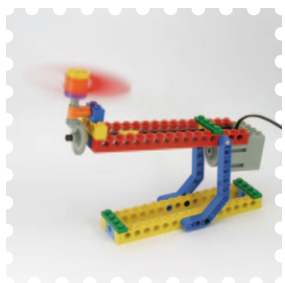
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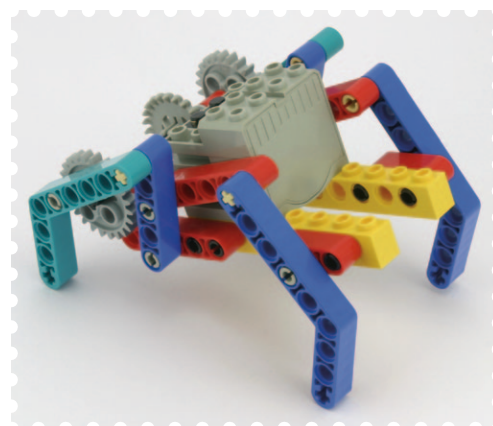
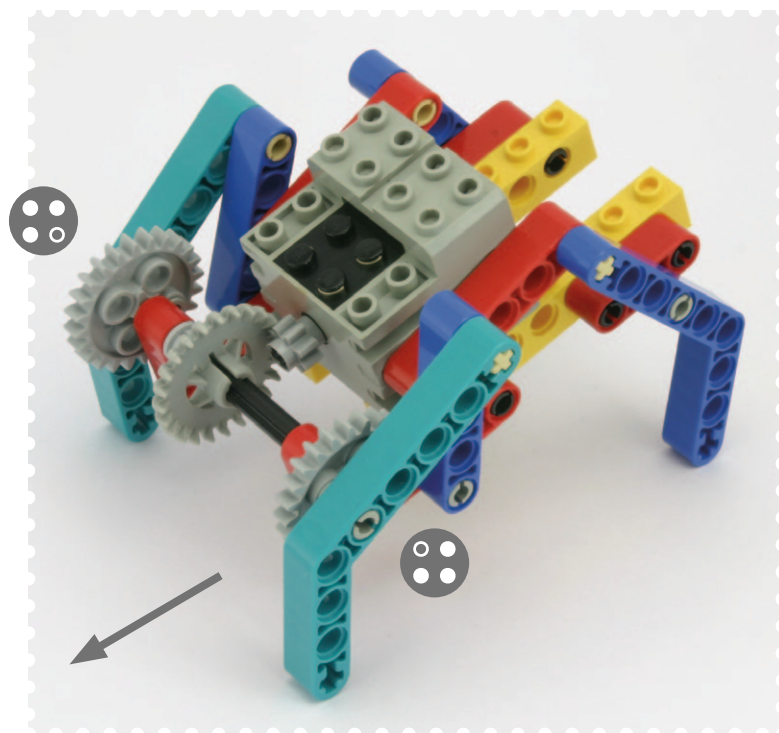
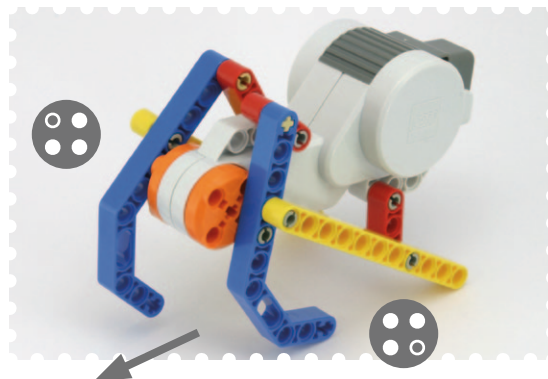
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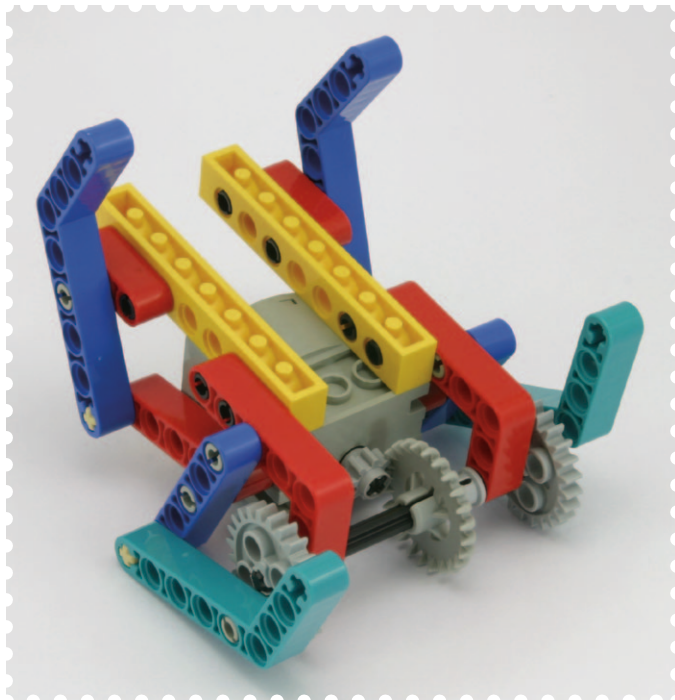
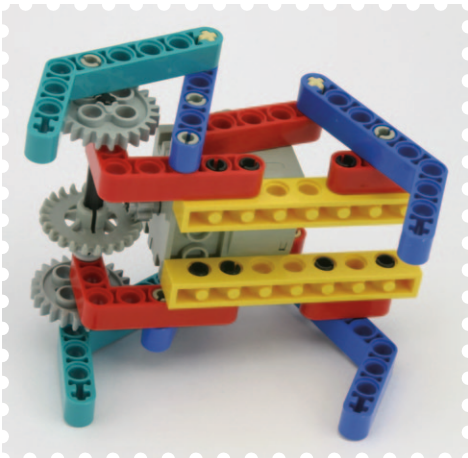
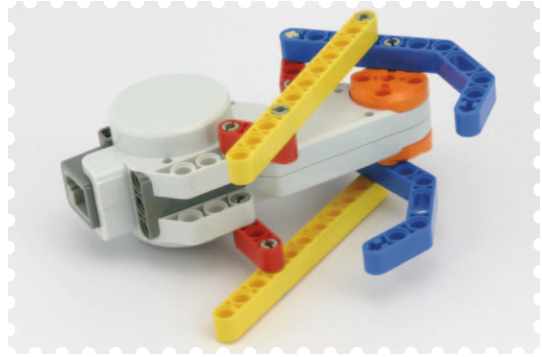
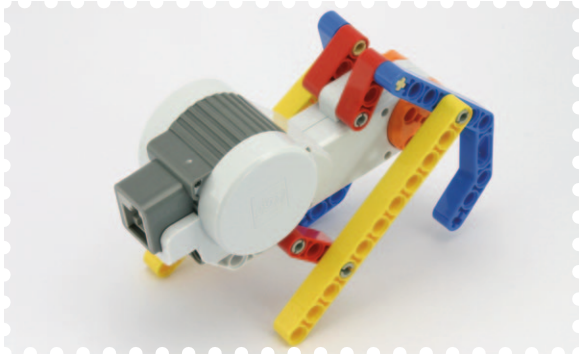


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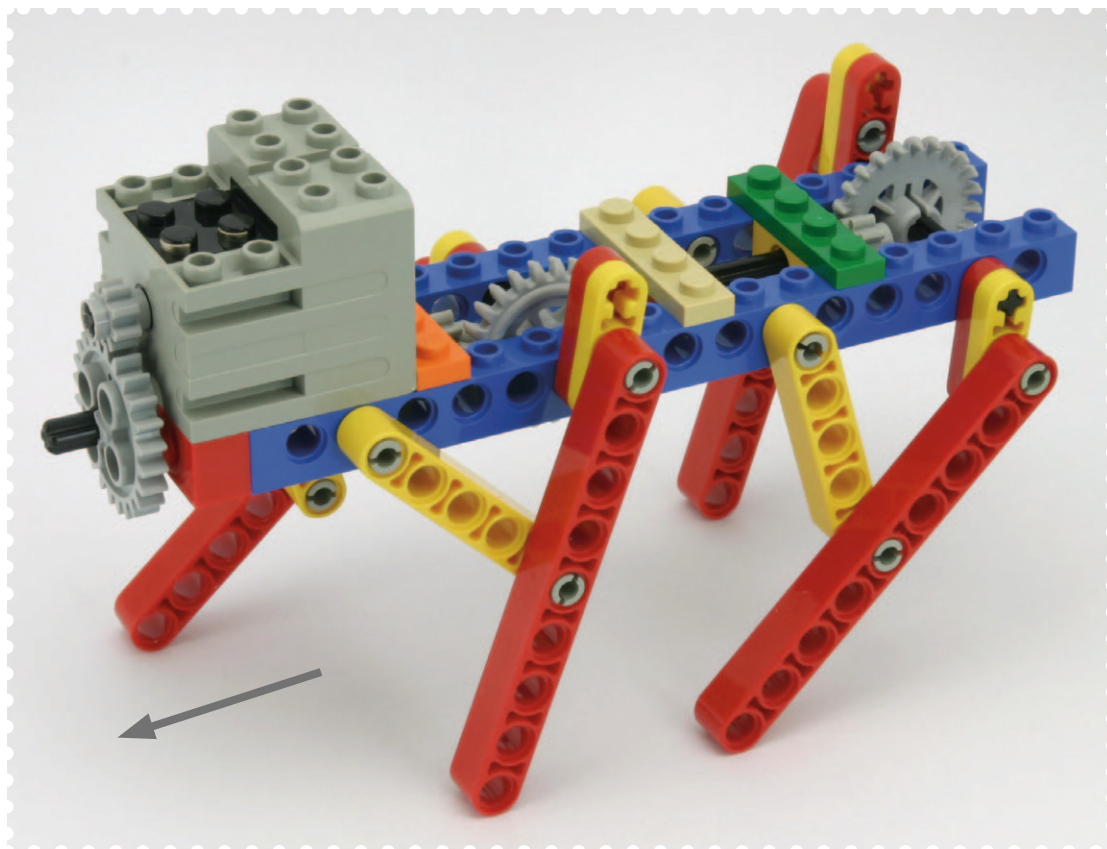


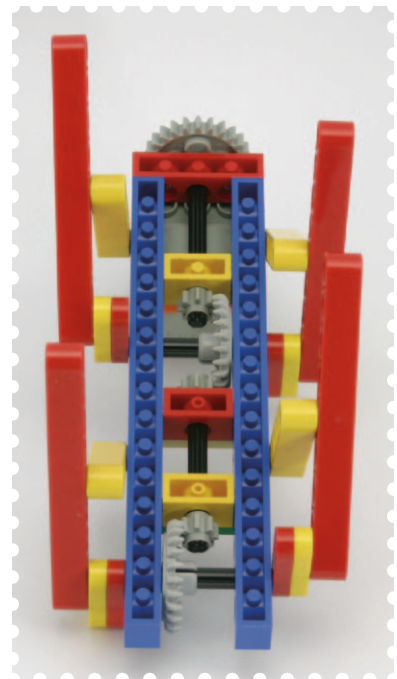
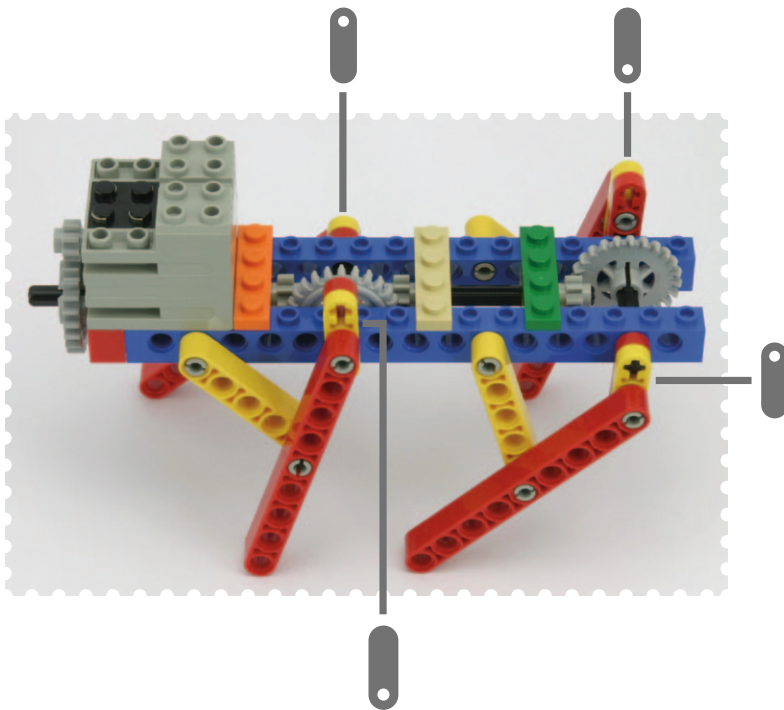
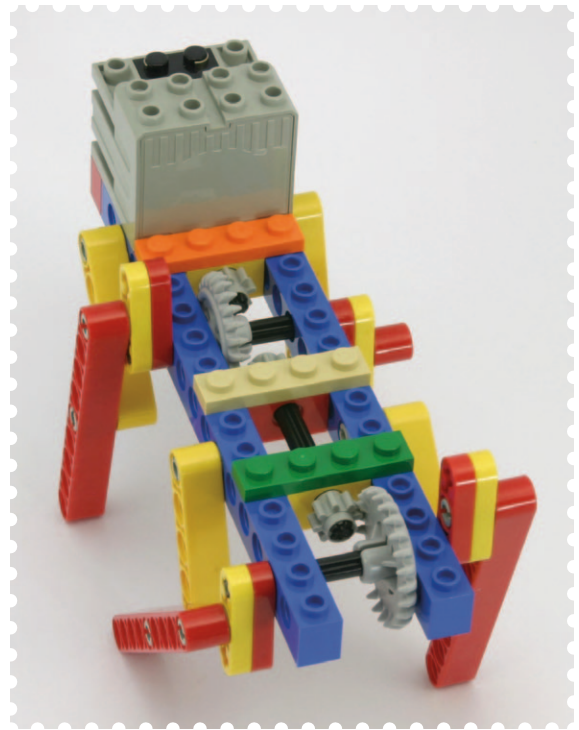
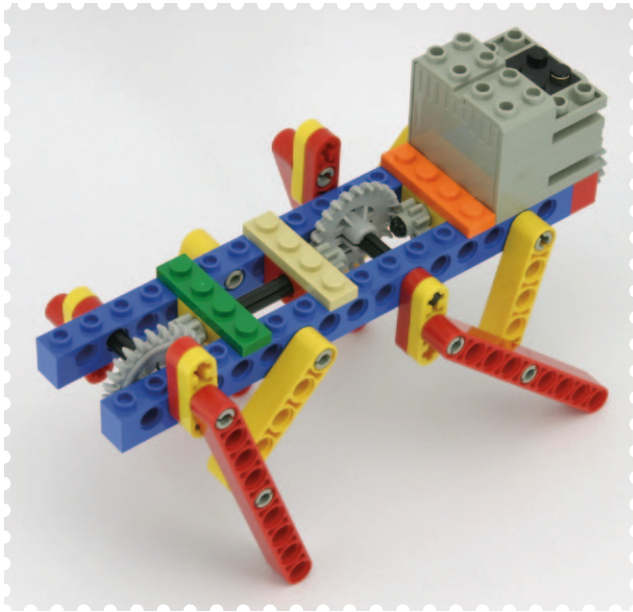
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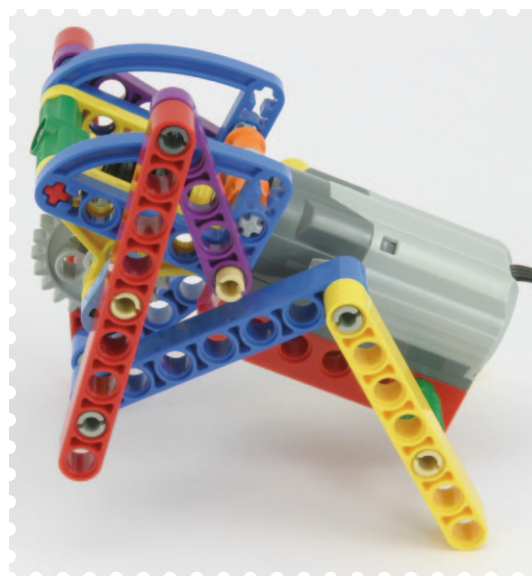
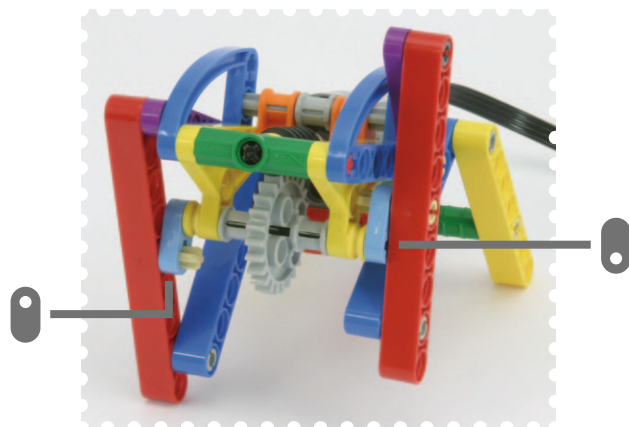
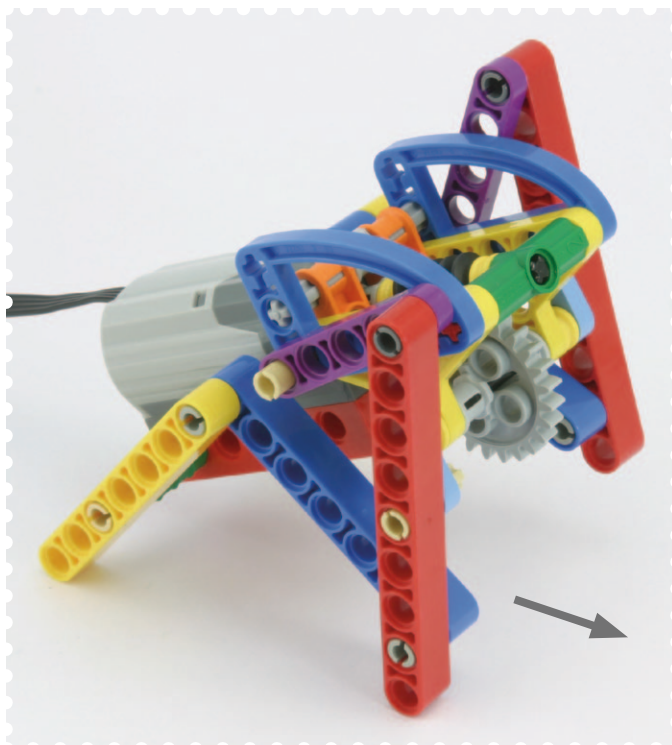


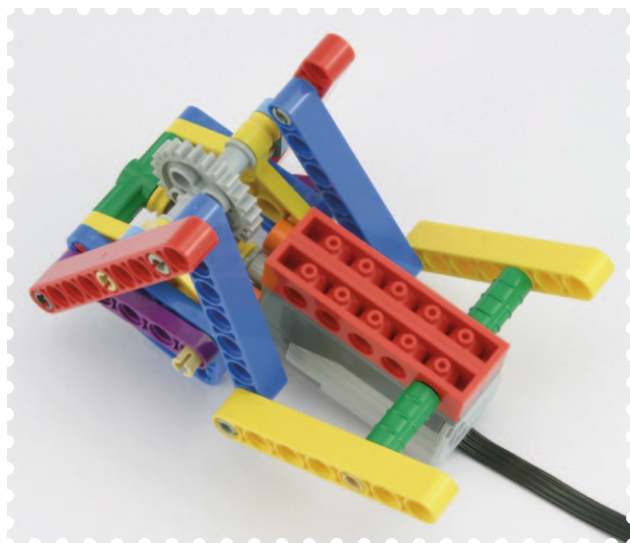
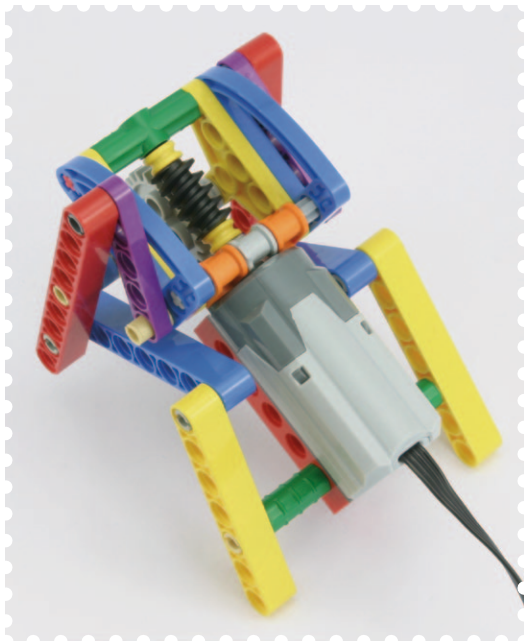
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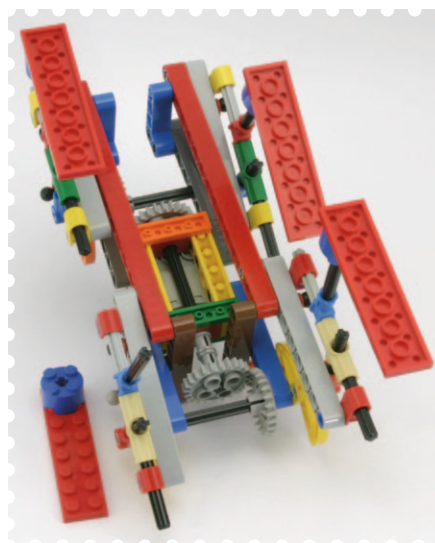
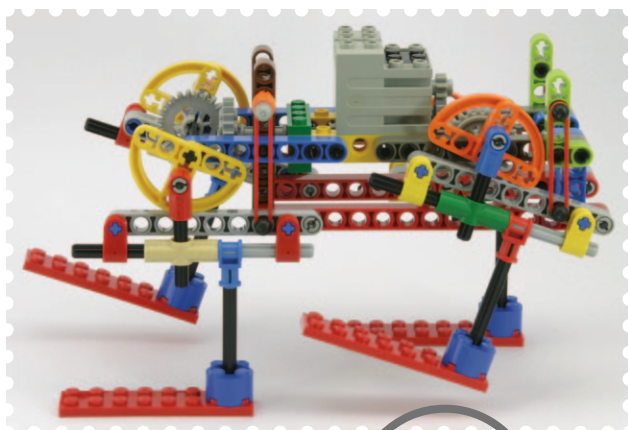


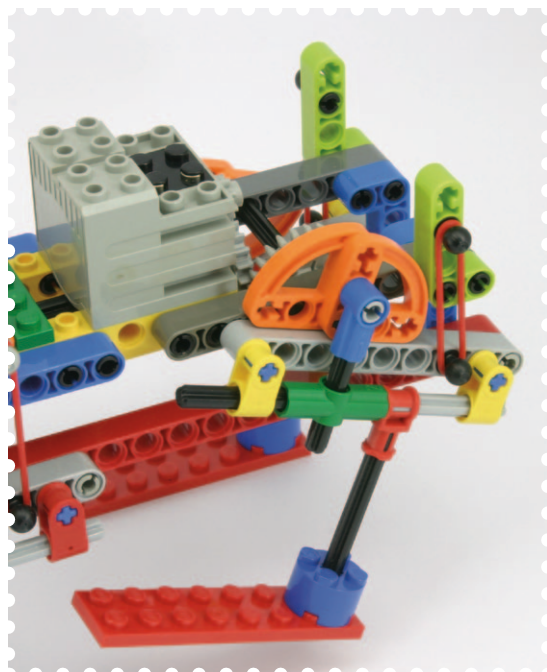
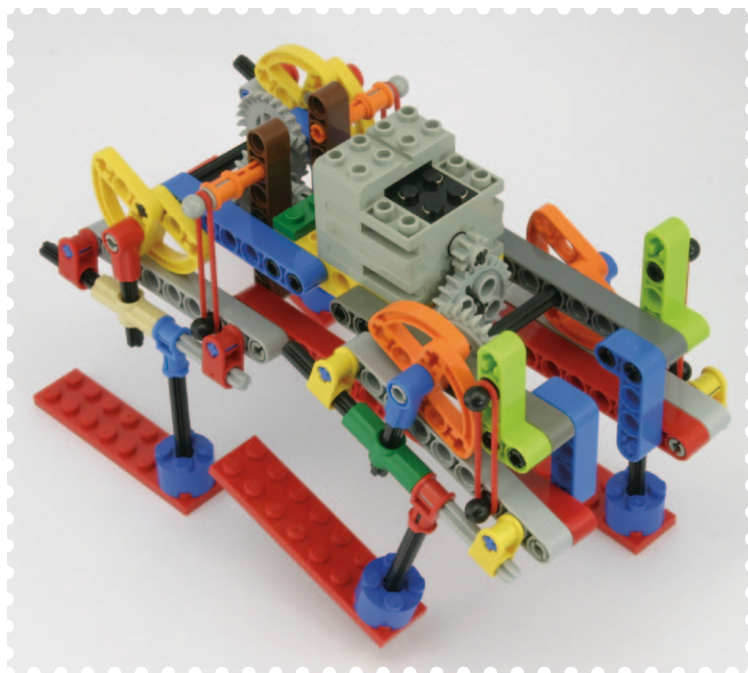
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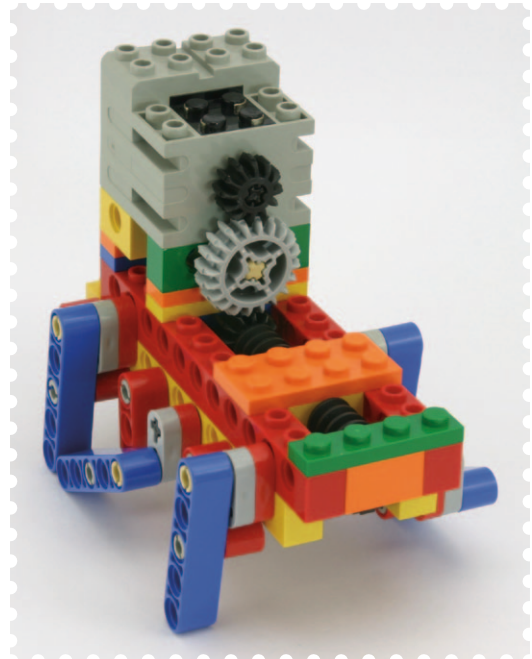
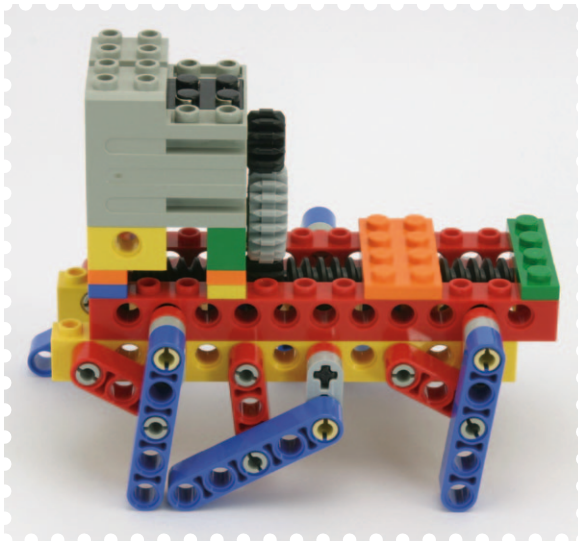
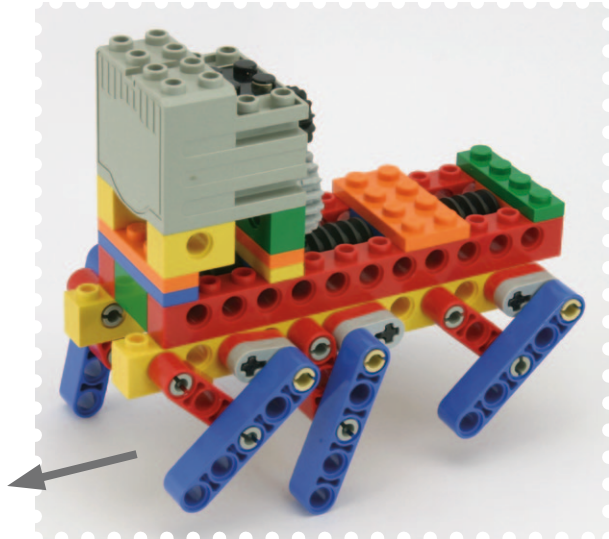


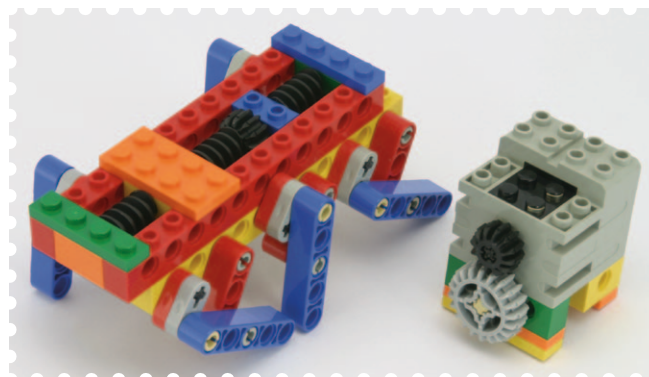
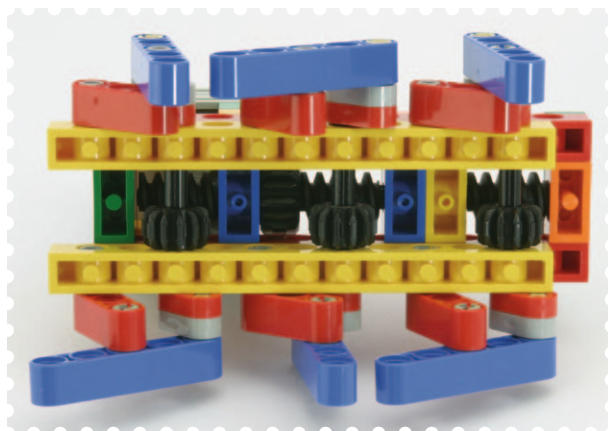
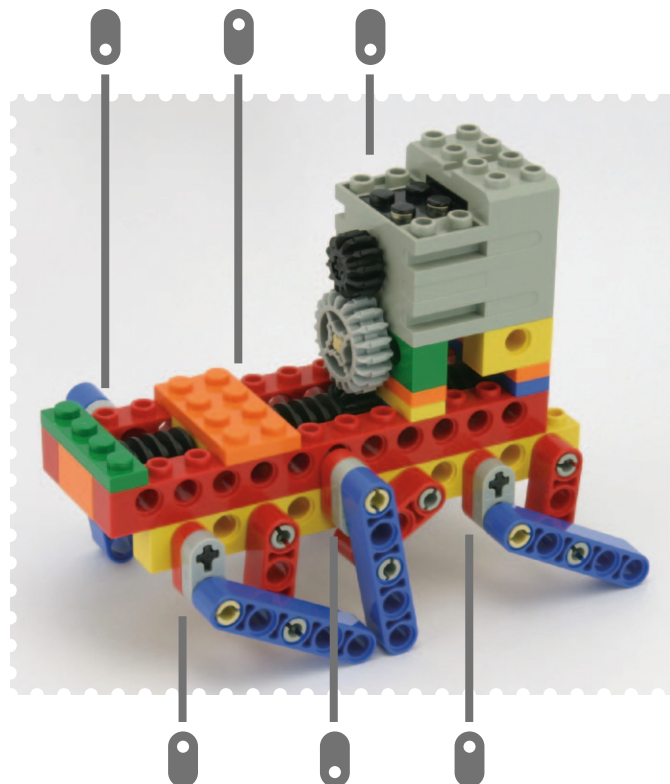
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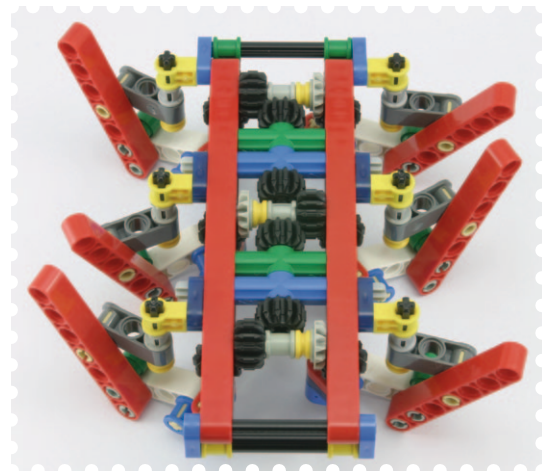
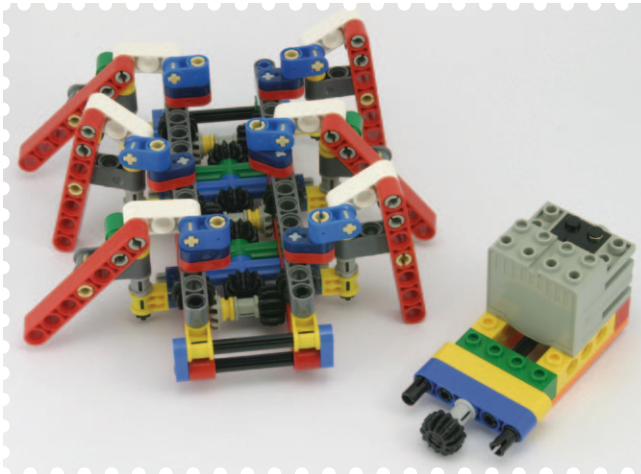
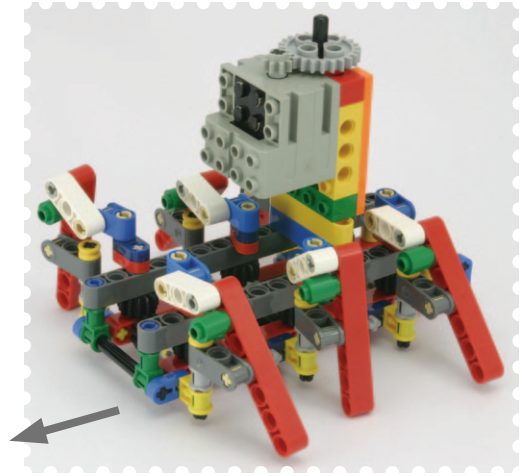


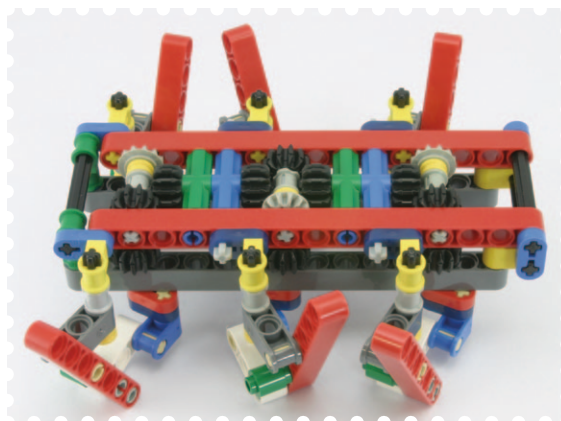
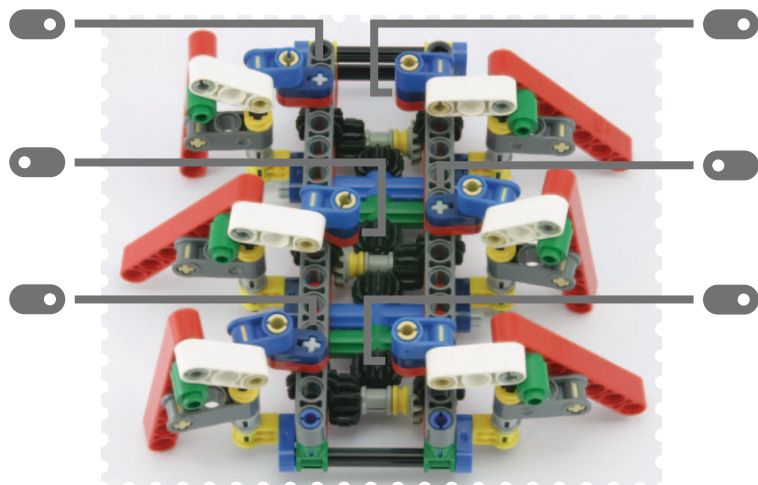
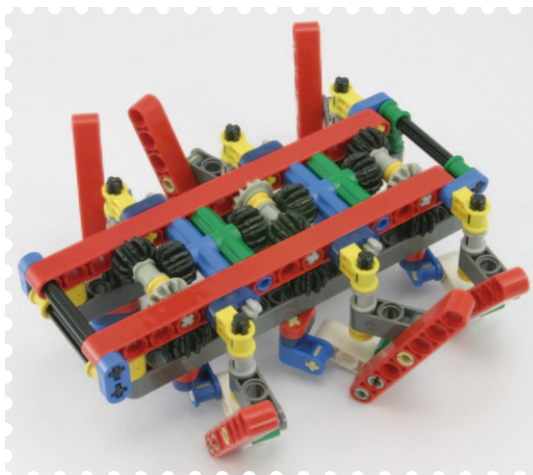
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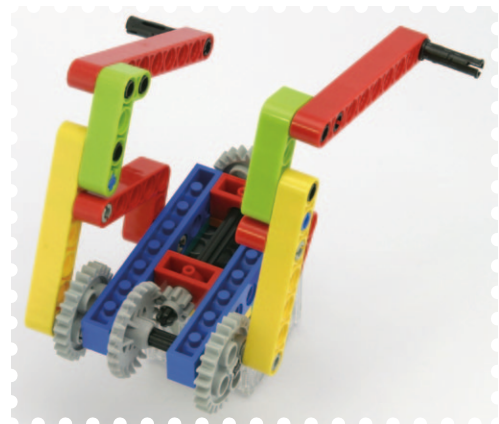
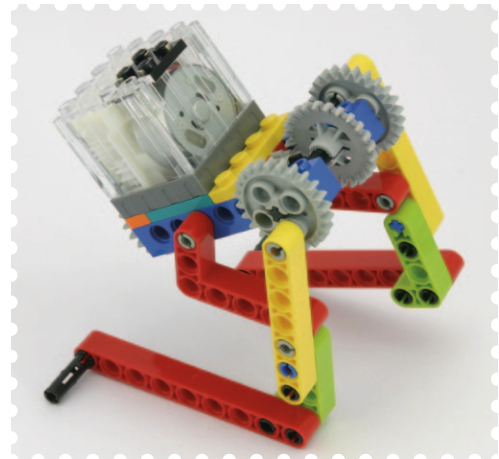
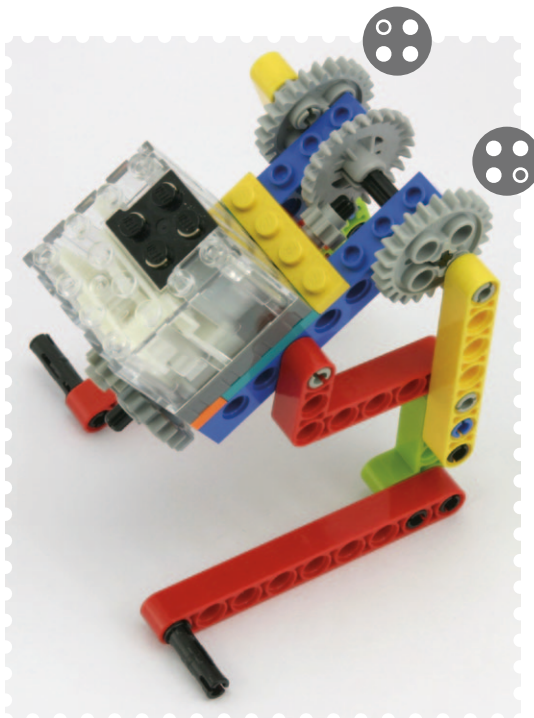
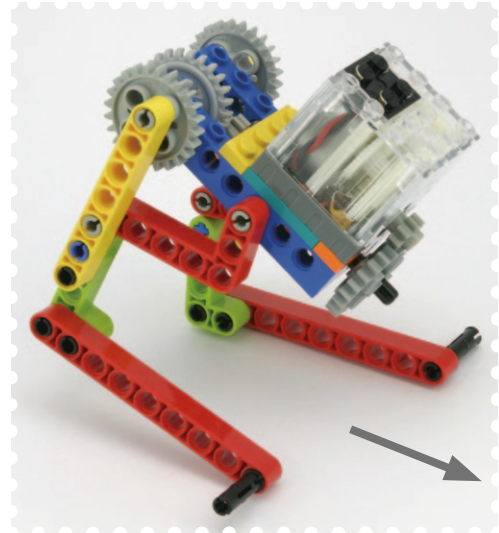


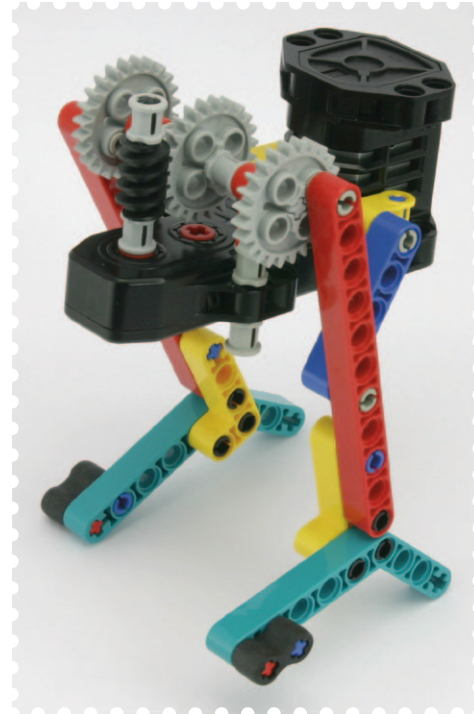
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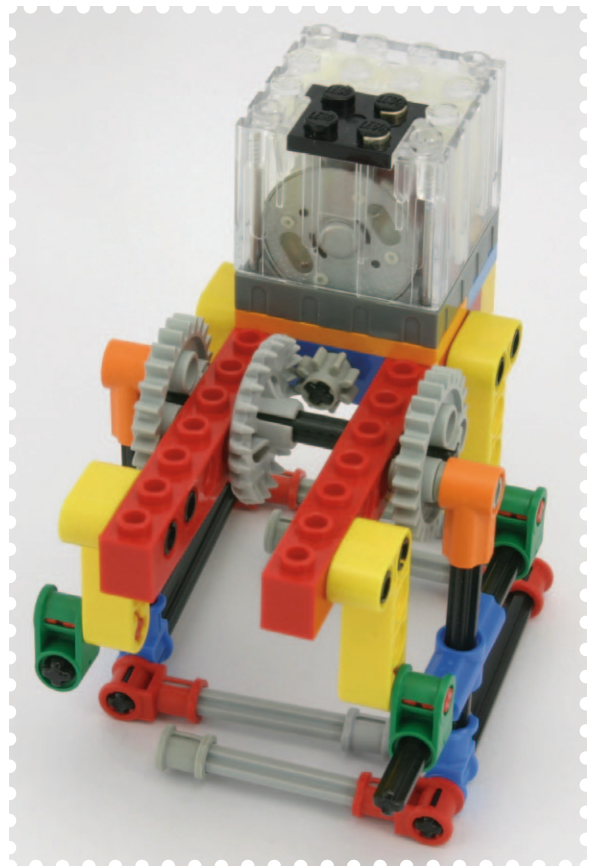
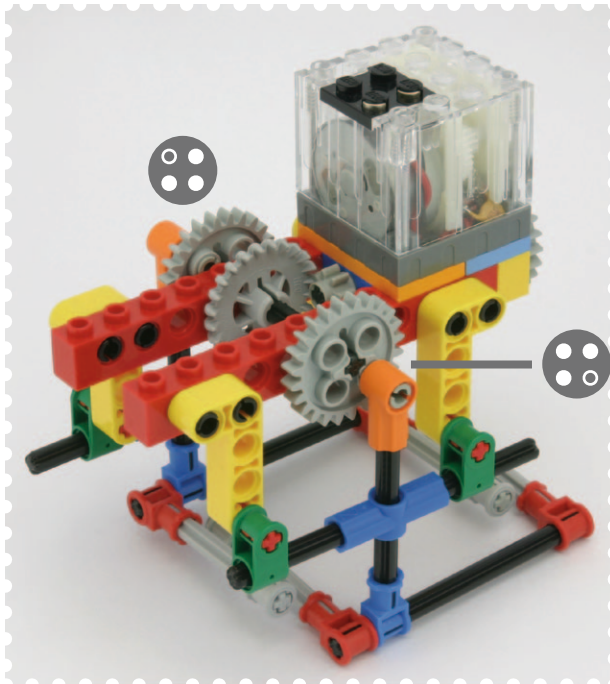
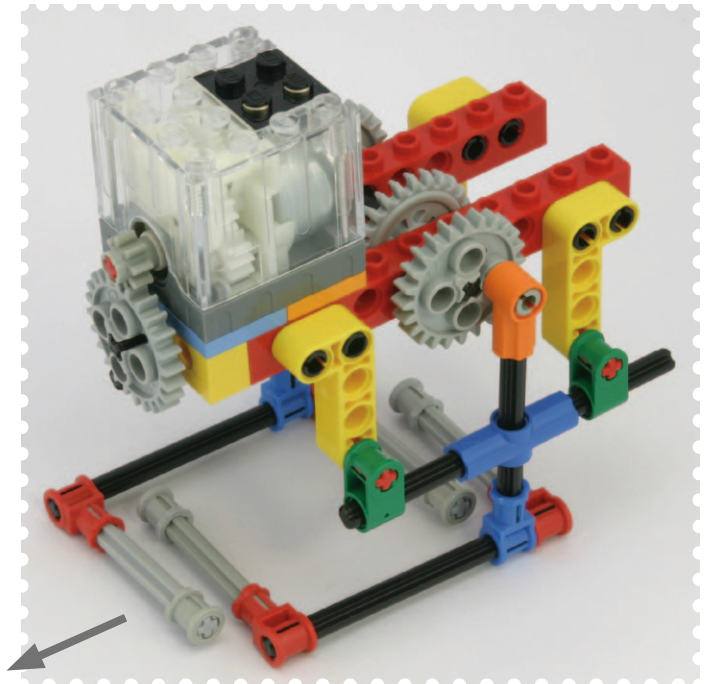


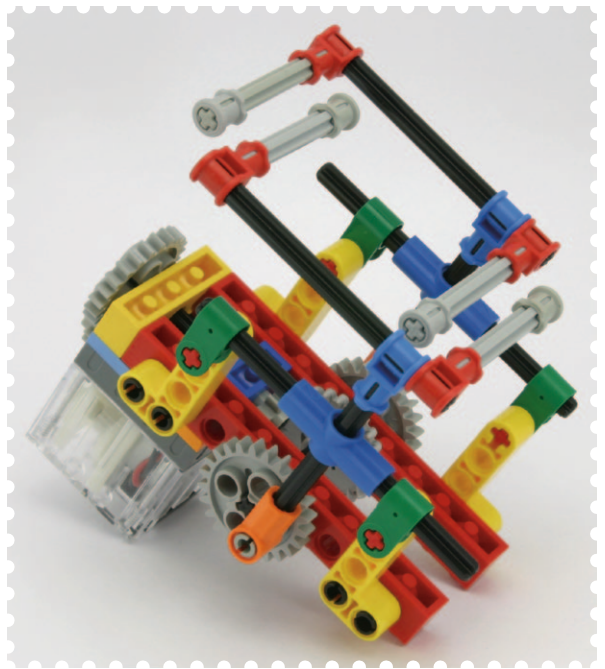
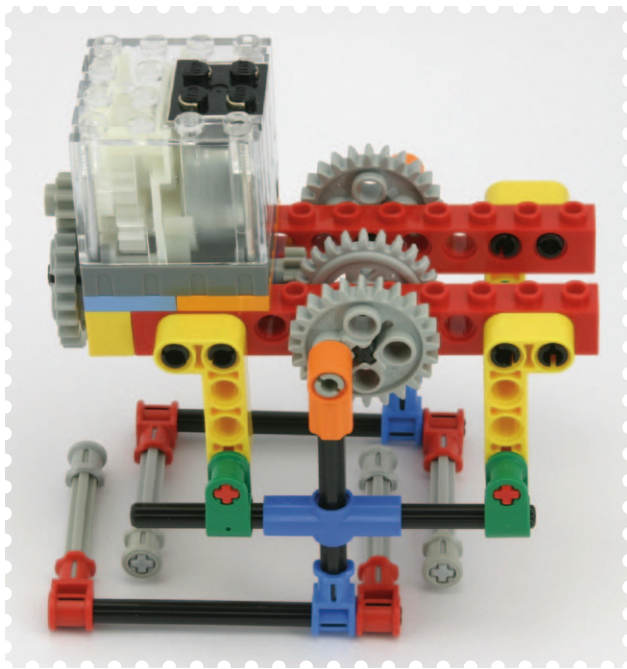
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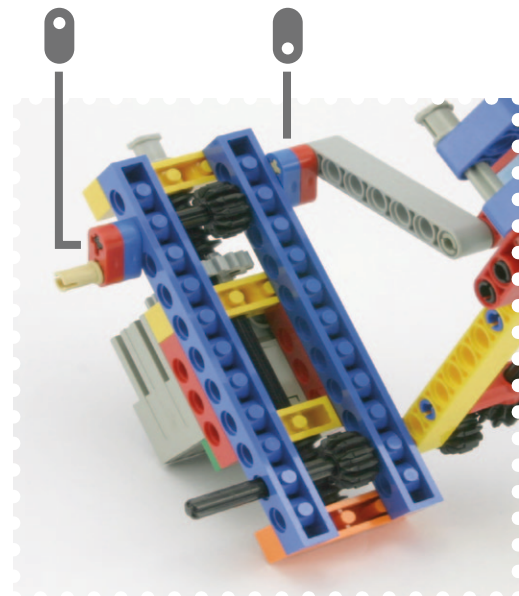
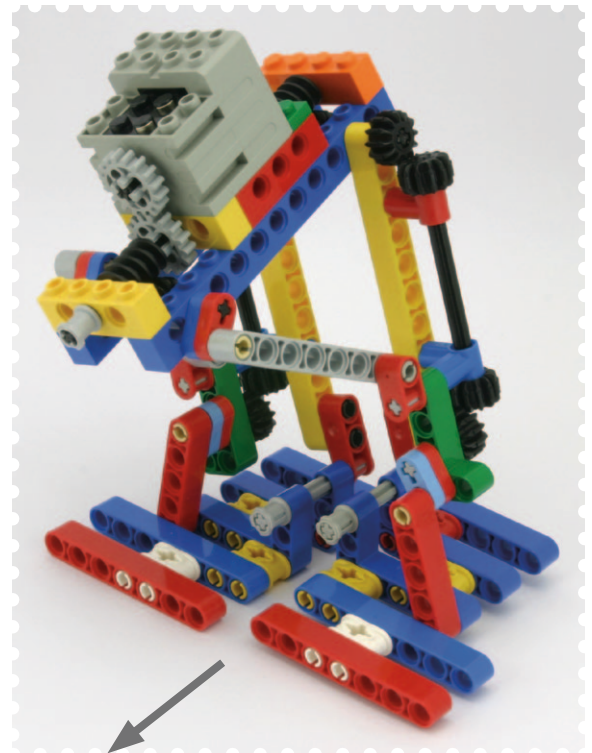


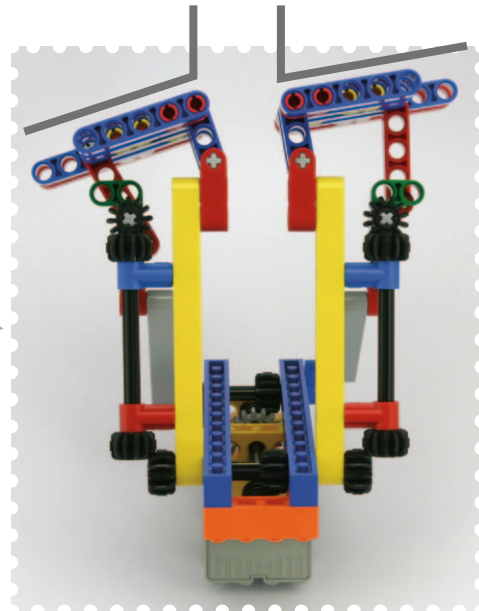
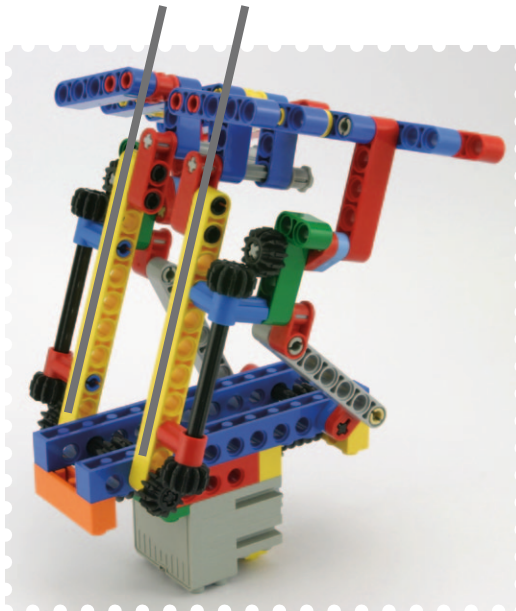
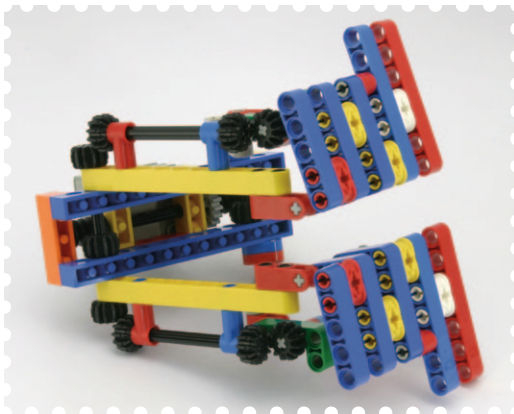
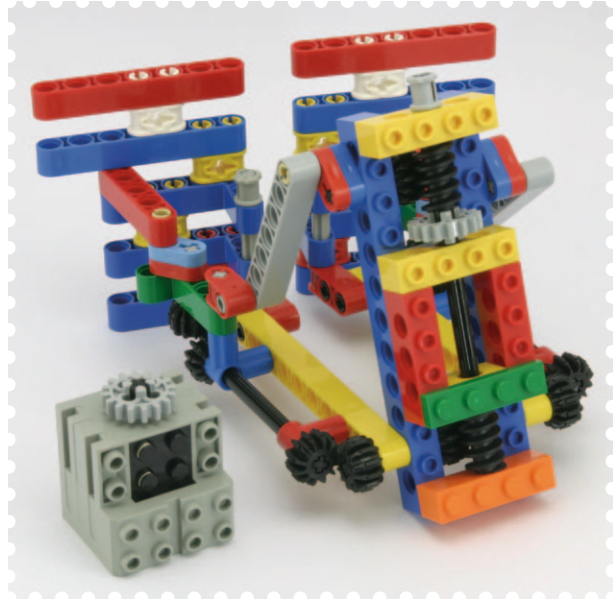
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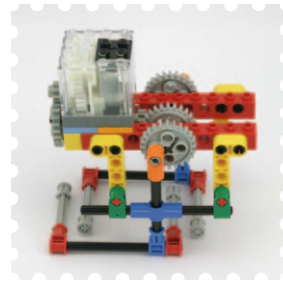
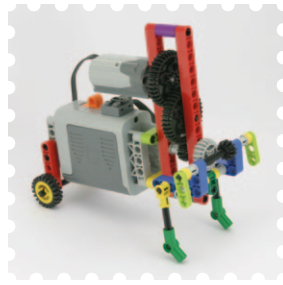




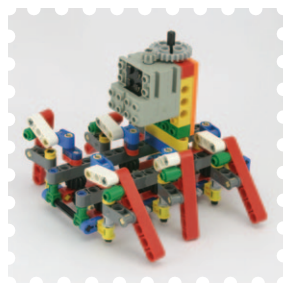
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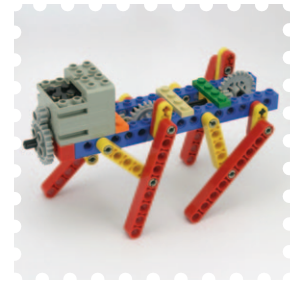
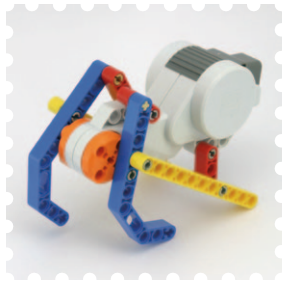






PART 2





24



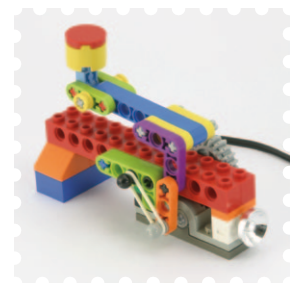
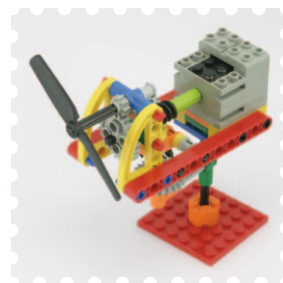
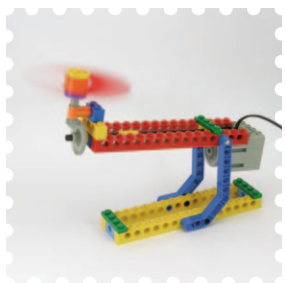
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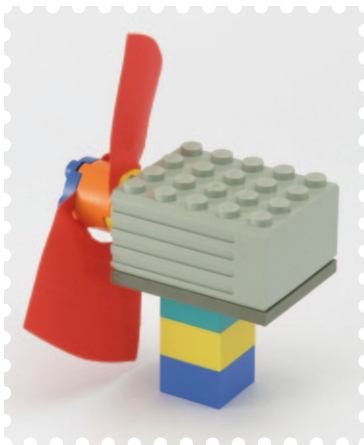
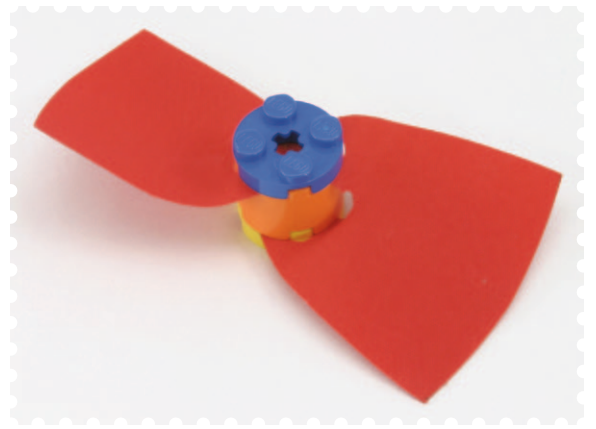
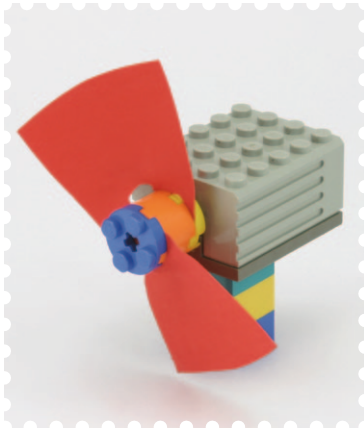
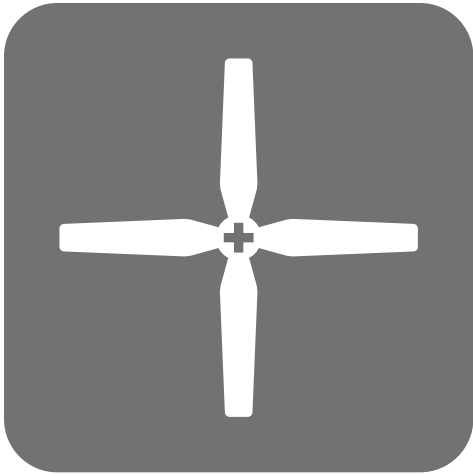


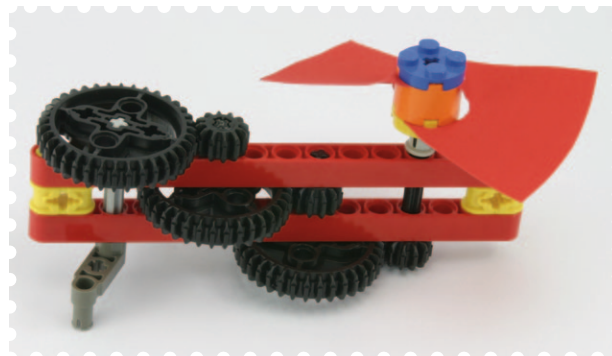
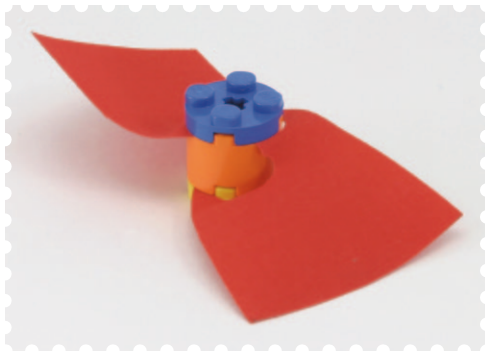
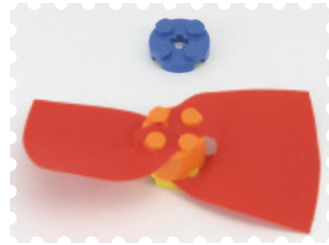
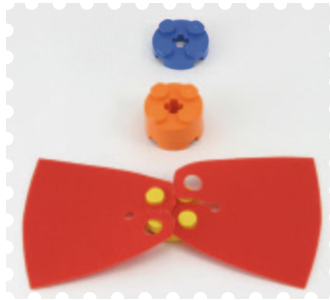
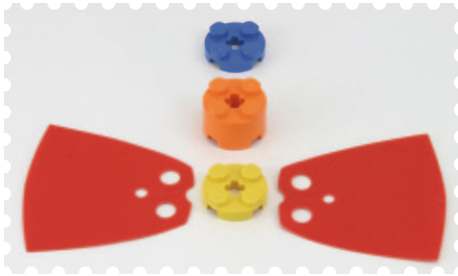
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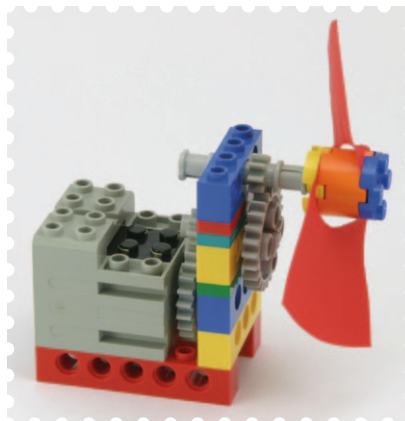
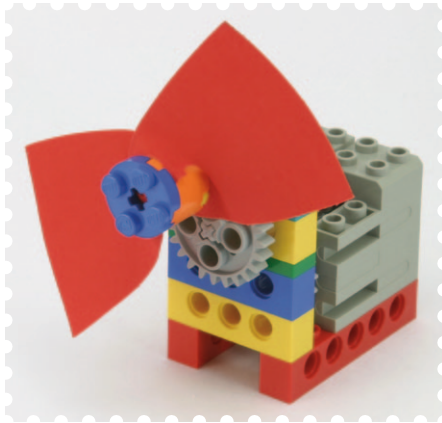
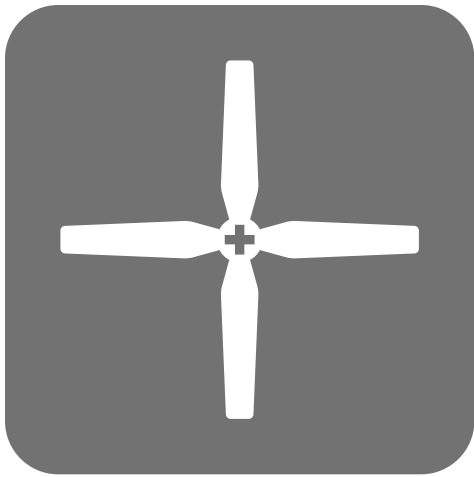


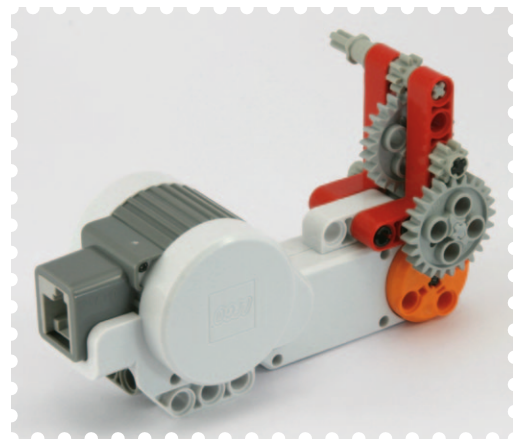
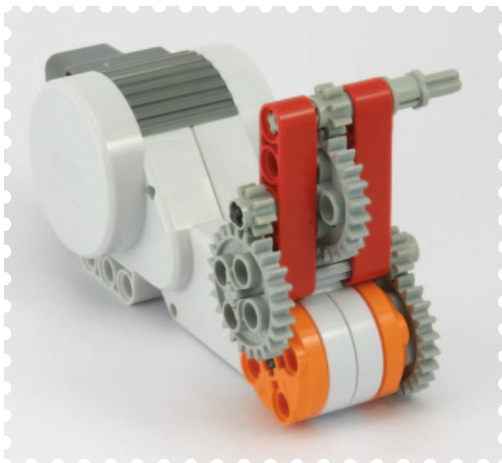
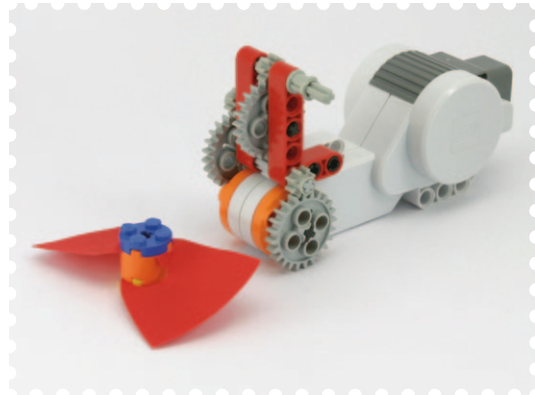
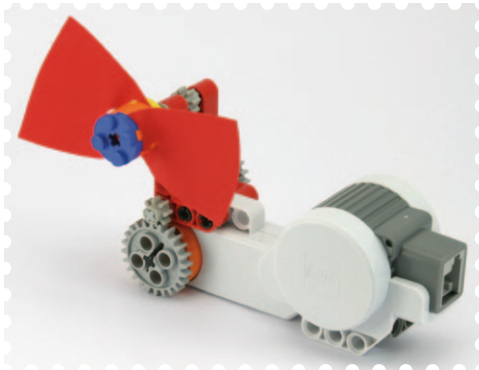
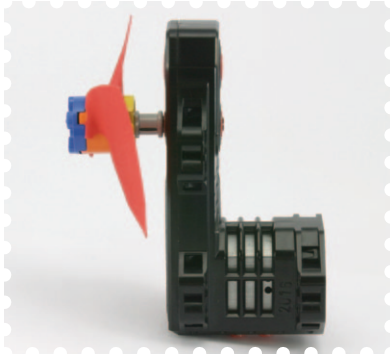
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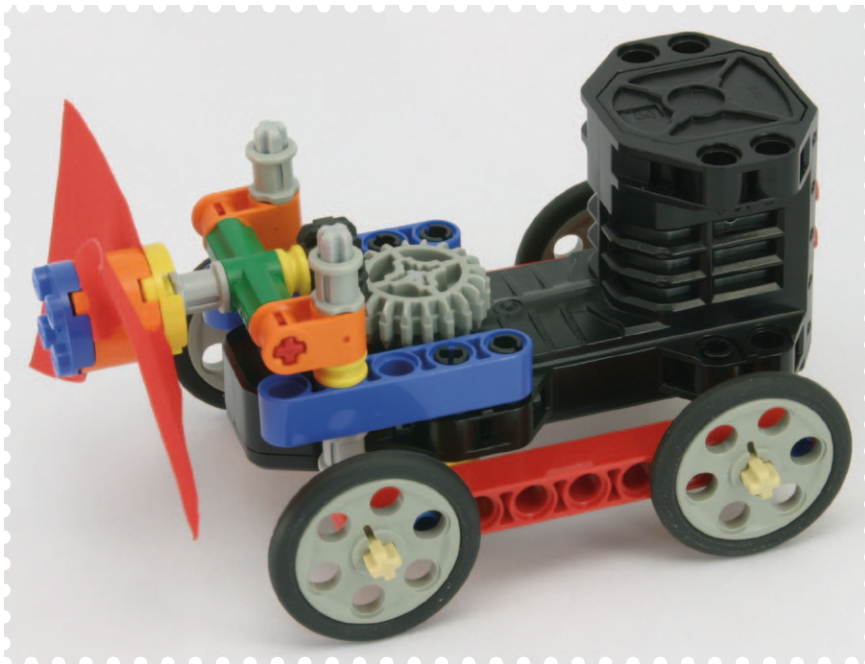
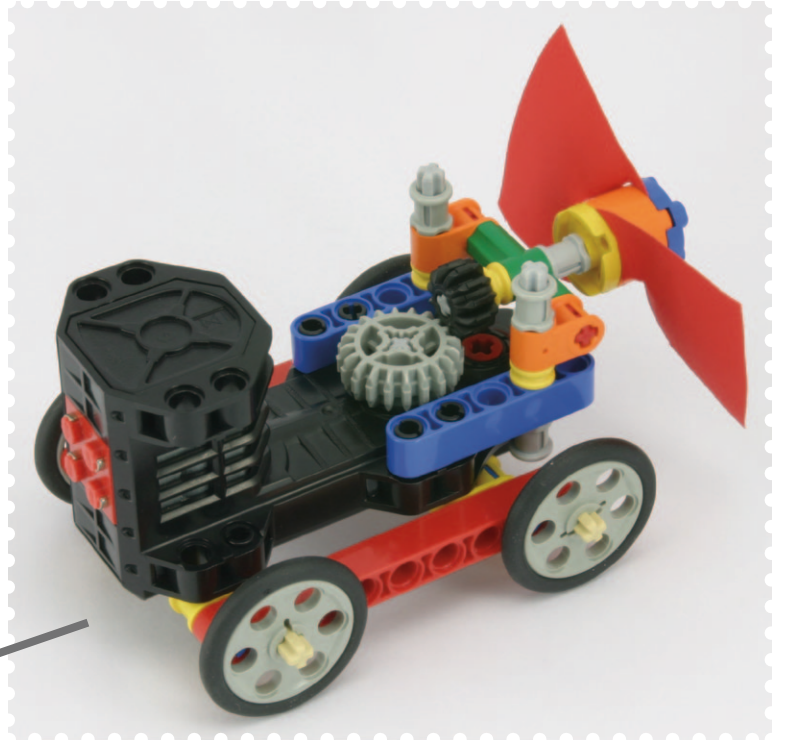
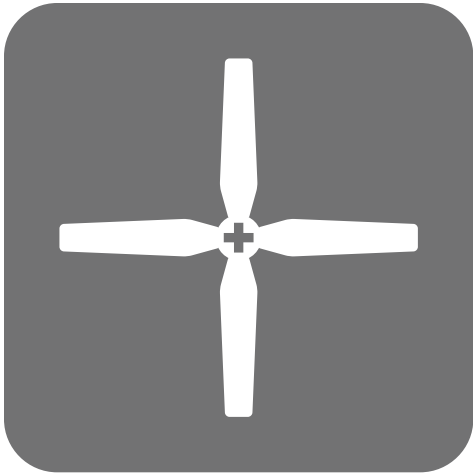


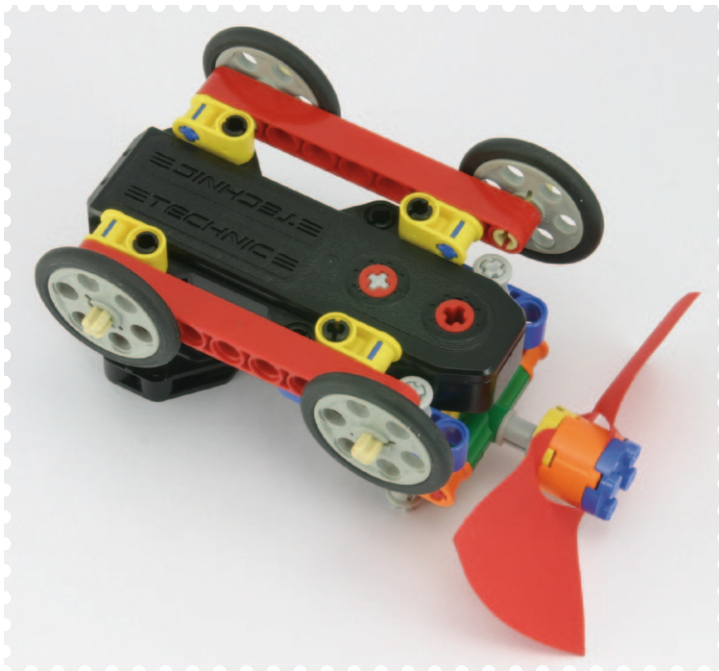
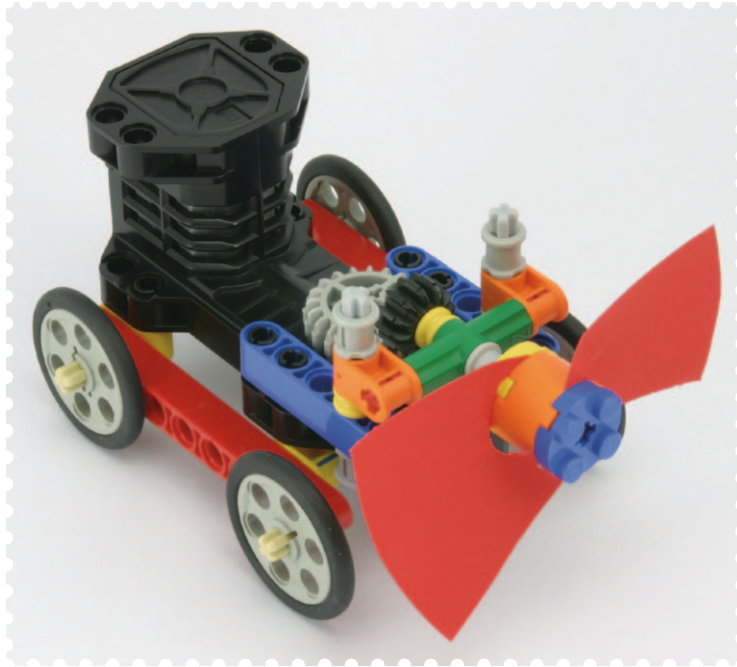


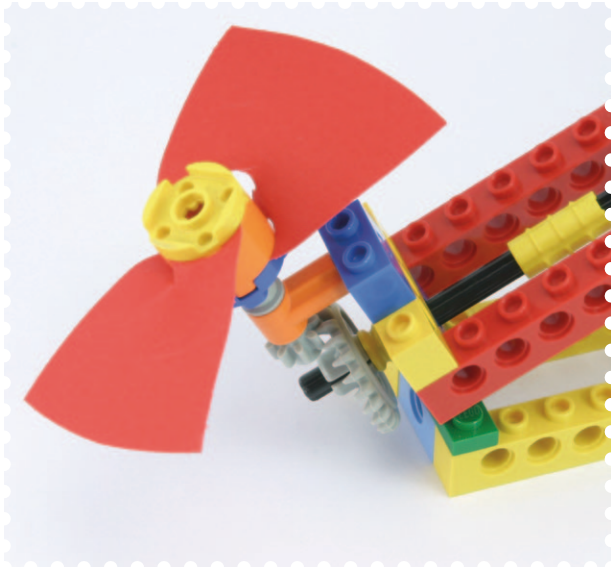
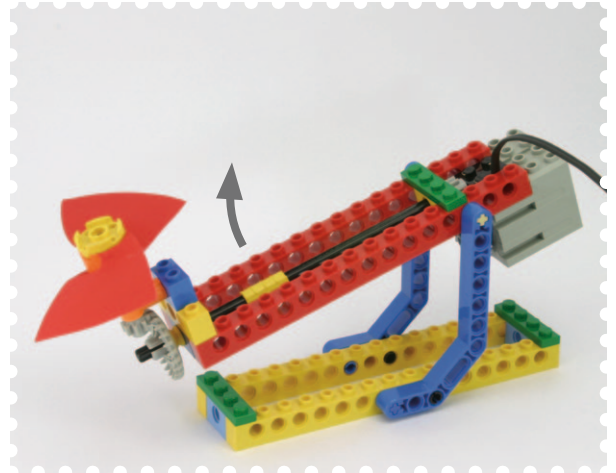
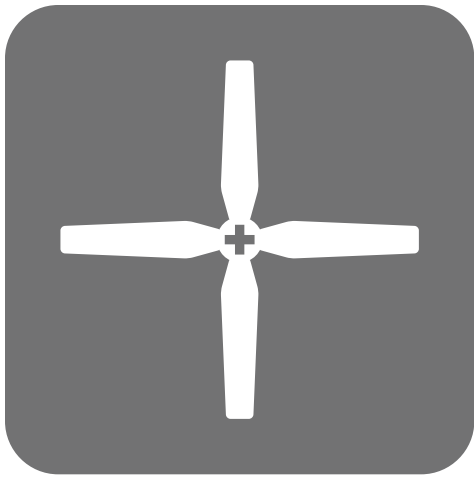


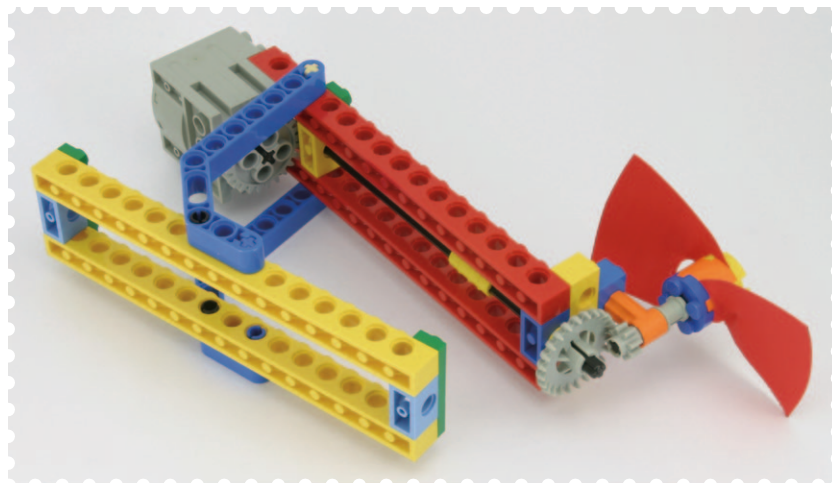
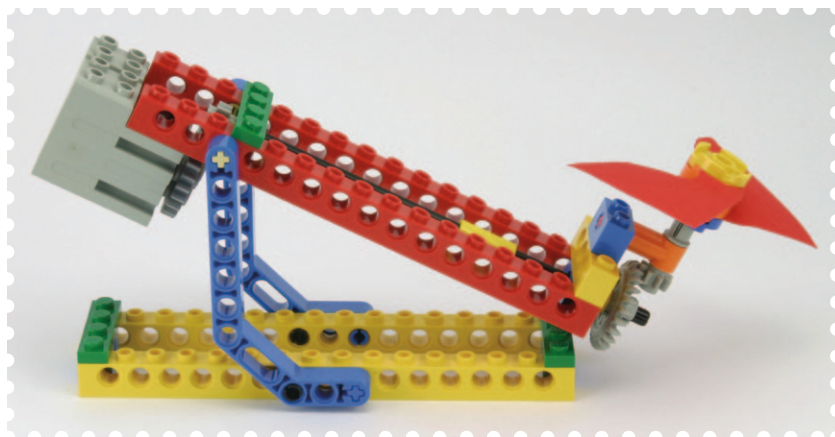
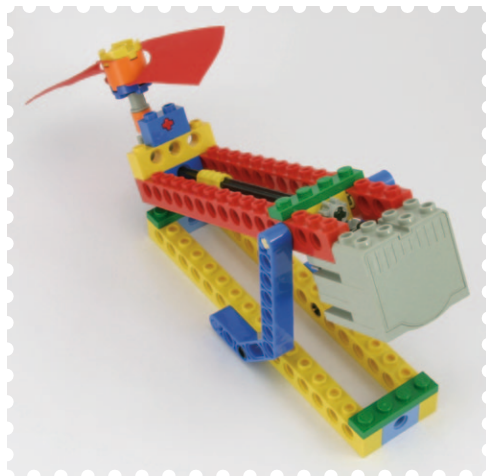
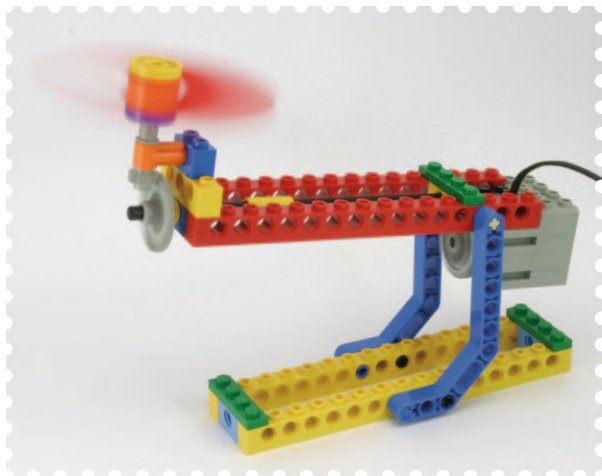


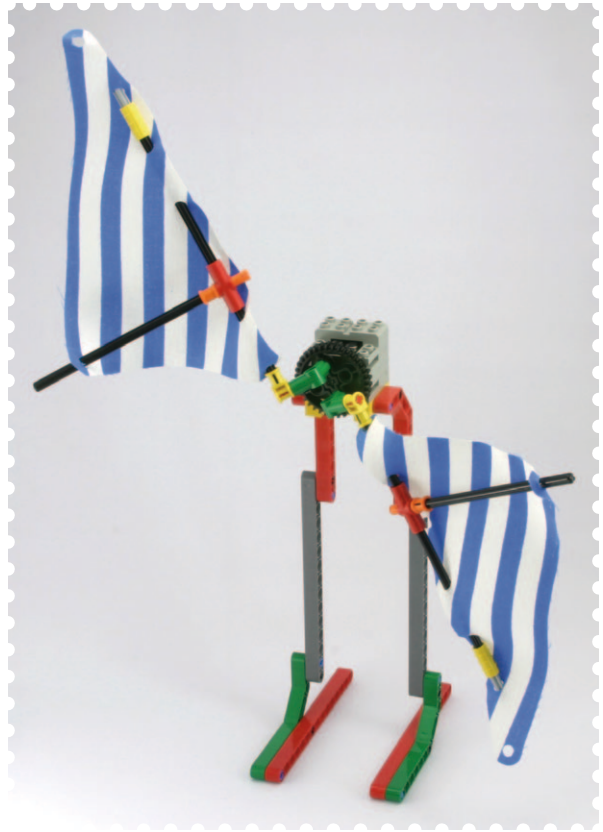
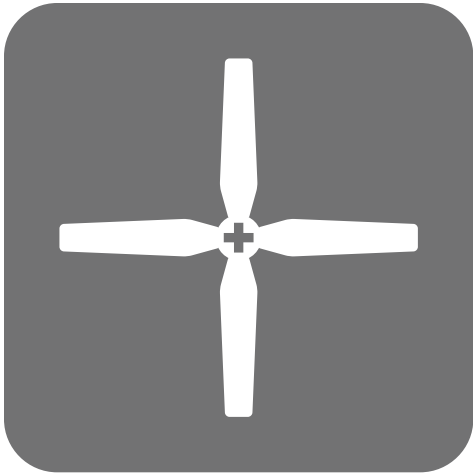


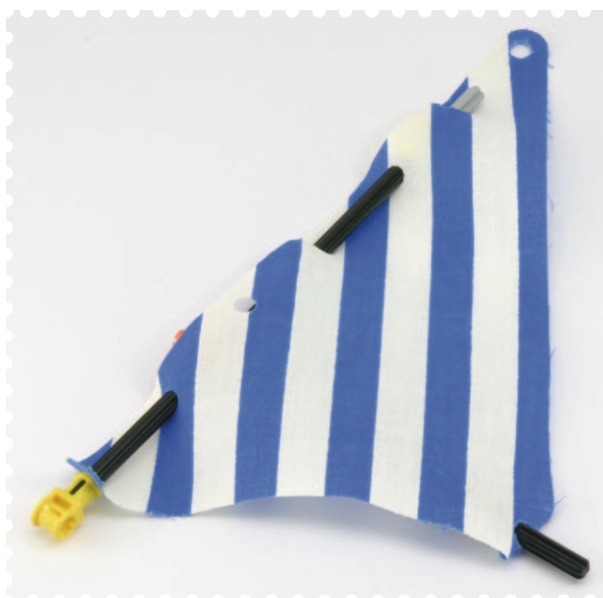
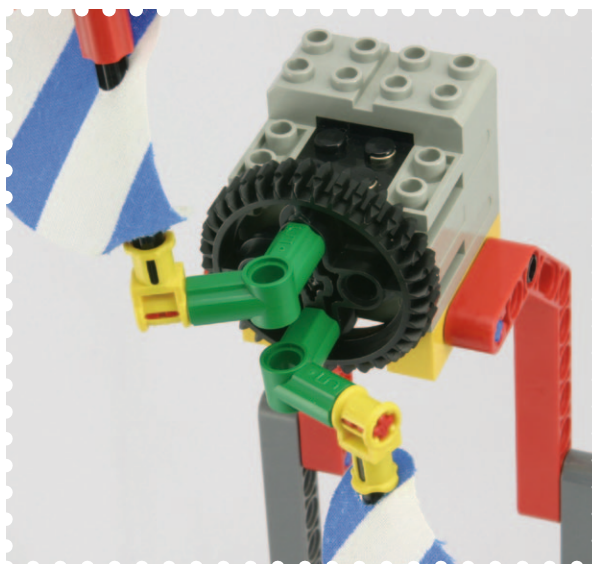


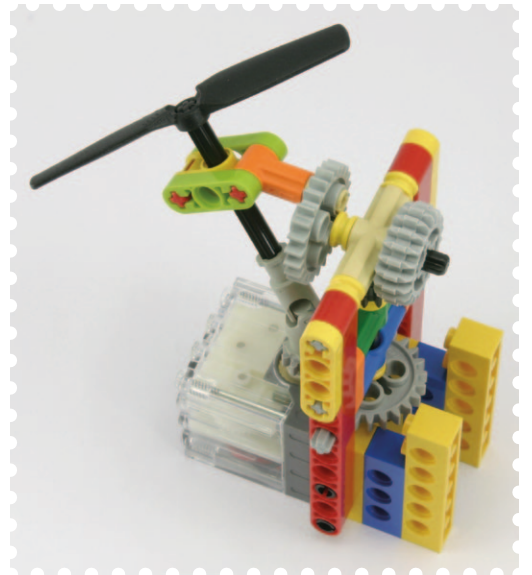
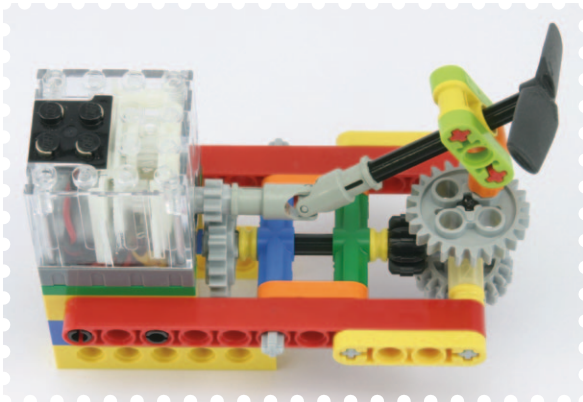
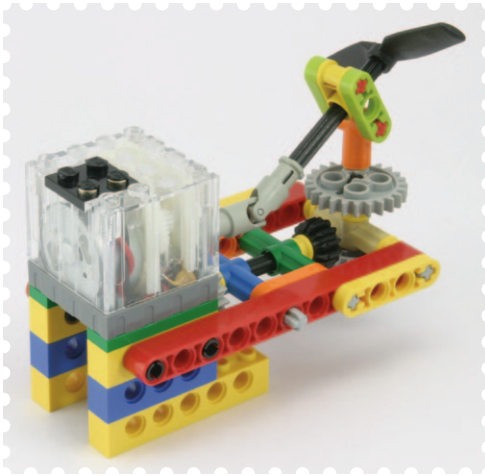
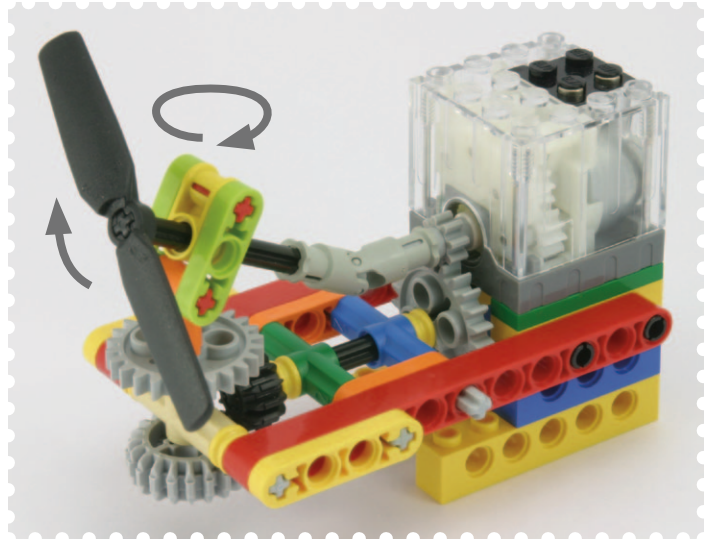
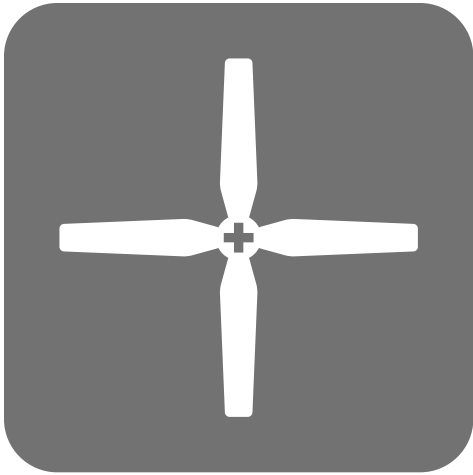


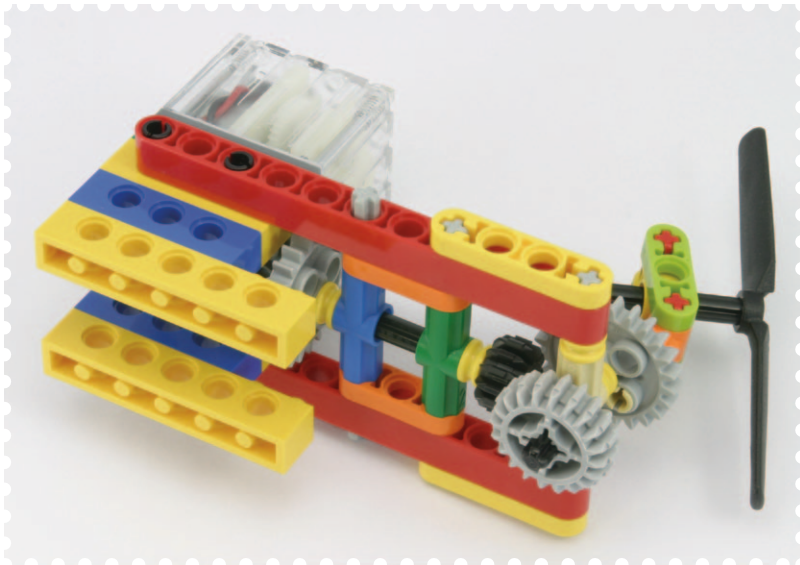
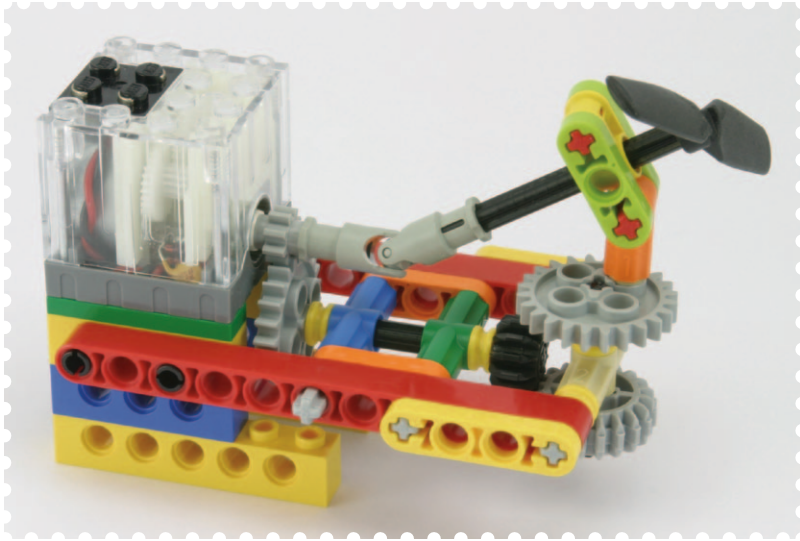


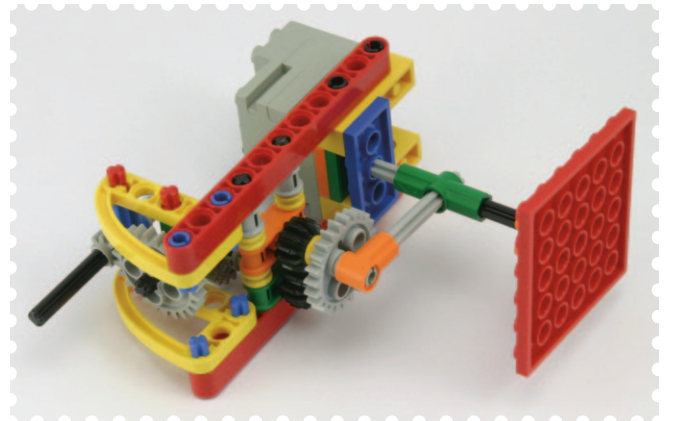
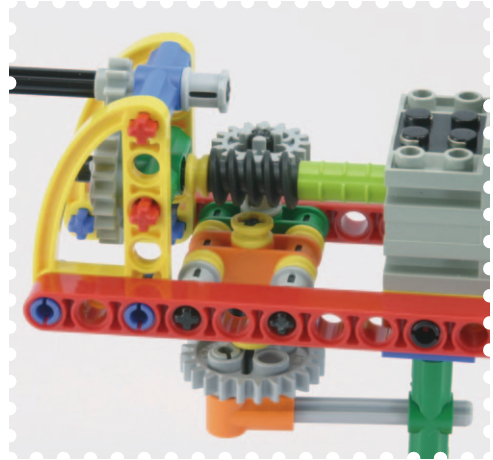
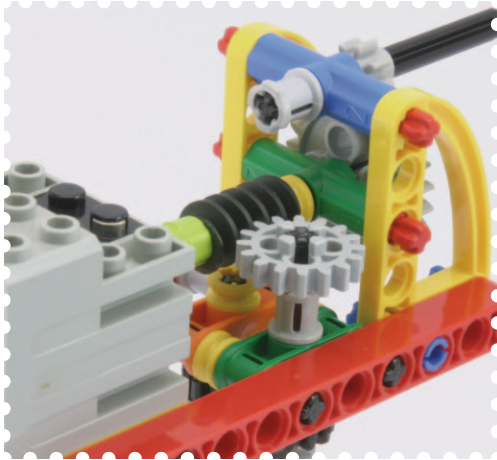
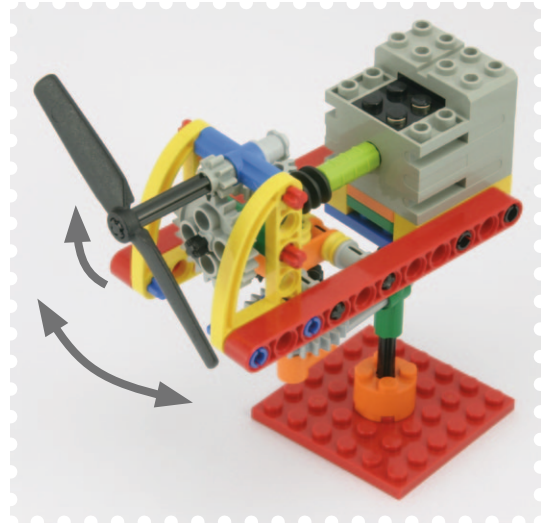
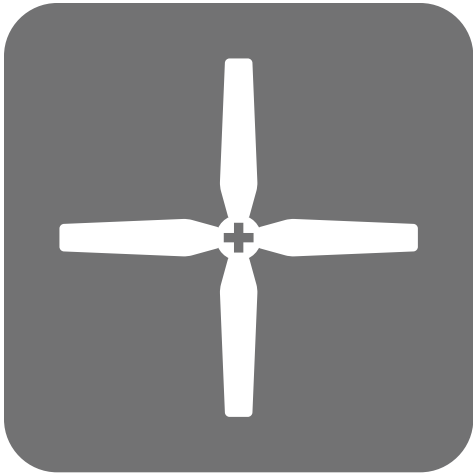


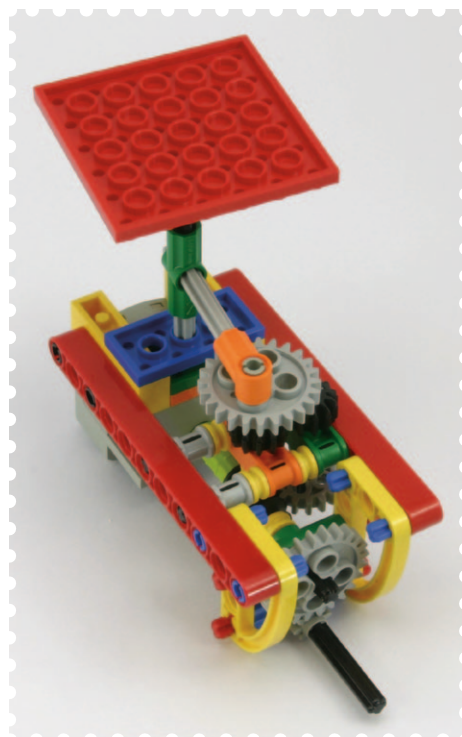
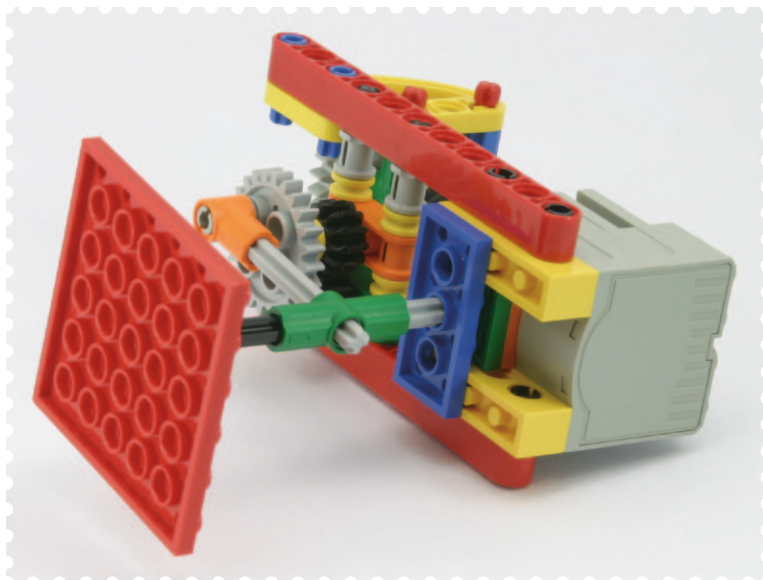
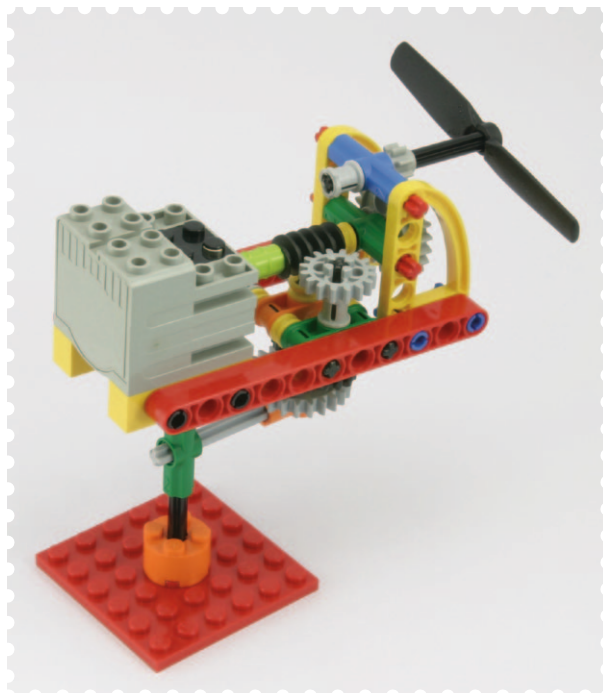
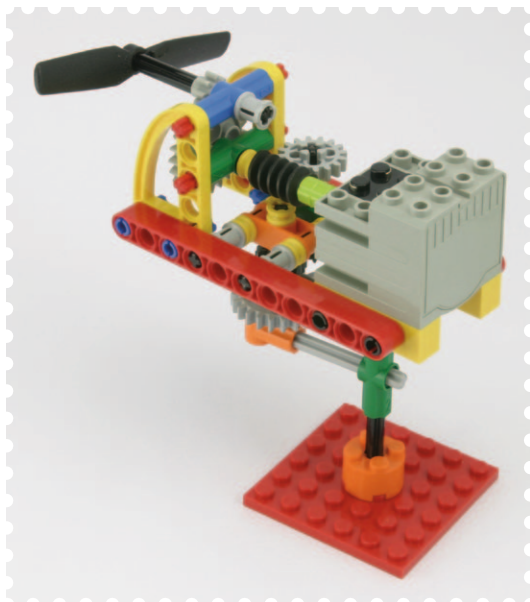


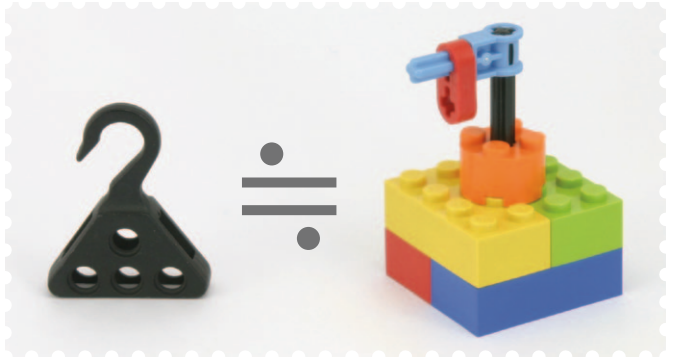


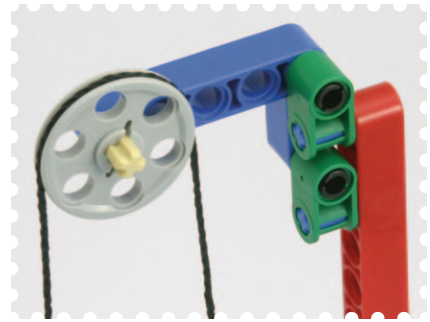
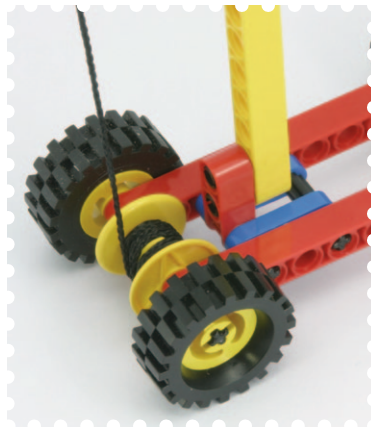




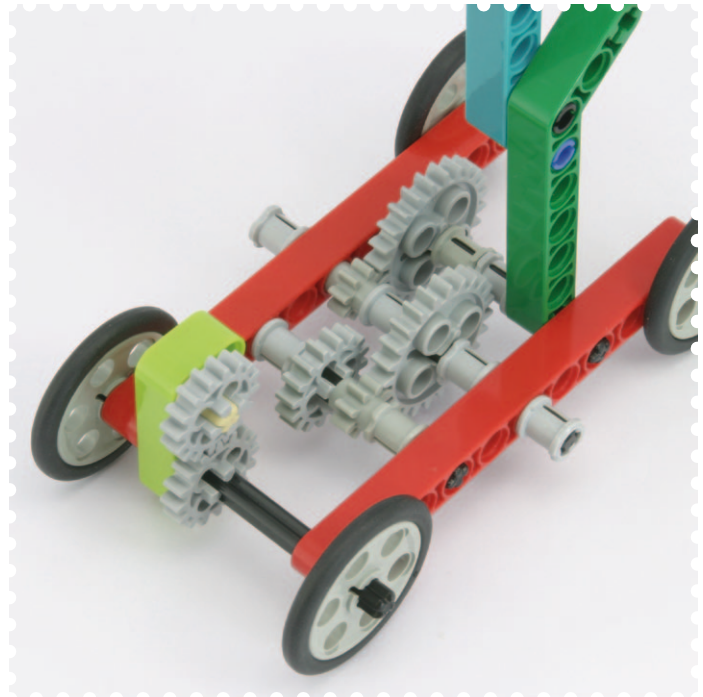
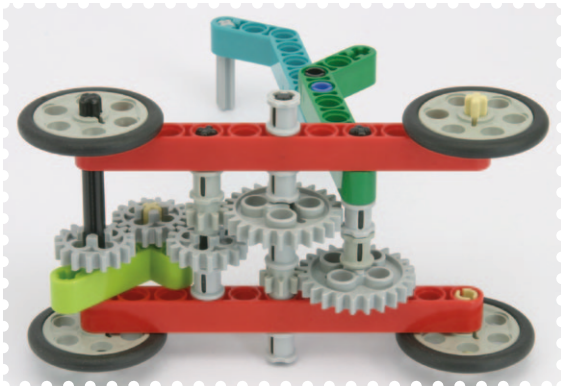
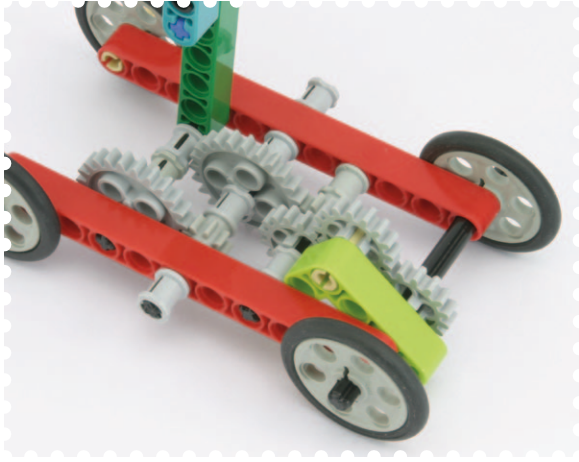


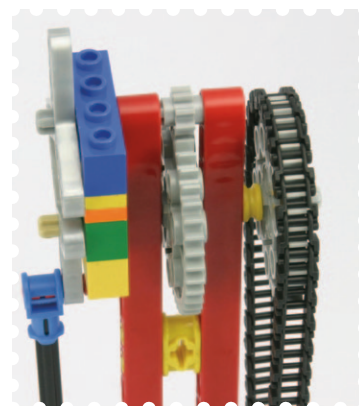
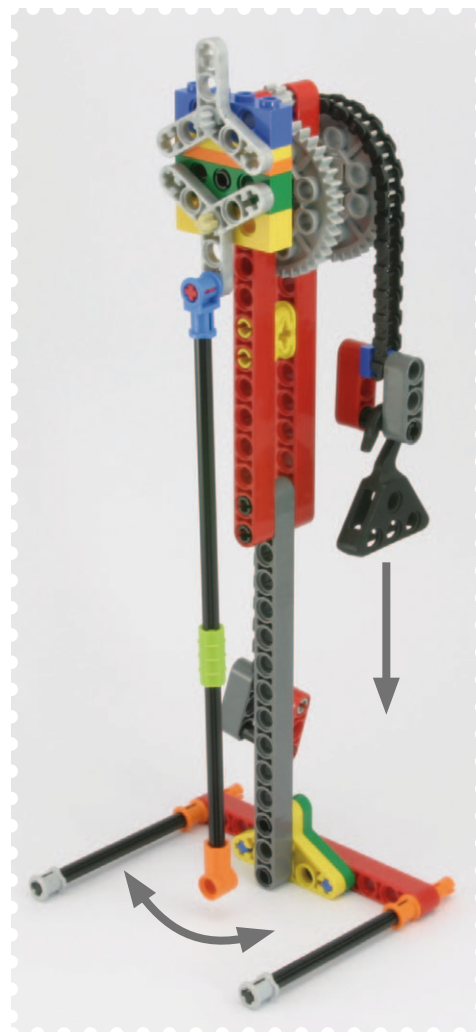
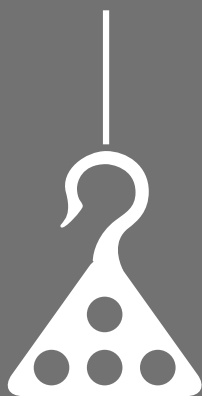


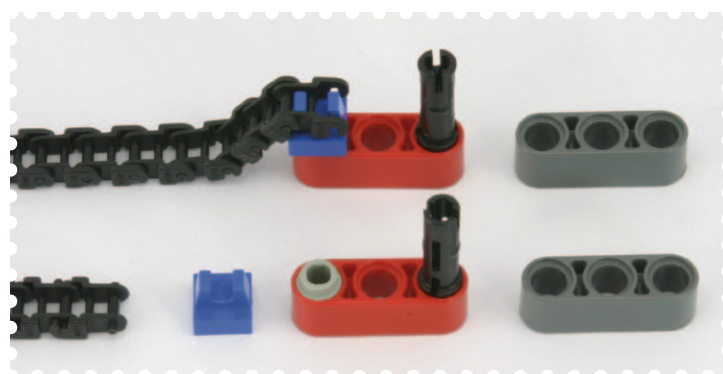
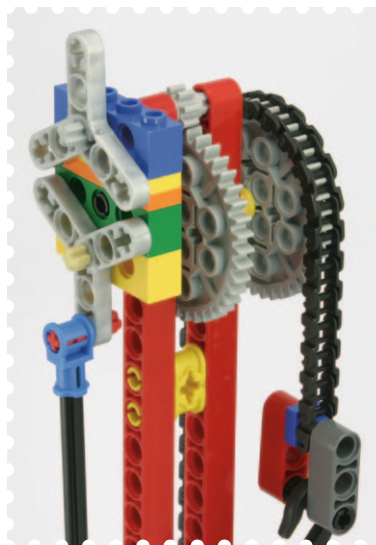


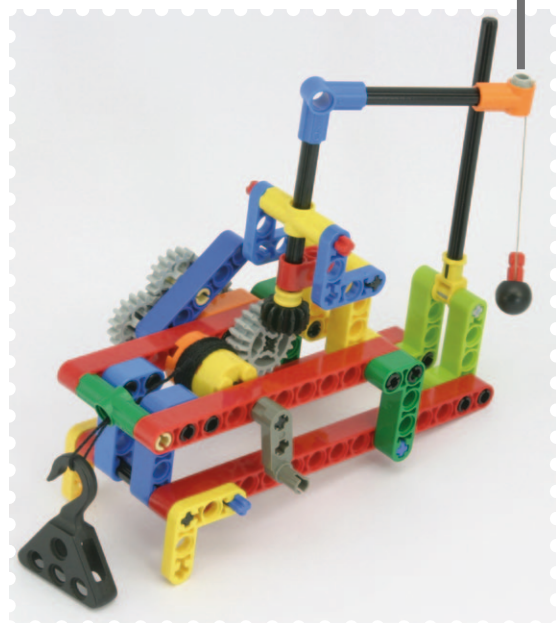
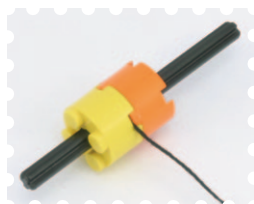
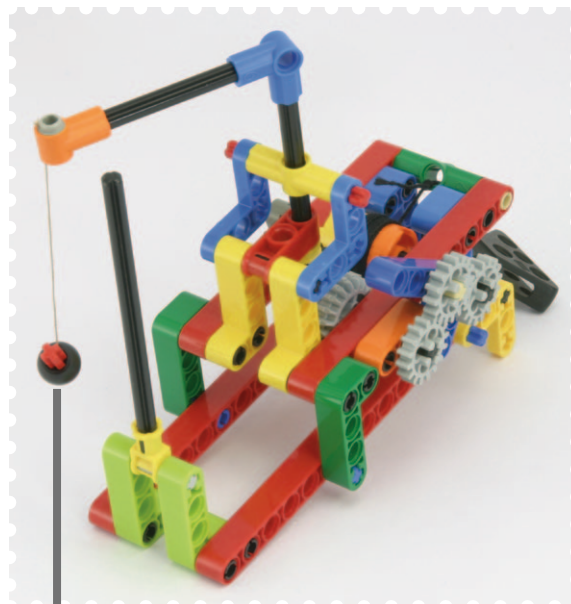


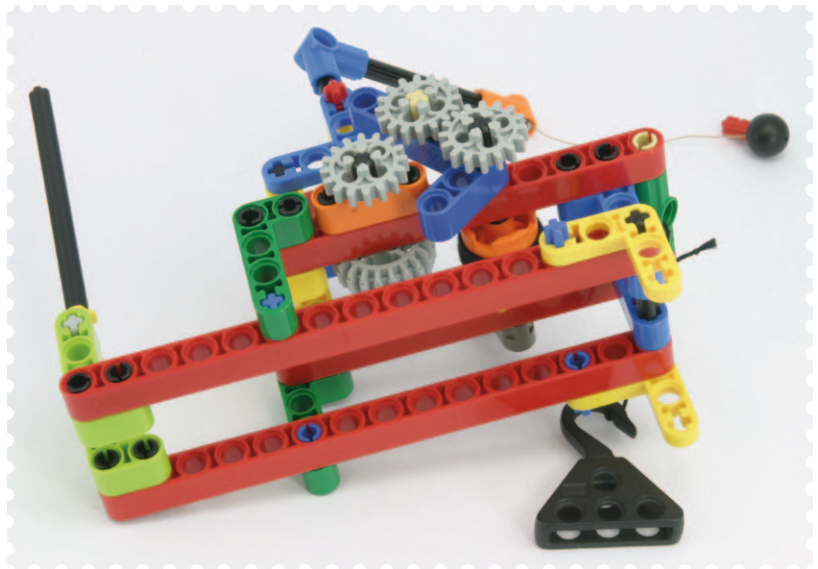
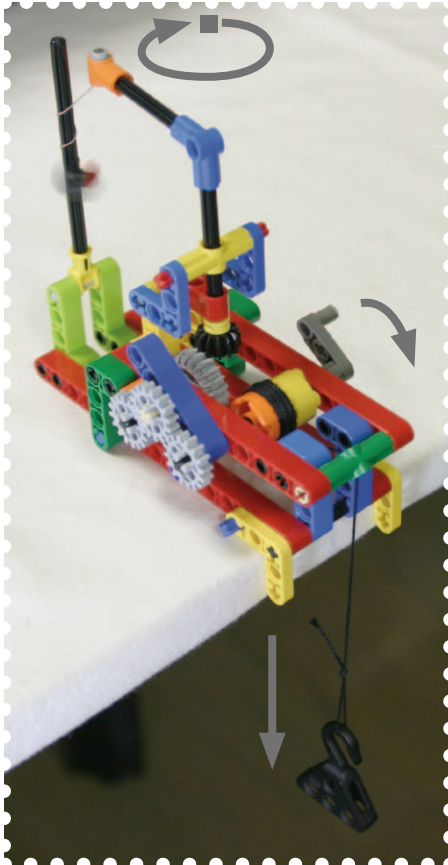


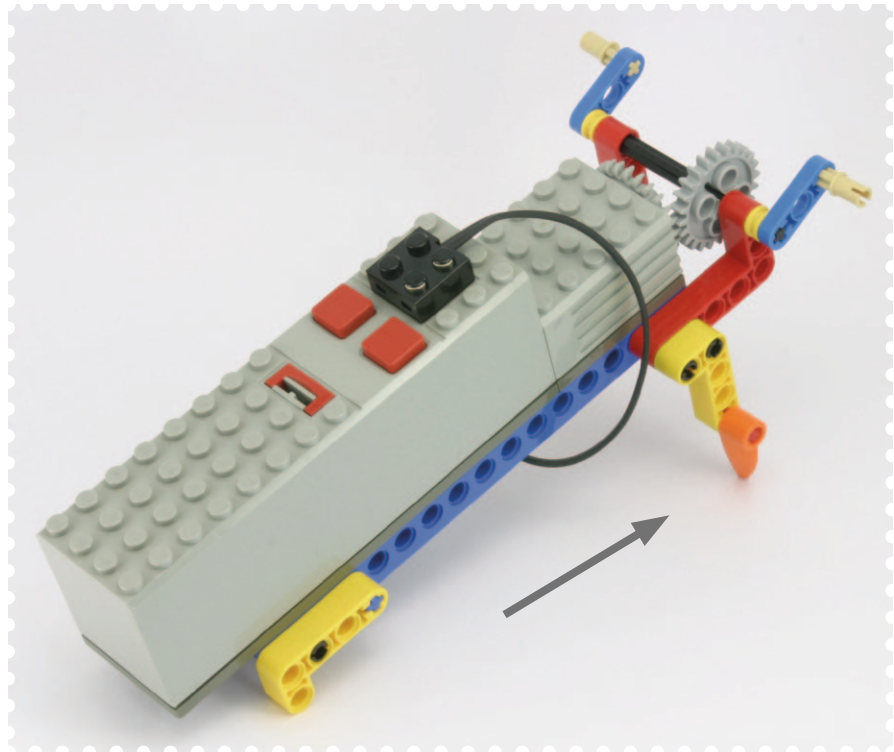
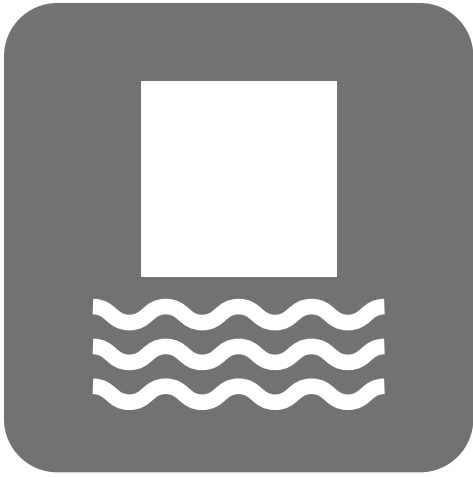


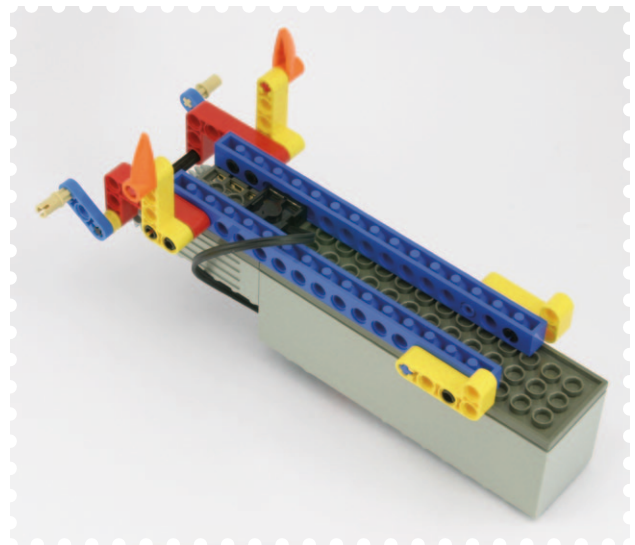
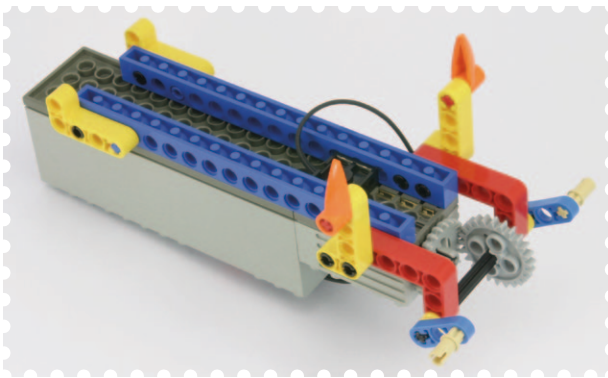
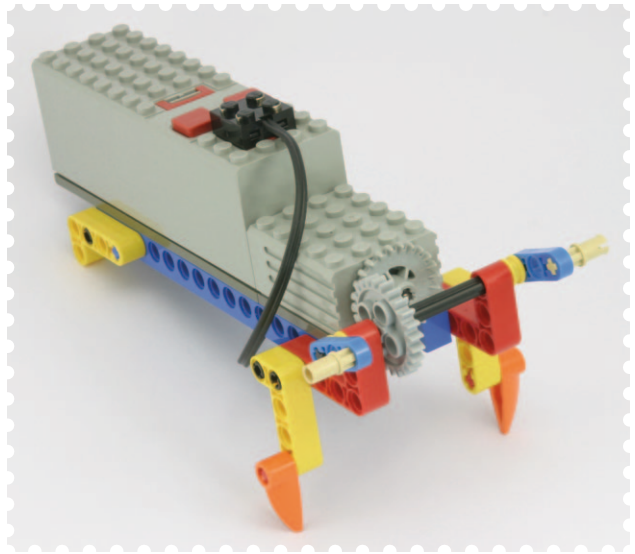
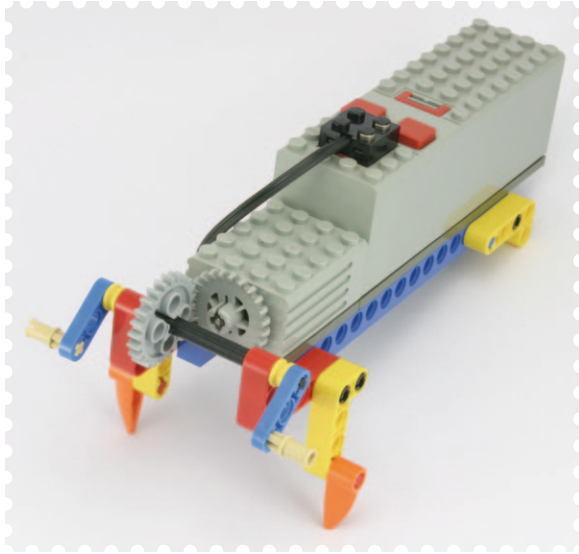


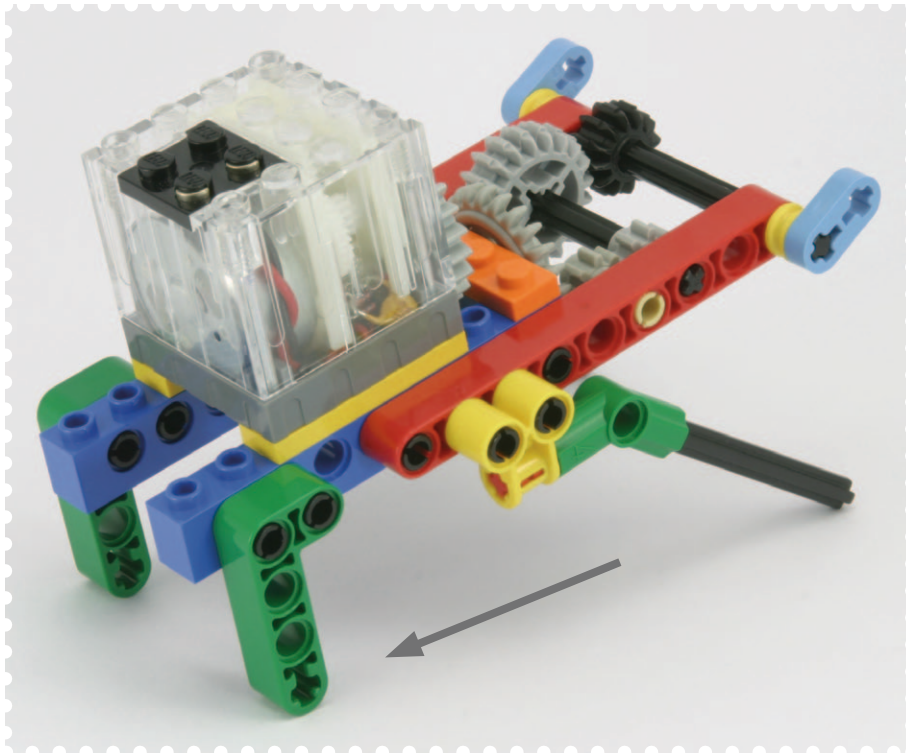
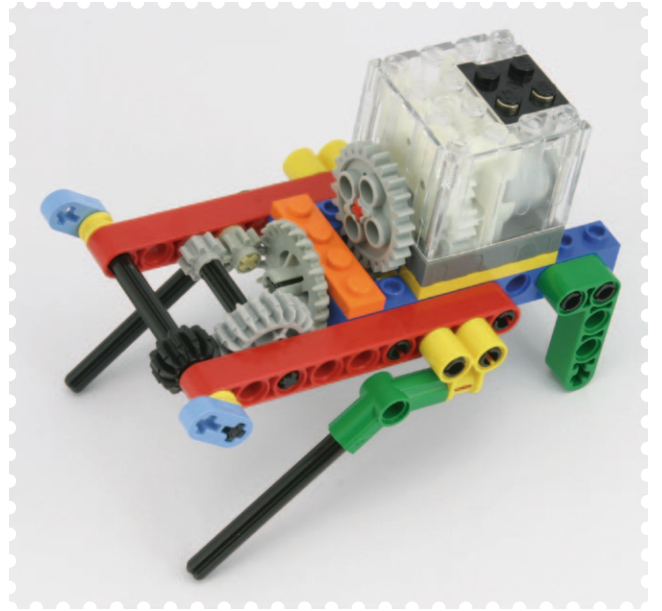
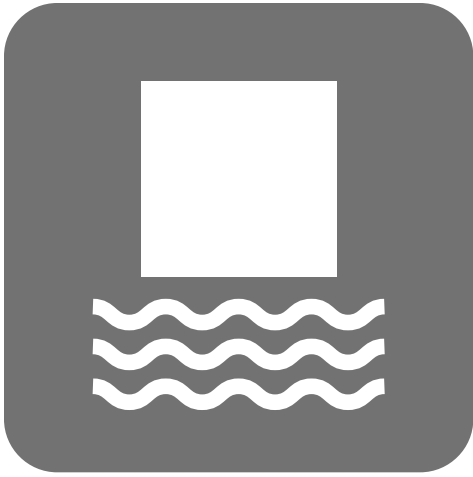


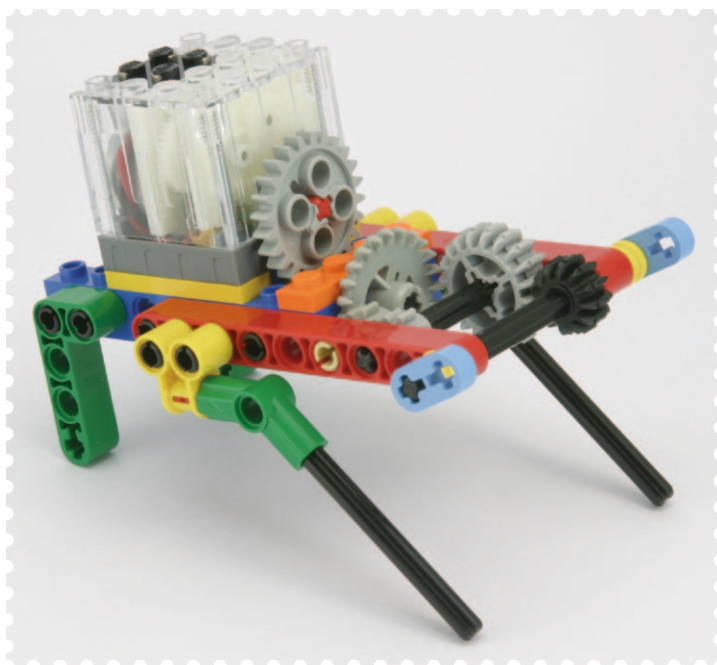
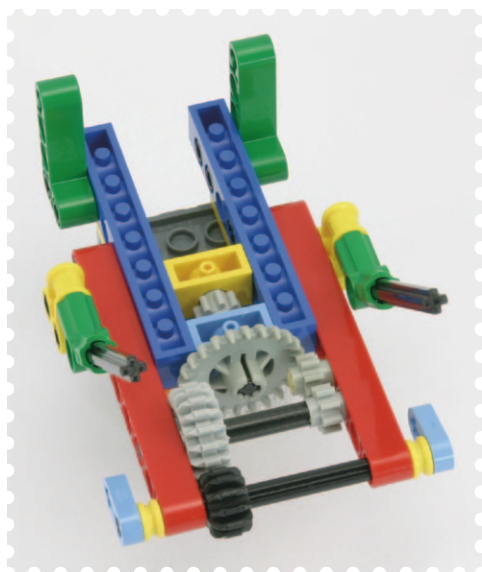
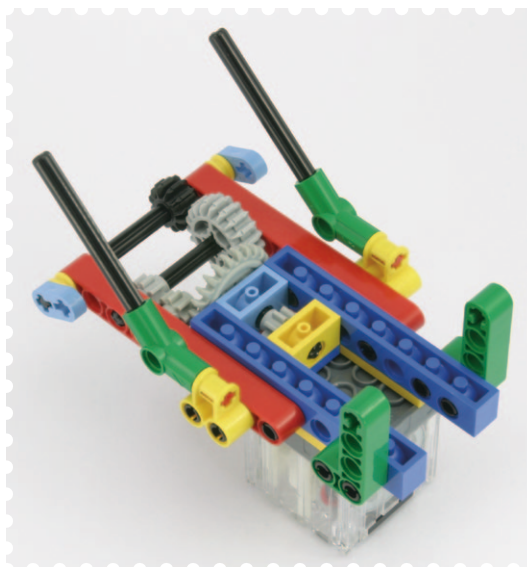
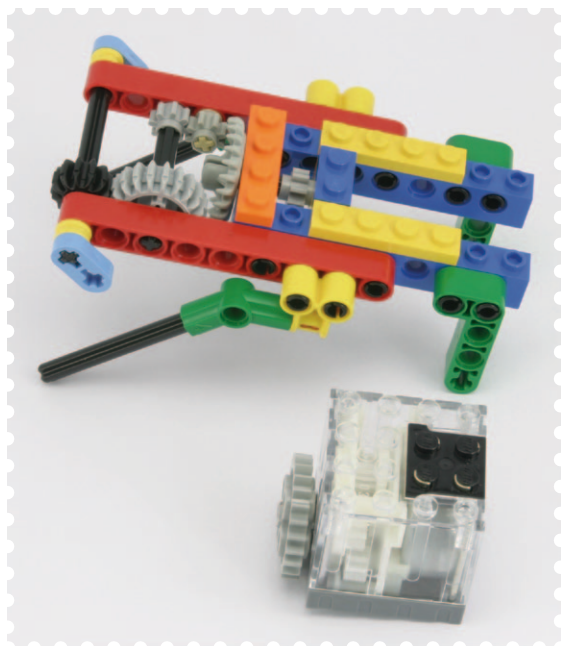


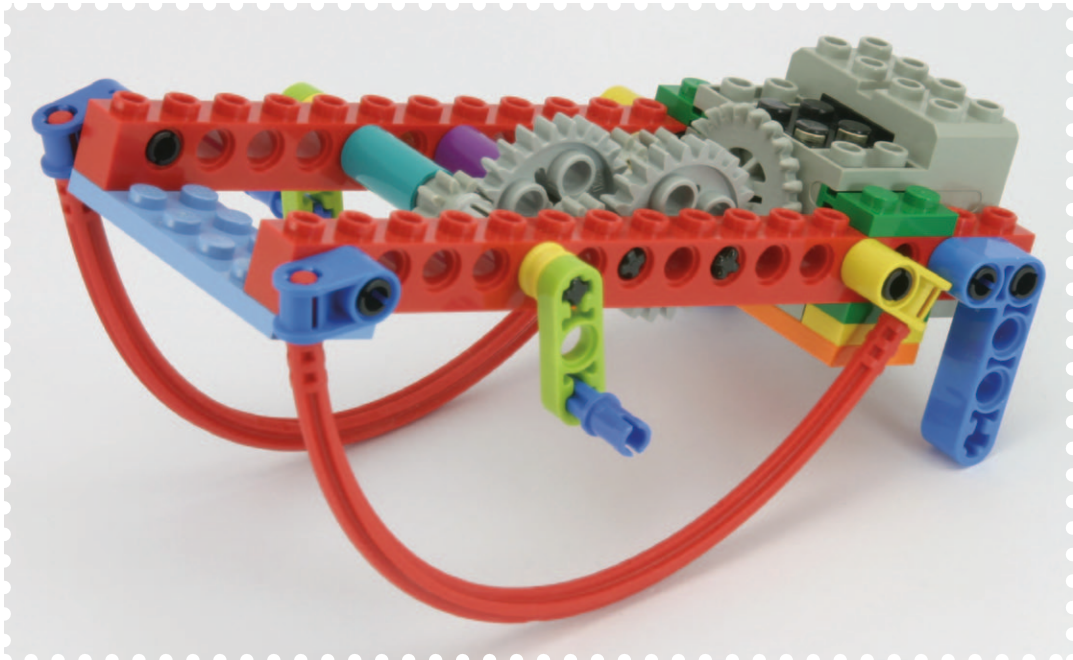
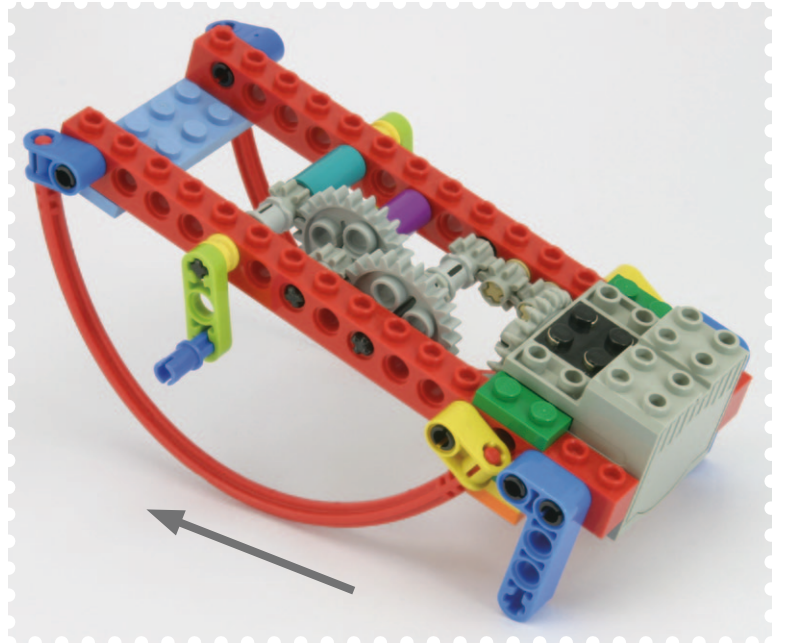
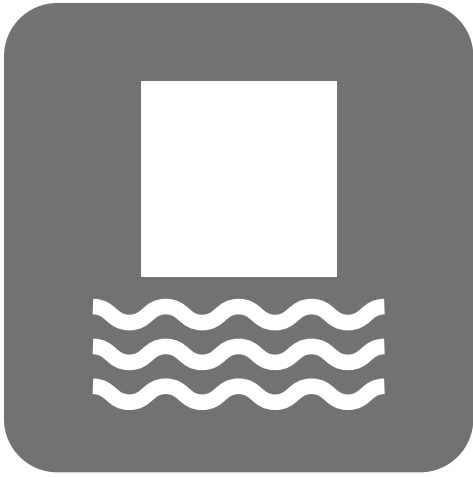


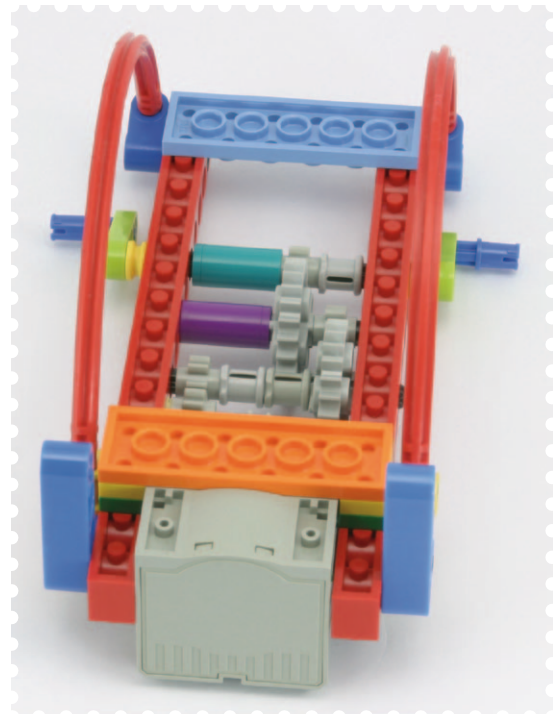
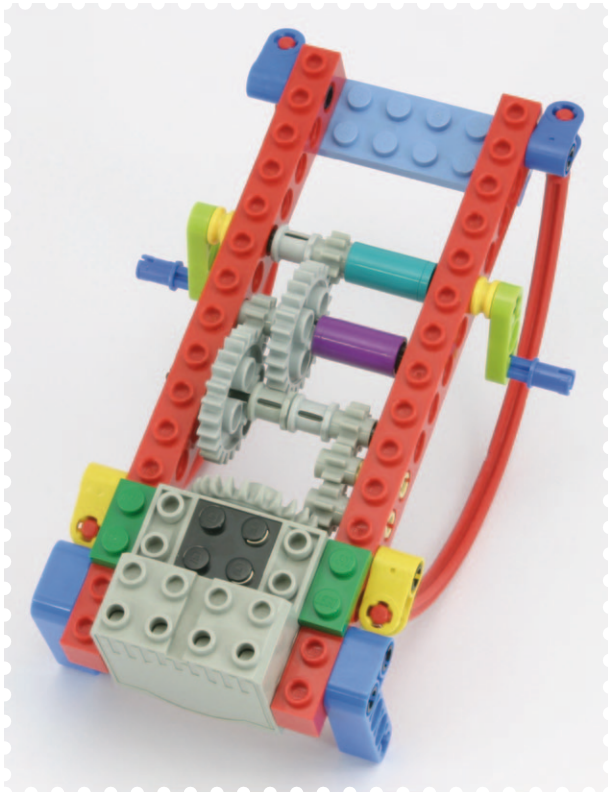
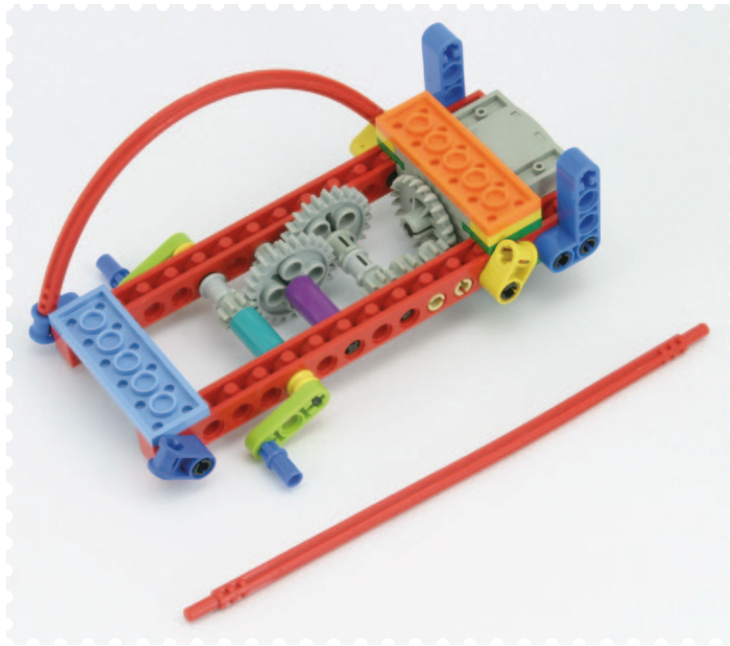


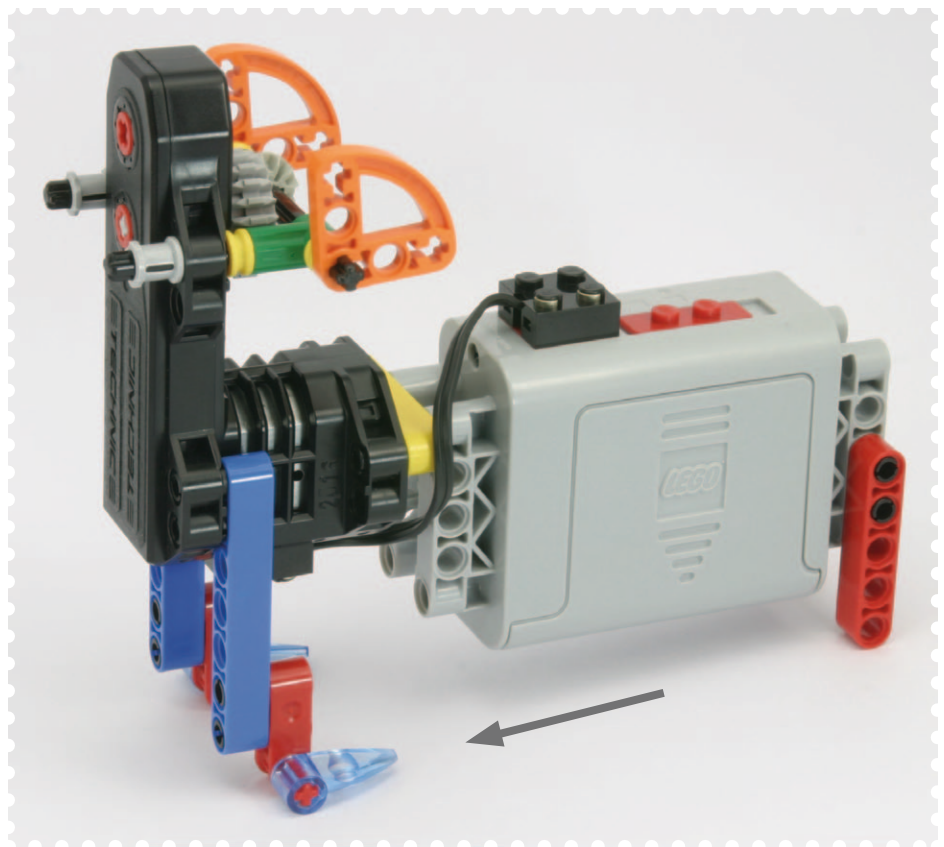
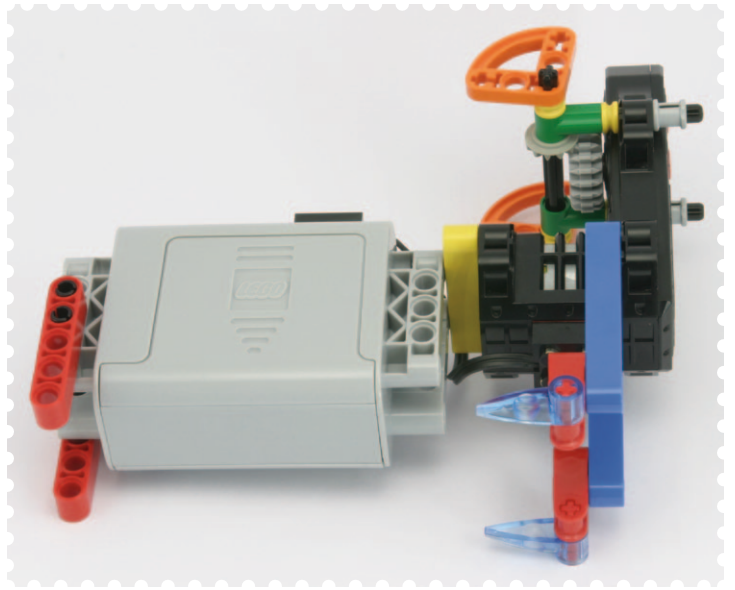
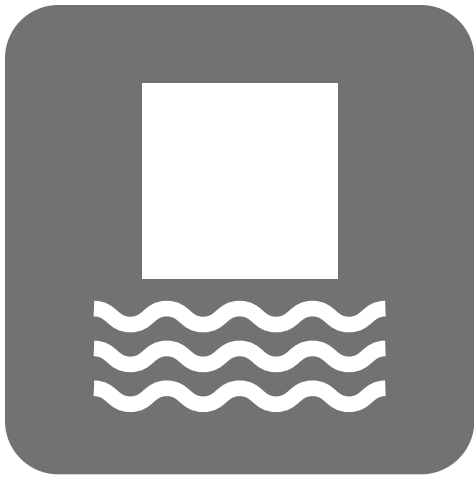


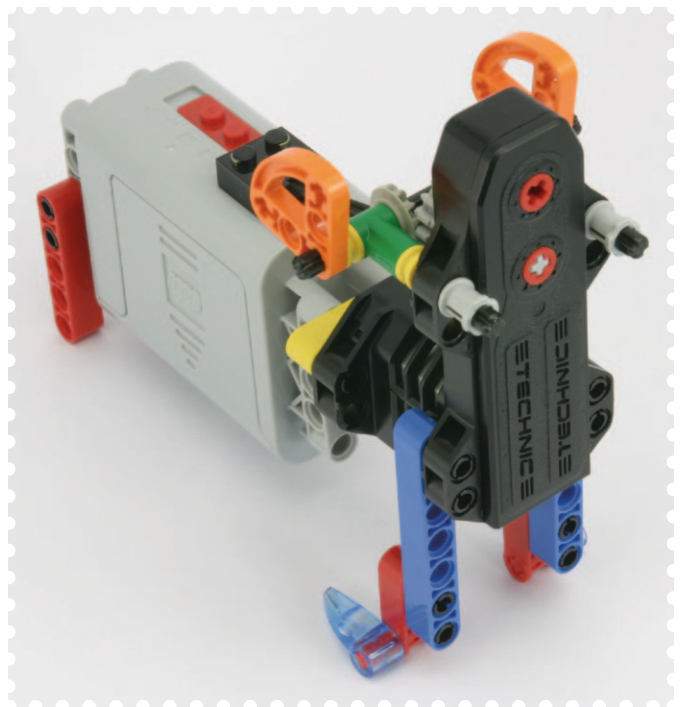
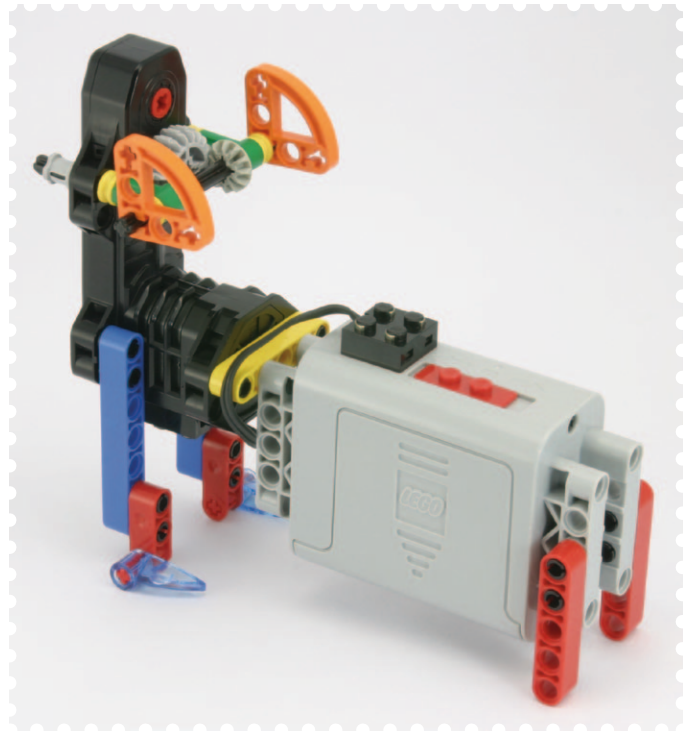
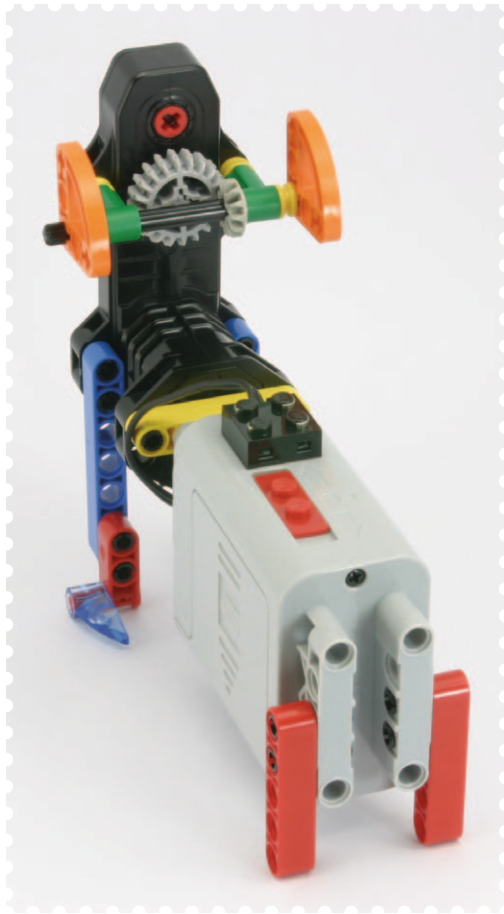


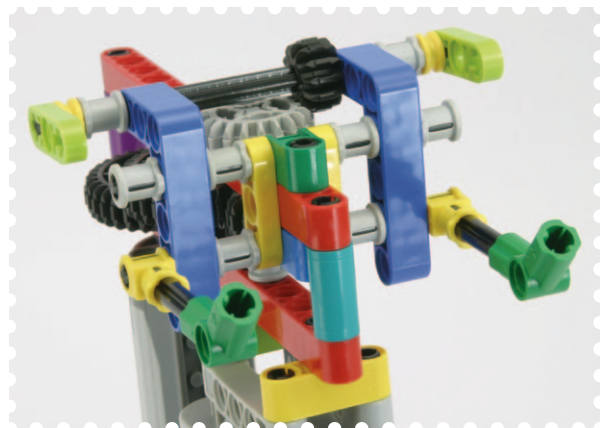
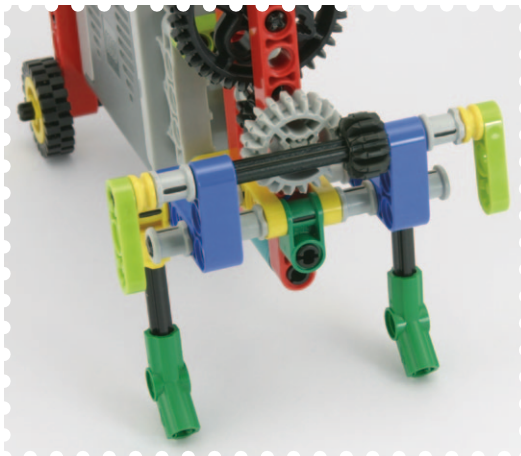
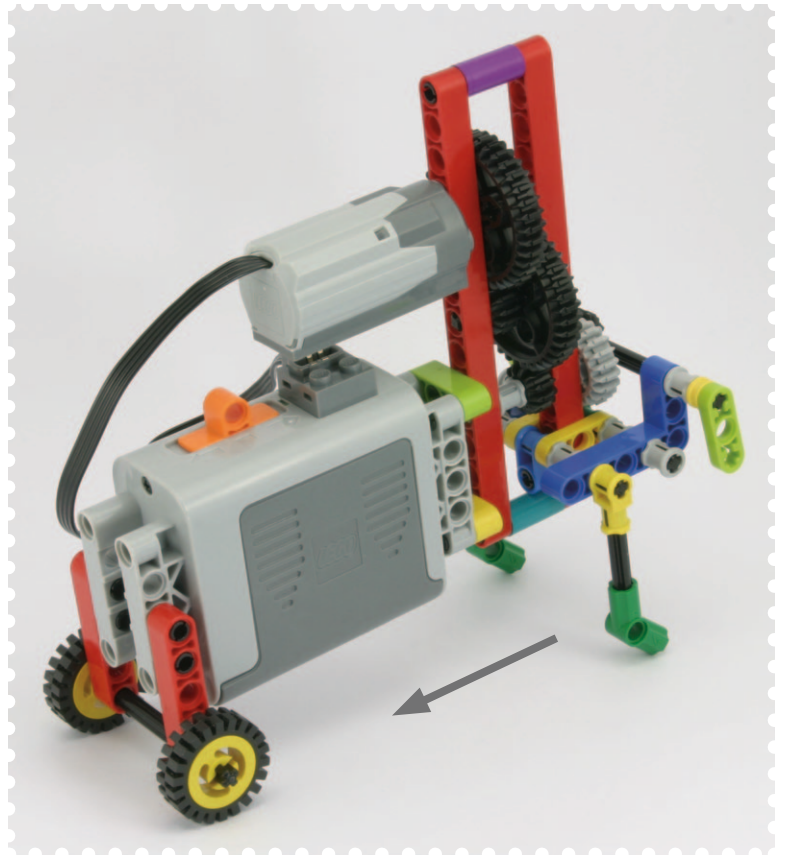
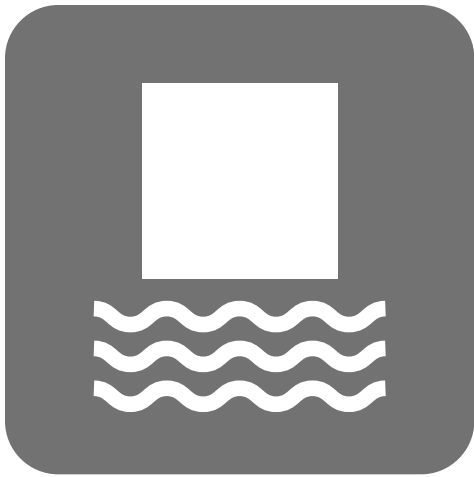


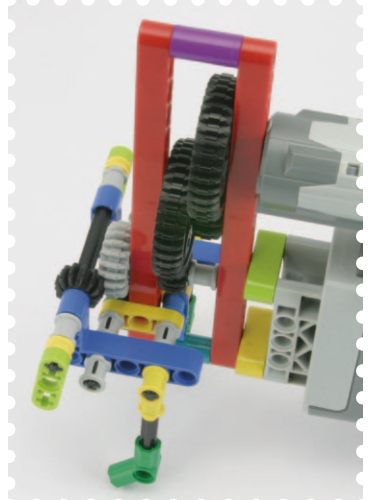
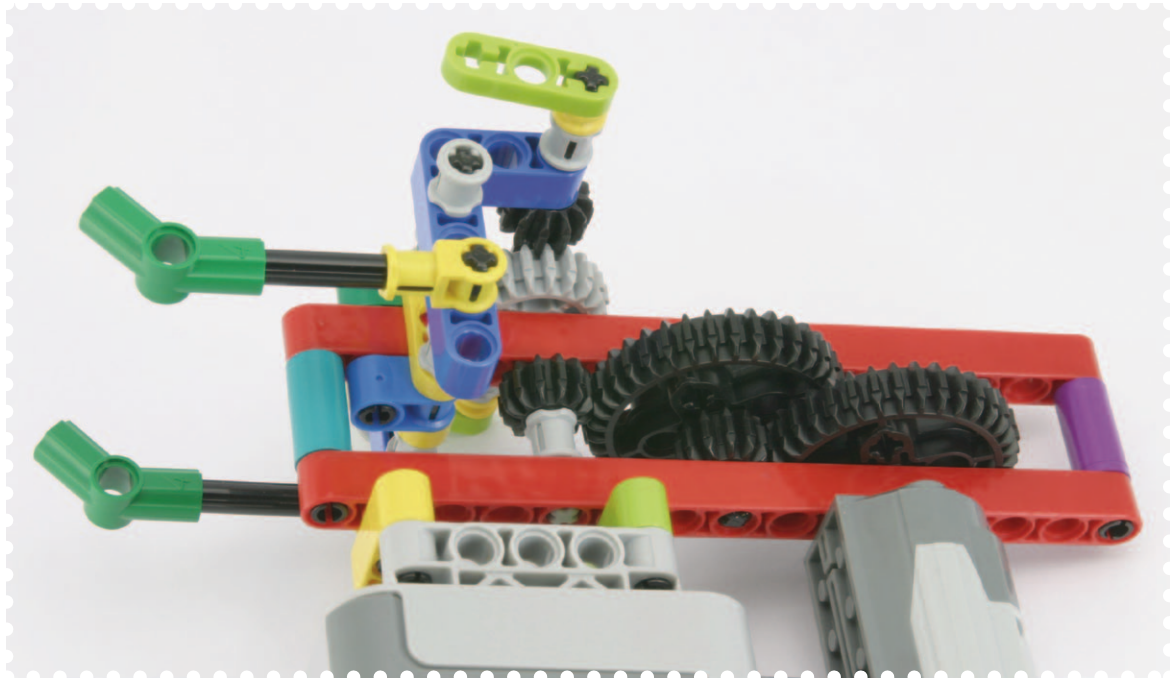


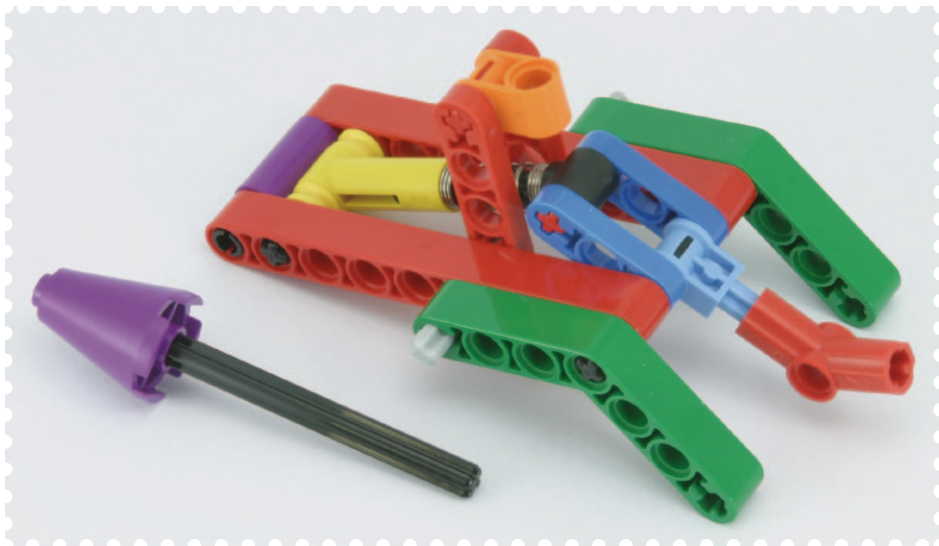
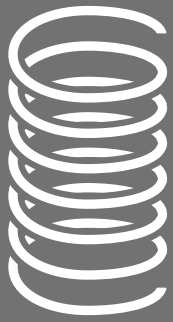


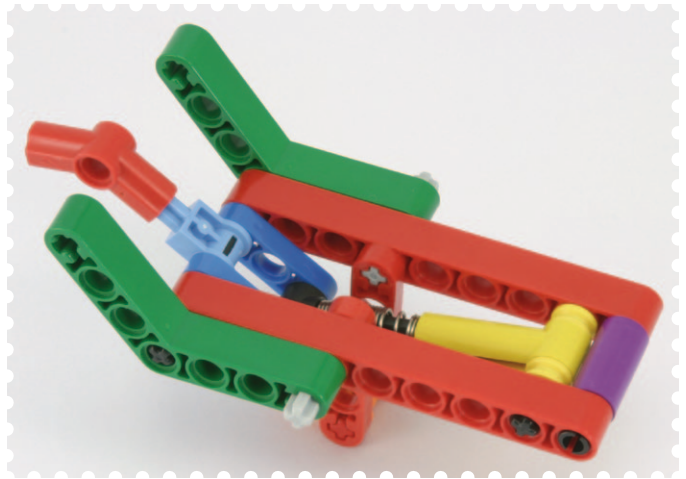
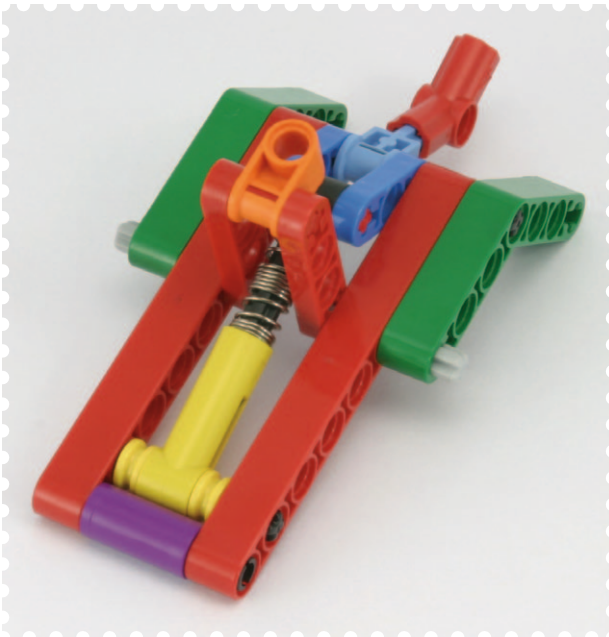
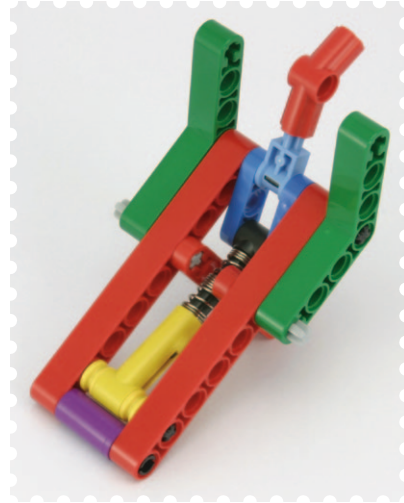


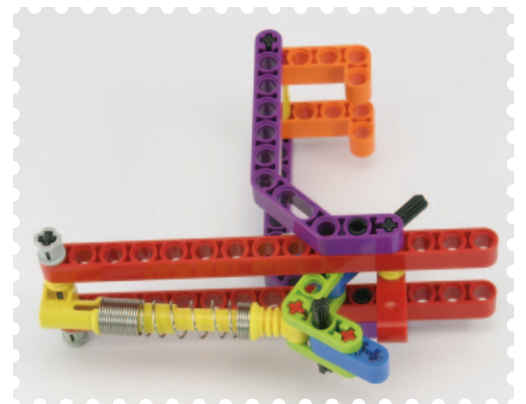
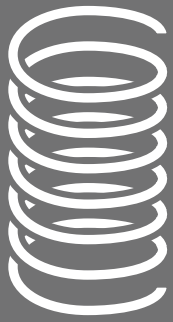


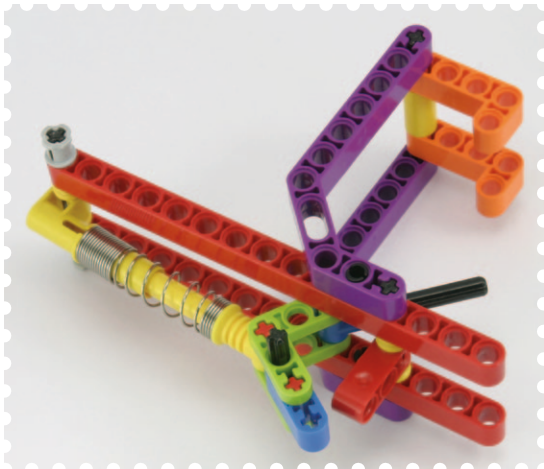


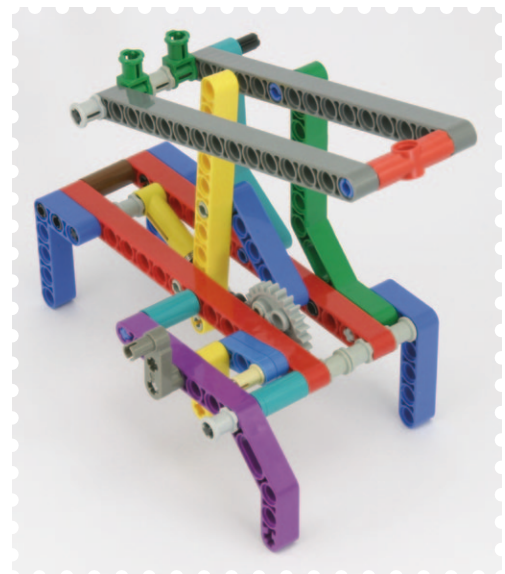
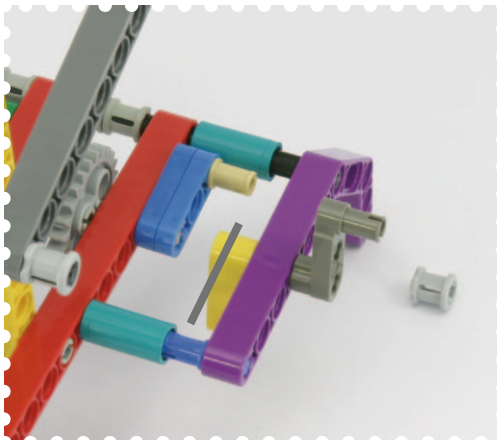
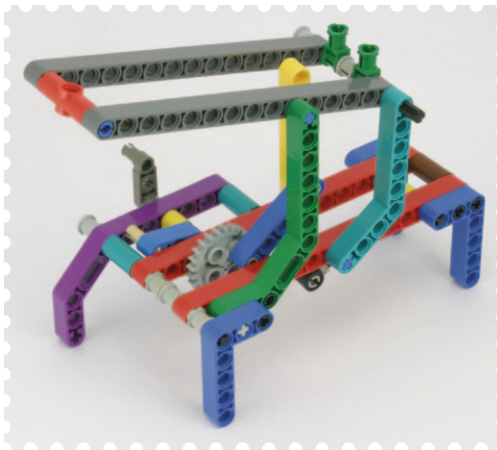
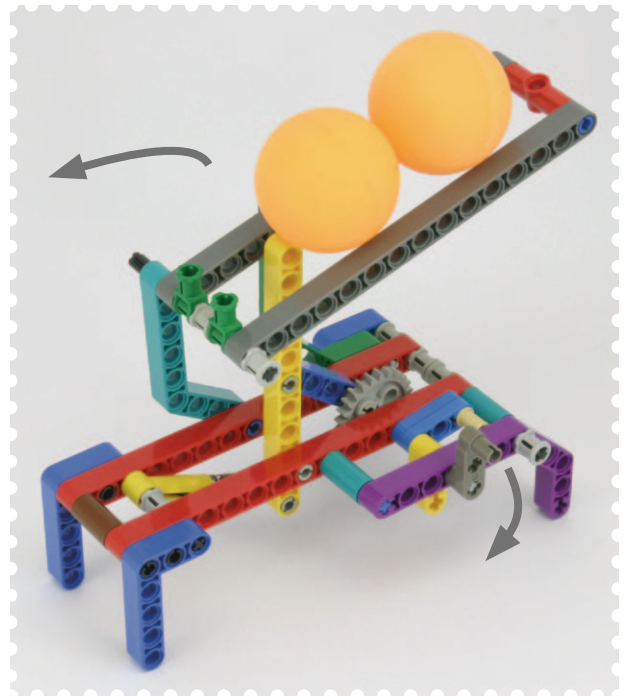
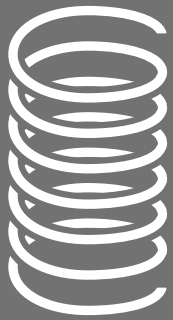


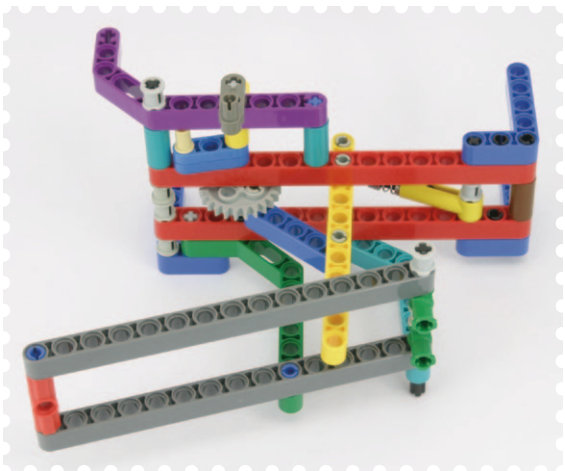
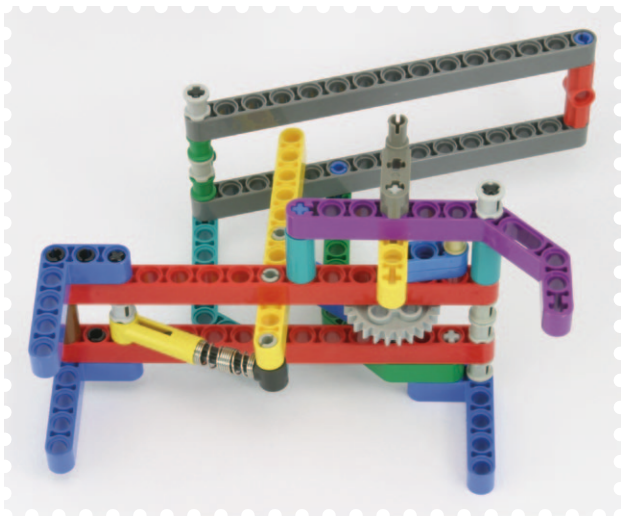
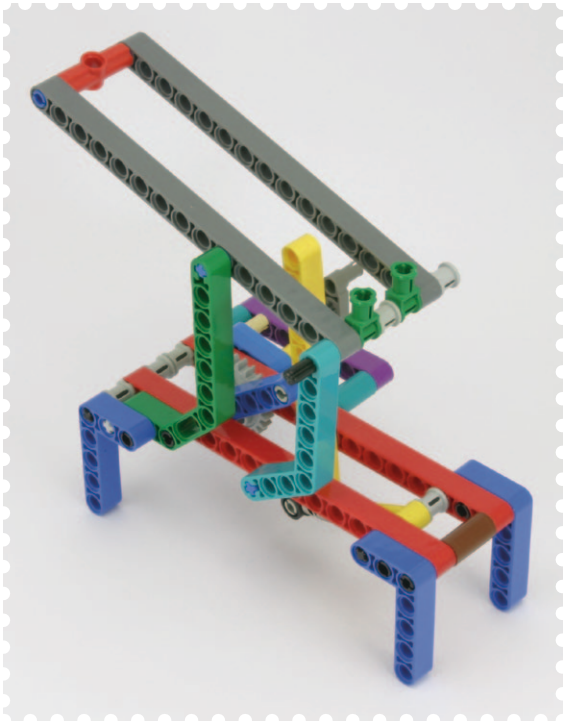
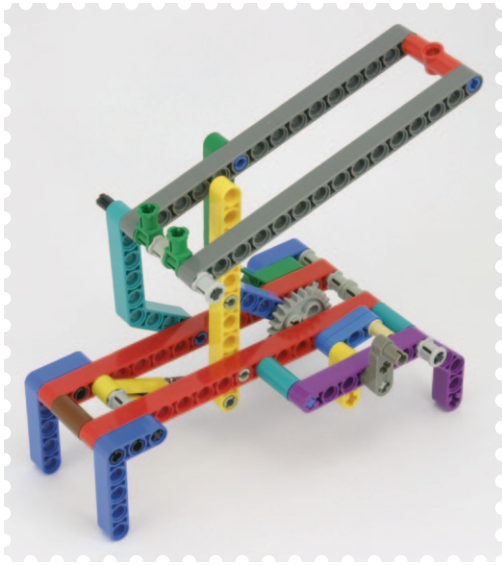


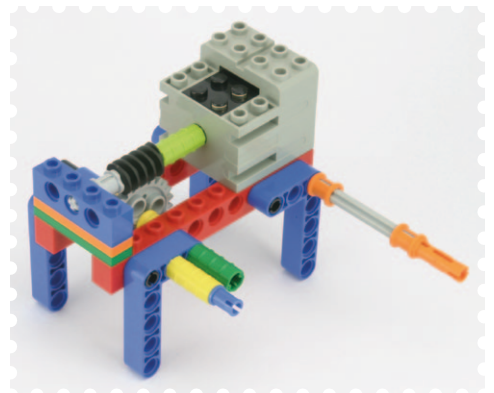
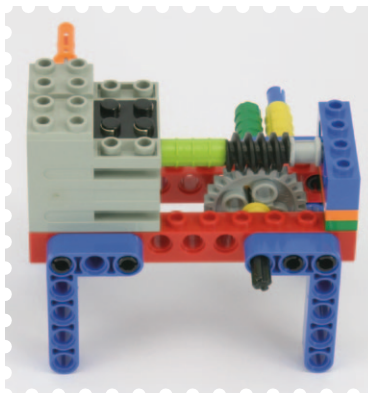
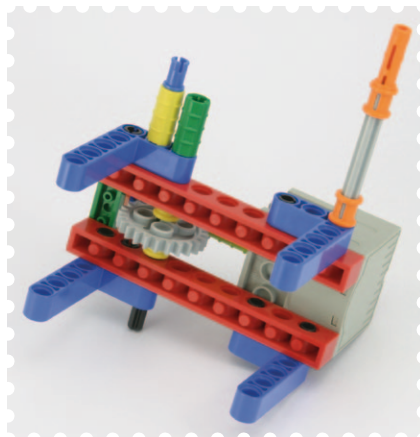
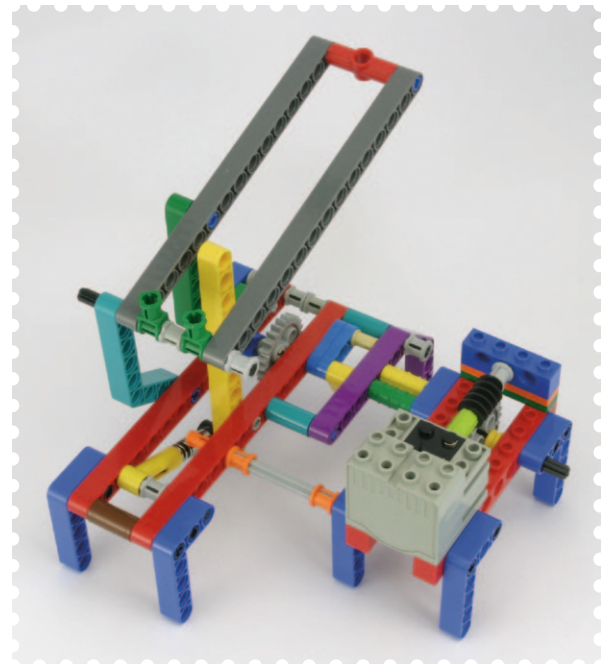
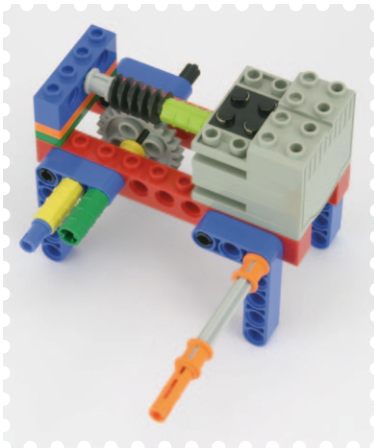
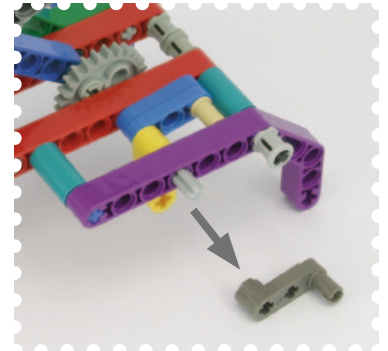
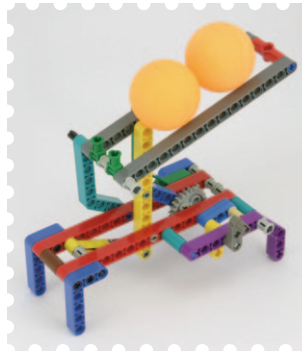
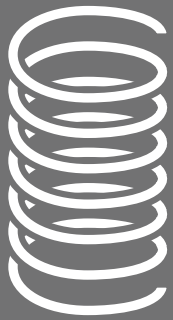


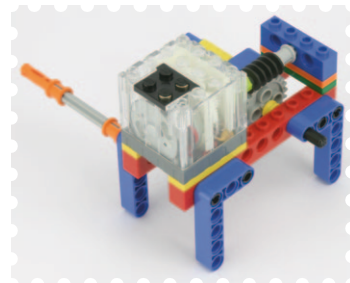
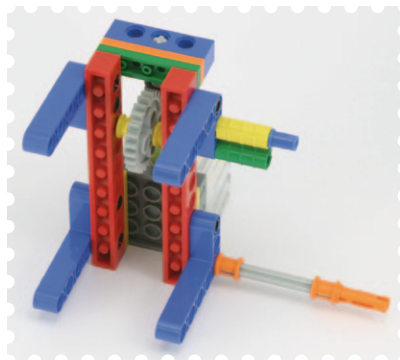
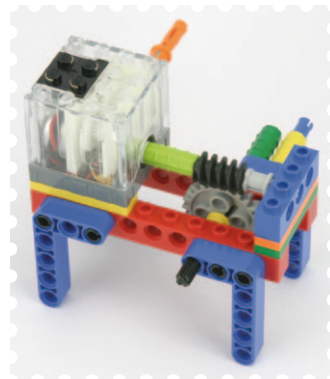
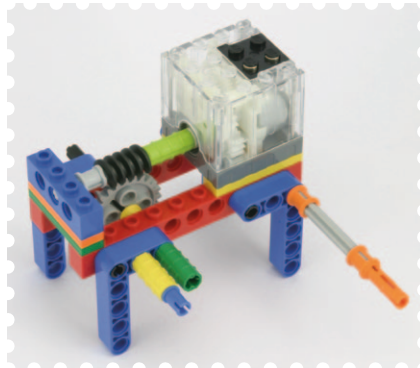
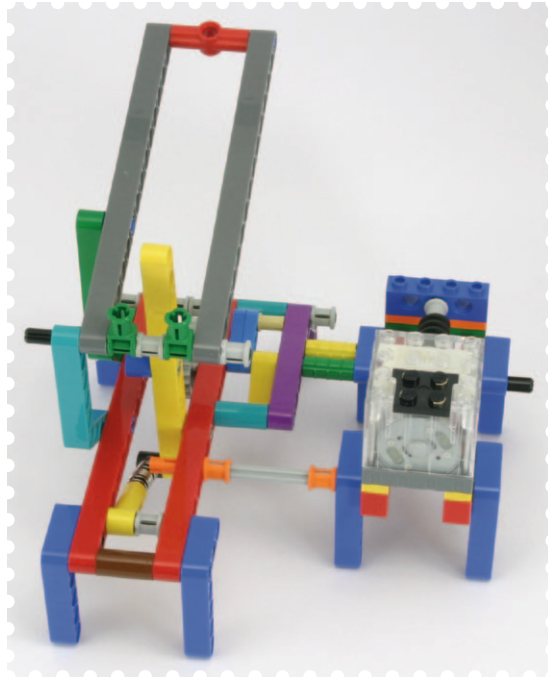


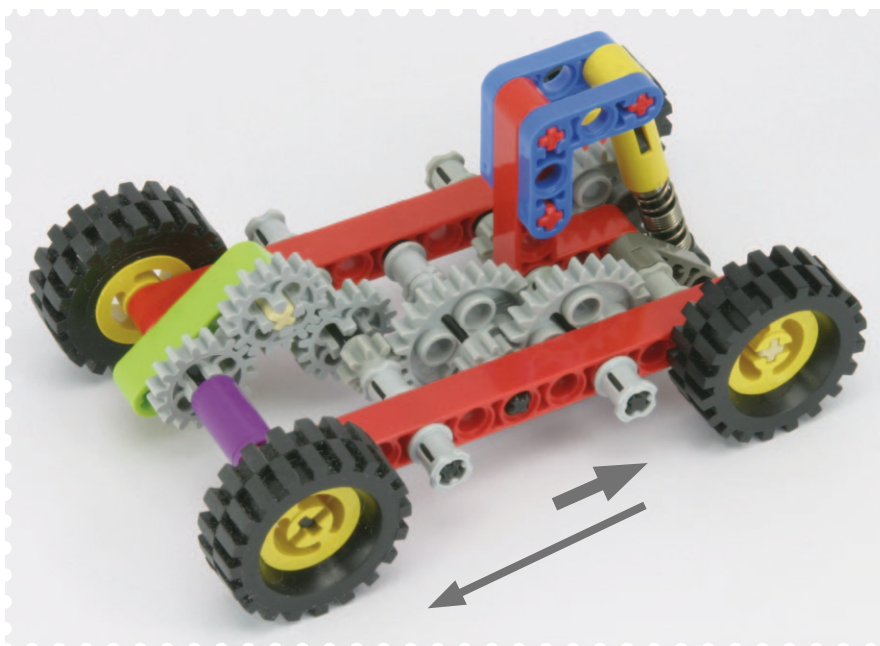
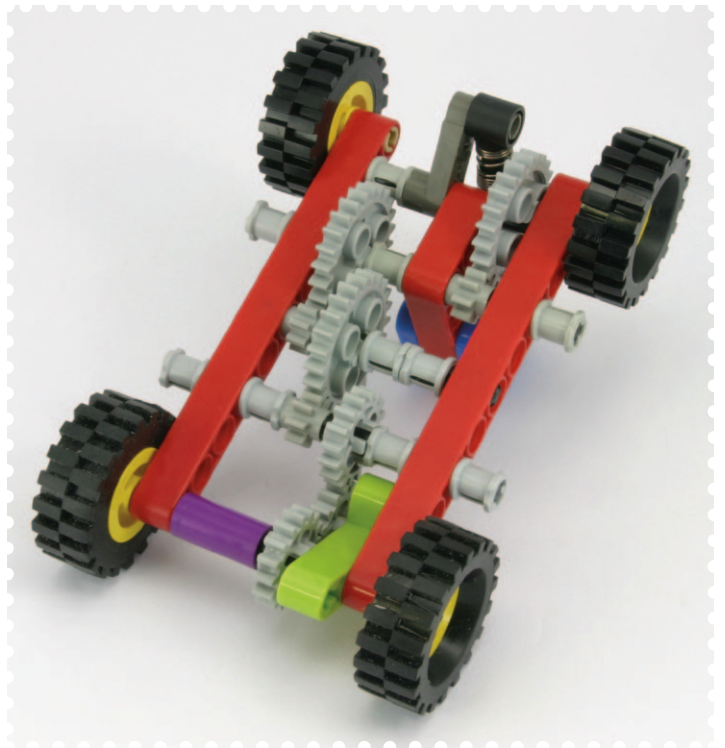
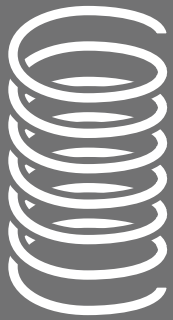


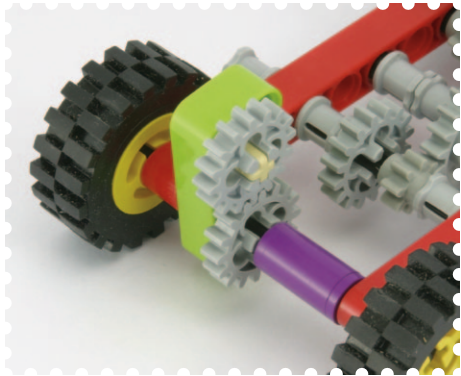


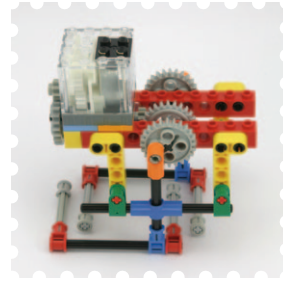
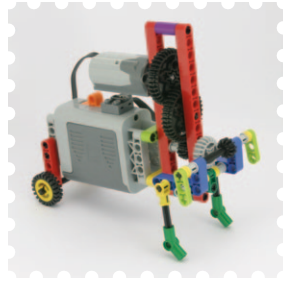




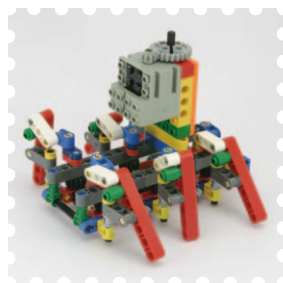


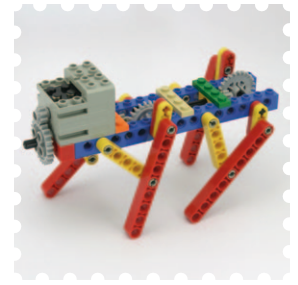
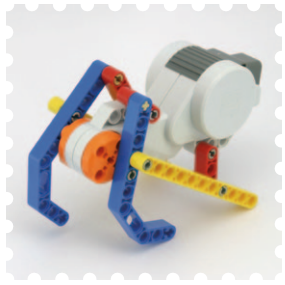






PART 3





68



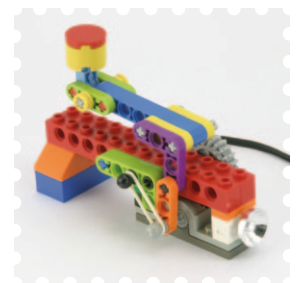
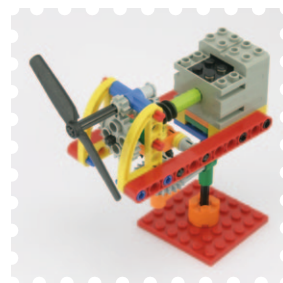
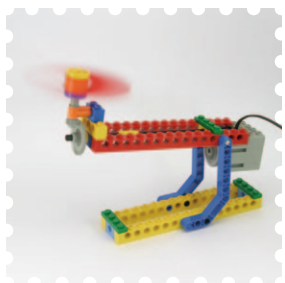
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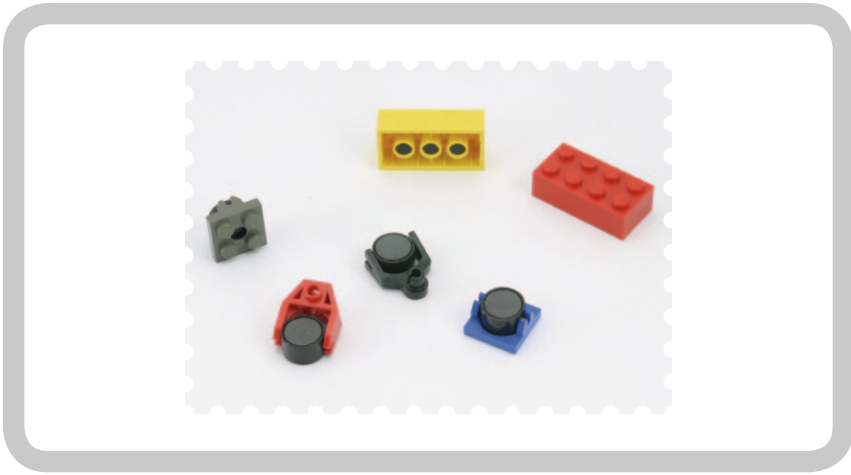


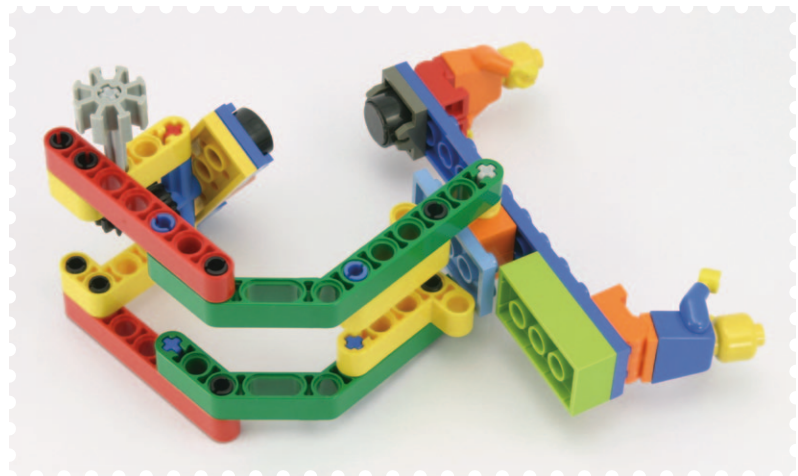
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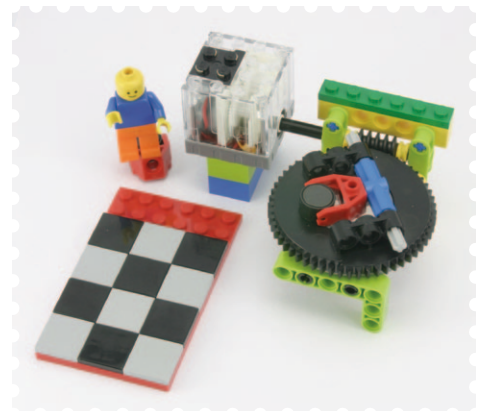
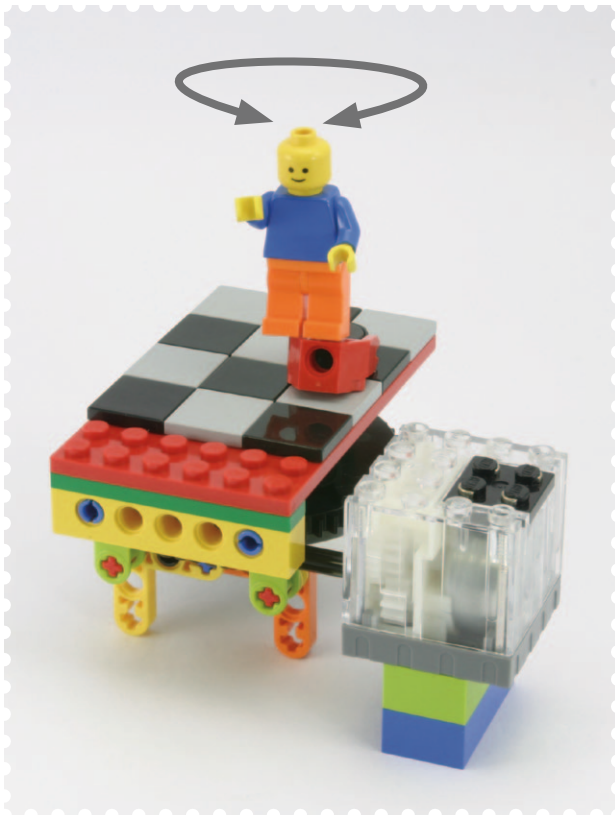
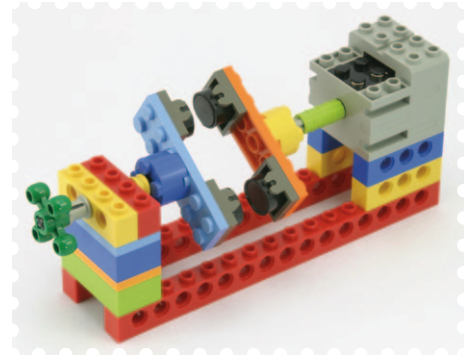


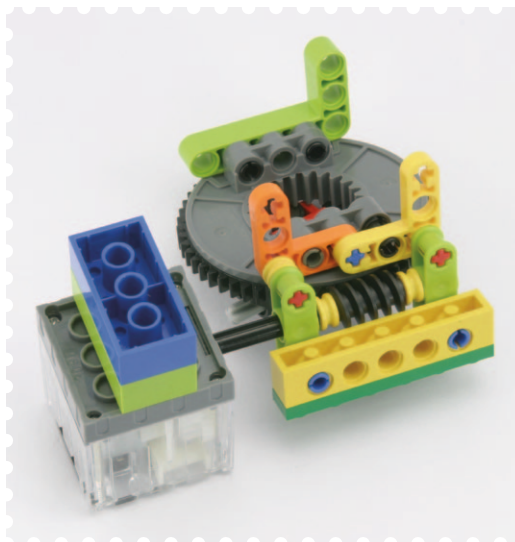
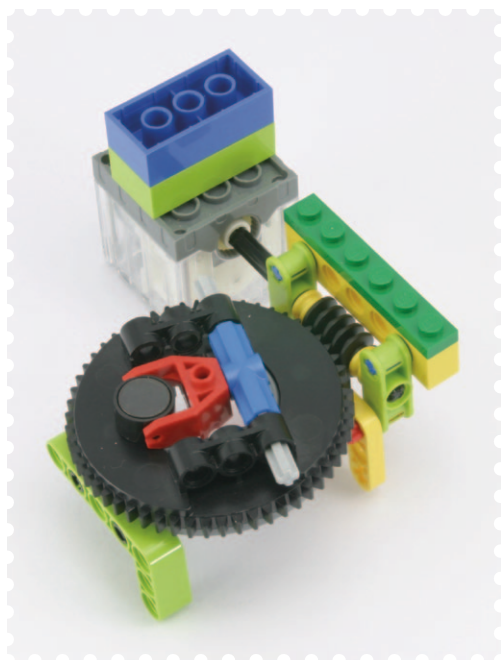
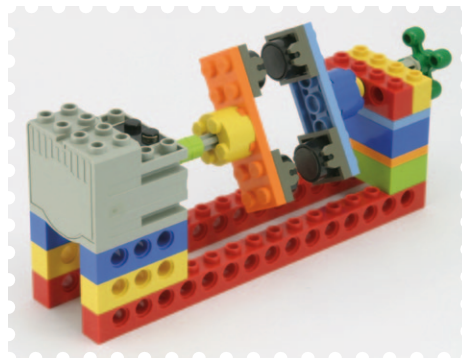
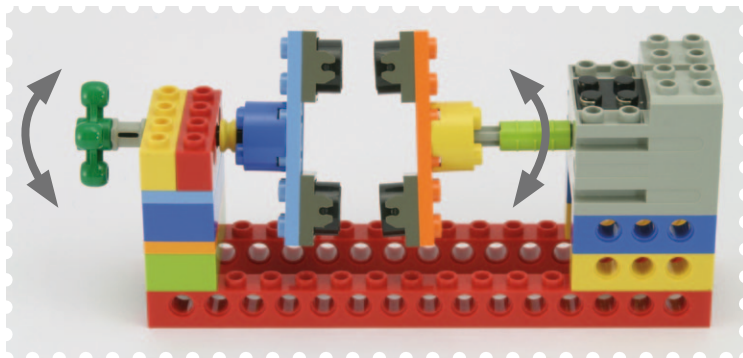
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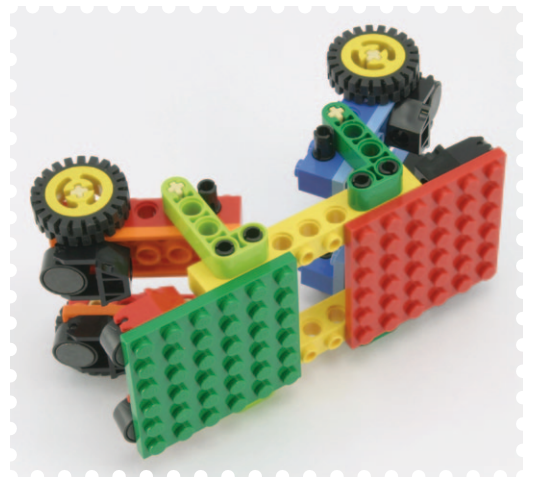
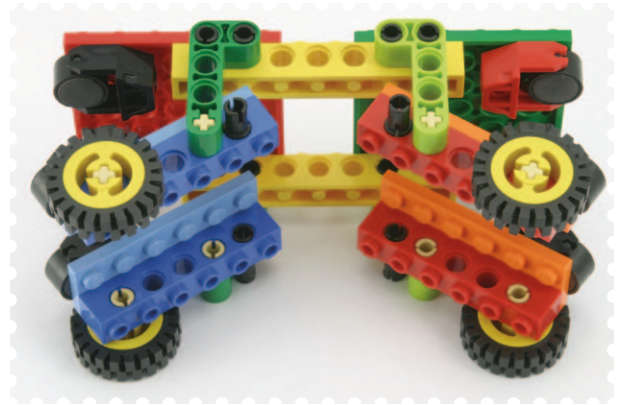
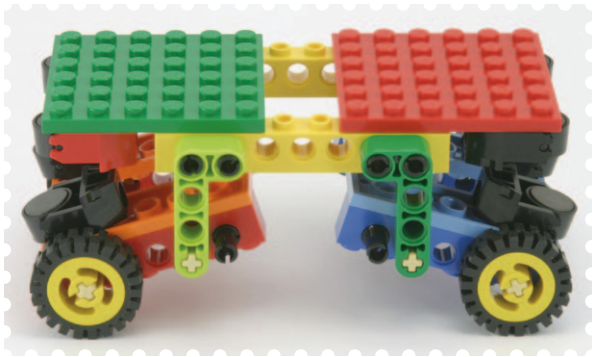


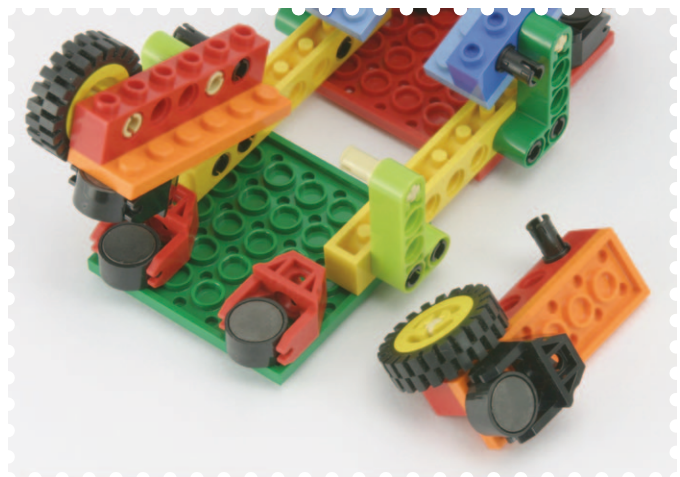
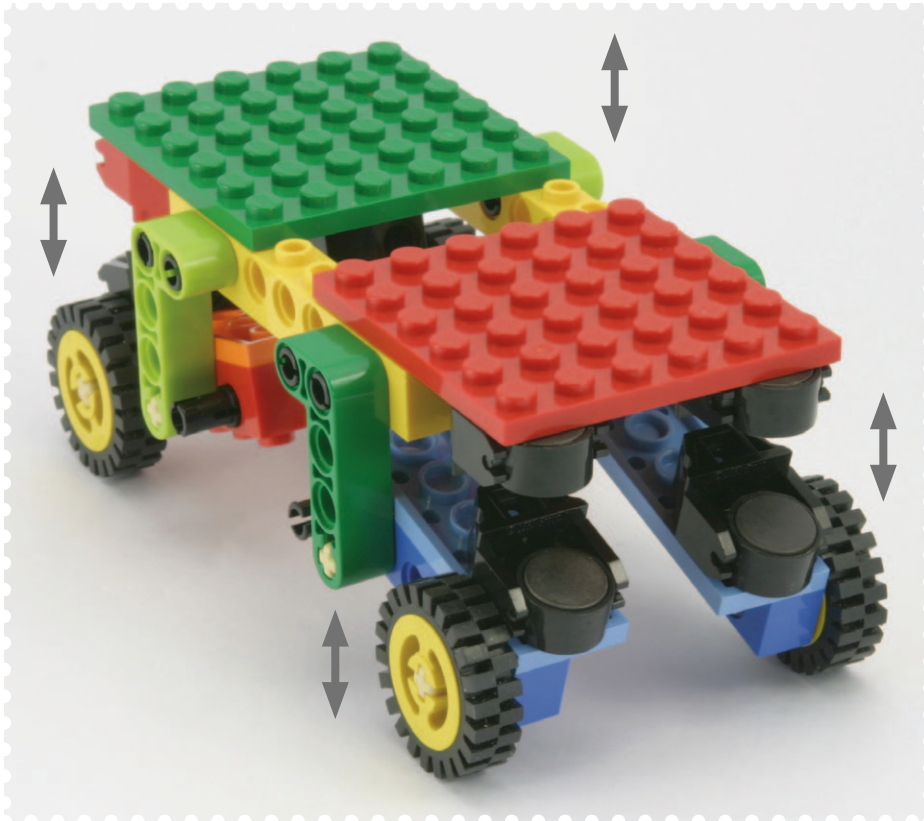


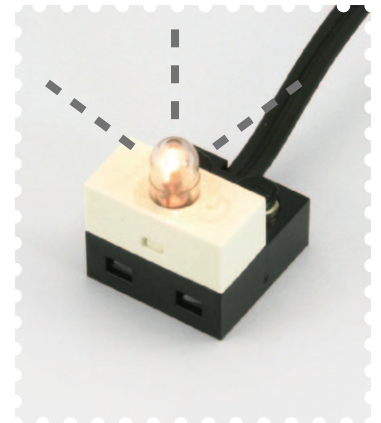
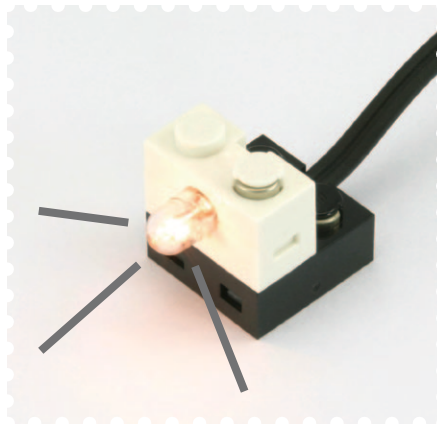
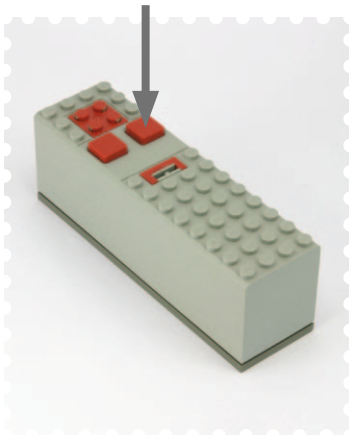
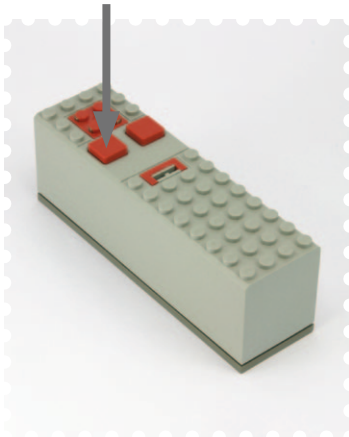


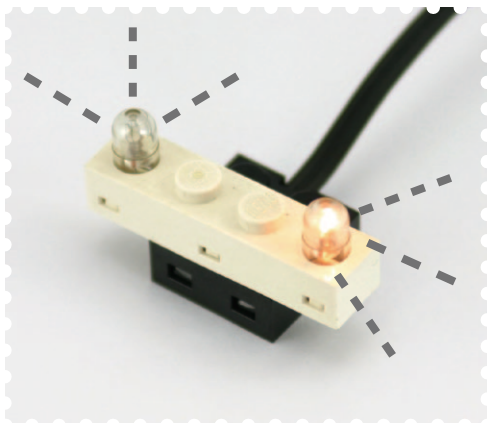
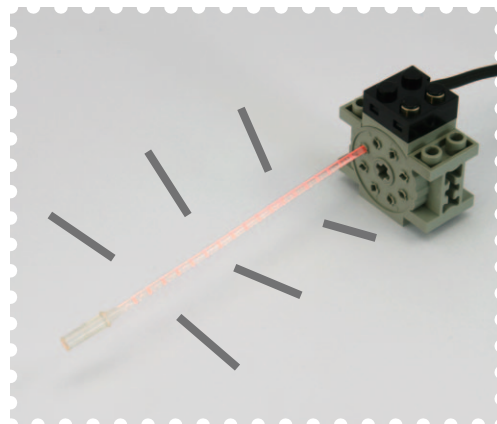
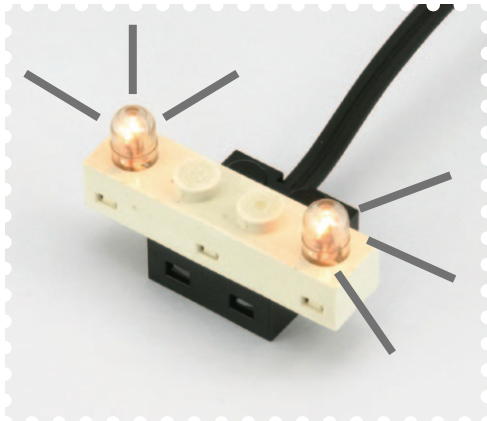
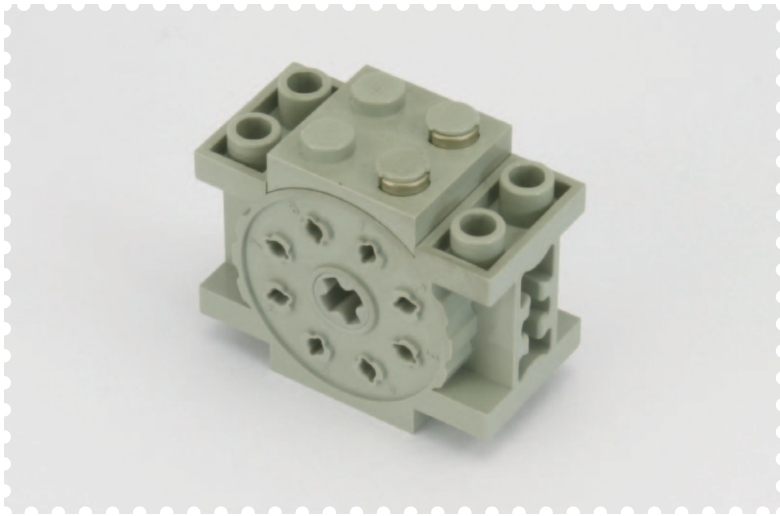


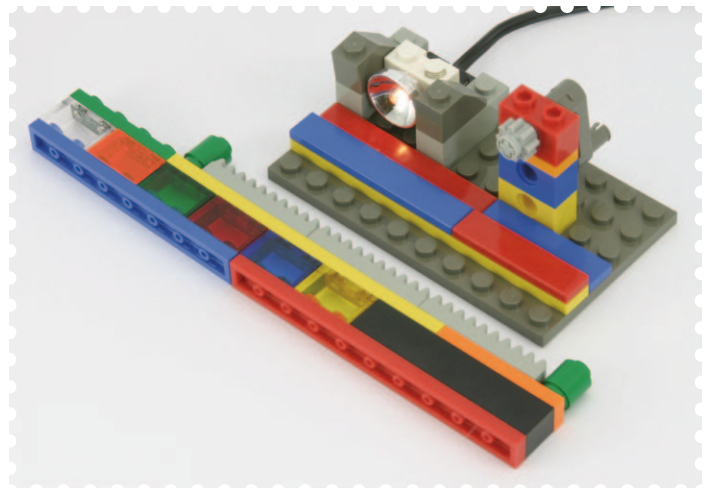
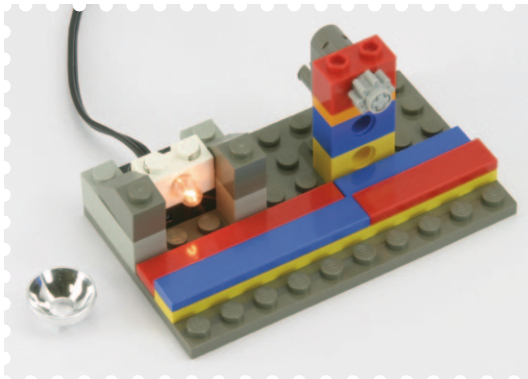
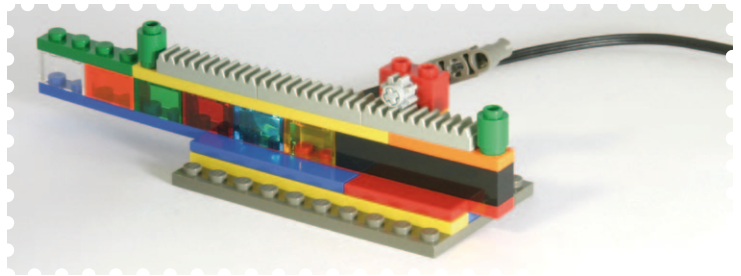
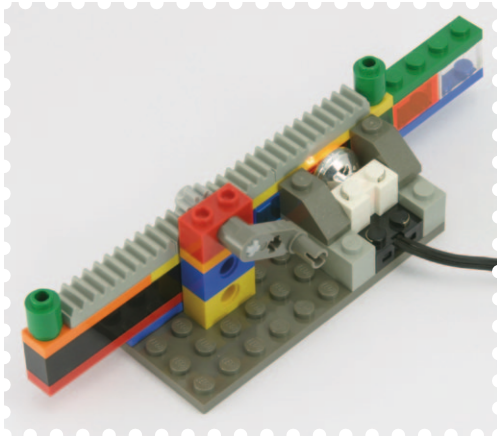
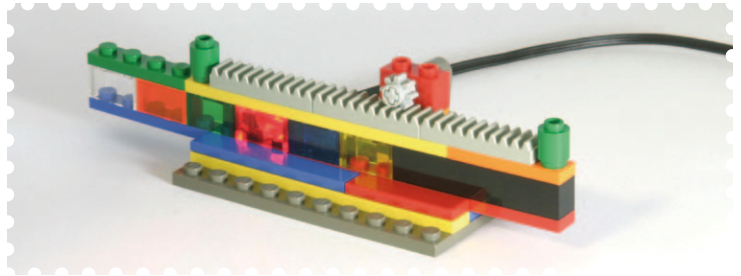
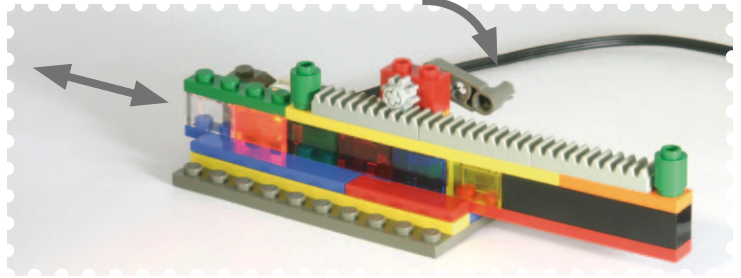


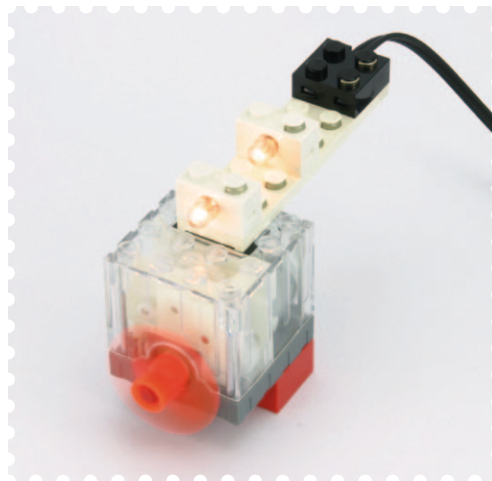
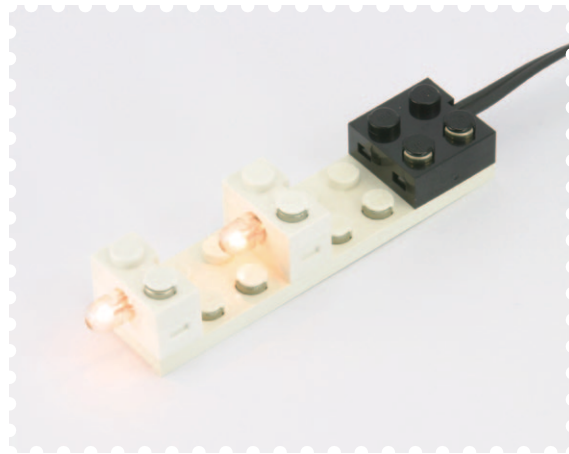
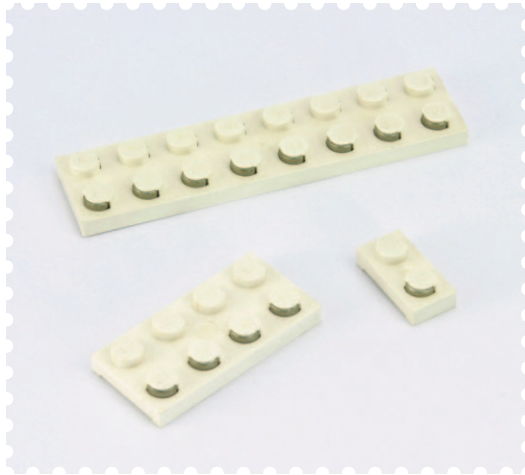


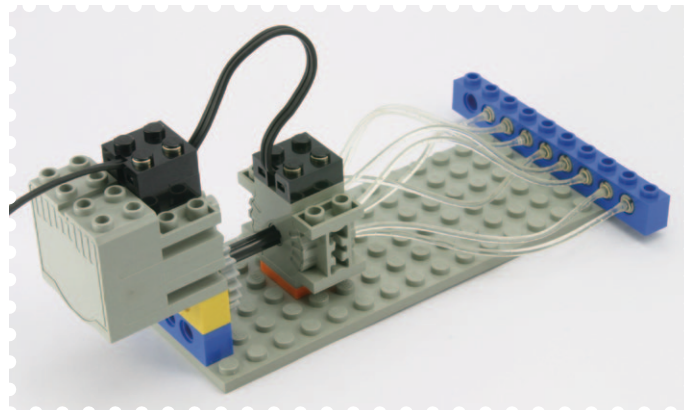
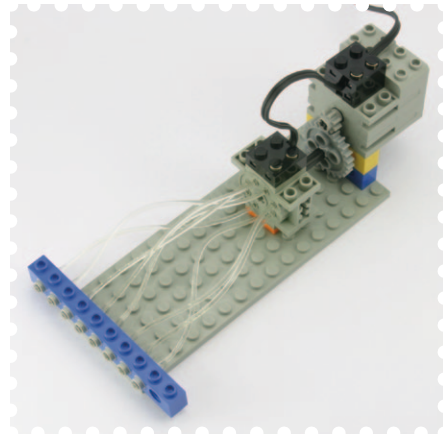
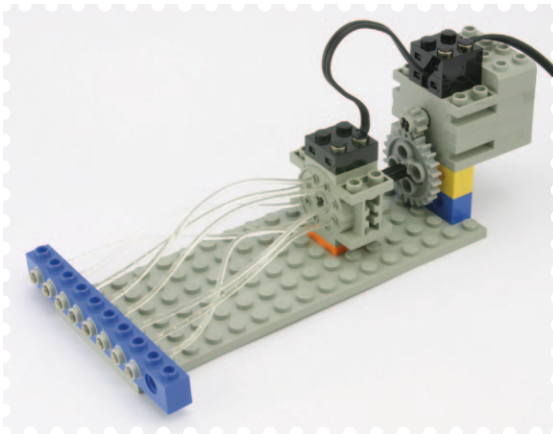
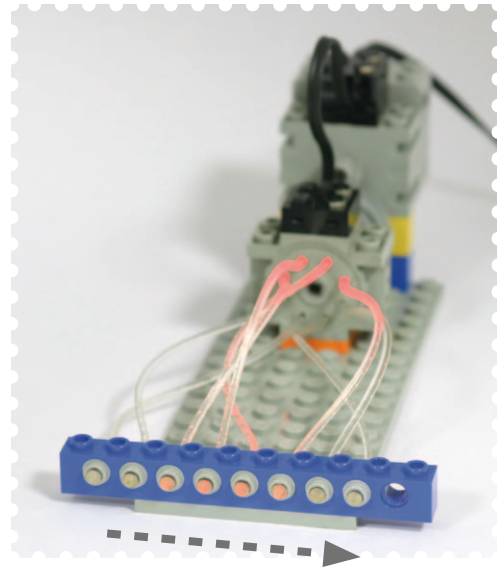


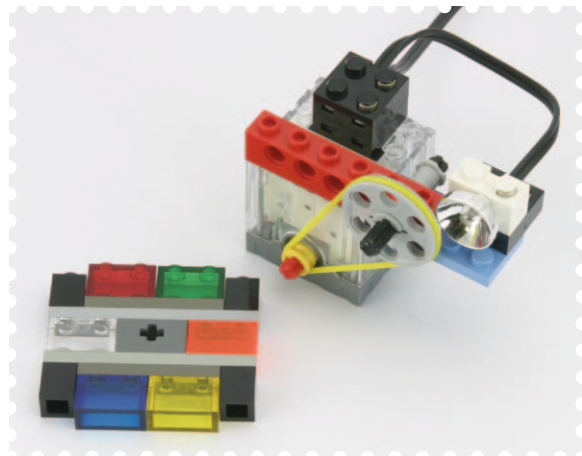
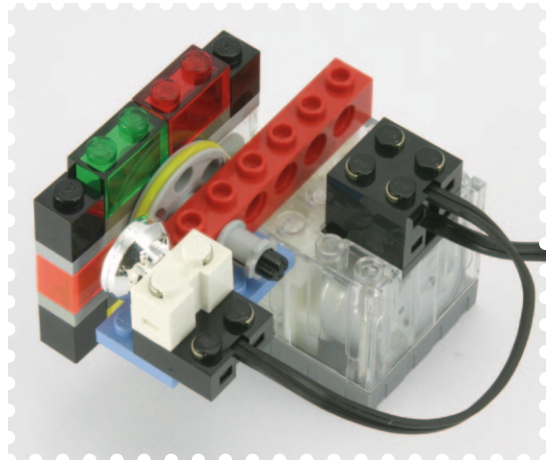
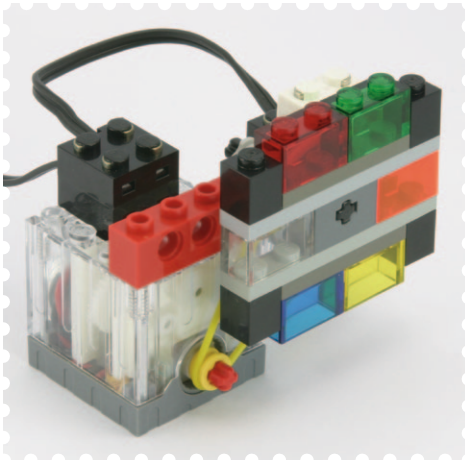
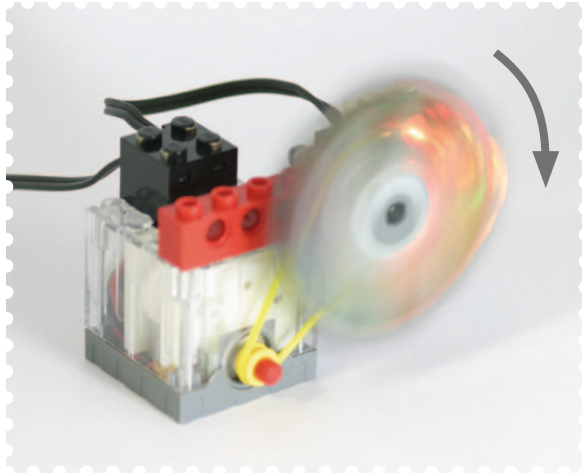


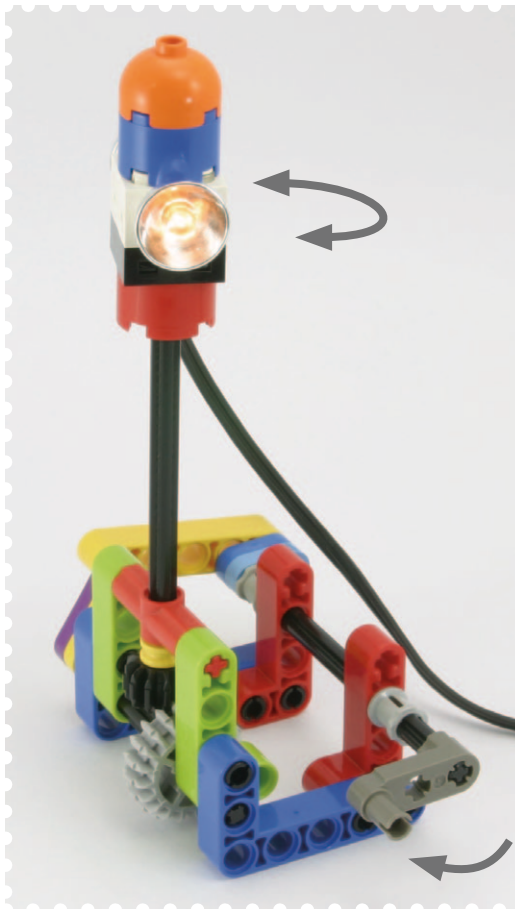


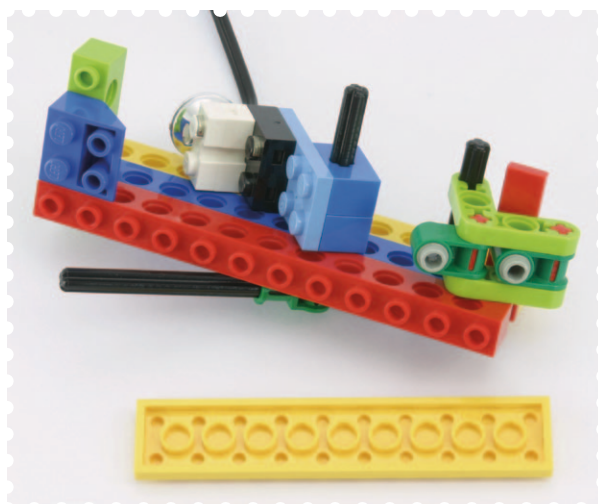
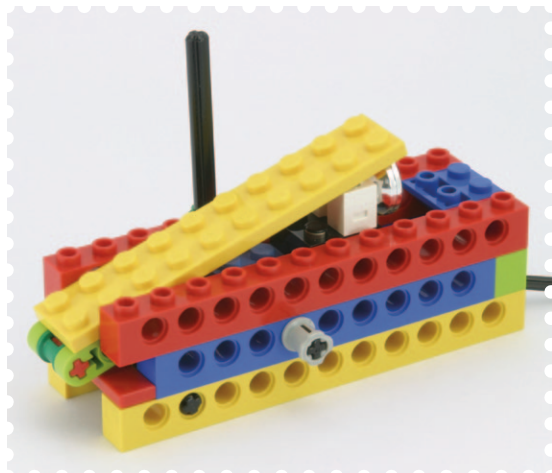
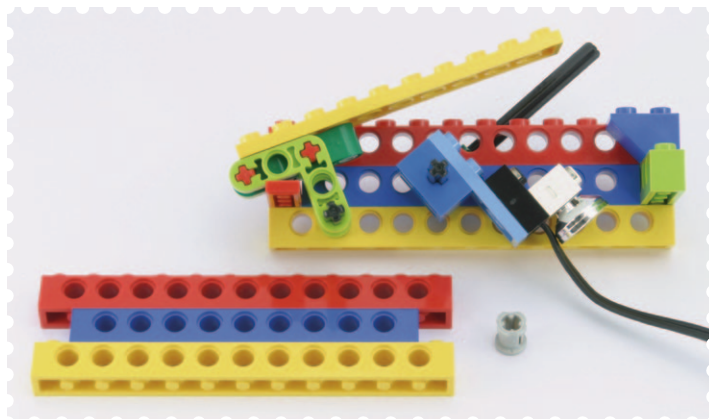
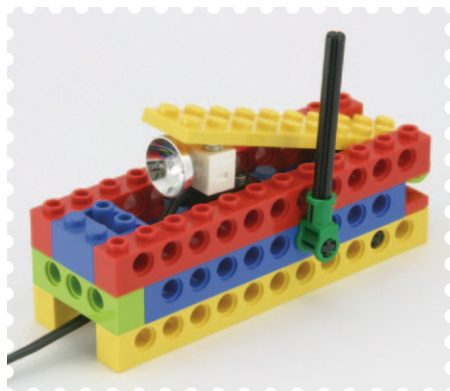
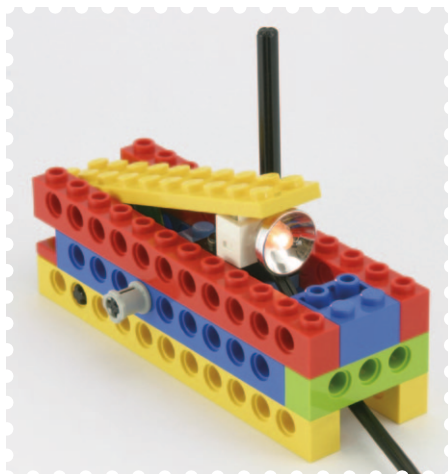
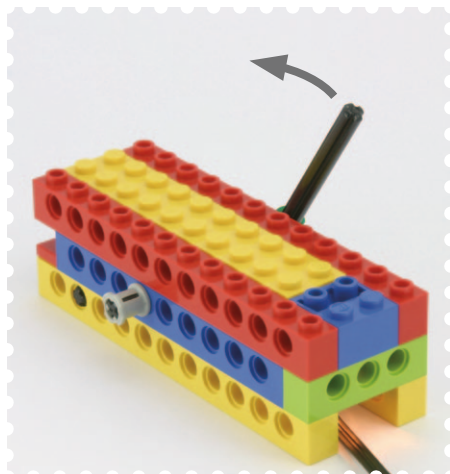


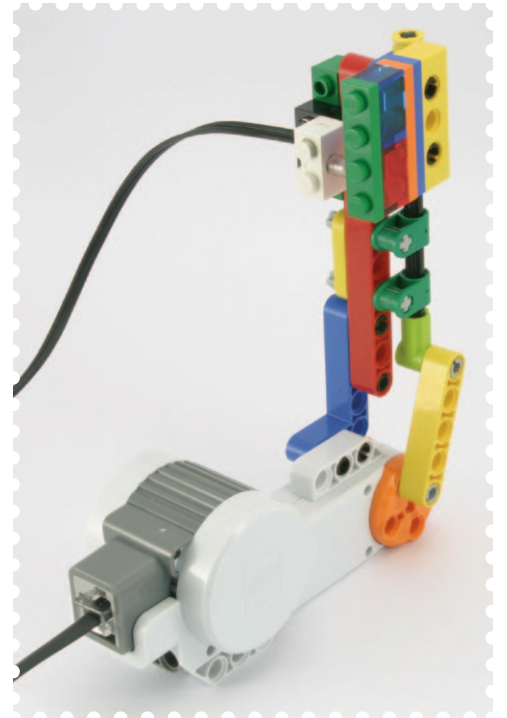
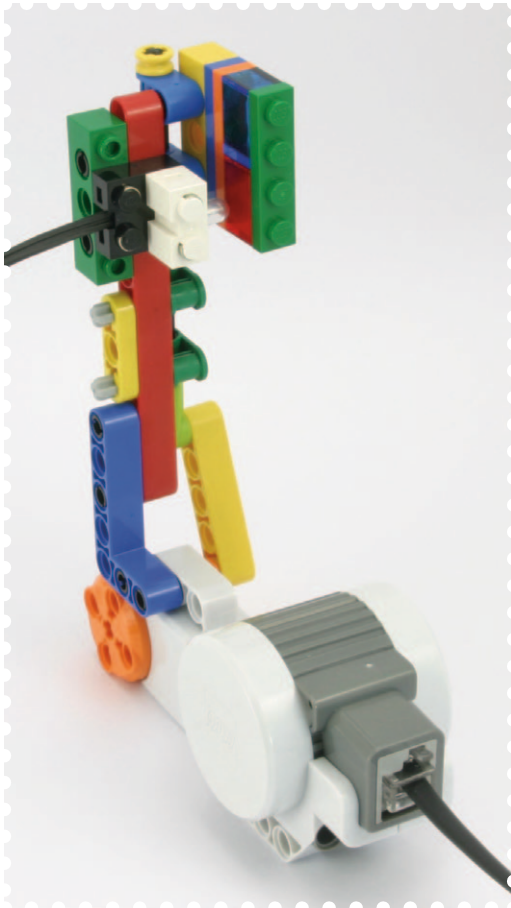


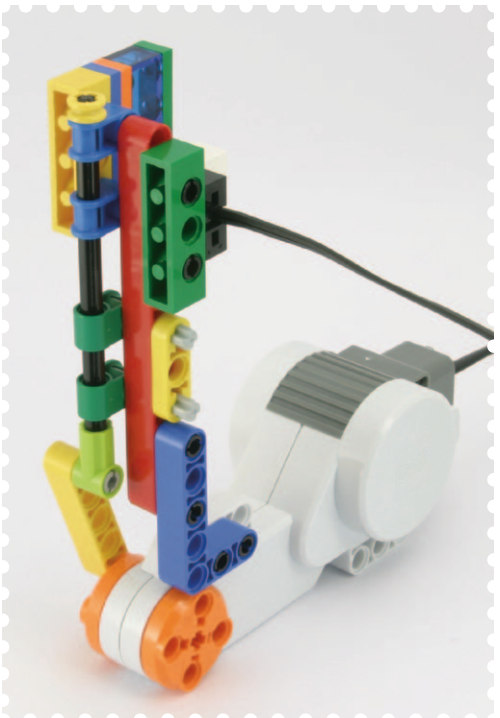
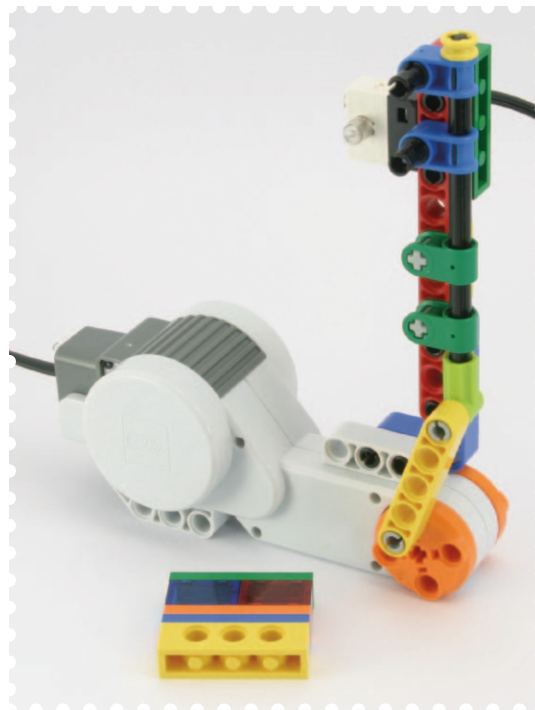
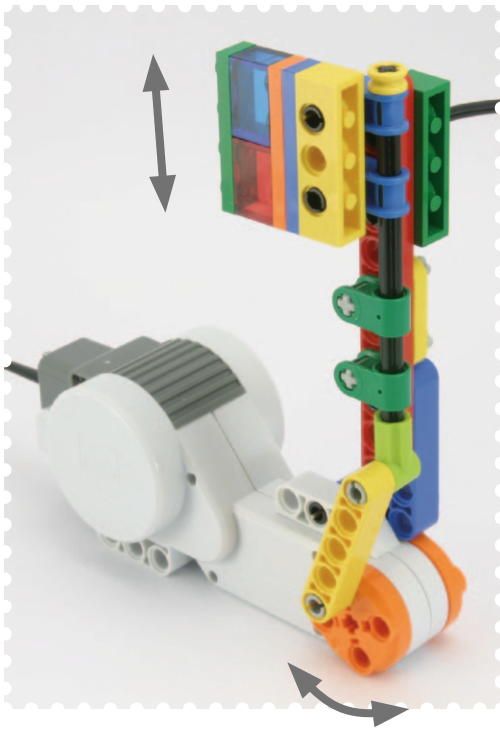


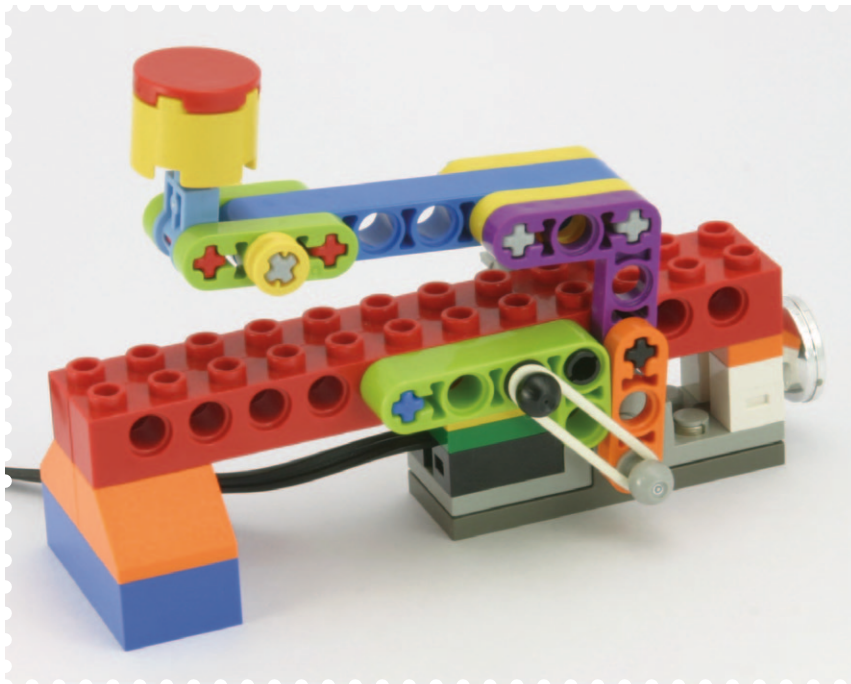
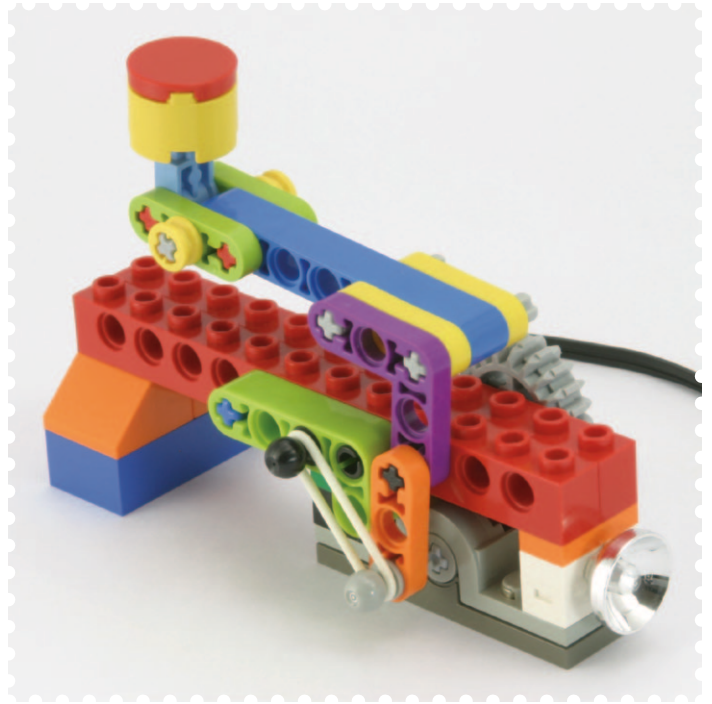


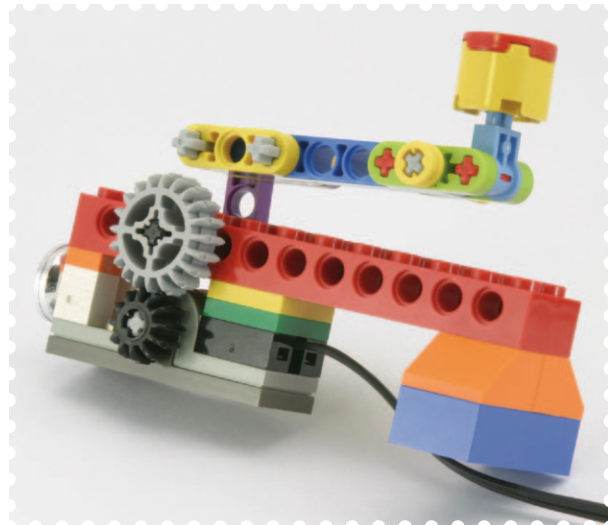
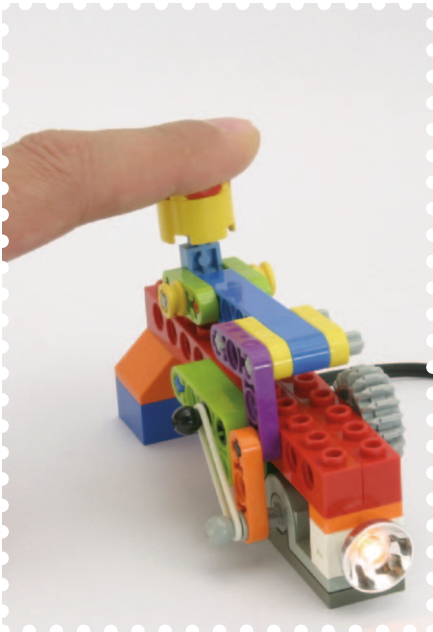
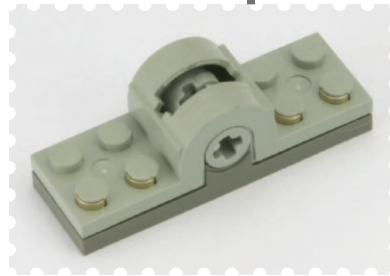
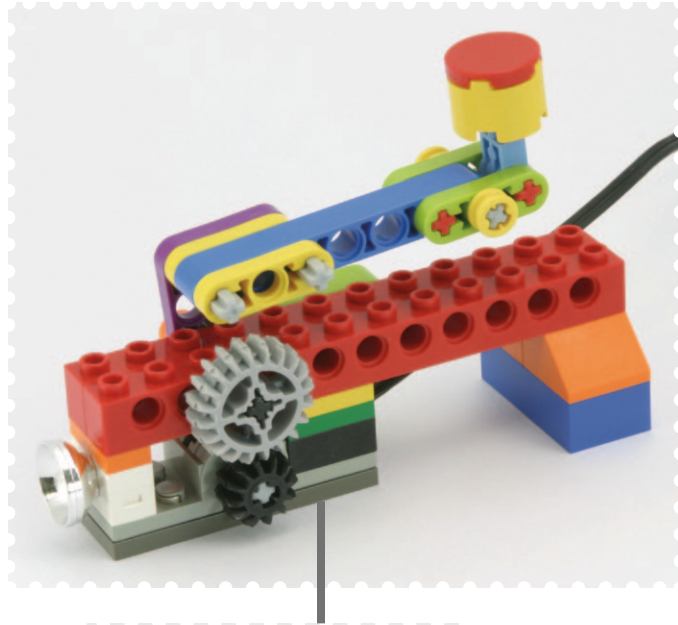
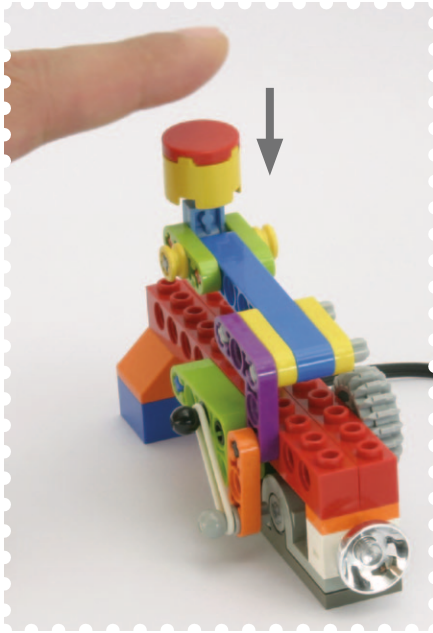


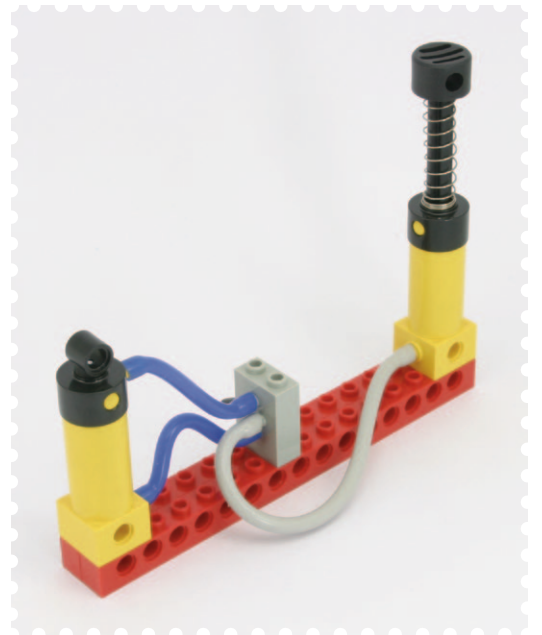
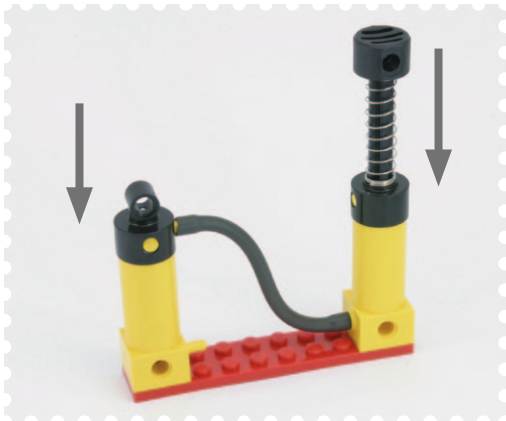
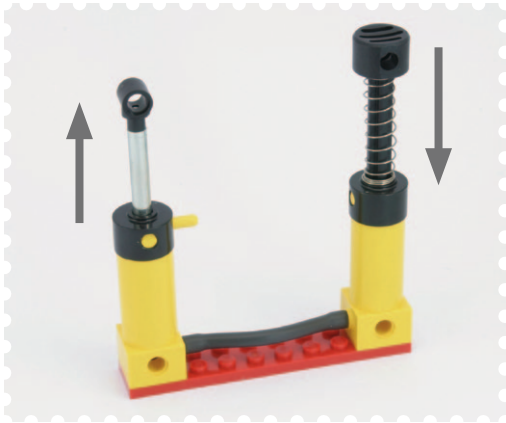
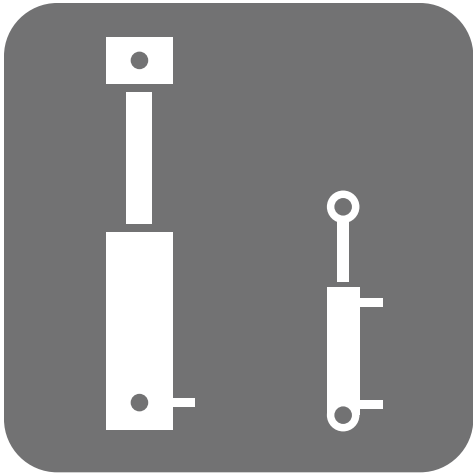


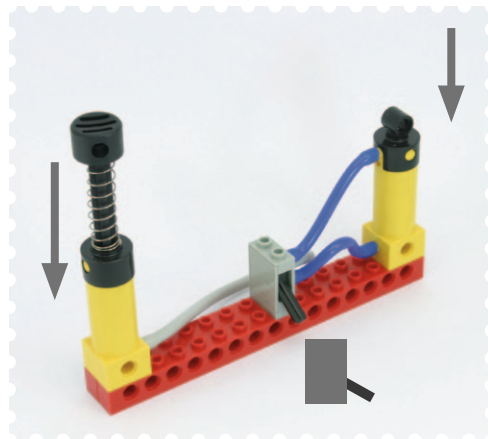
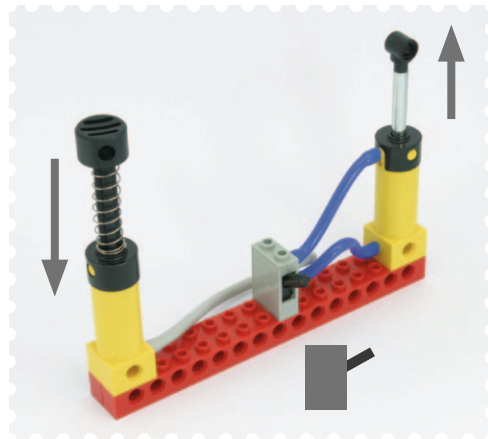
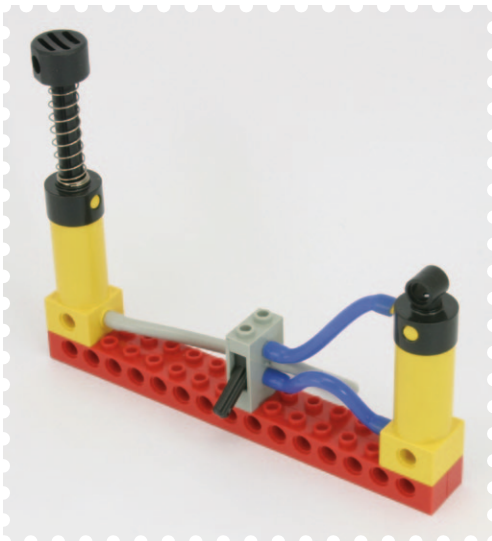
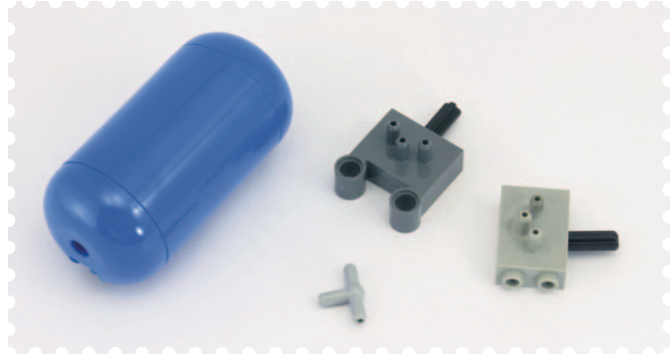


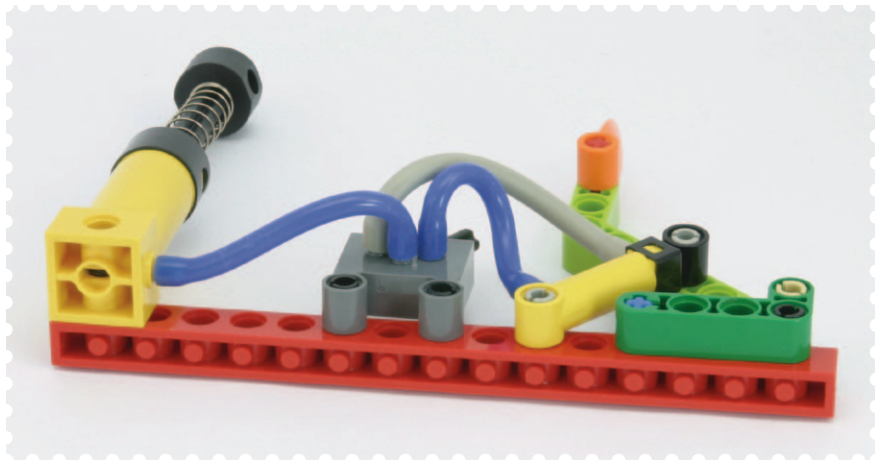
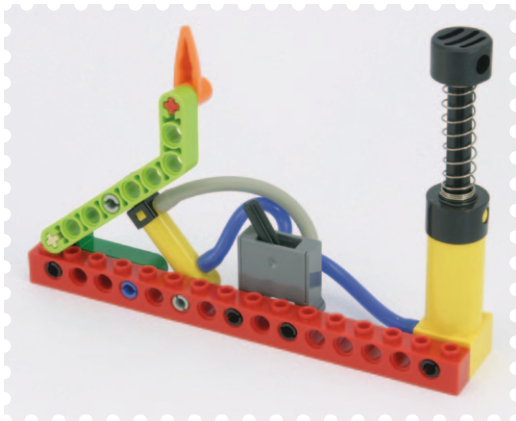
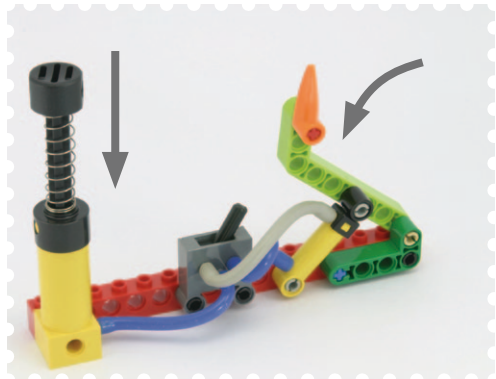
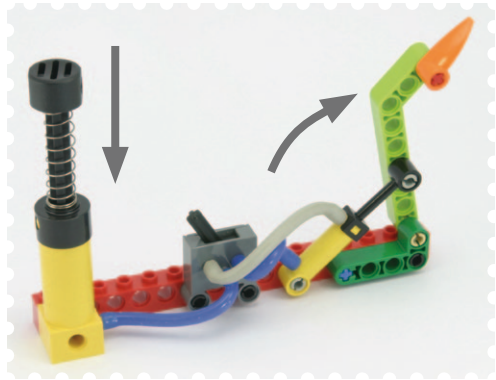
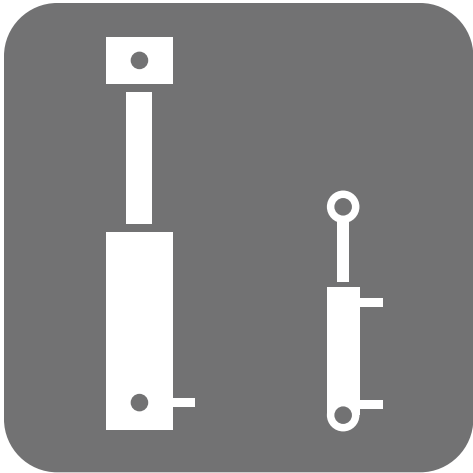


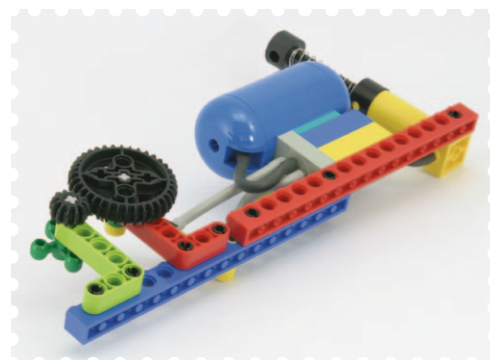
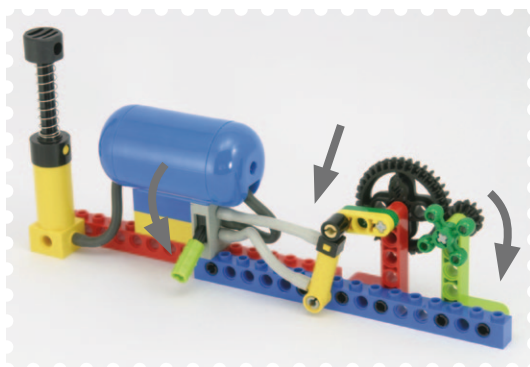
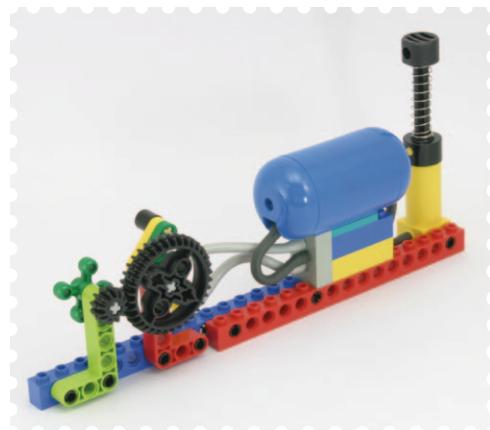
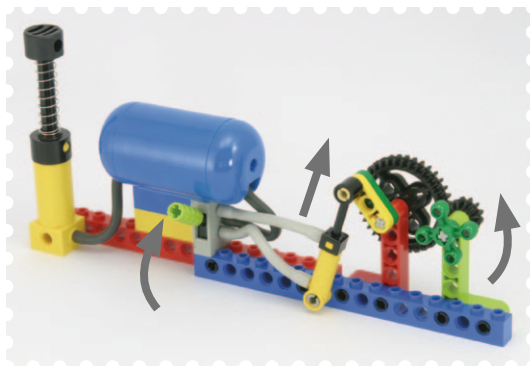
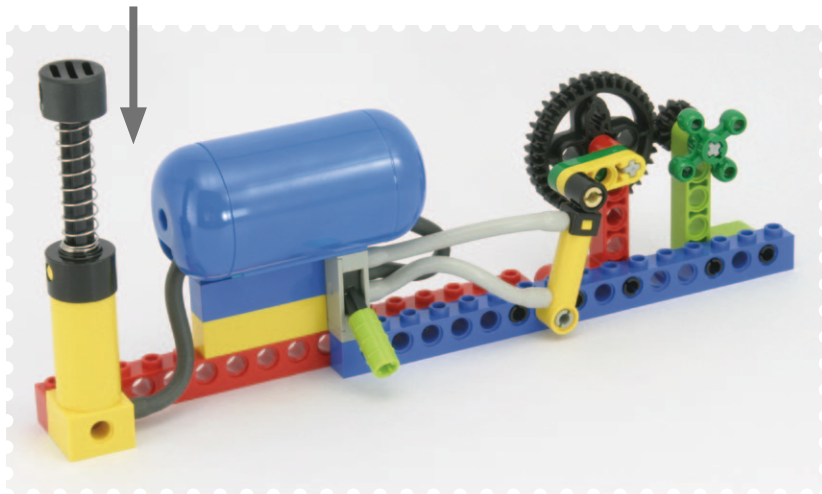


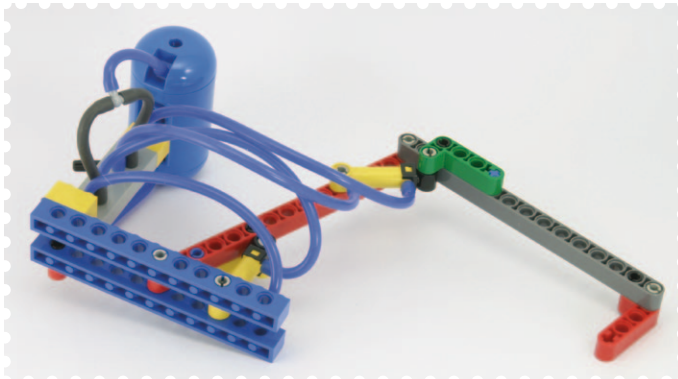
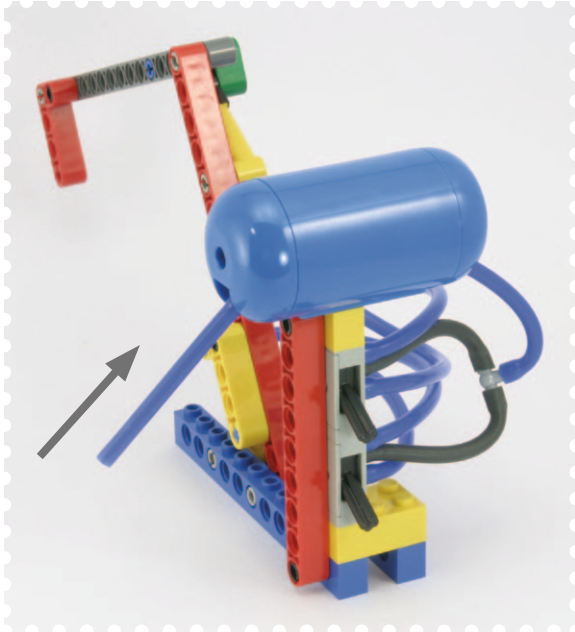
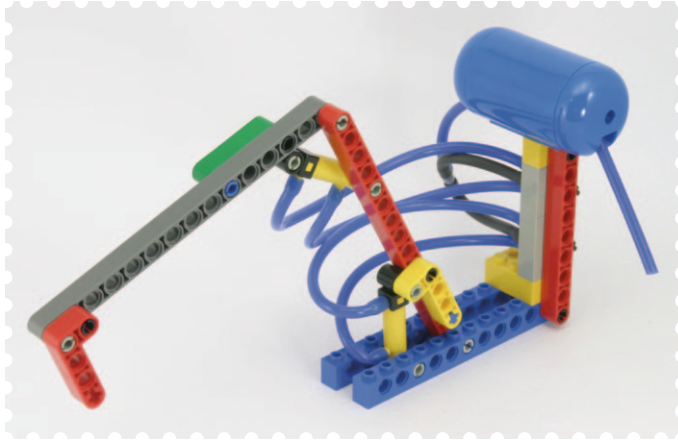
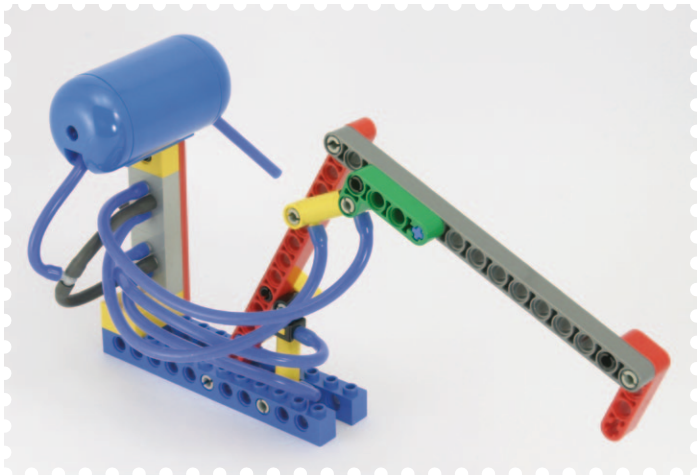
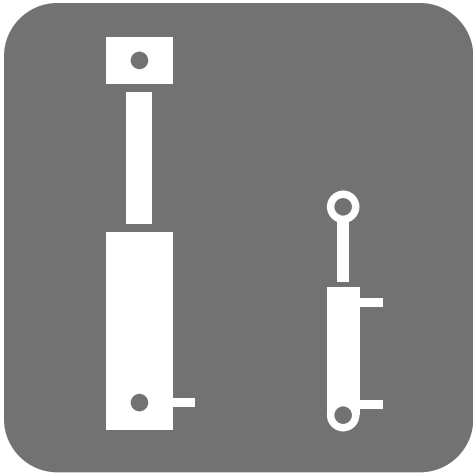


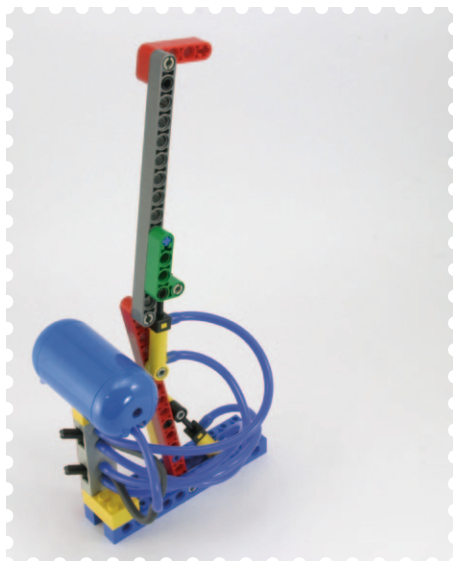
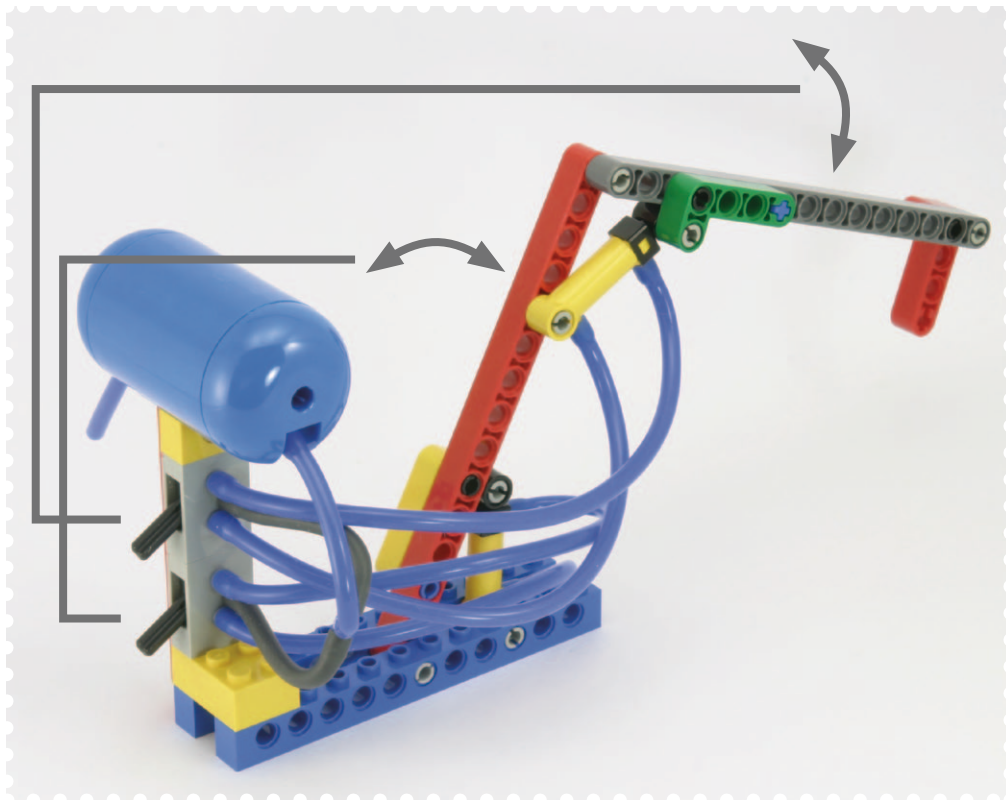


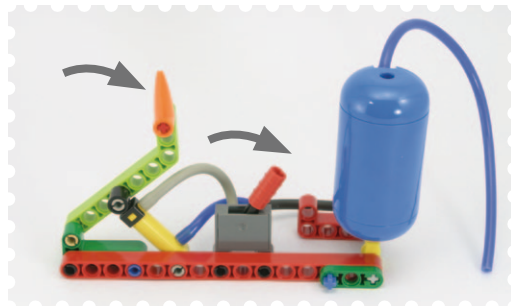
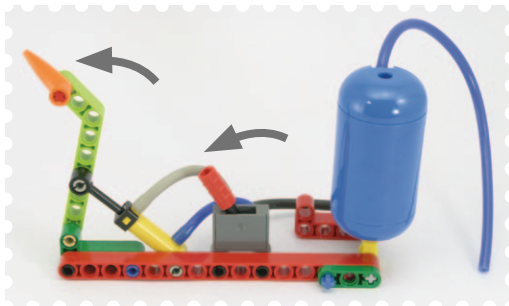
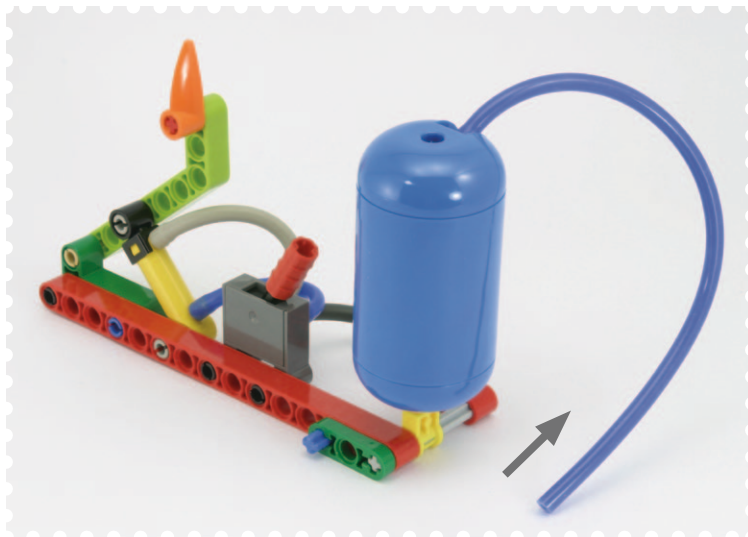
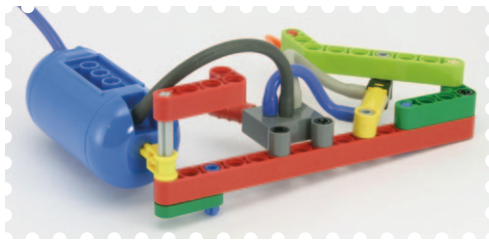
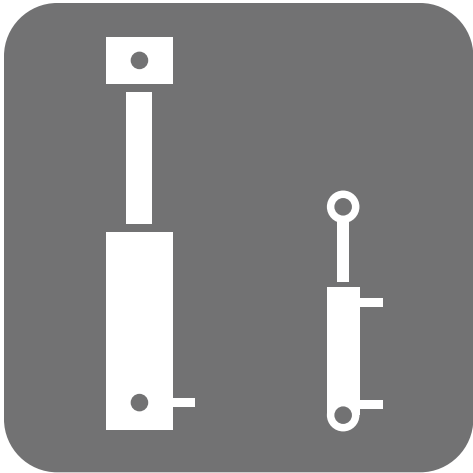


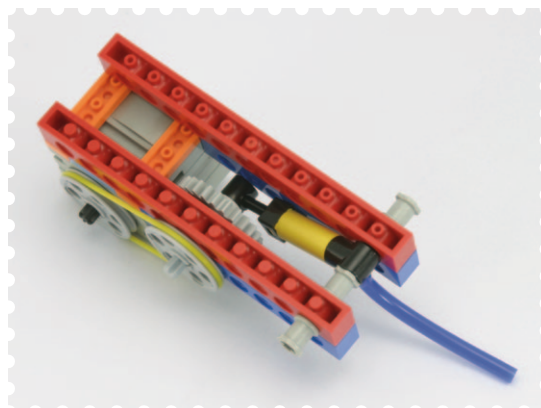
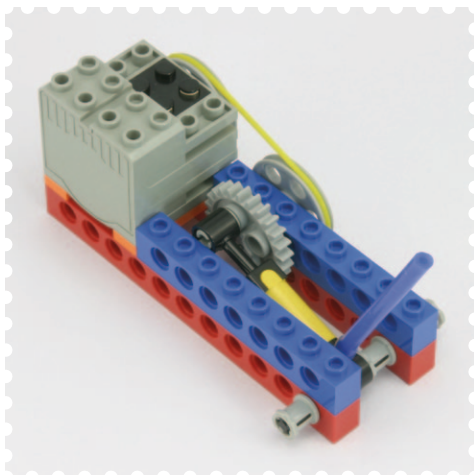
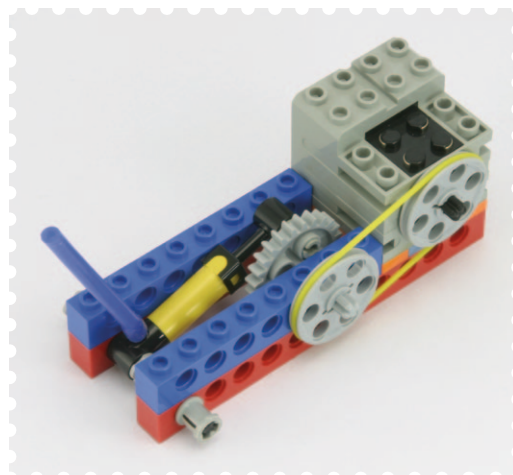
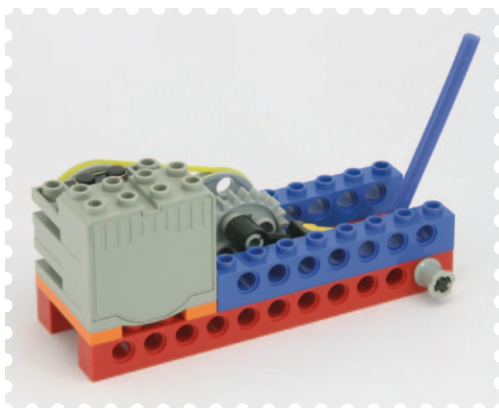
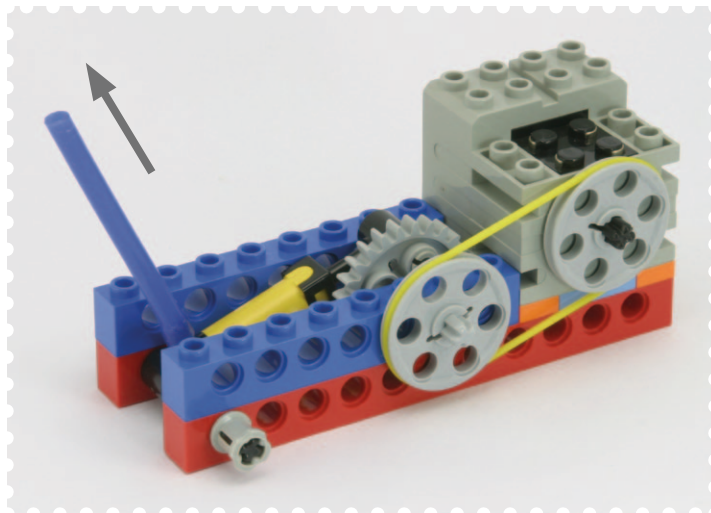


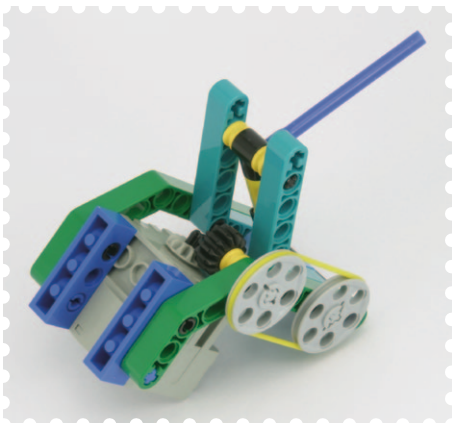
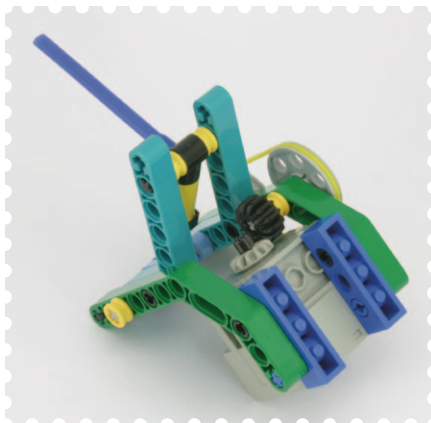
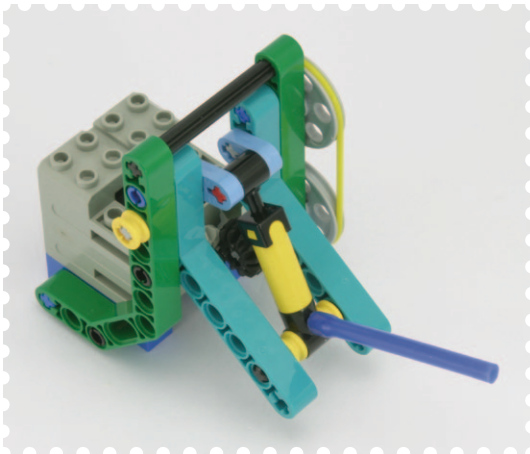
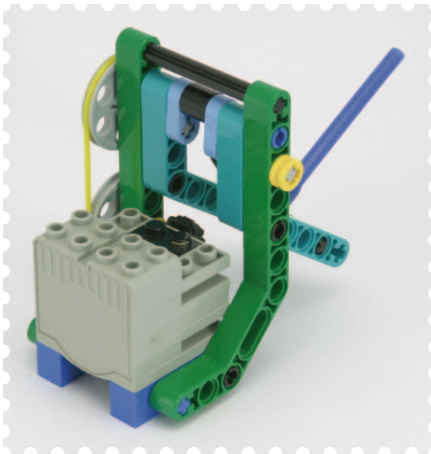
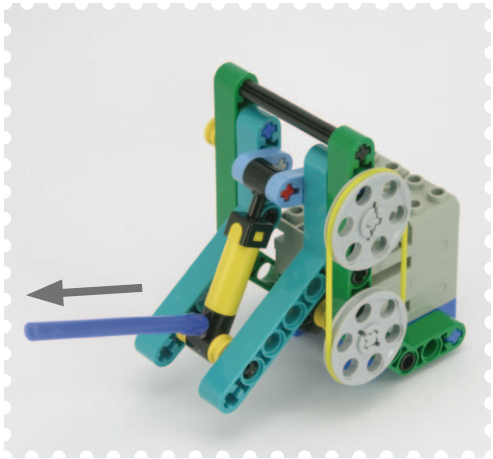
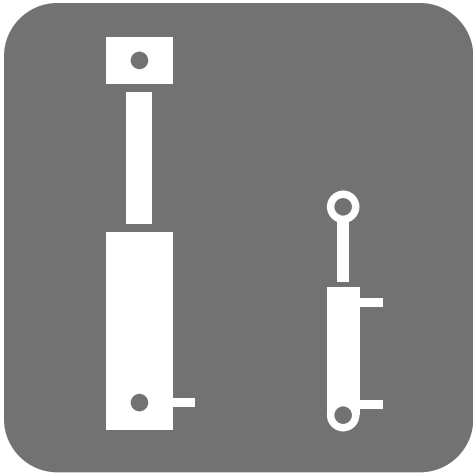


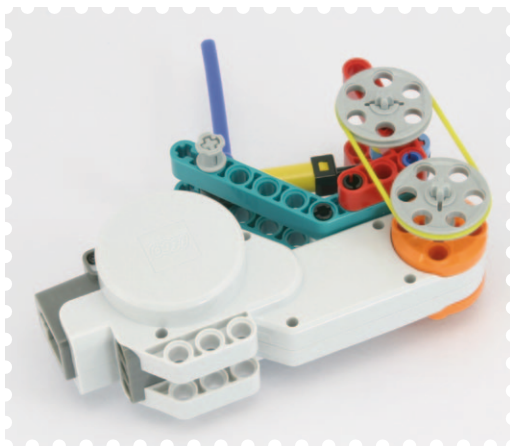
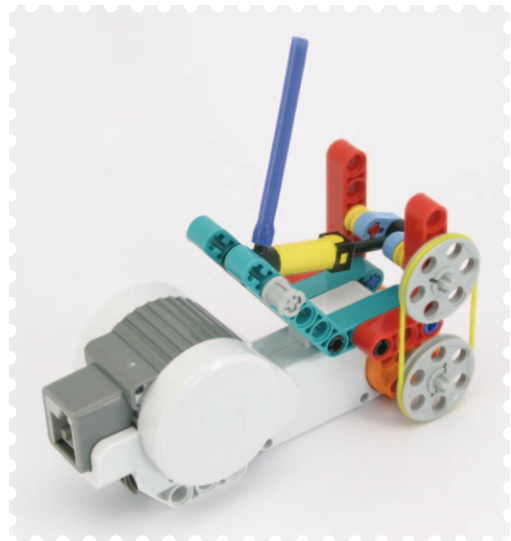
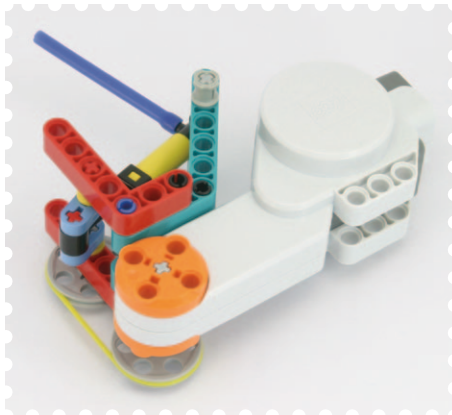
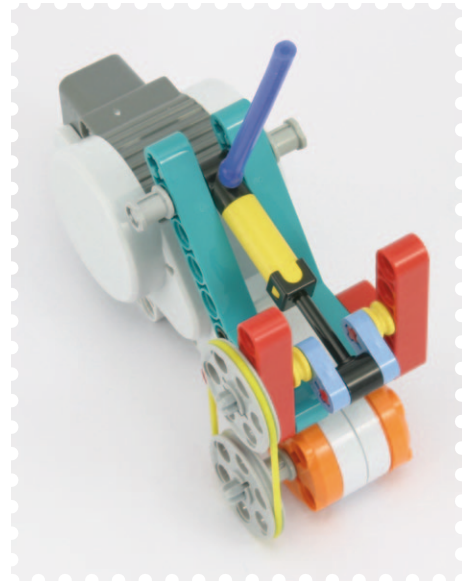
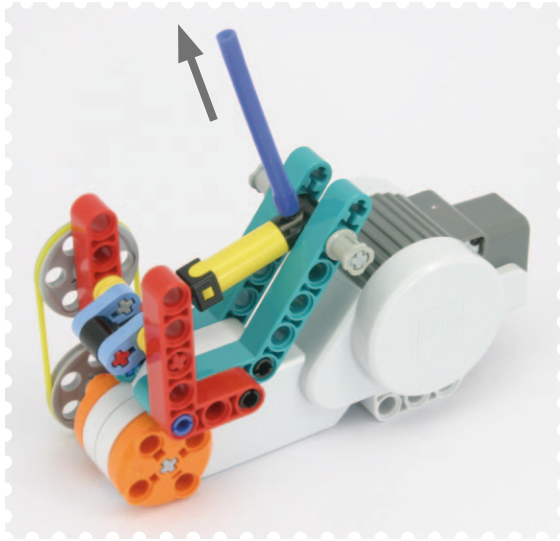


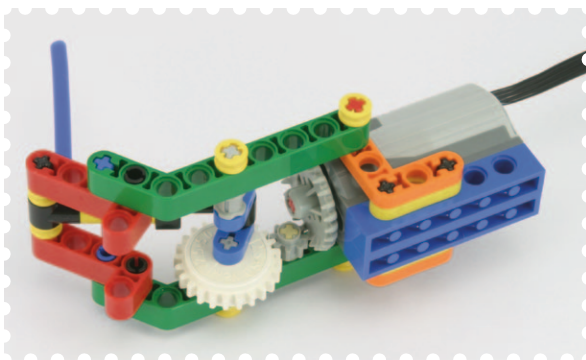
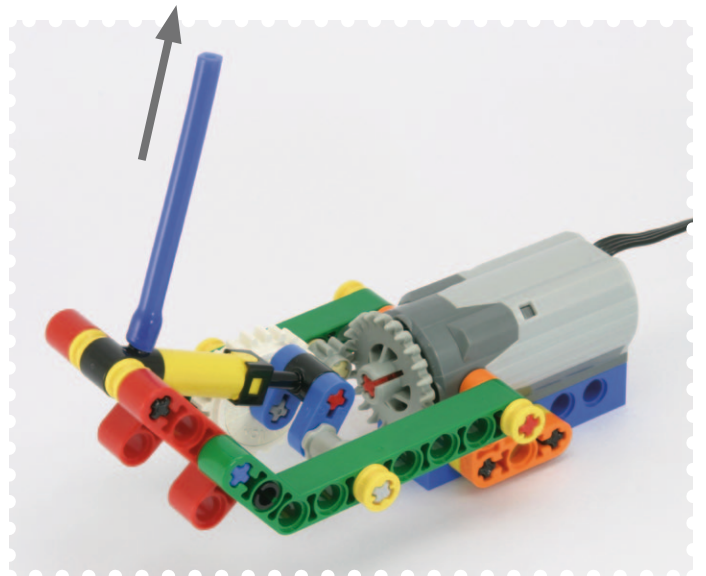
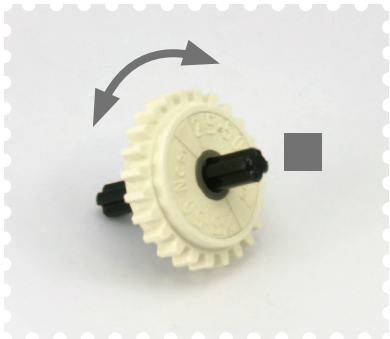
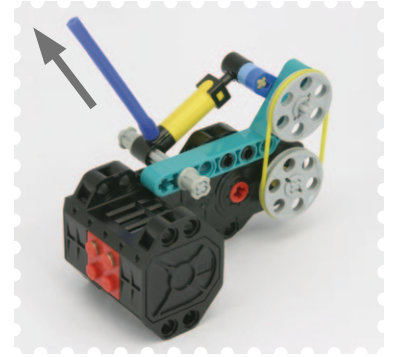
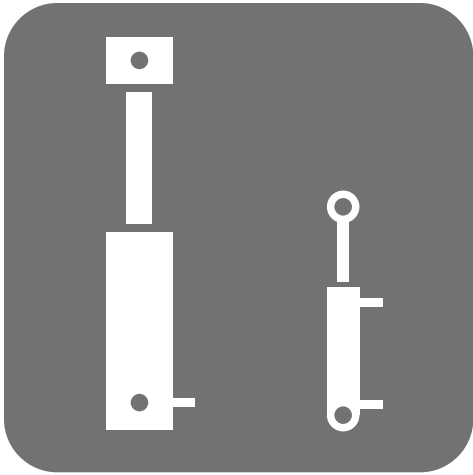


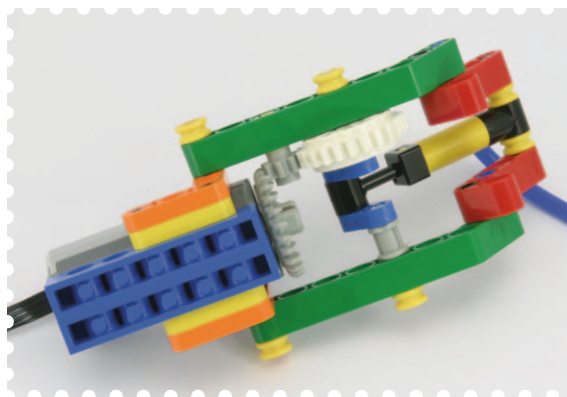
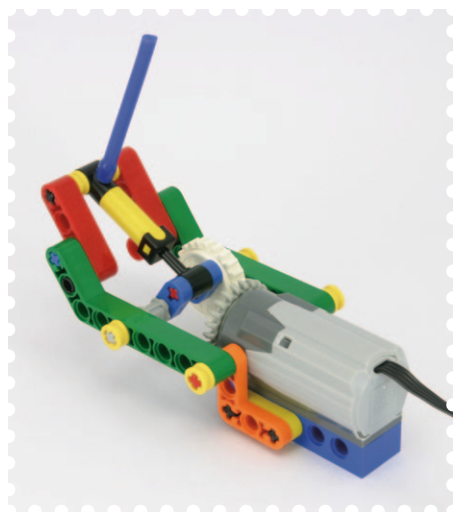
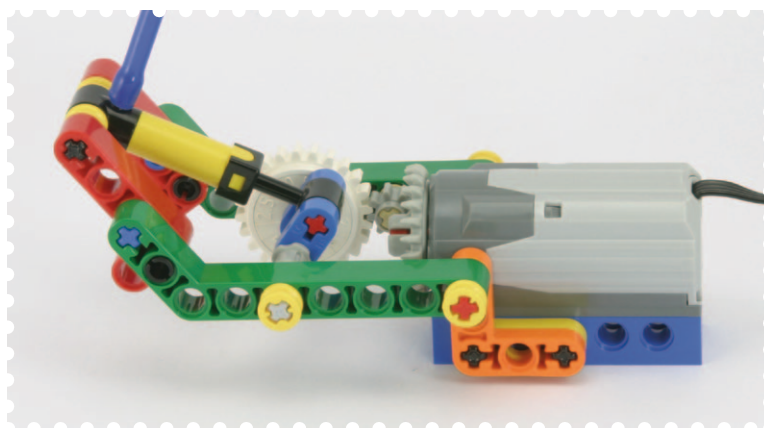
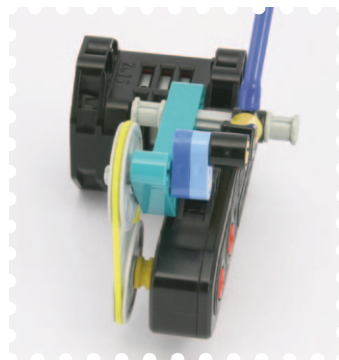
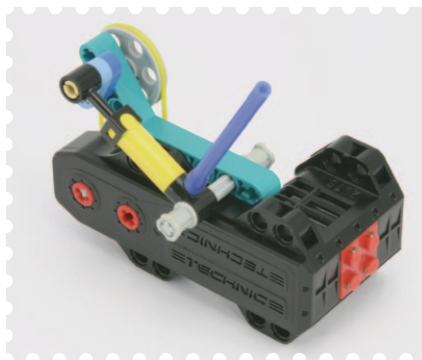
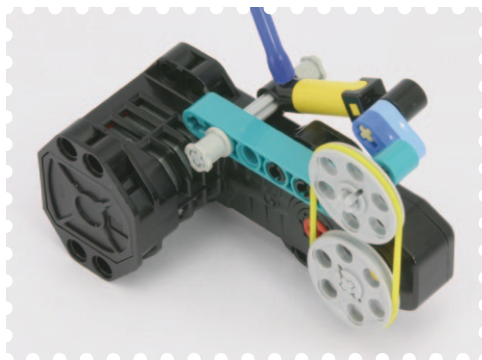


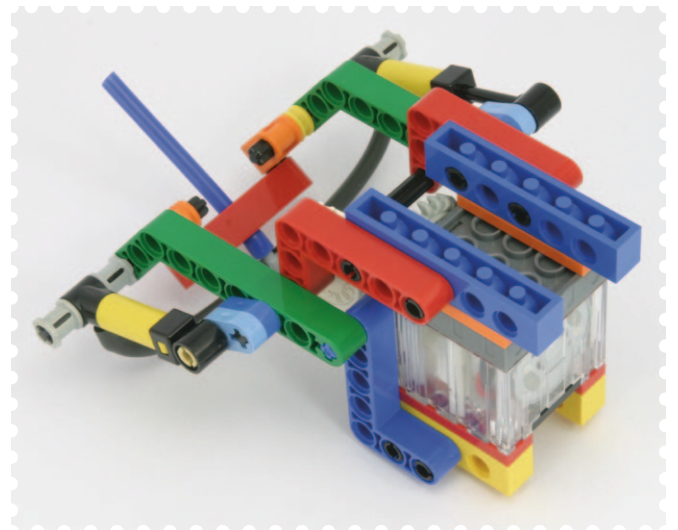
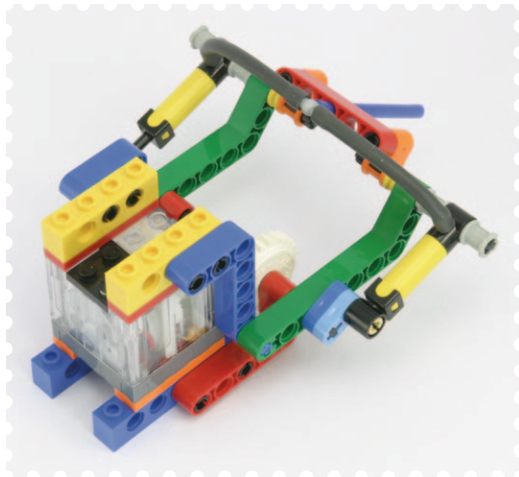
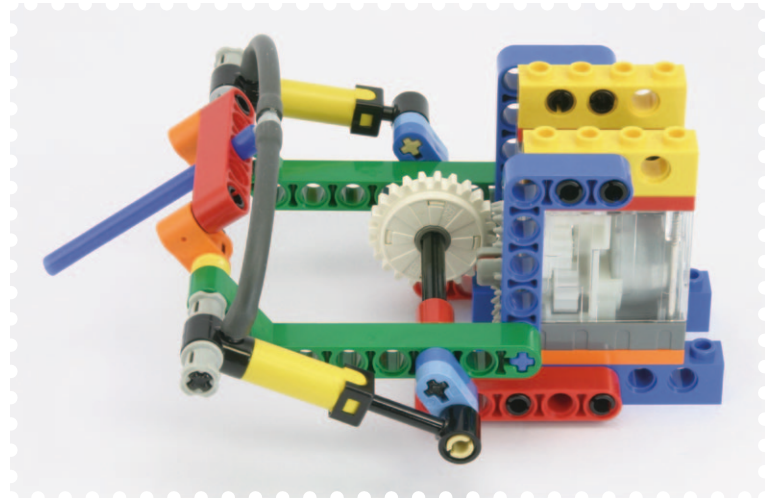
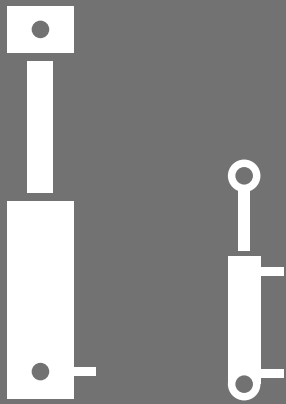


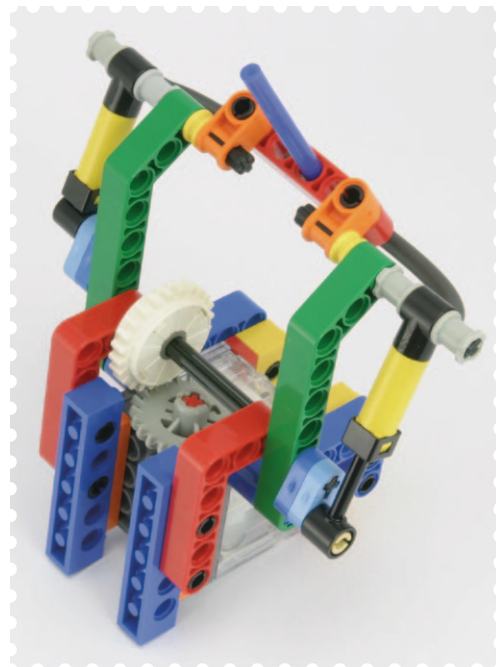
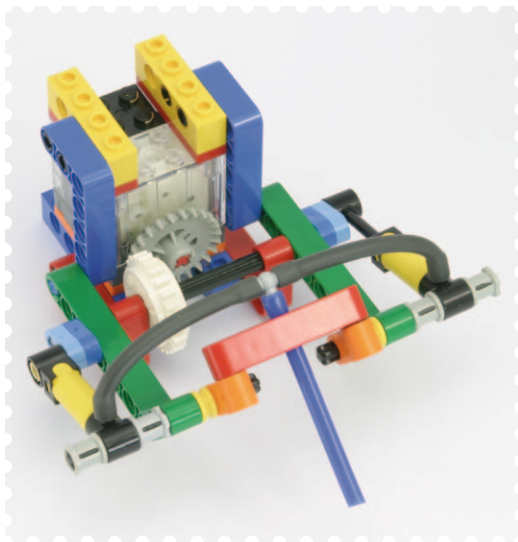
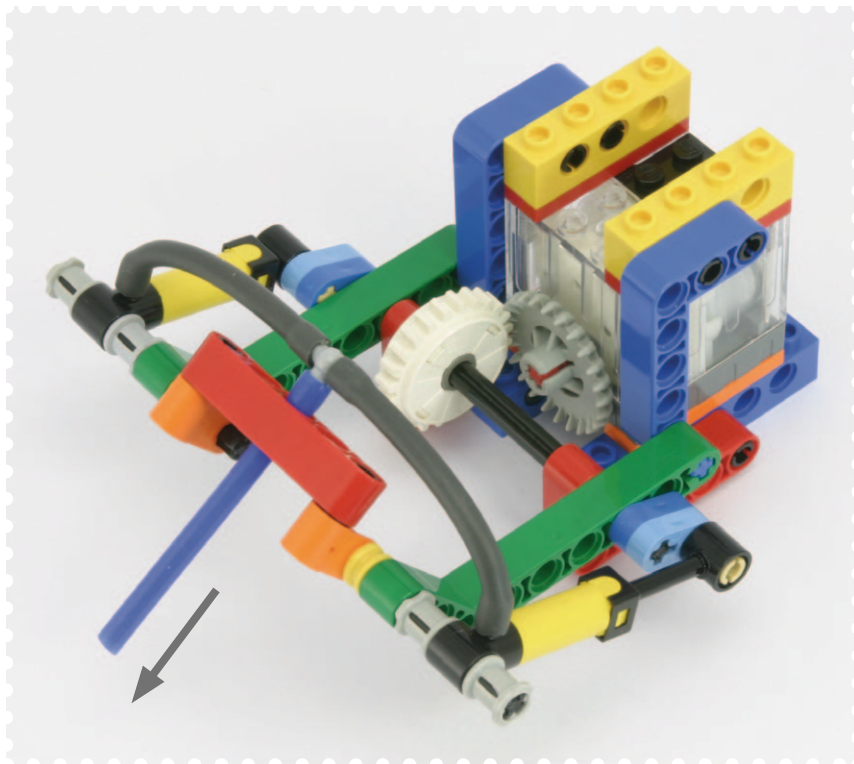


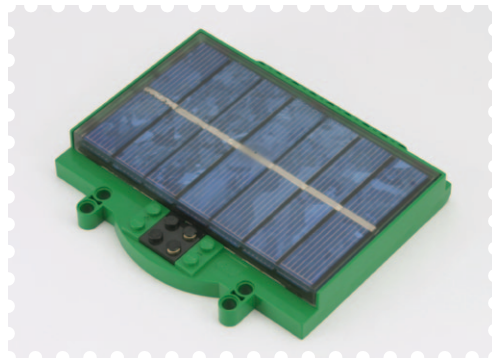
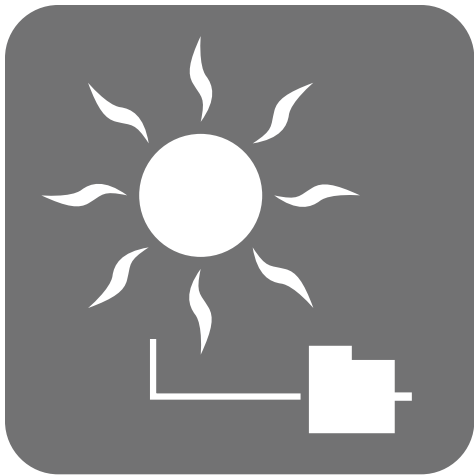


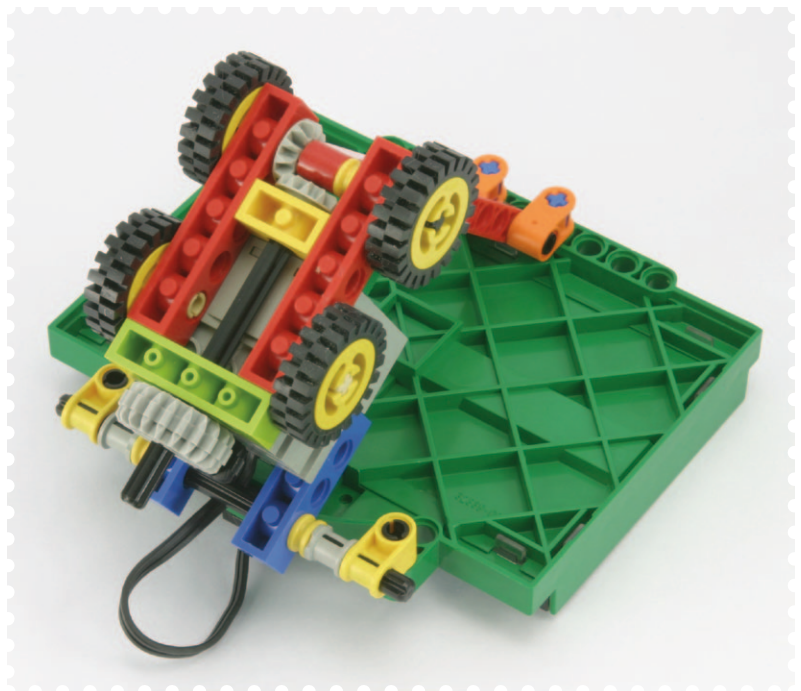
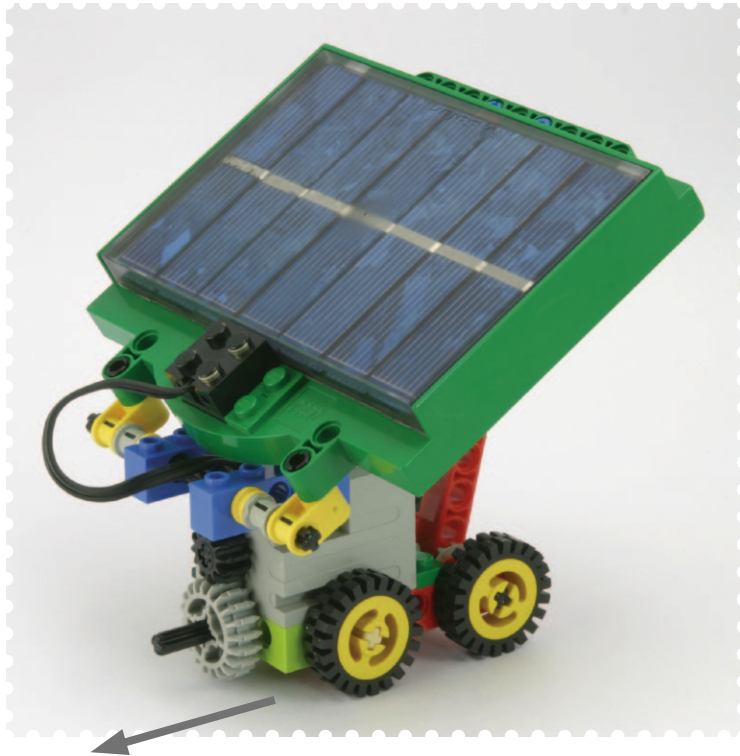


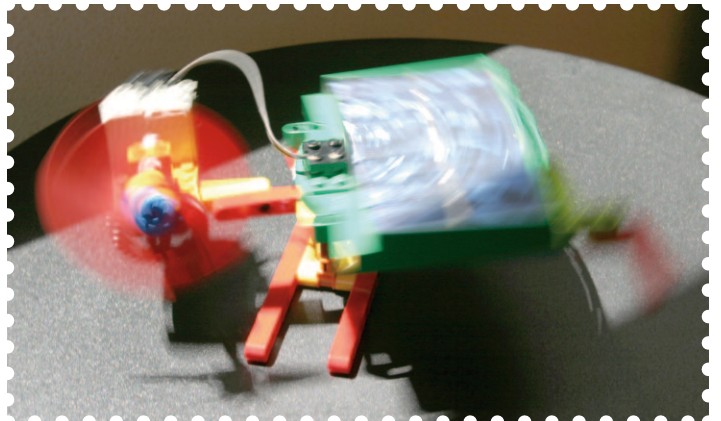
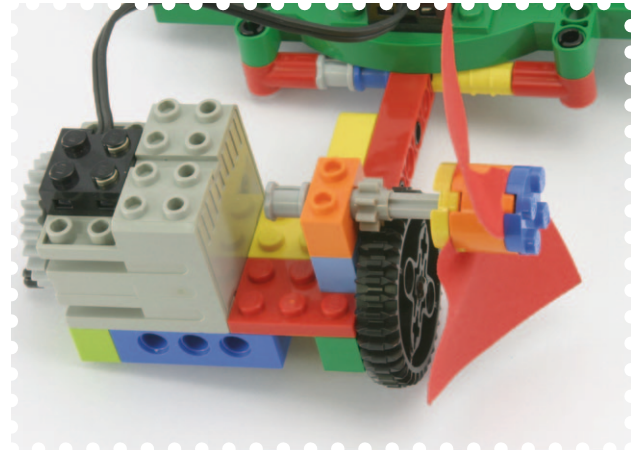
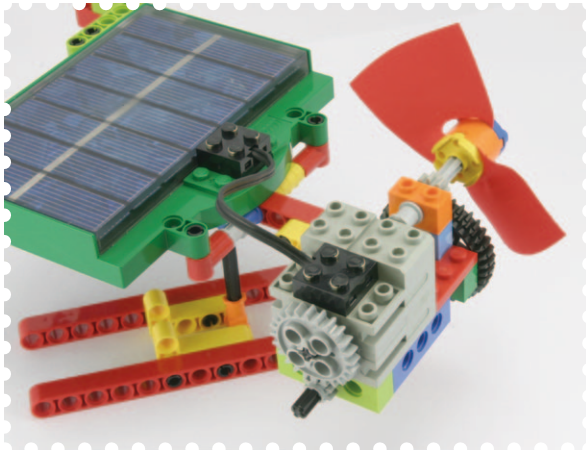
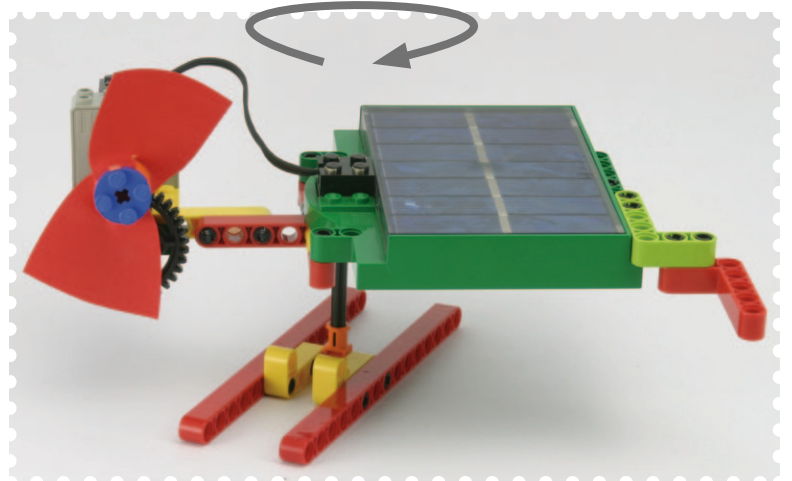
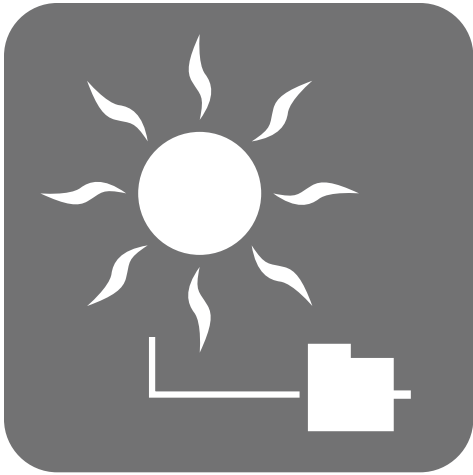


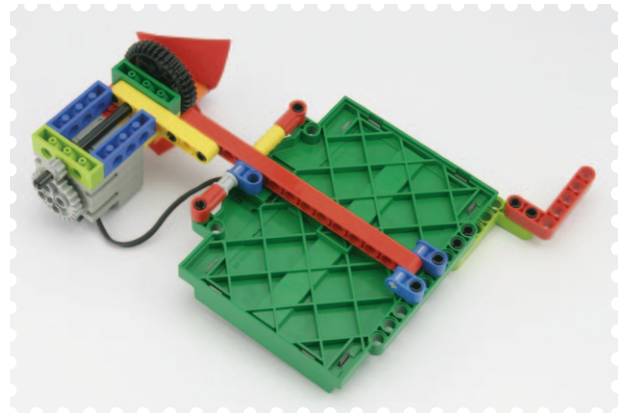
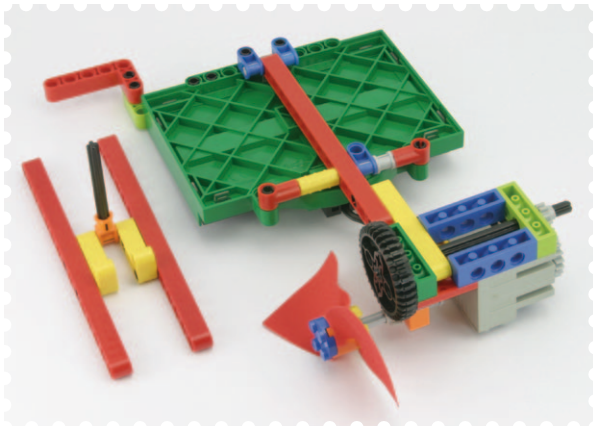
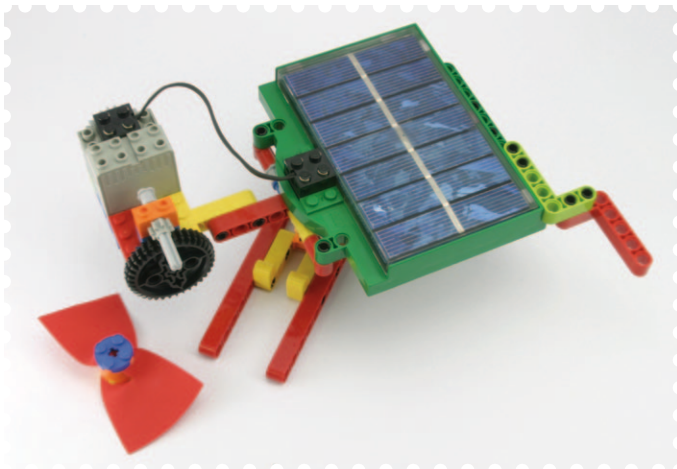
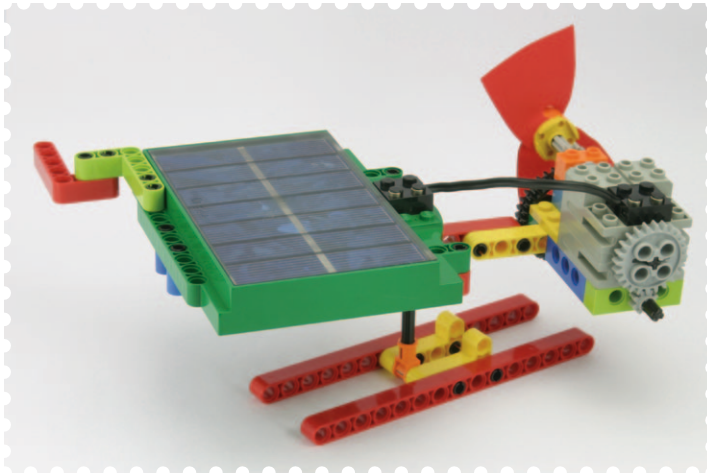


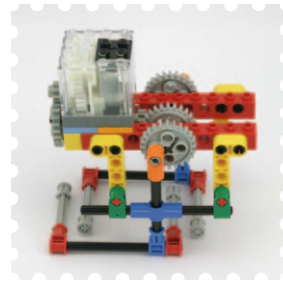
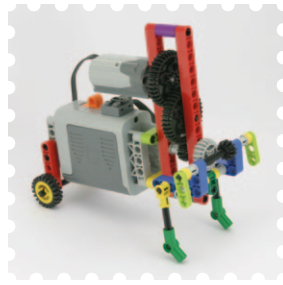




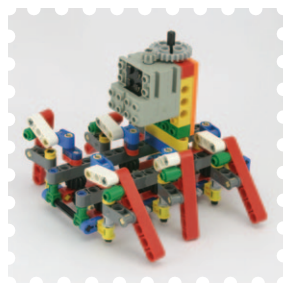


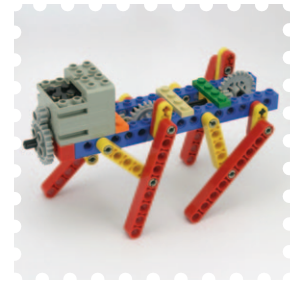
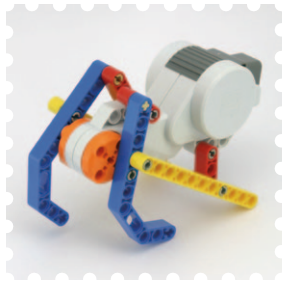






PART 4





106



116



128



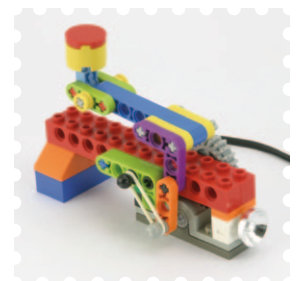
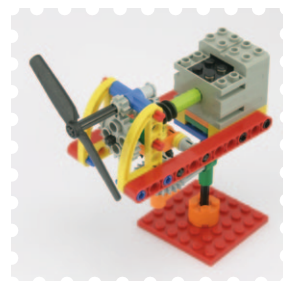
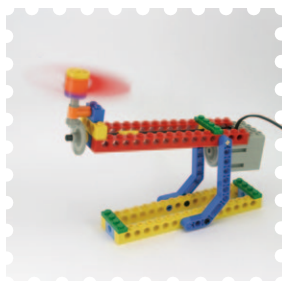
140

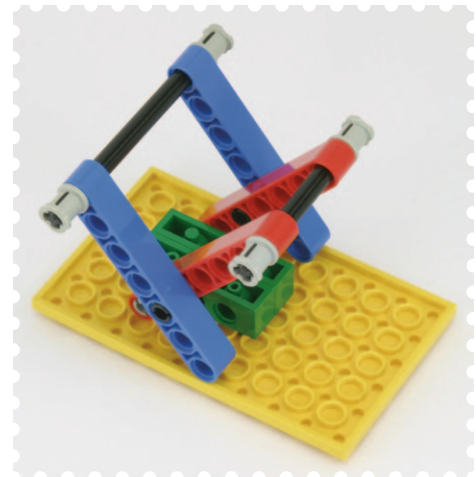
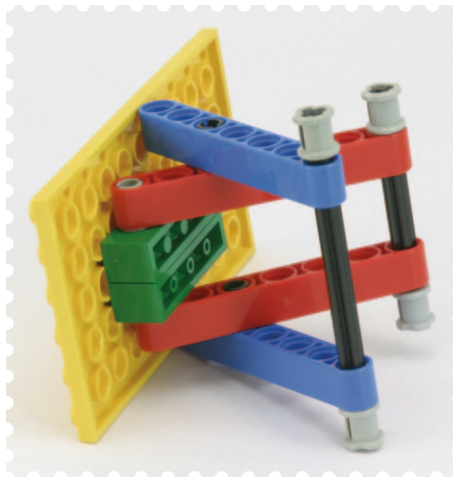
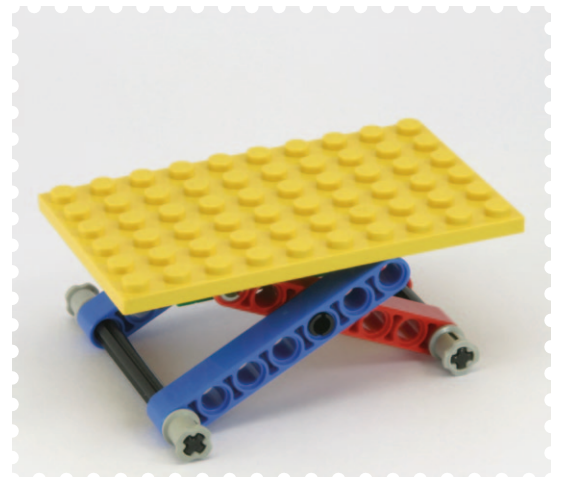
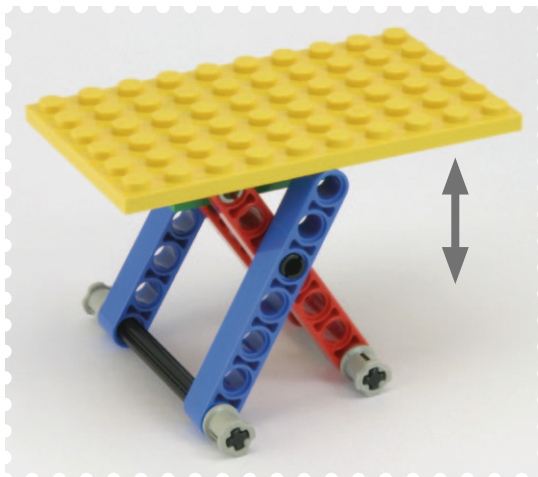
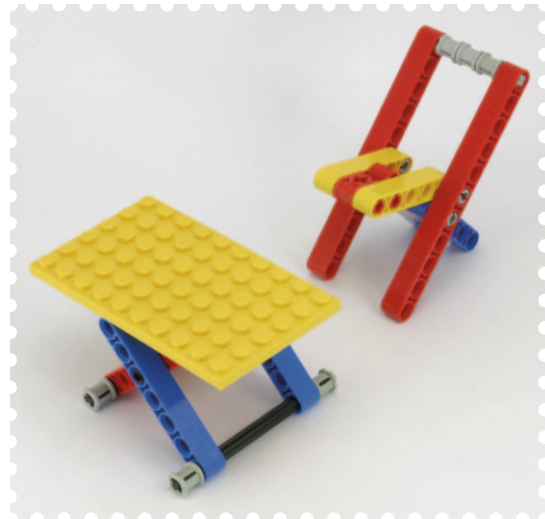


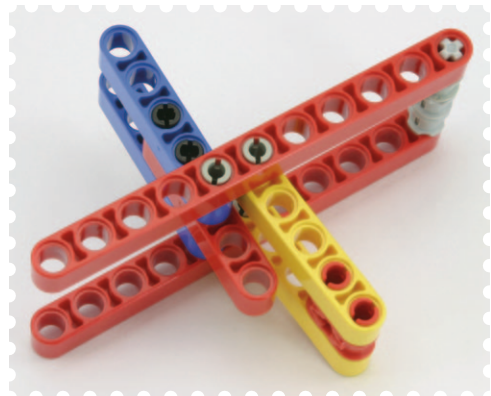
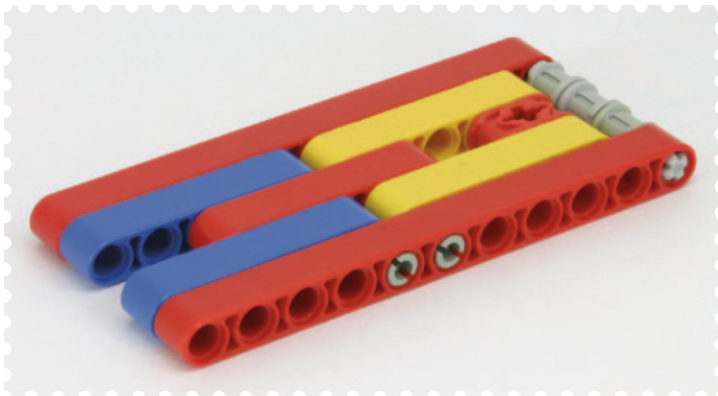
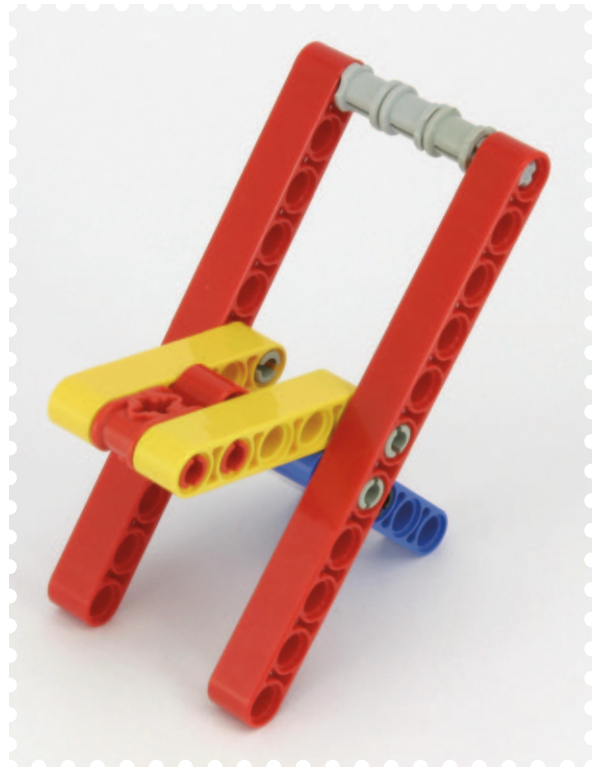
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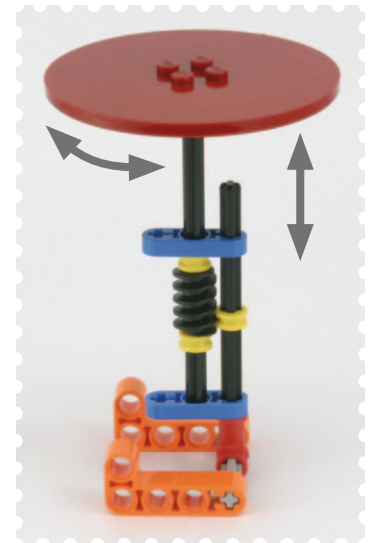
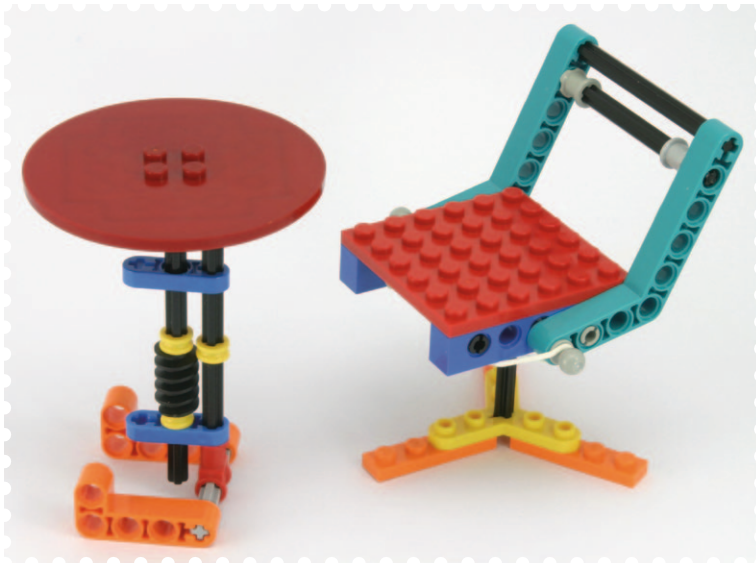
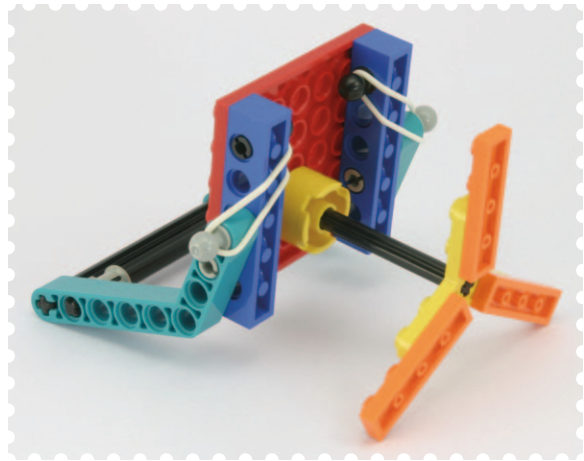


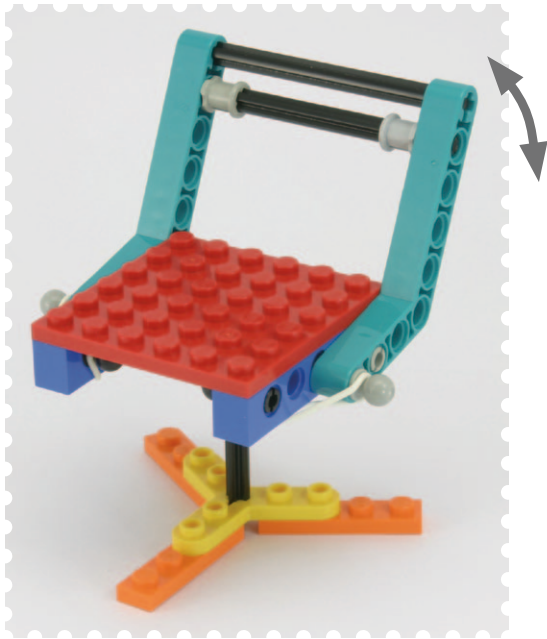
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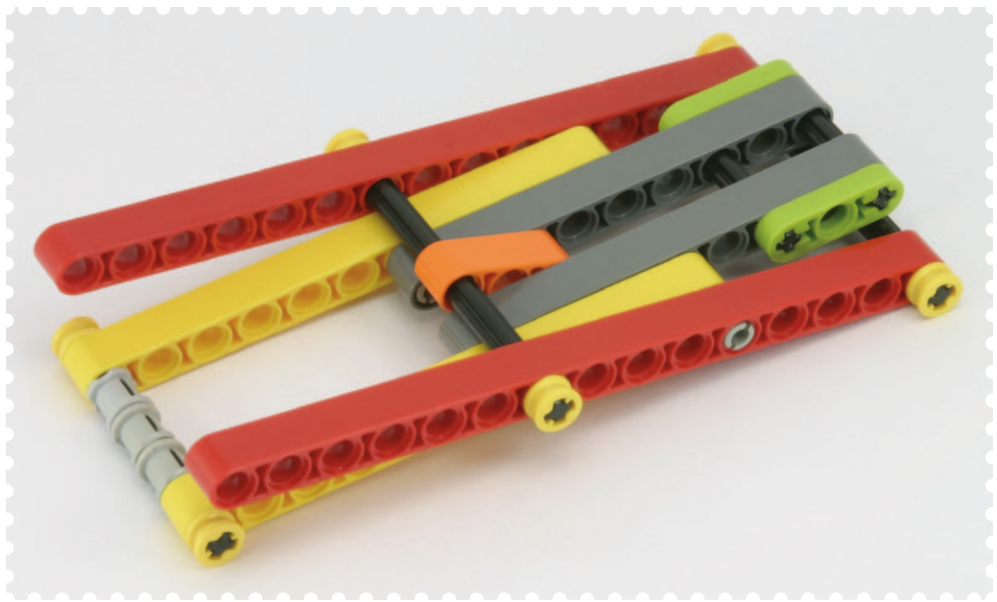


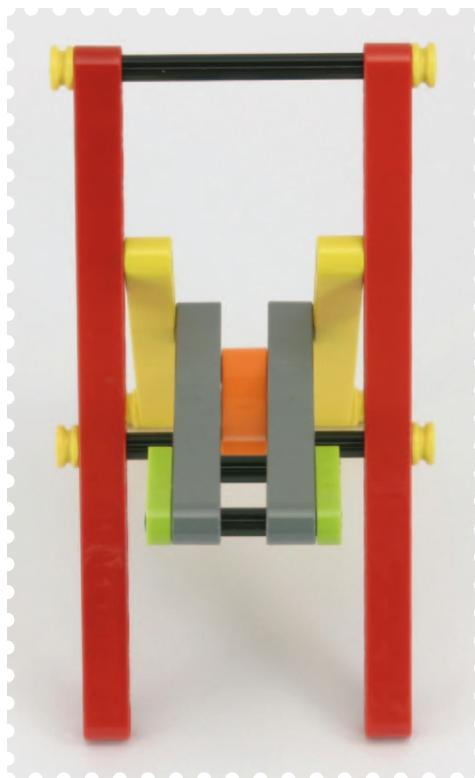
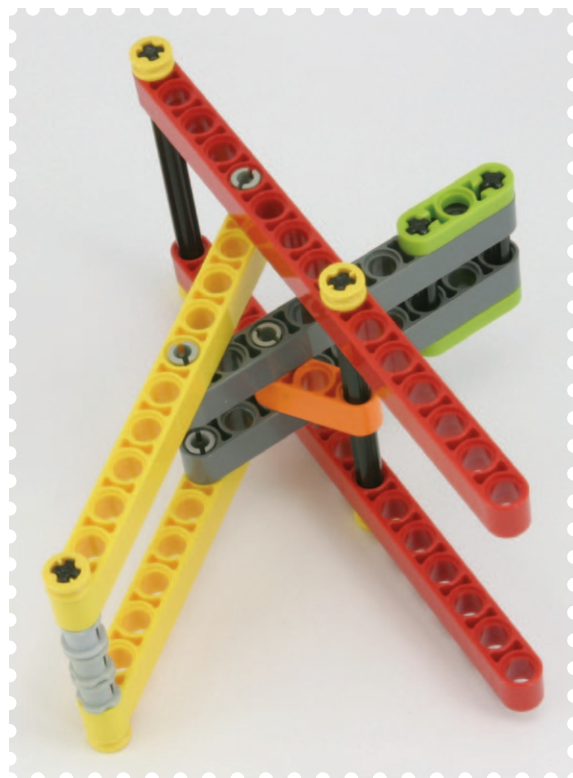


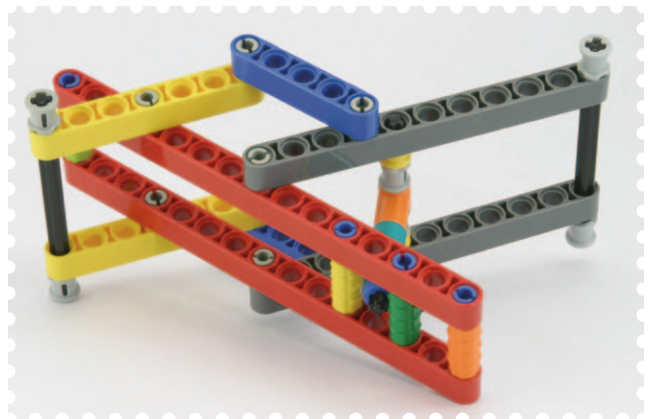
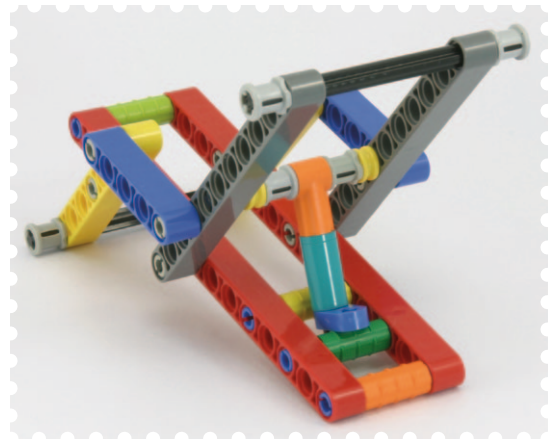
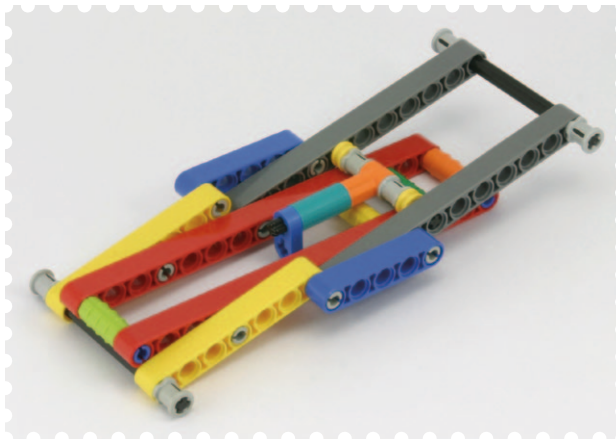
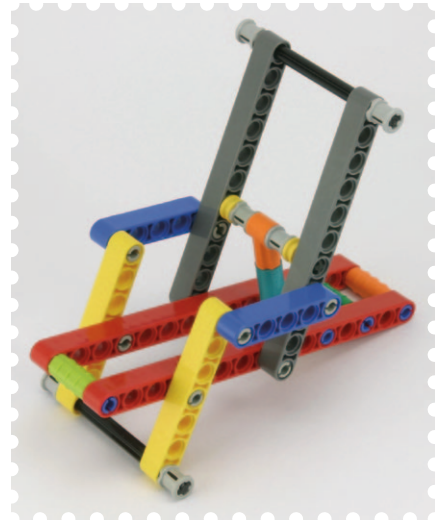


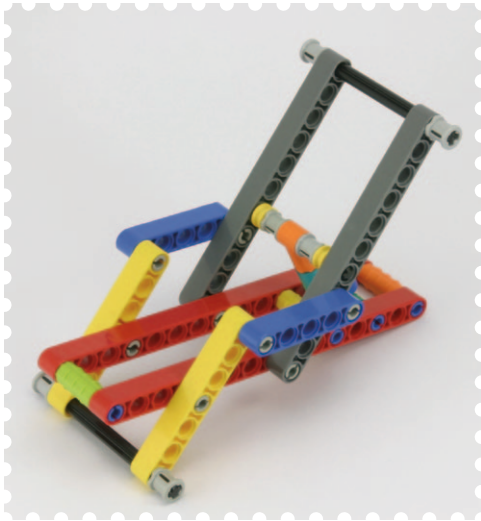


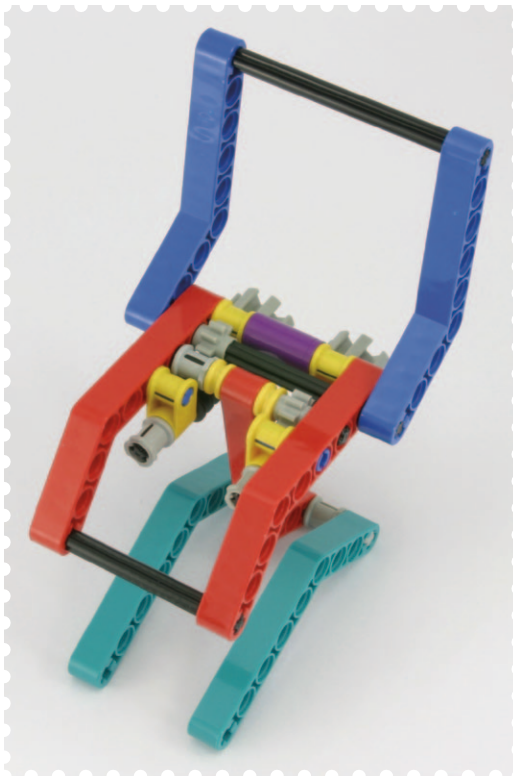
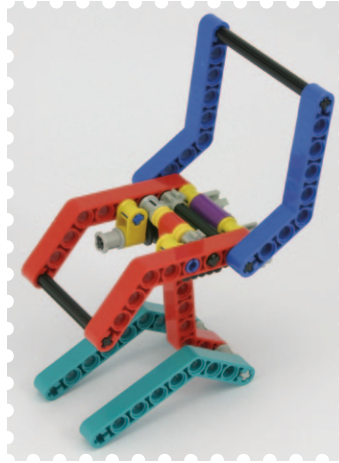


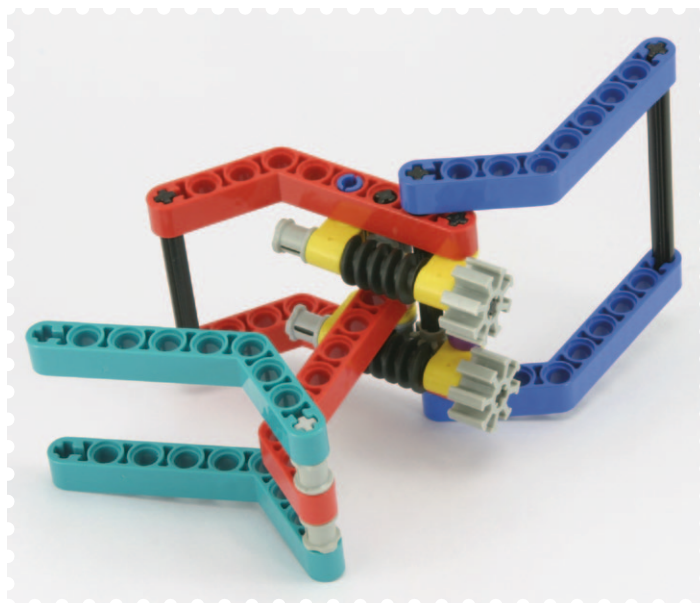
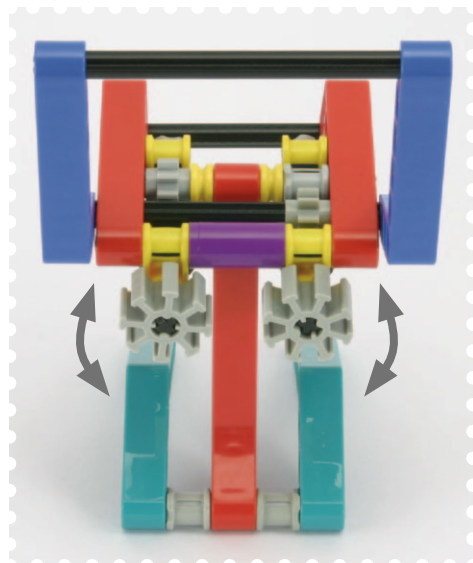
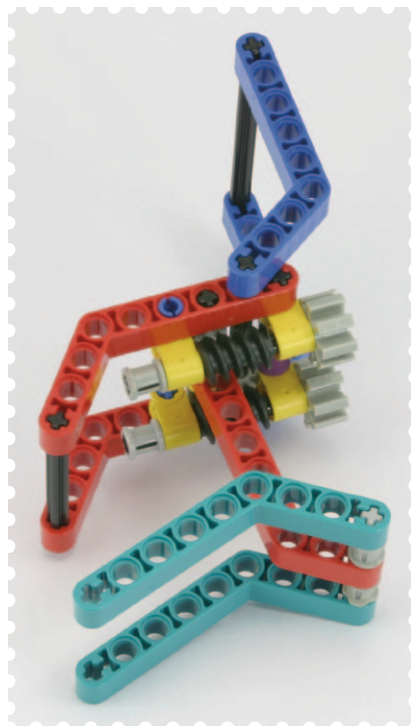
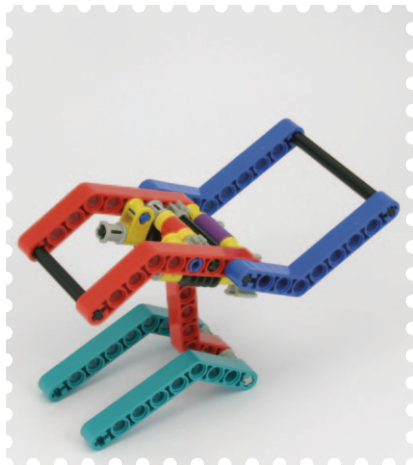


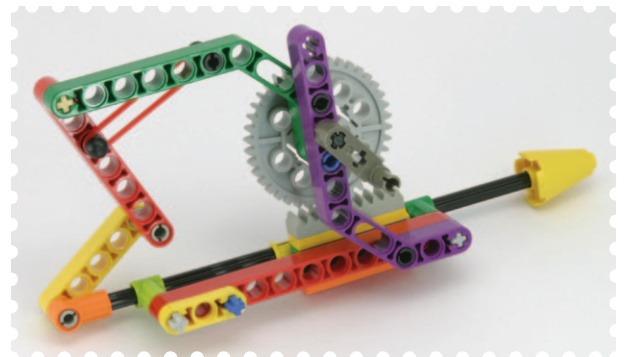
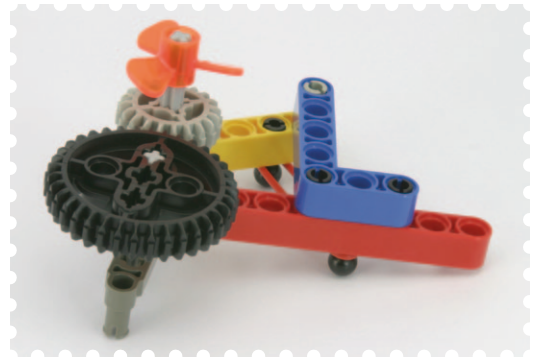
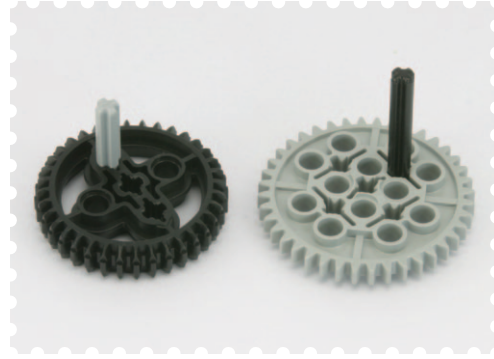
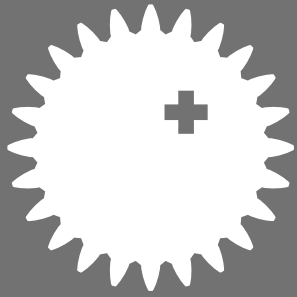


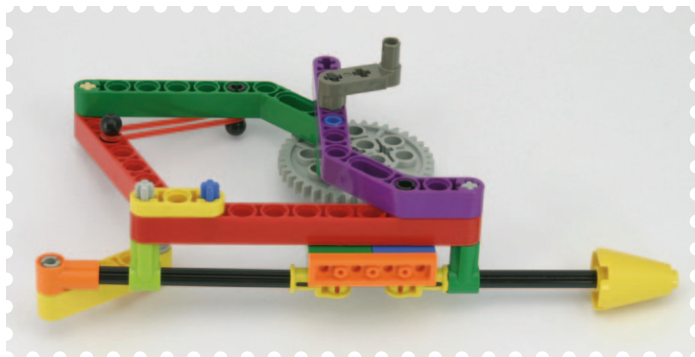
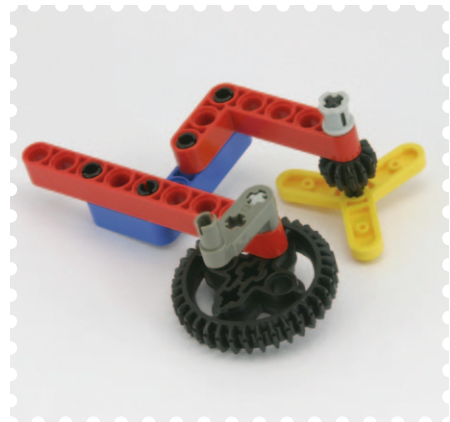
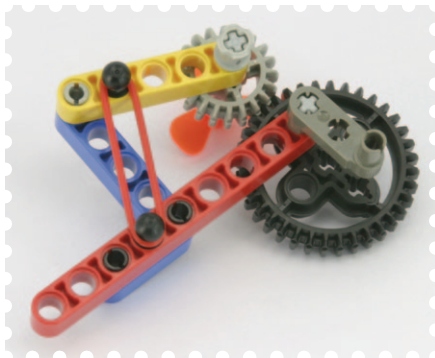
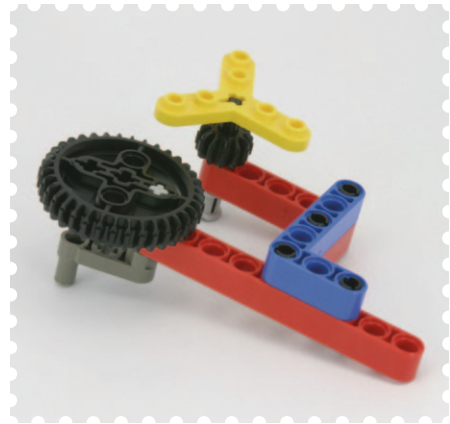


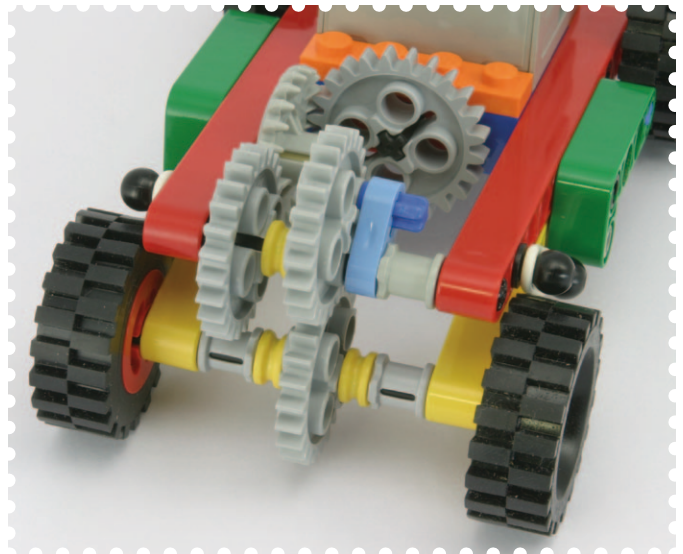
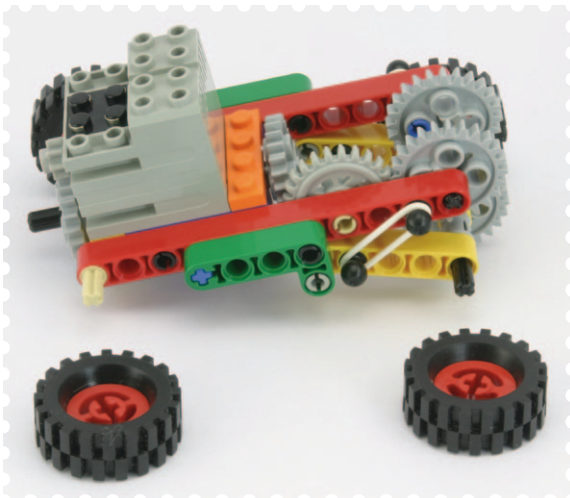
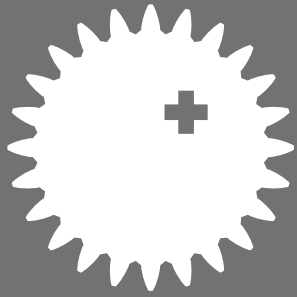


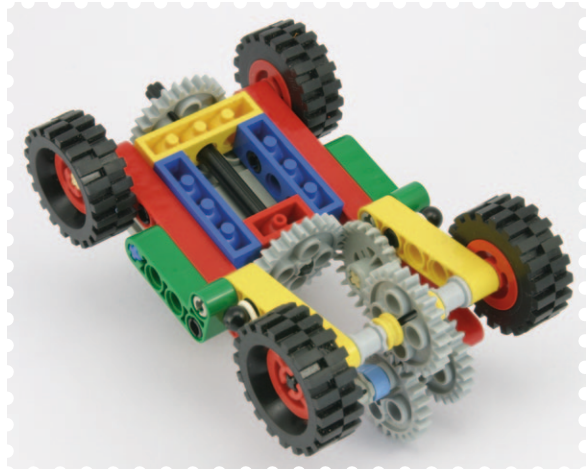
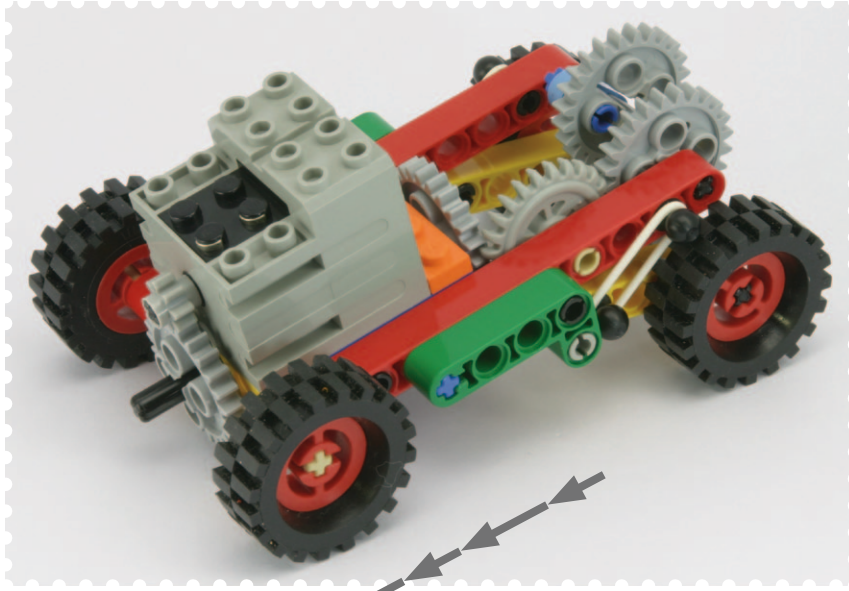


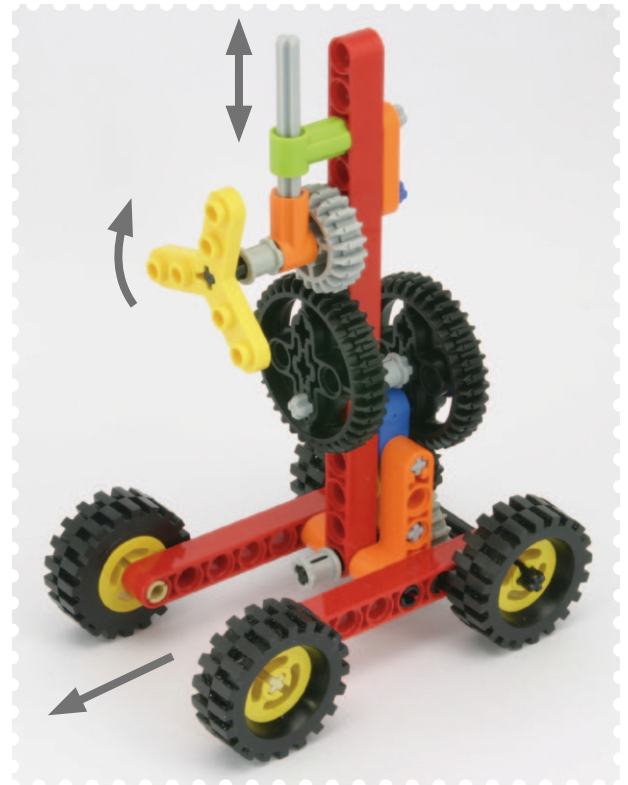
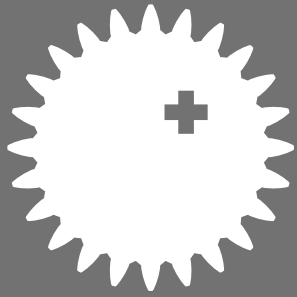


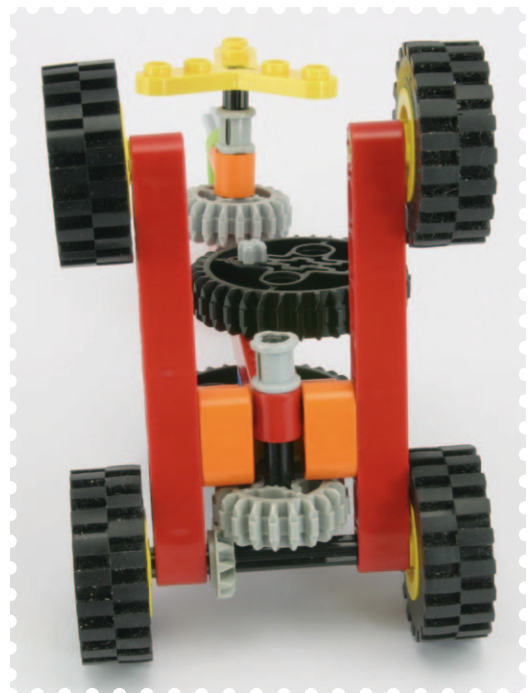


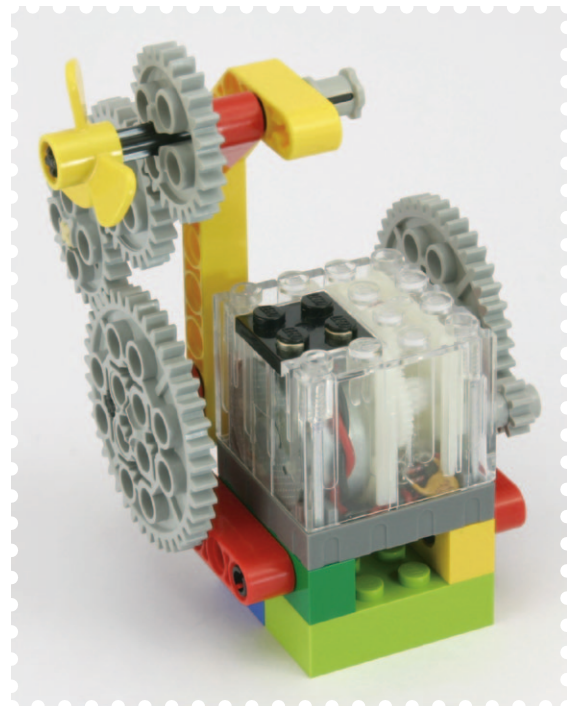
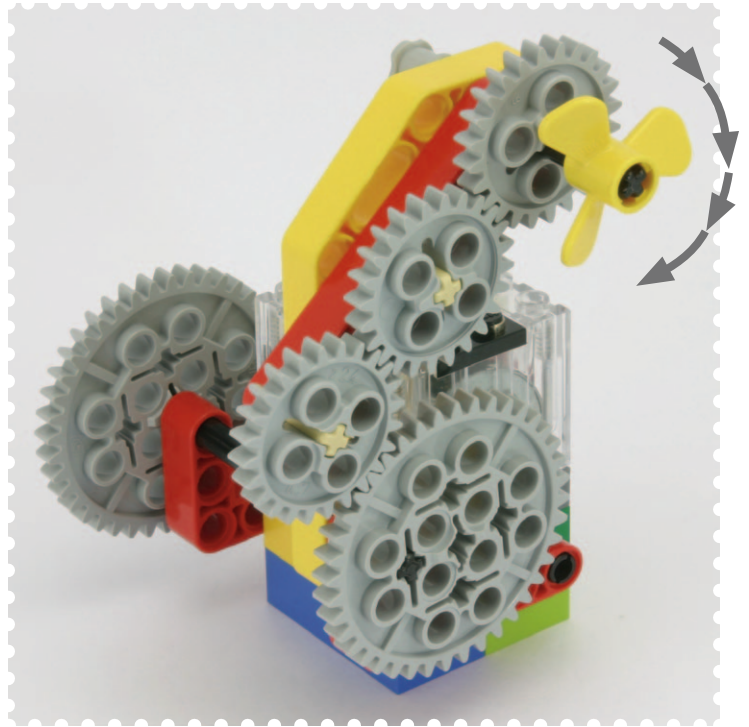
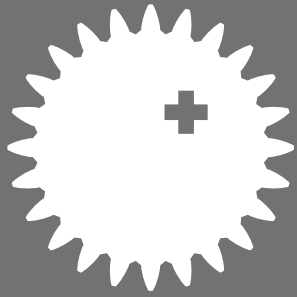


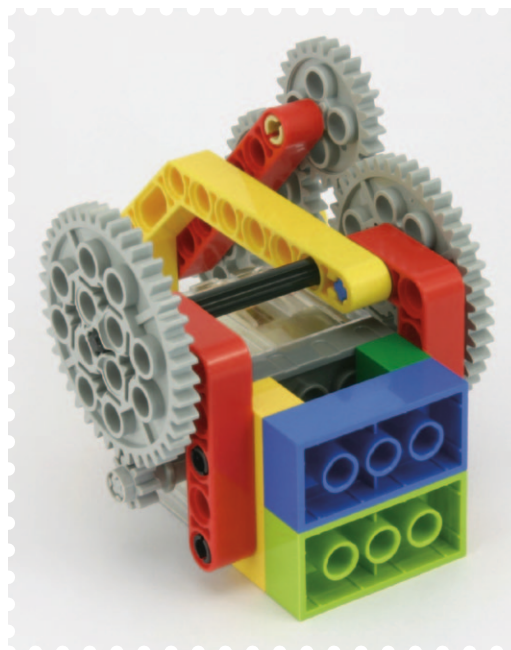
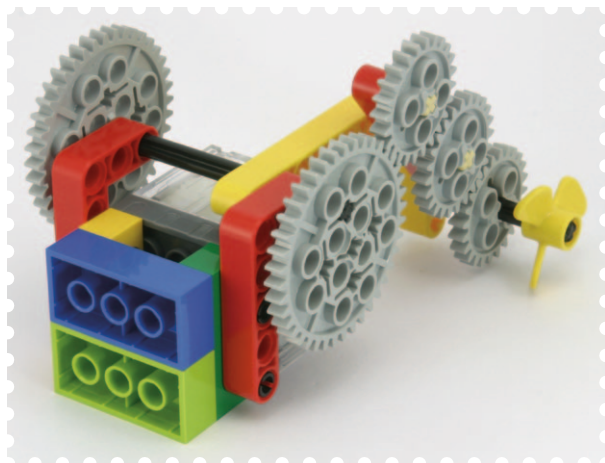
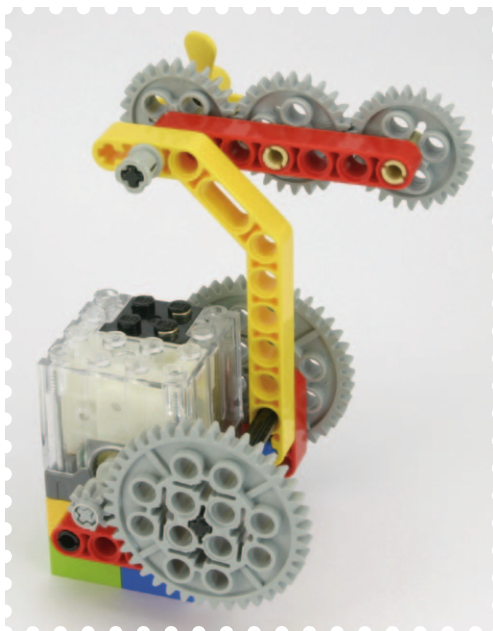
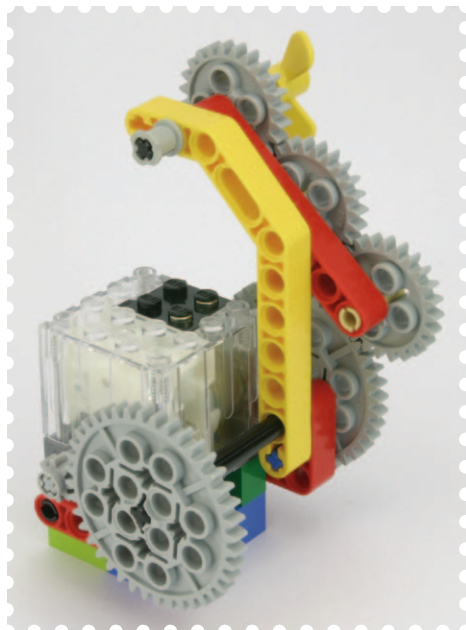


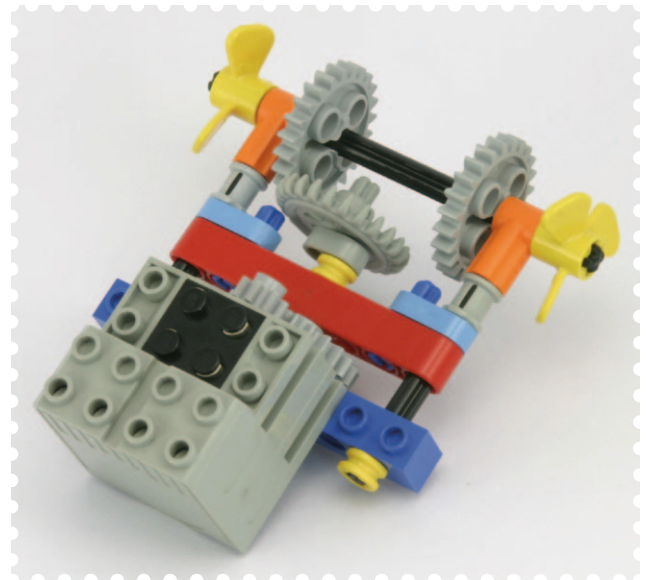
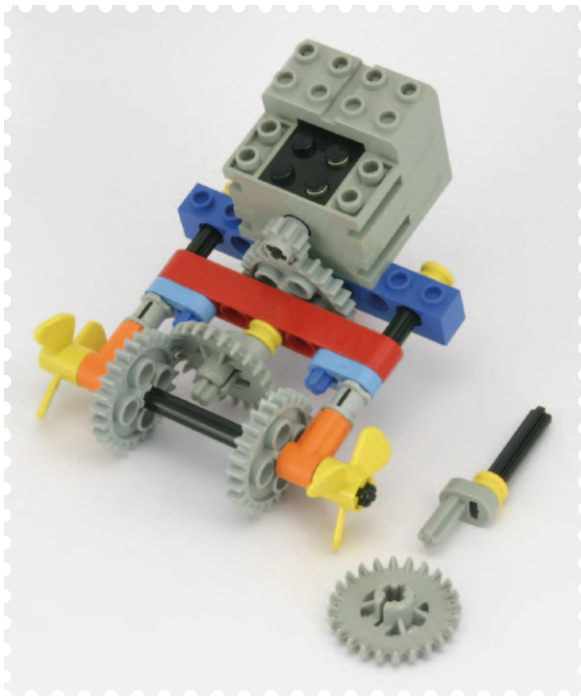
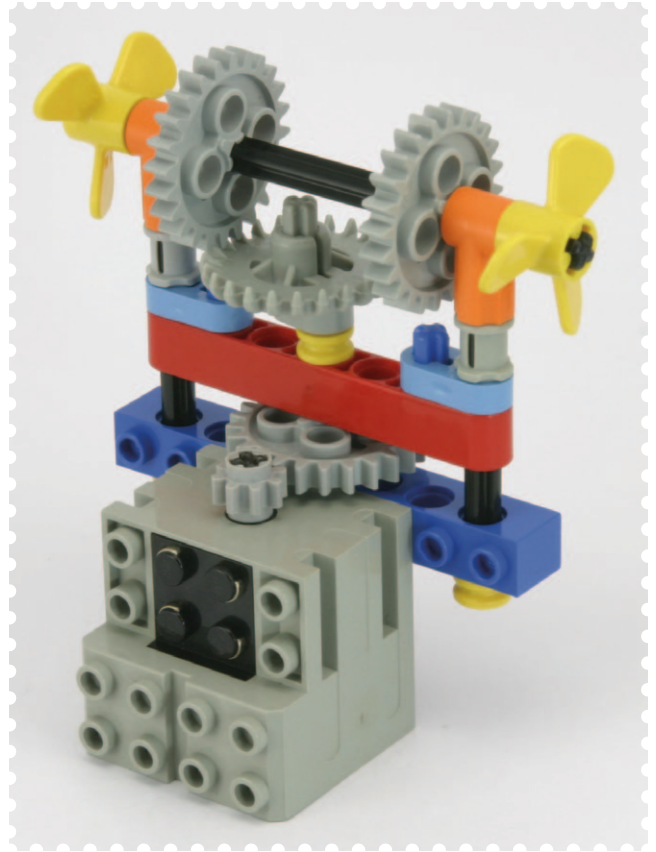
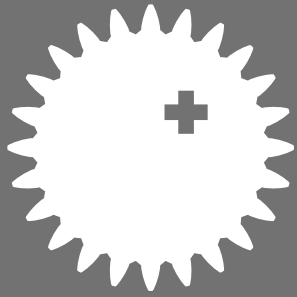


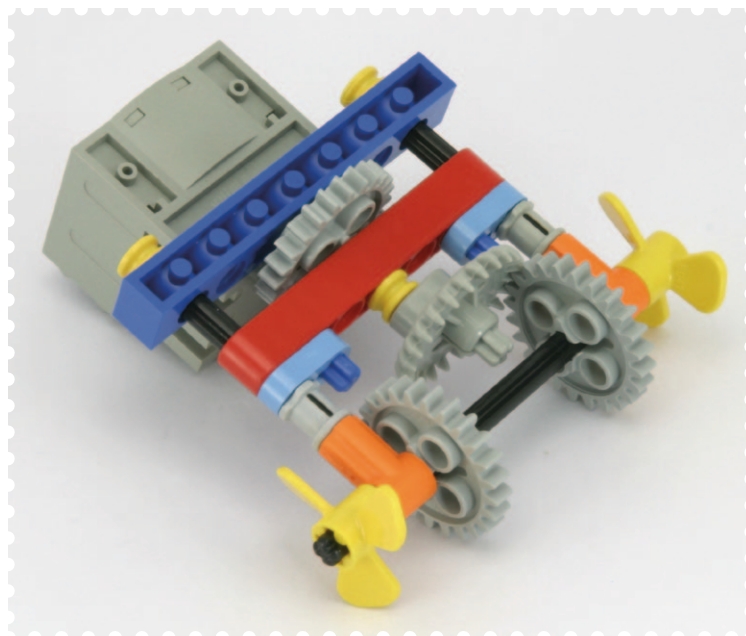
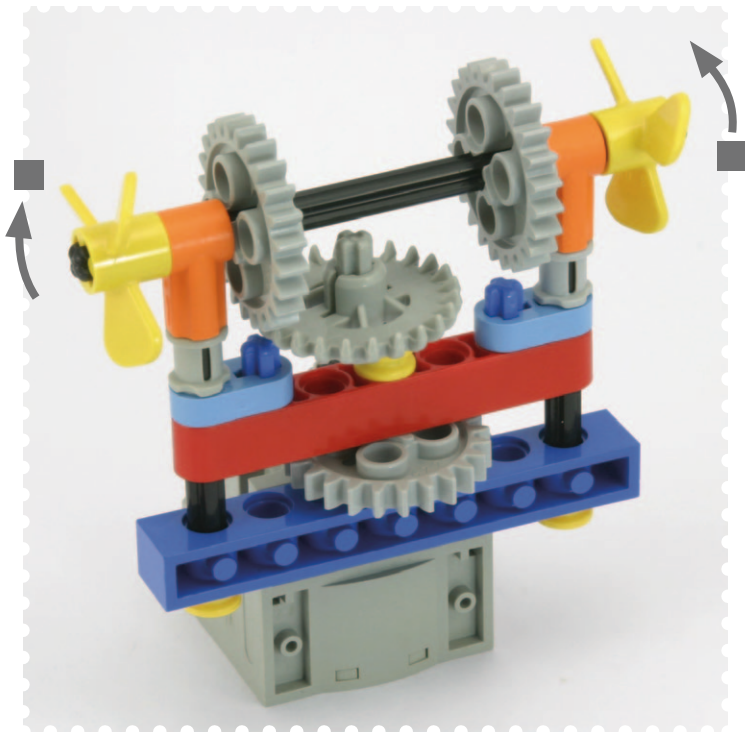


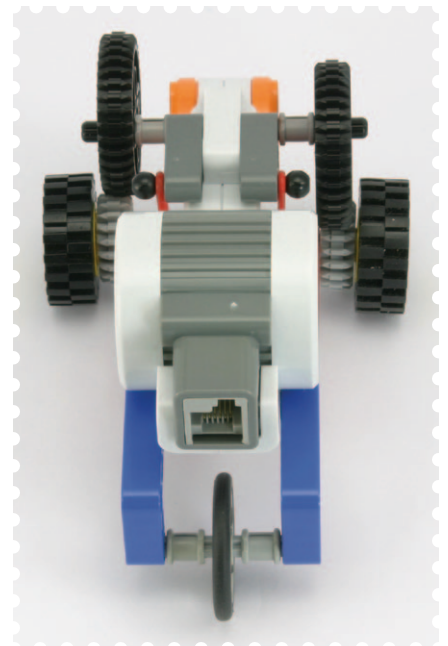
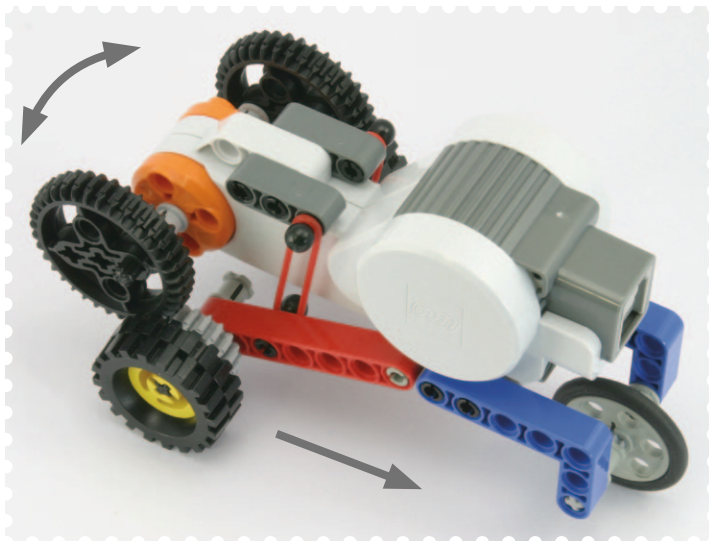
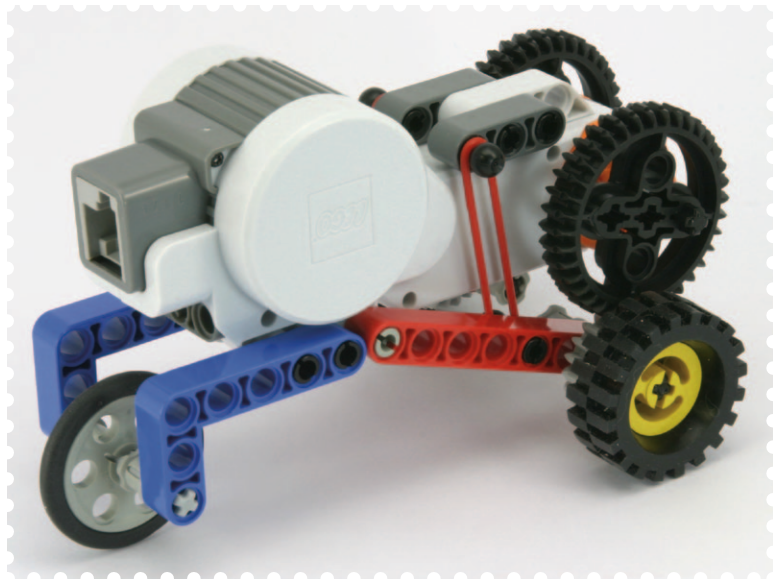
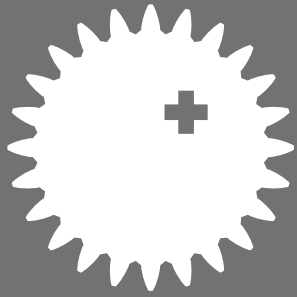


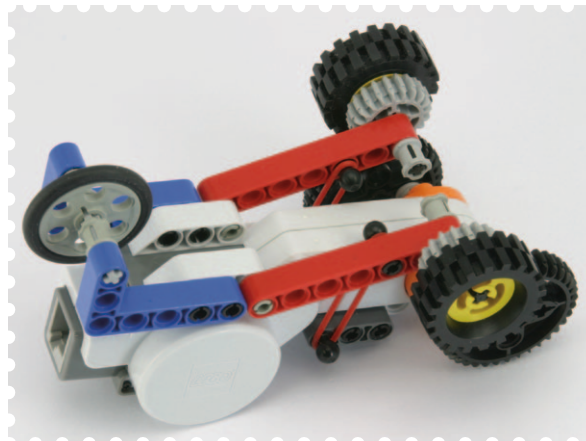
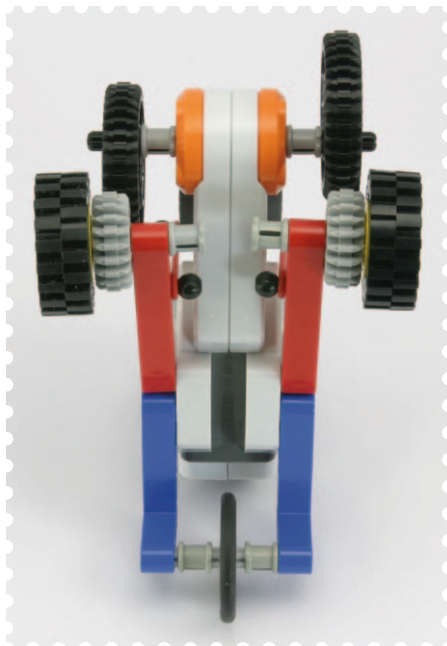
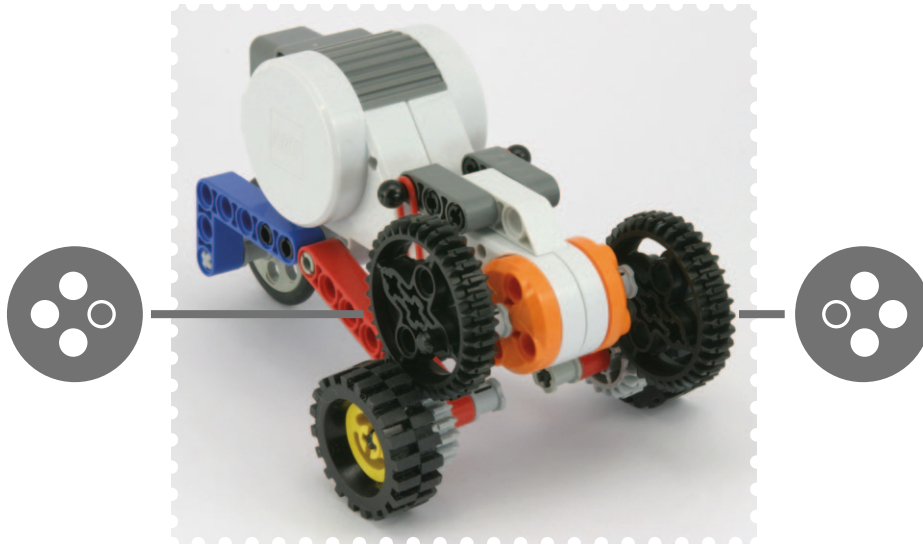


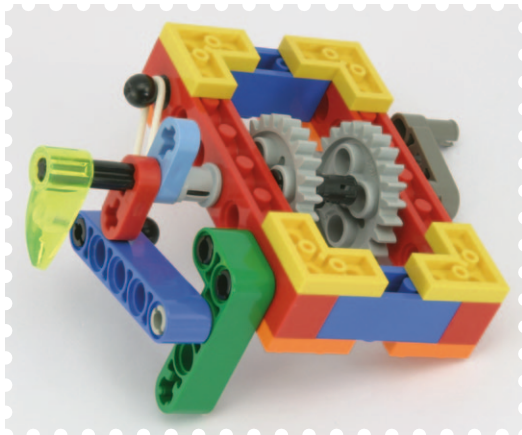
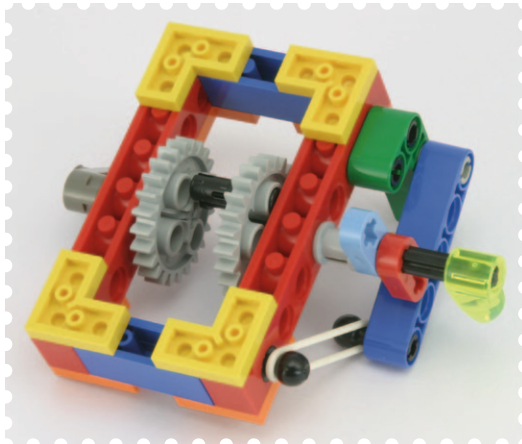
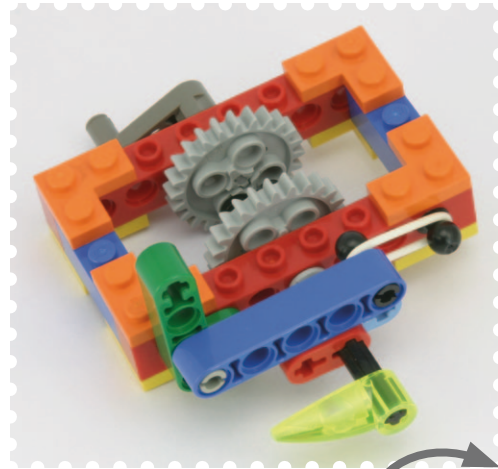


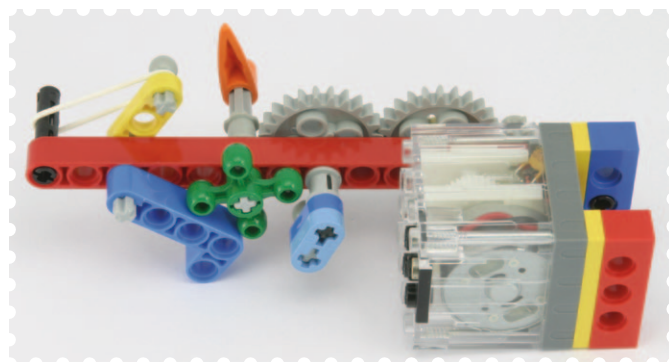
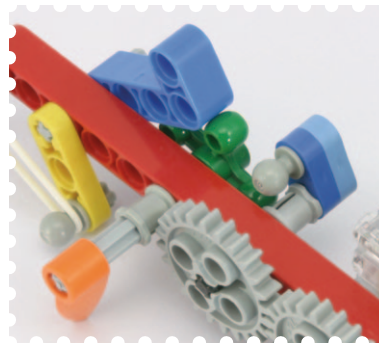
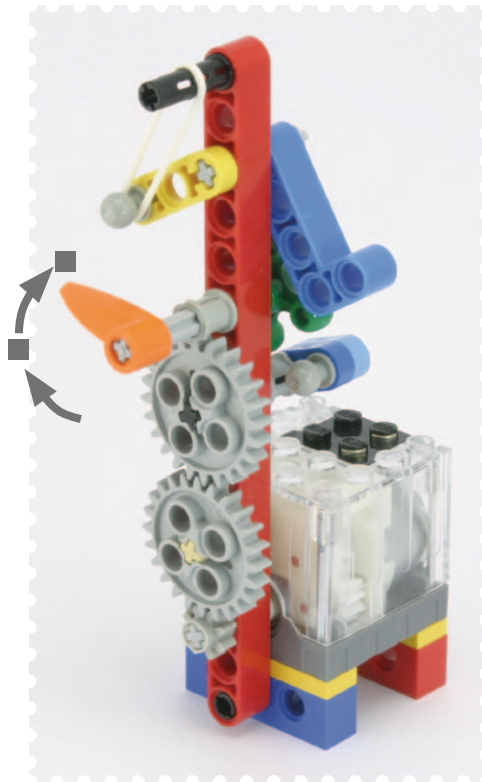


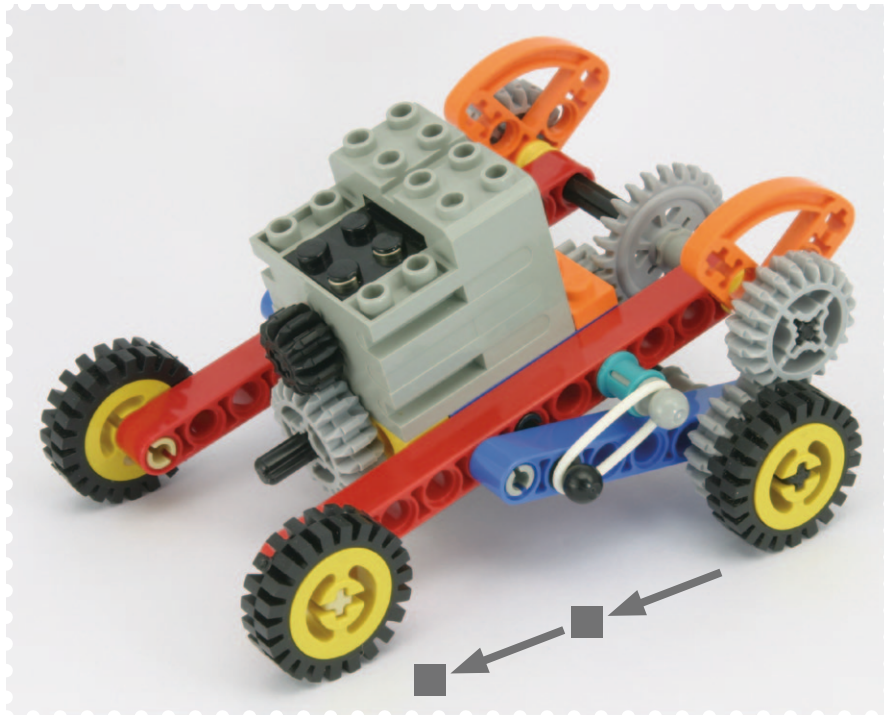
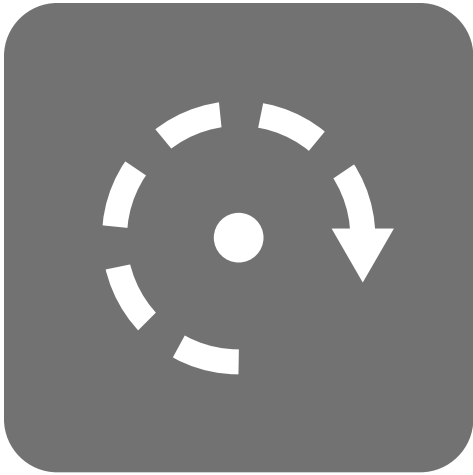


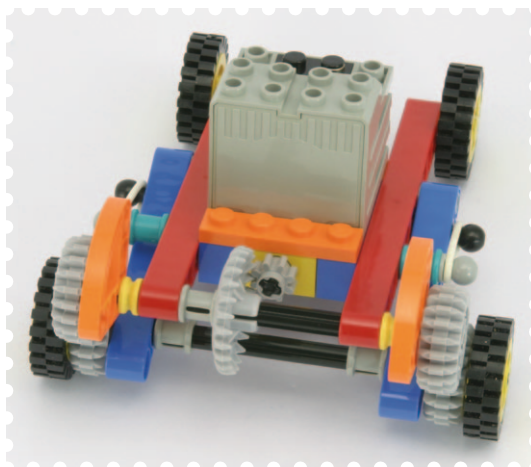
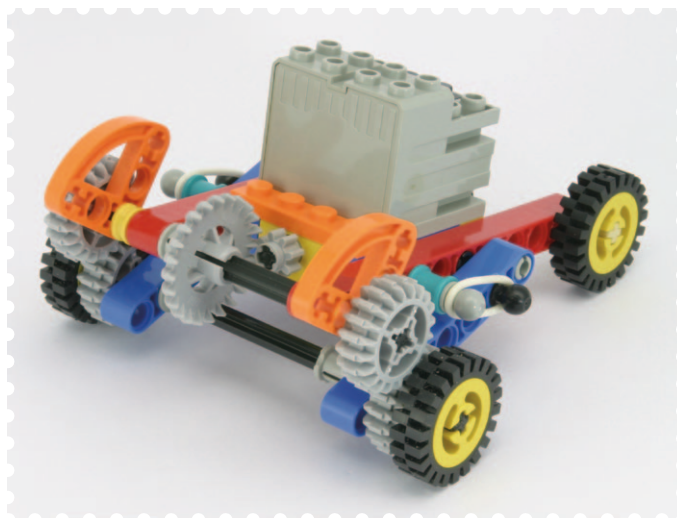


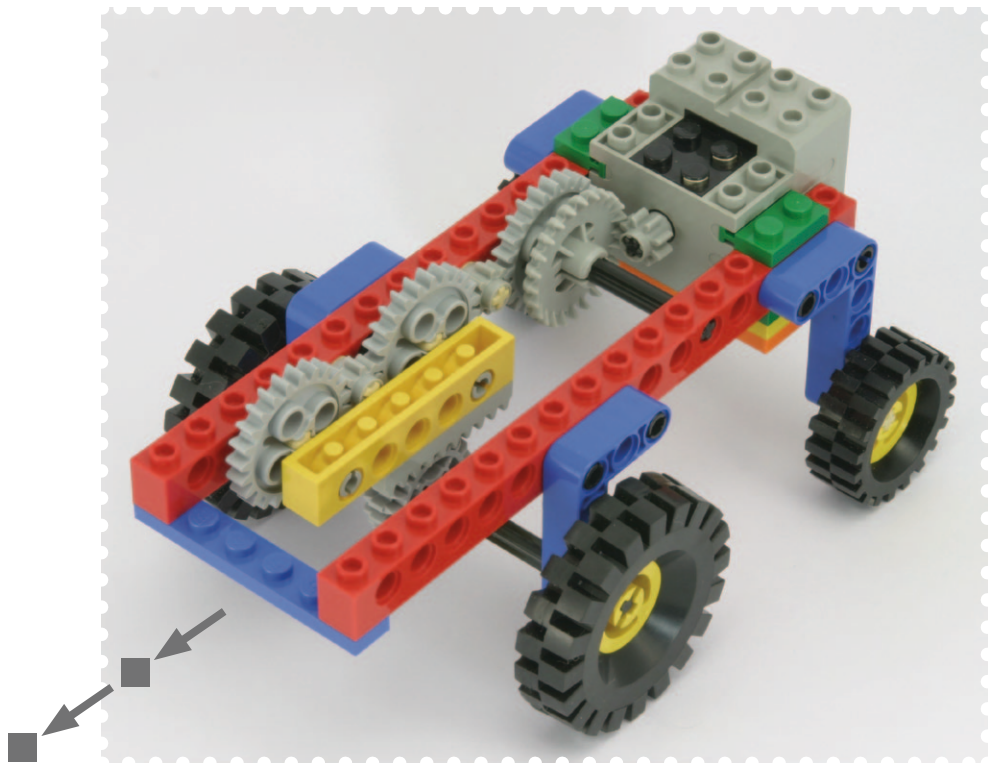
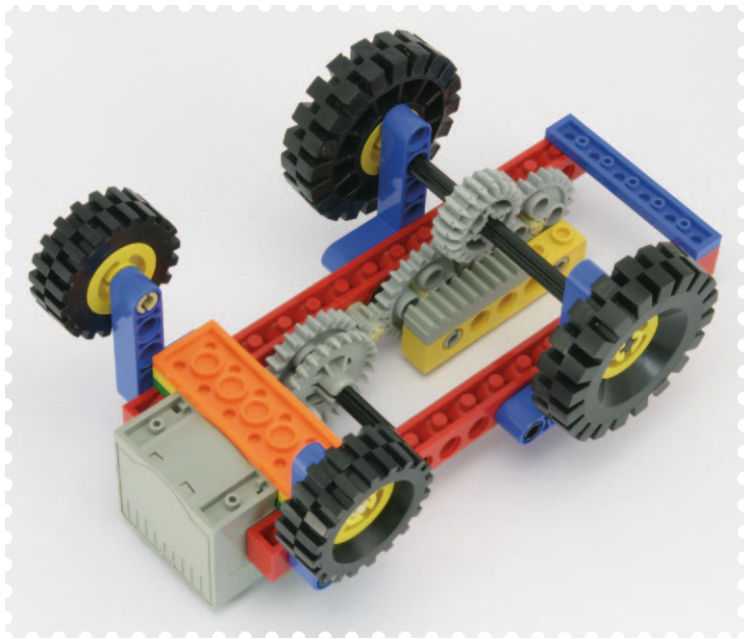


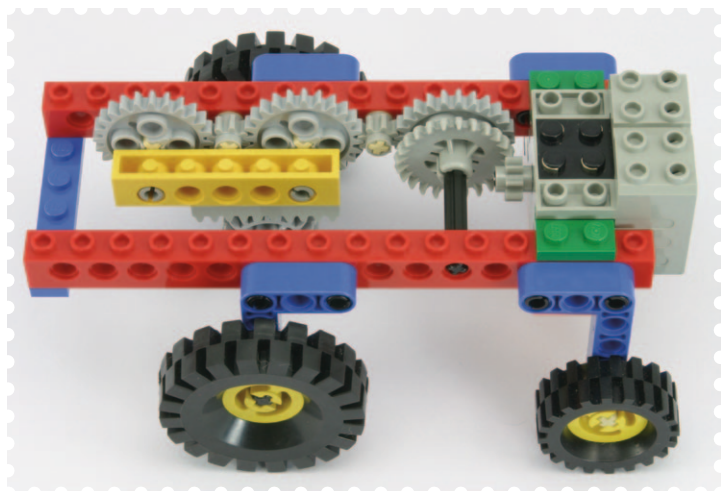
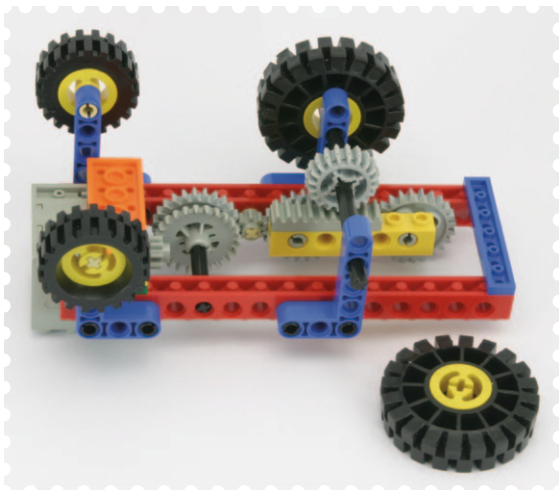
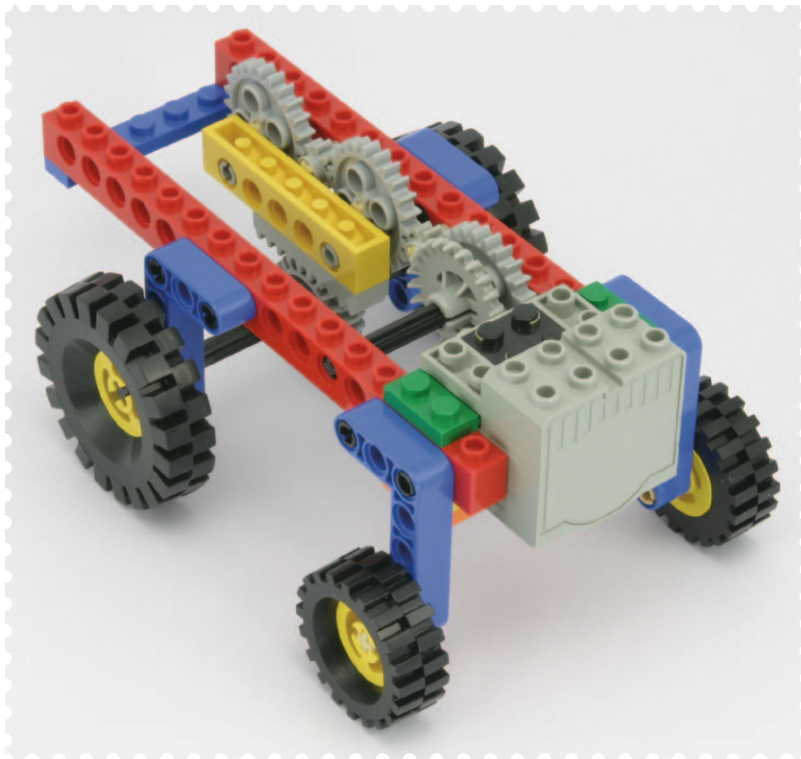


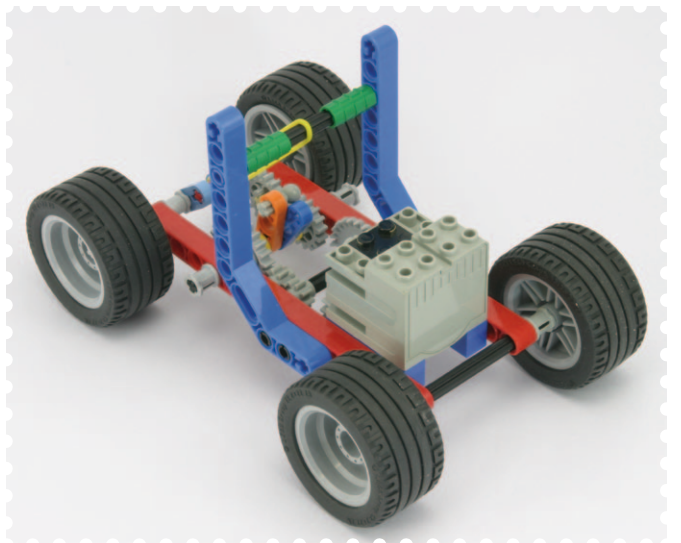
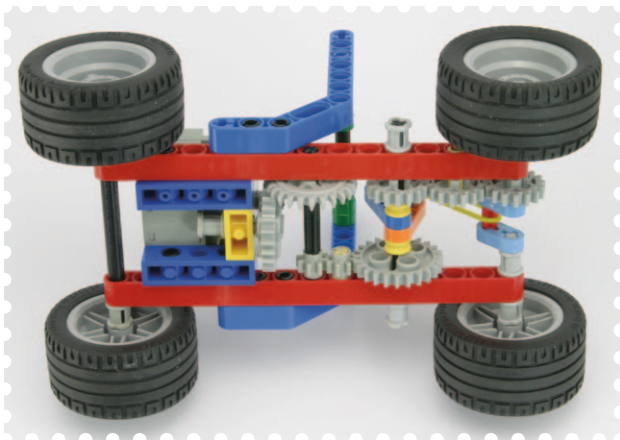
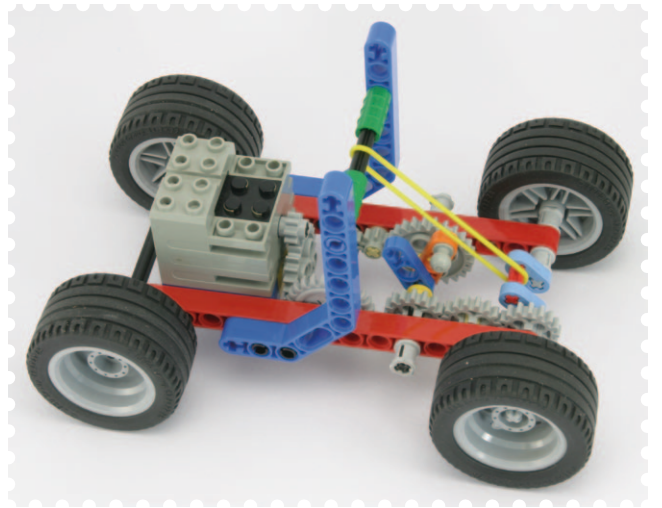


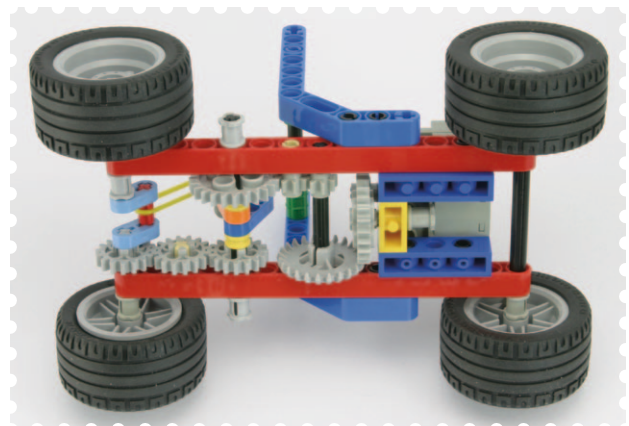
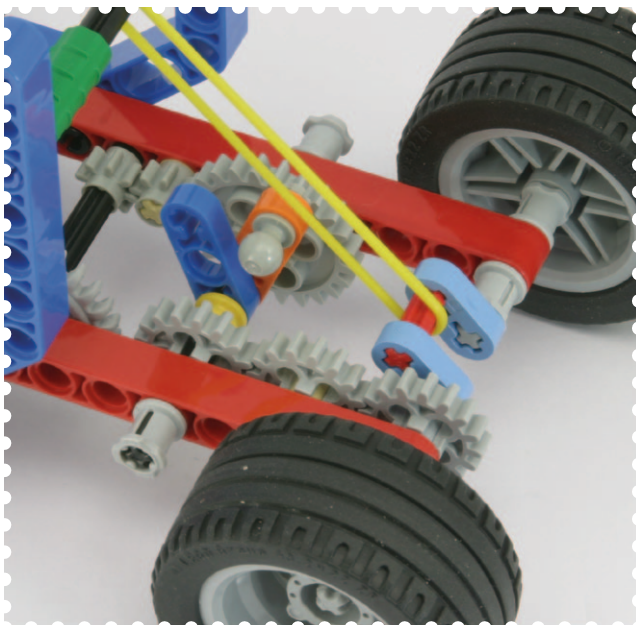
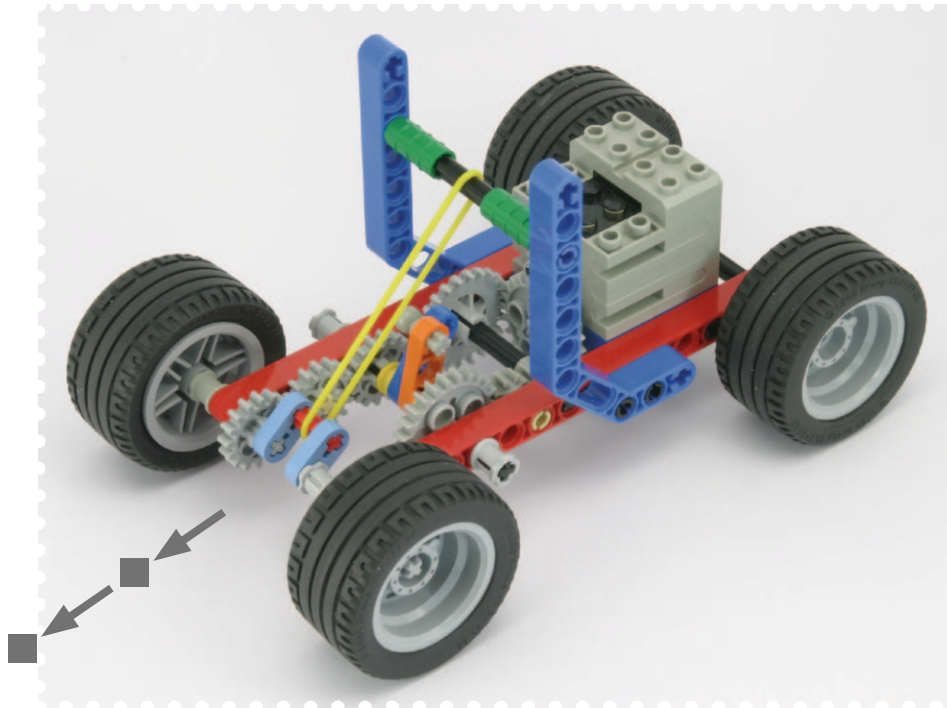


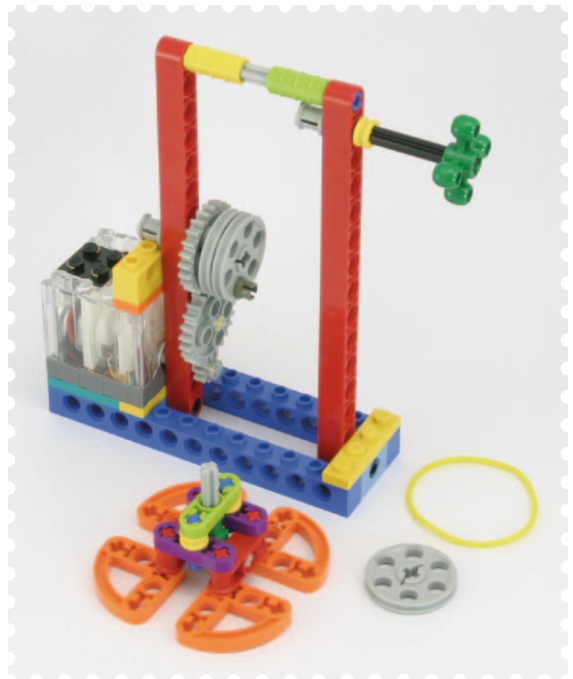
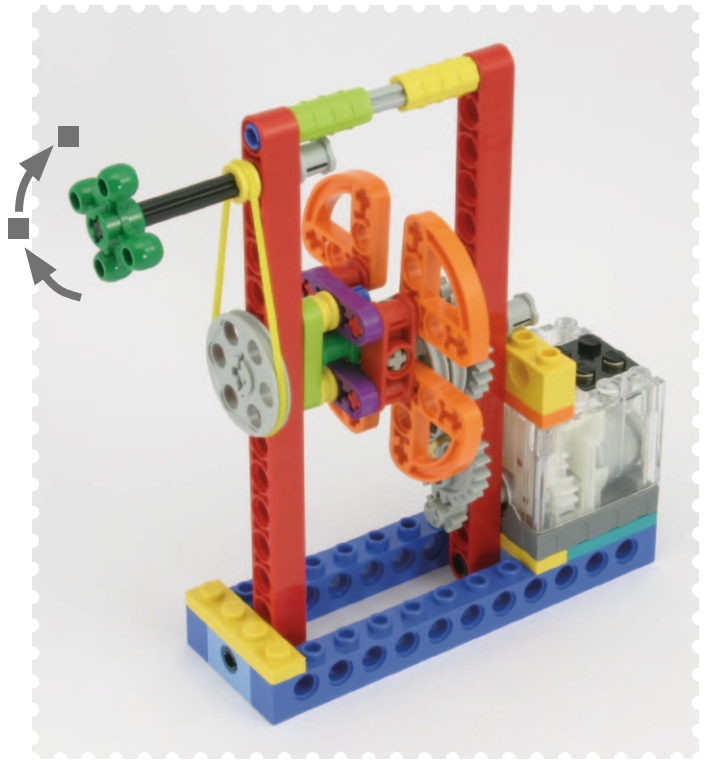


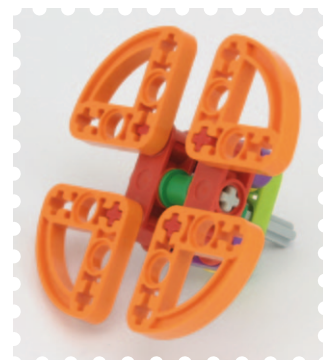
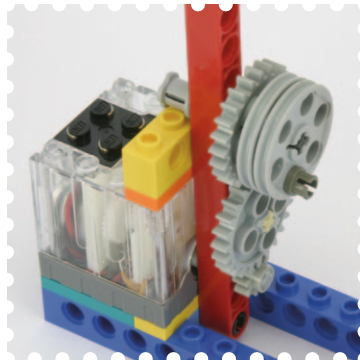
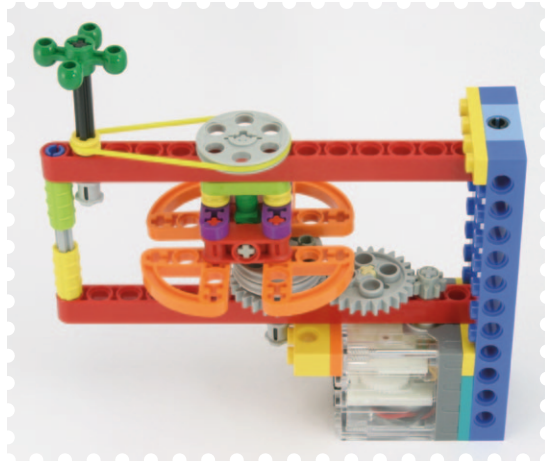
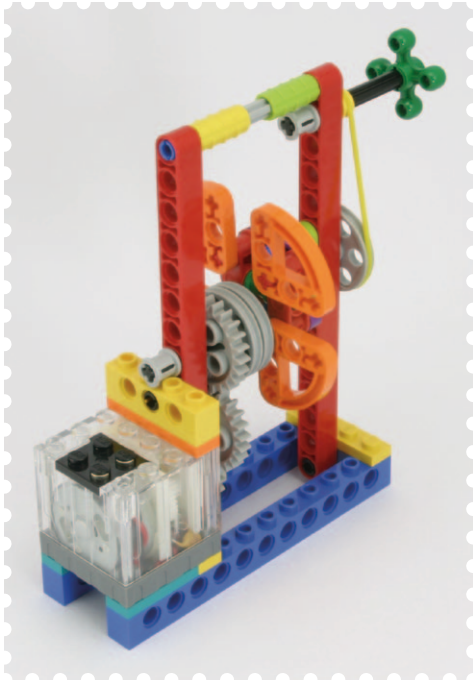


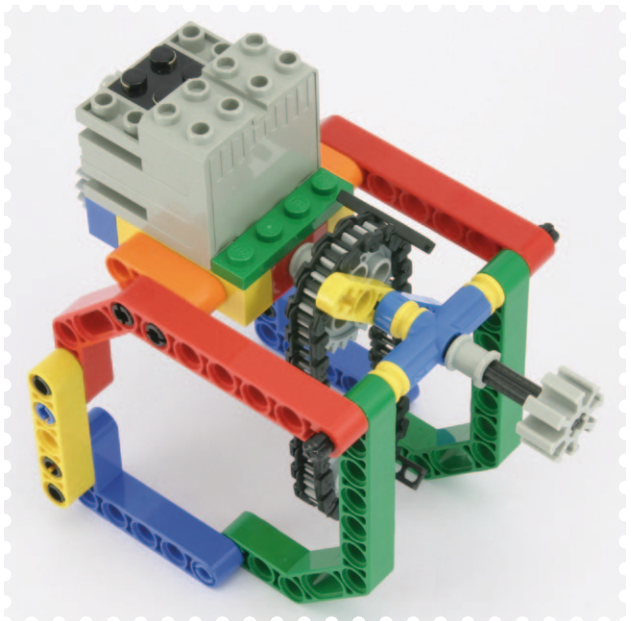
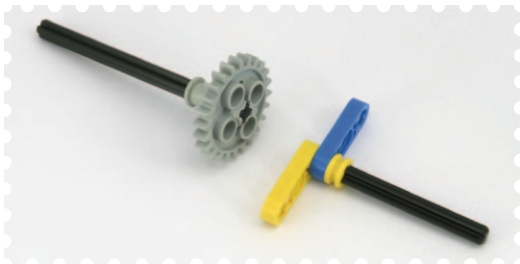
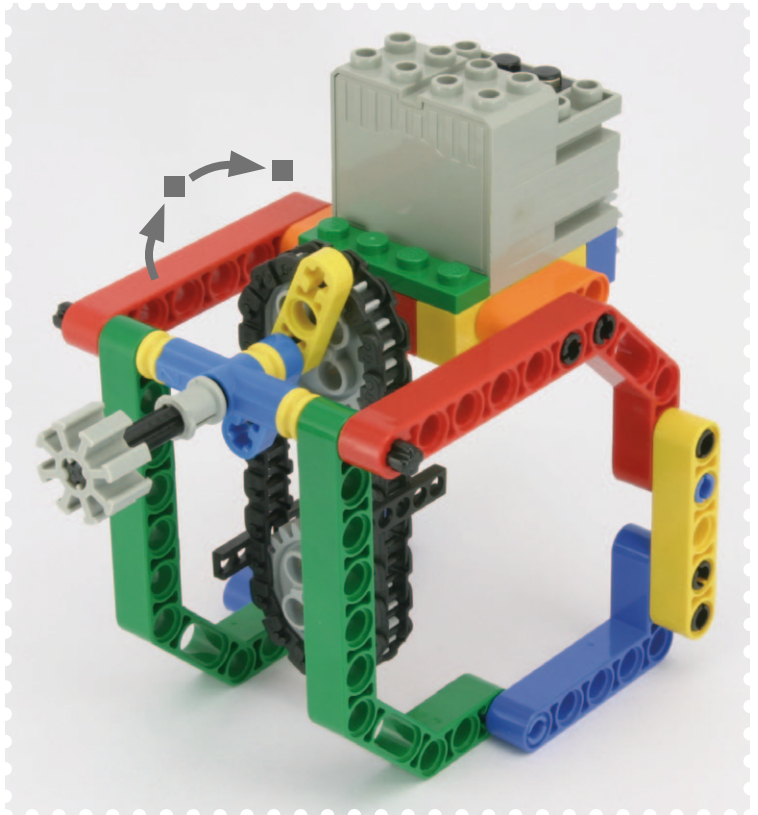


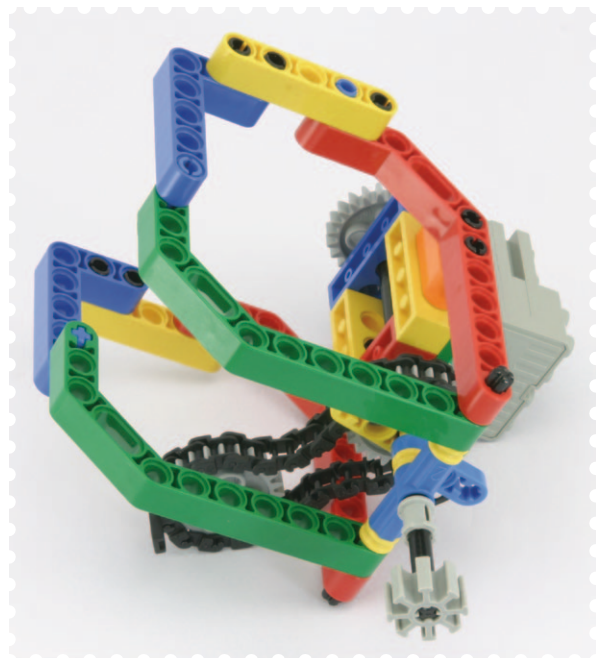
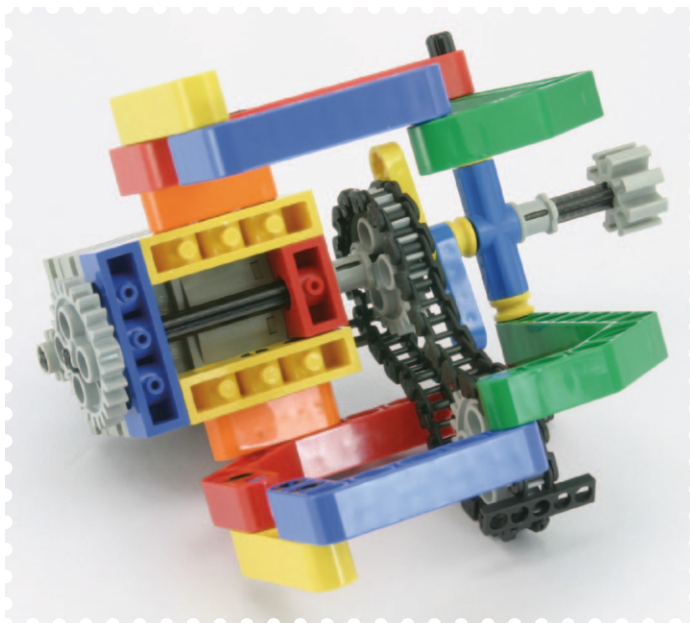
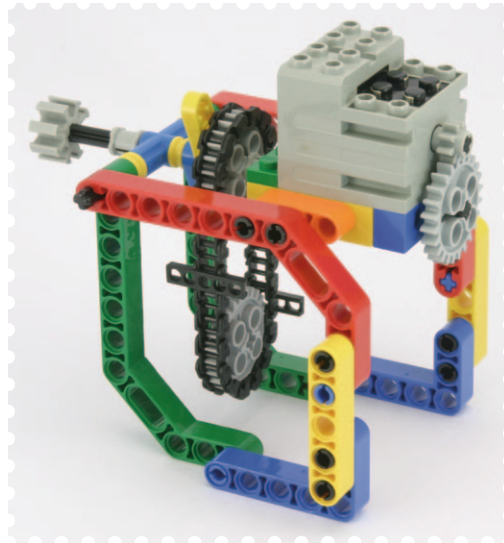
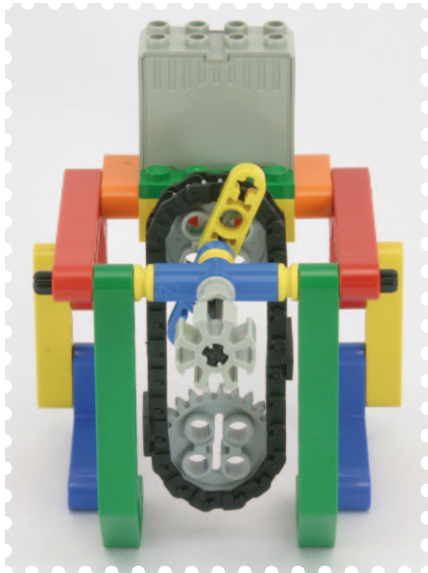


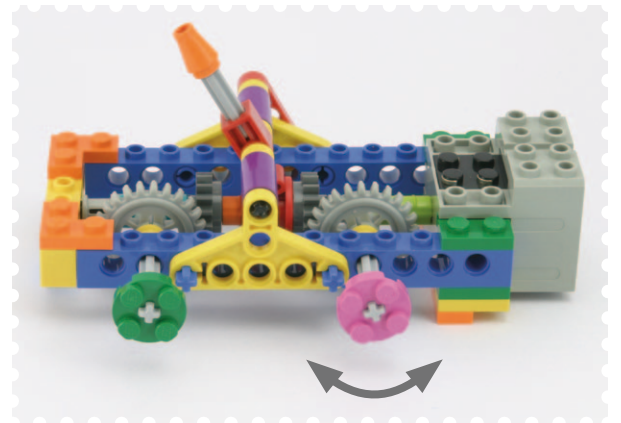
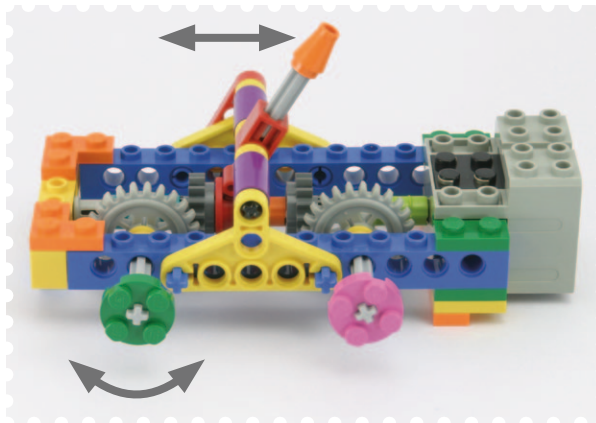
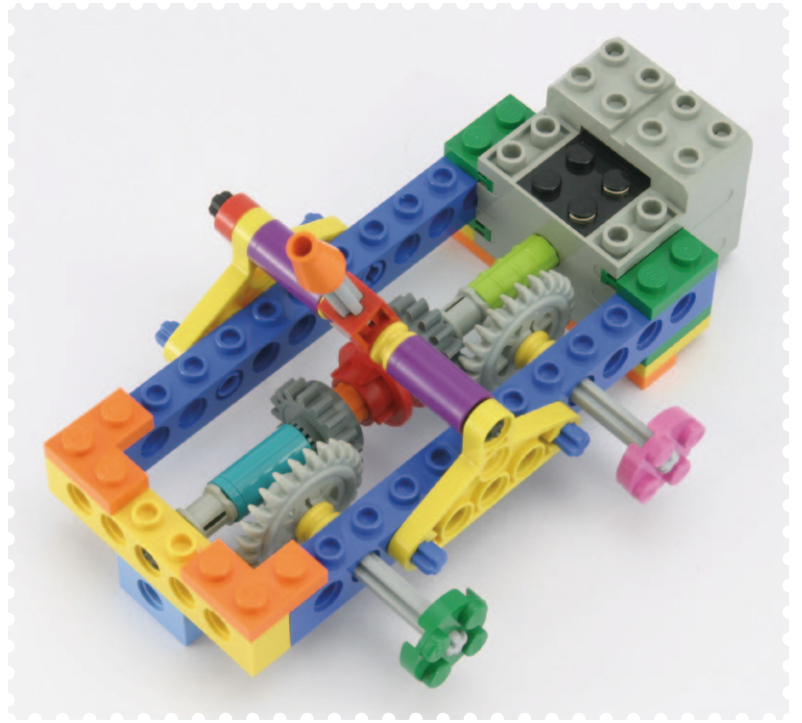


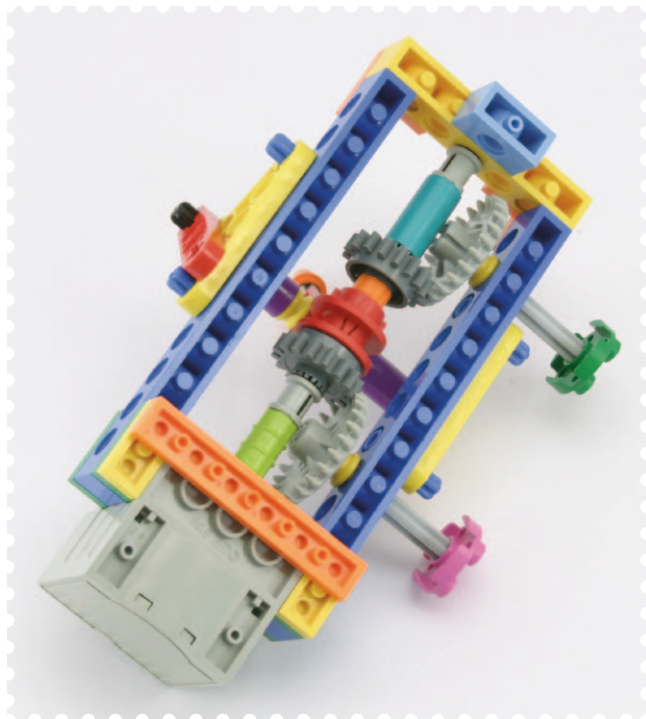
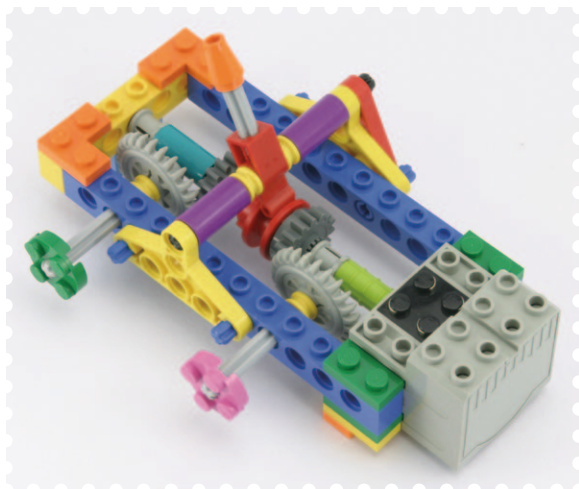
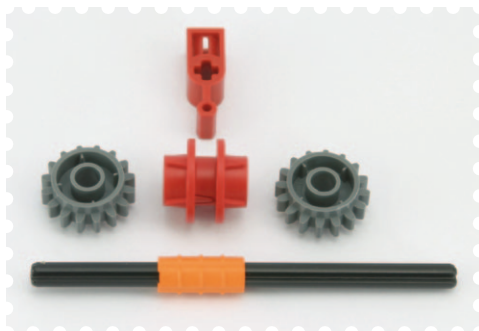
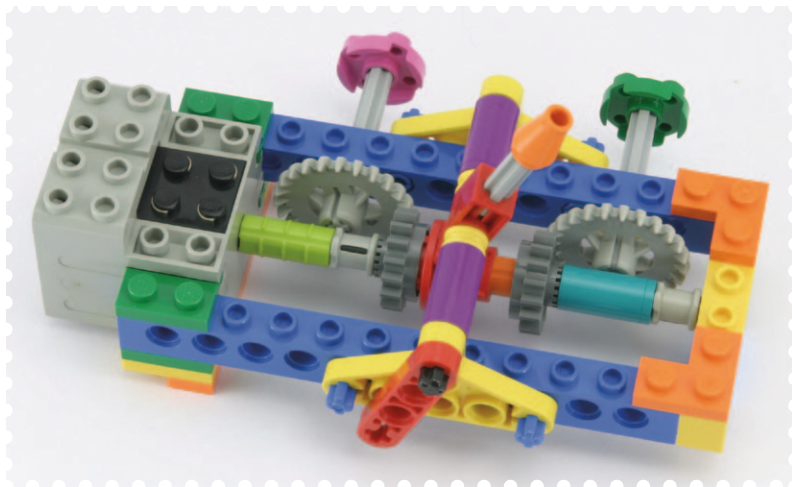


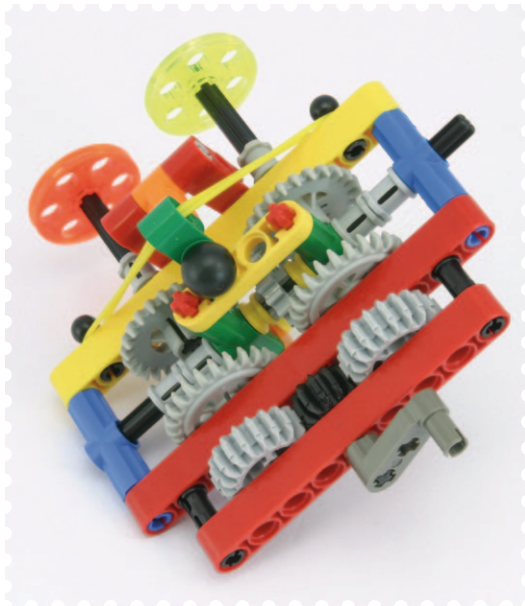
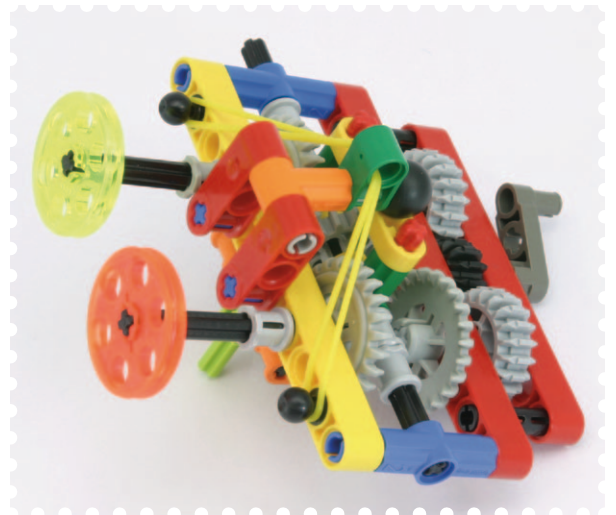
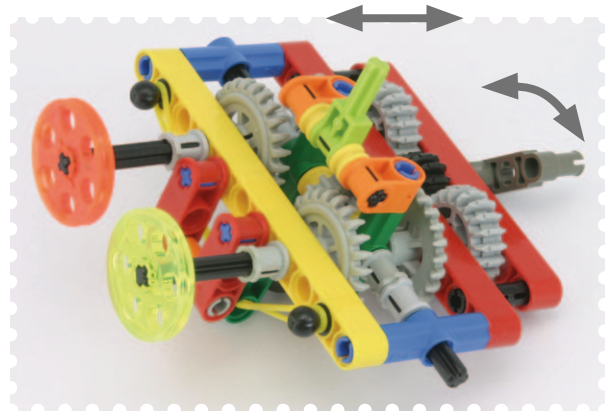


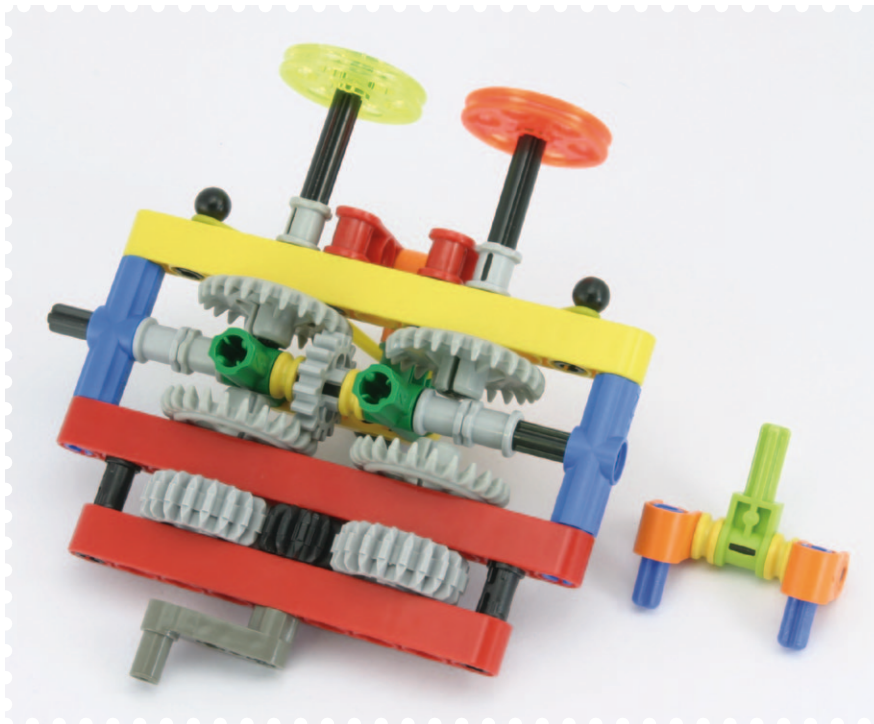
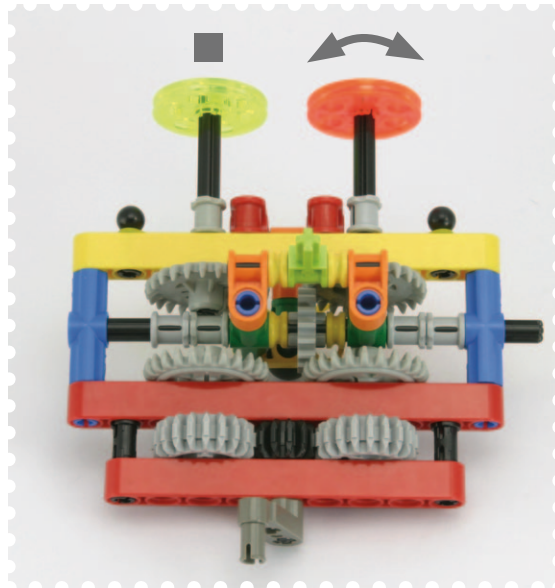
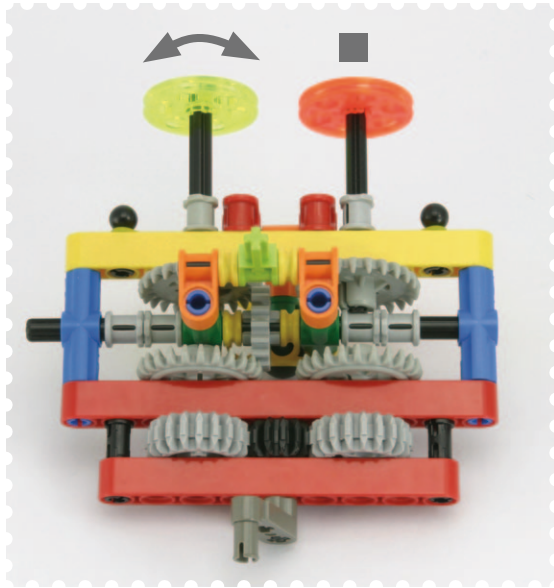


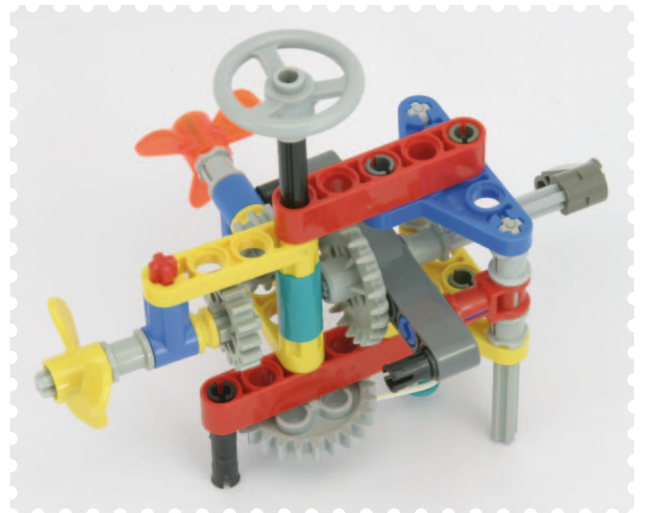


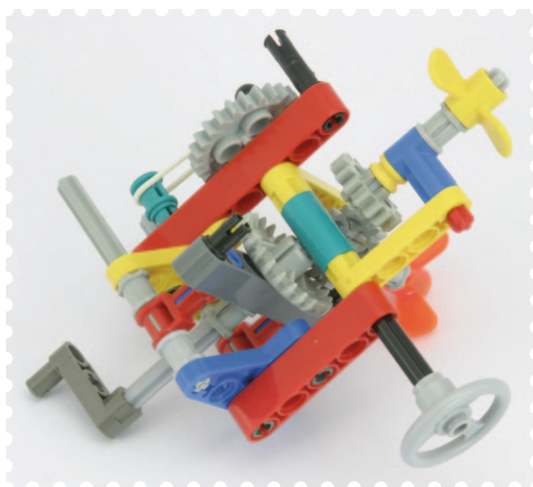
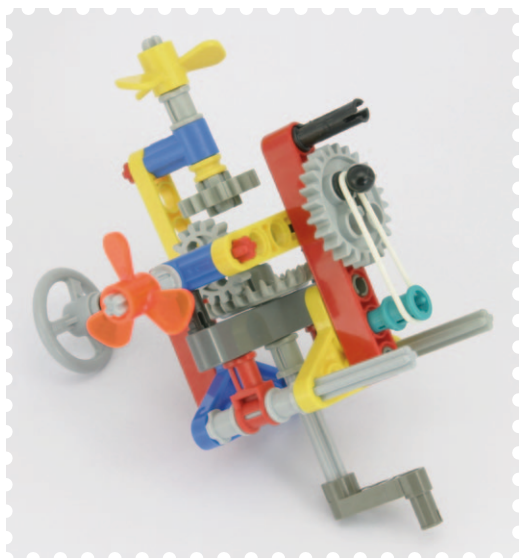
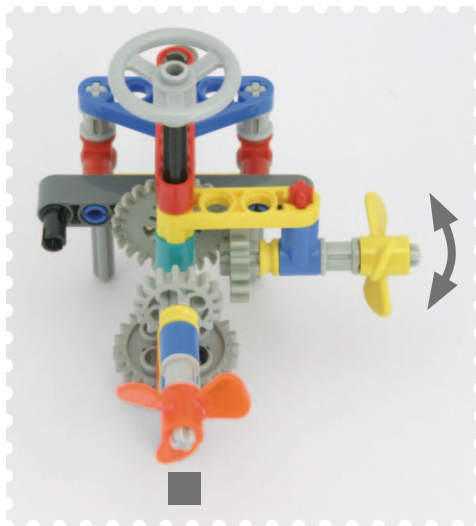
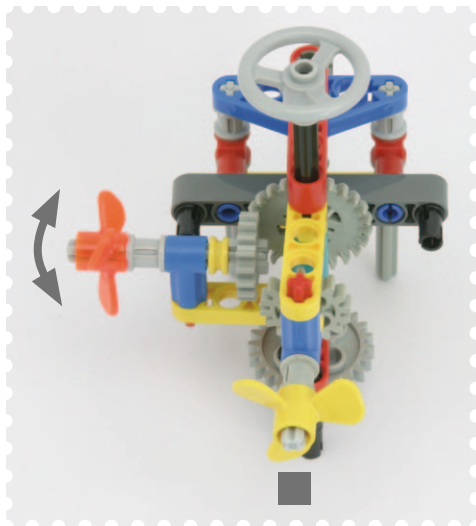


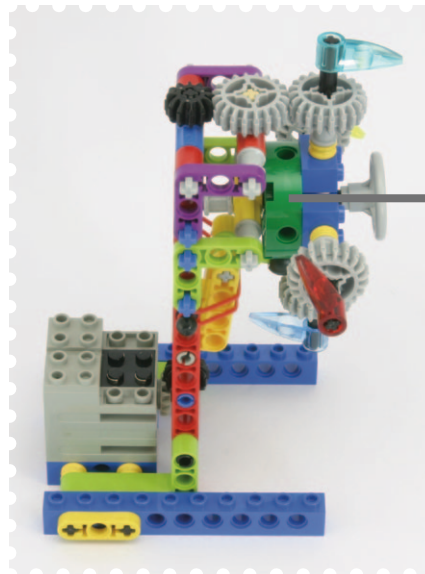
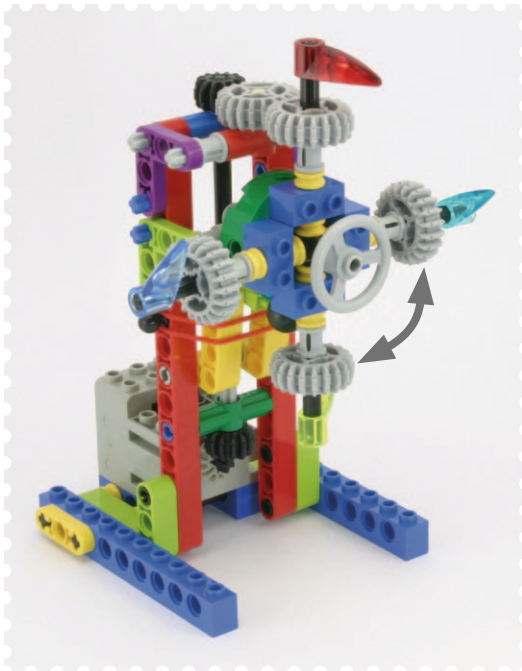
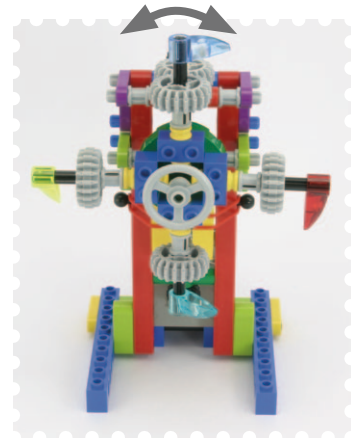


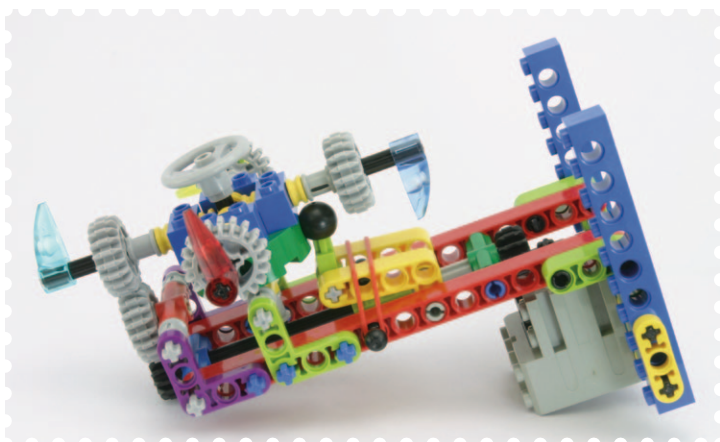


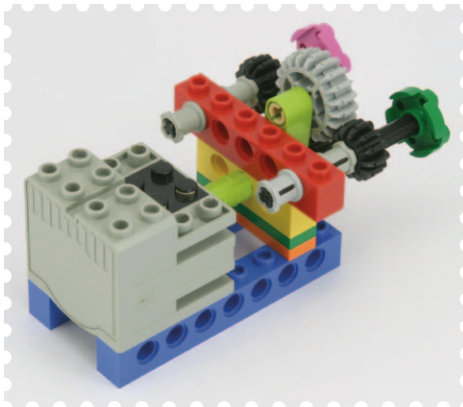
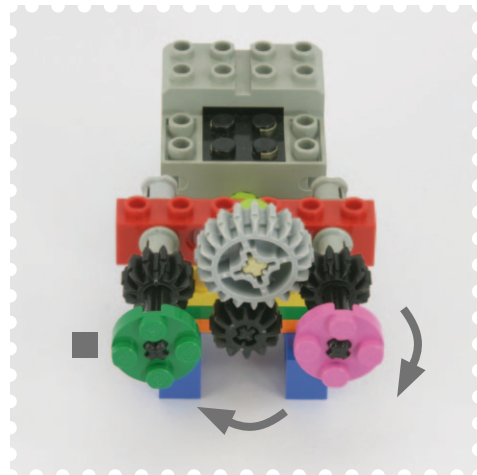
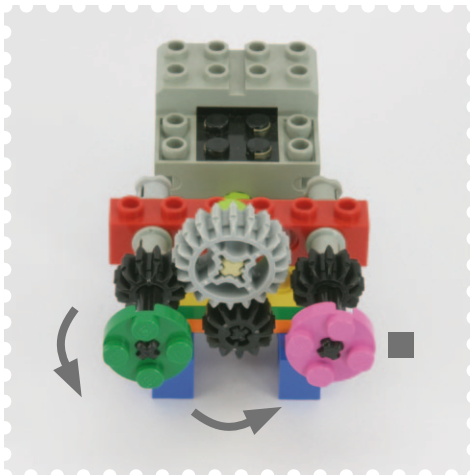
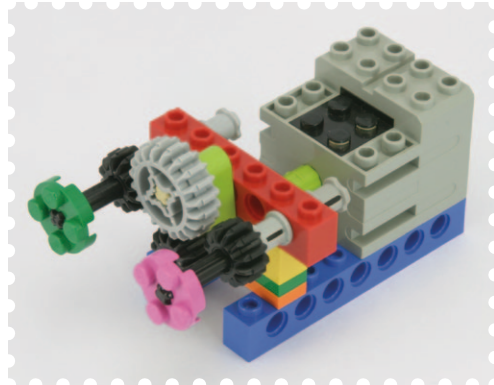
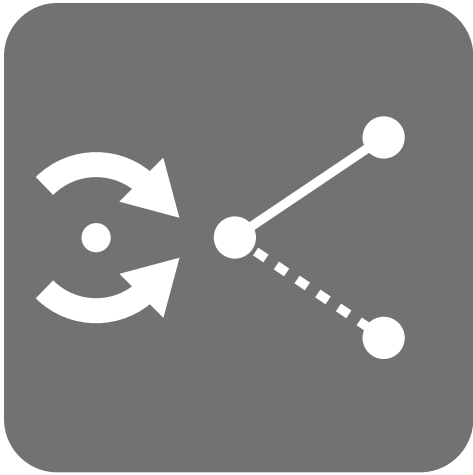


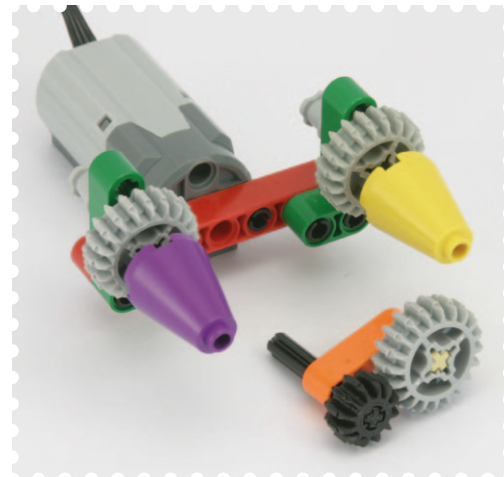
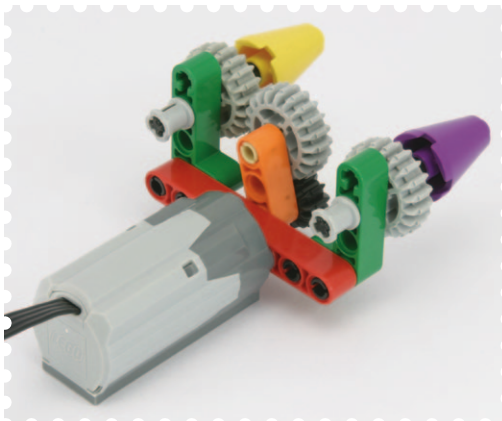
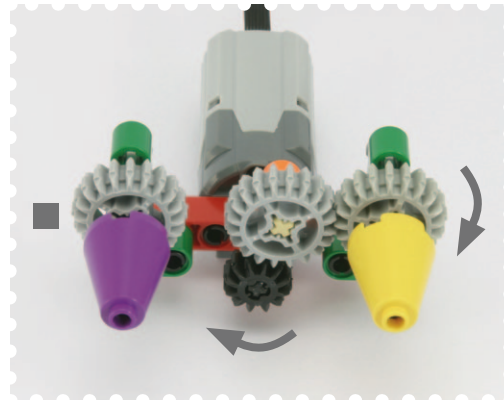
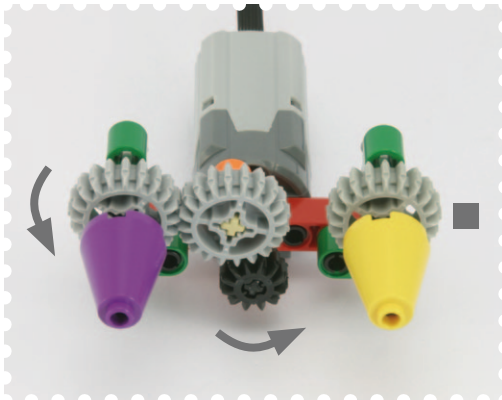
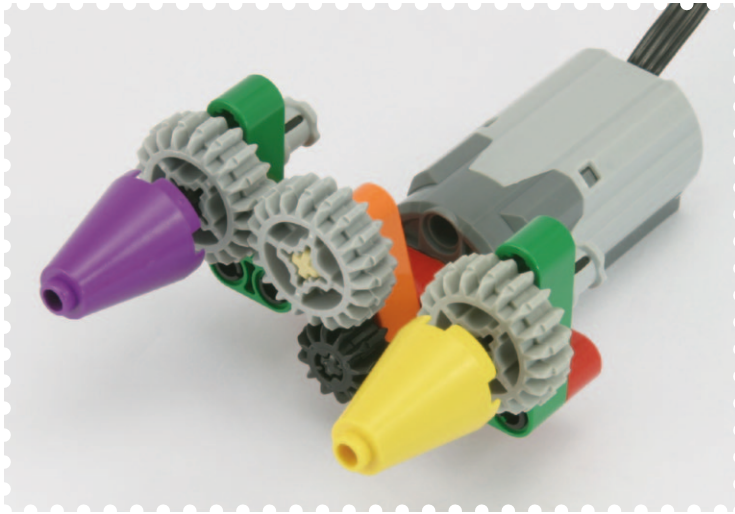


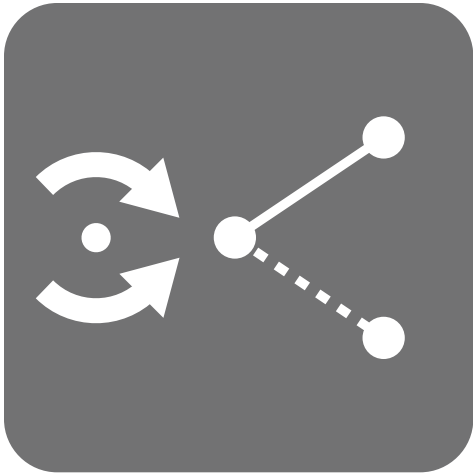


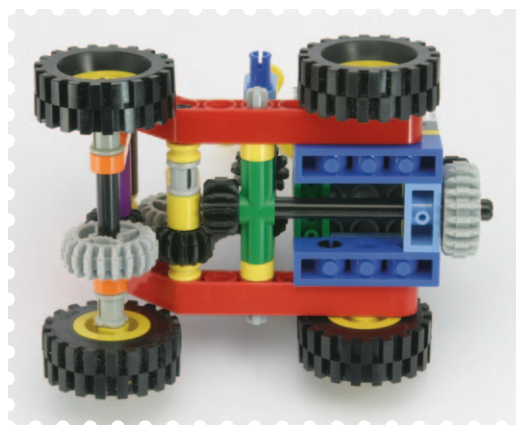
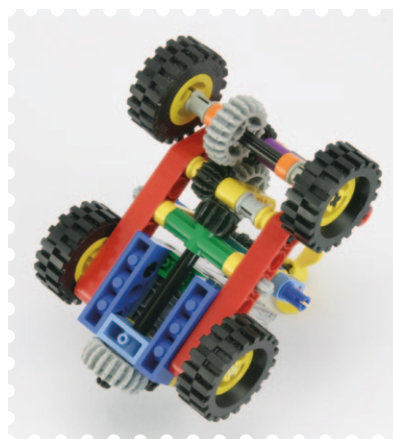


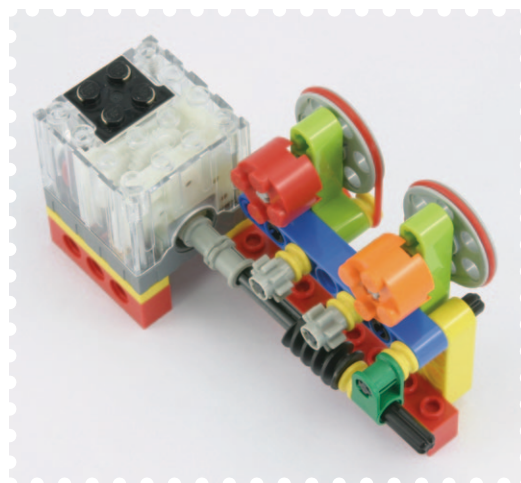
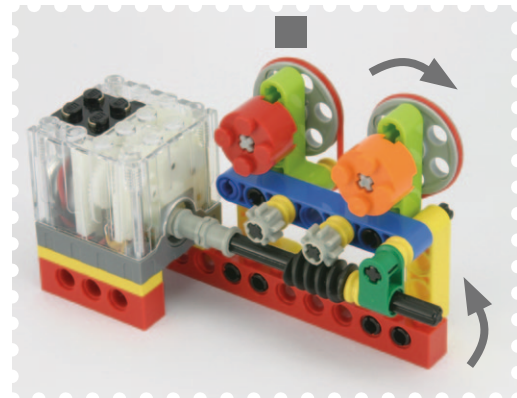
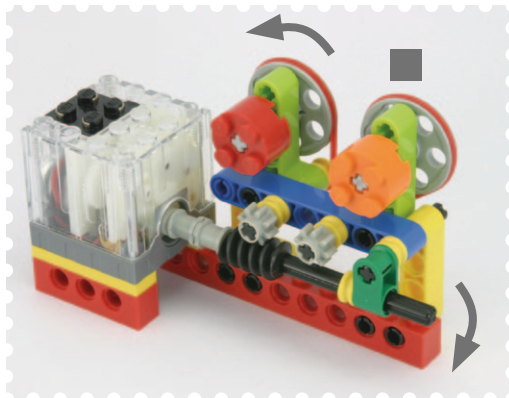
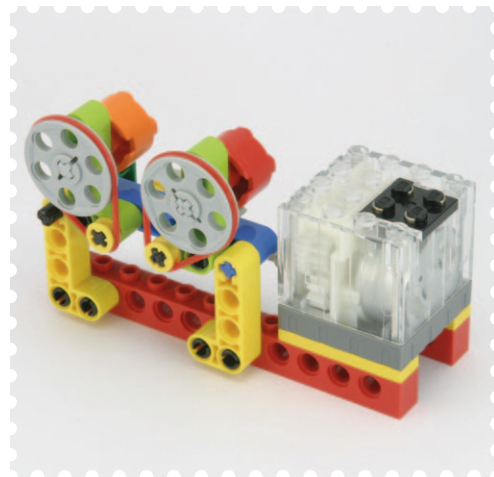
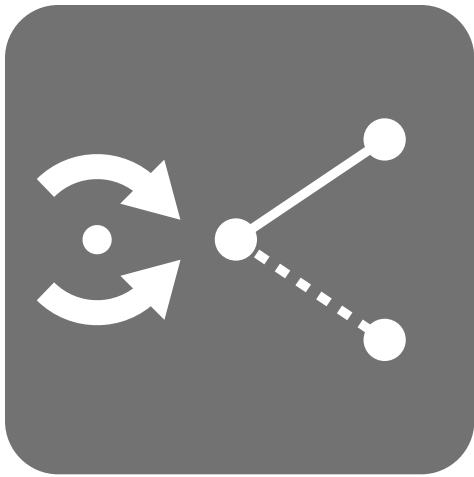


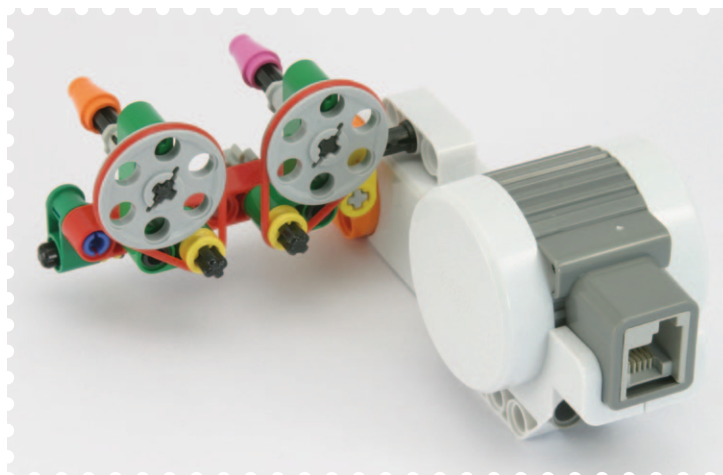
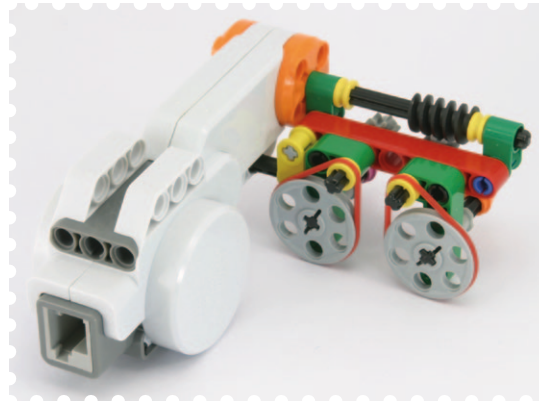
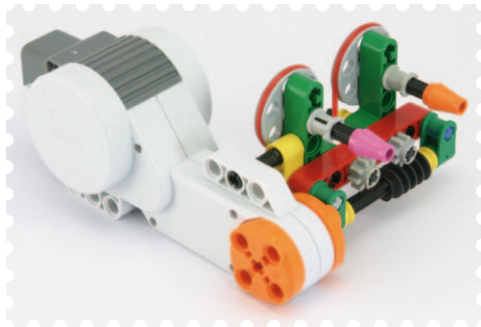
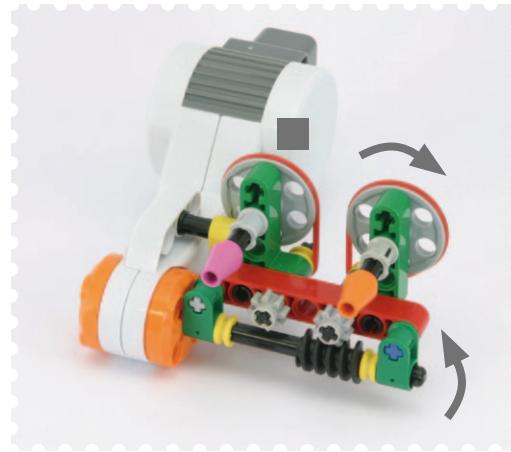
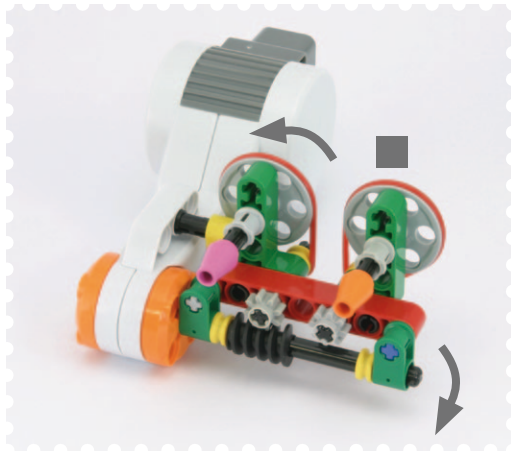


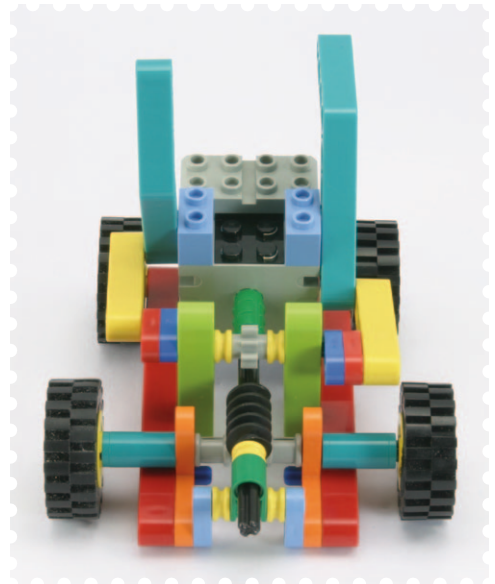
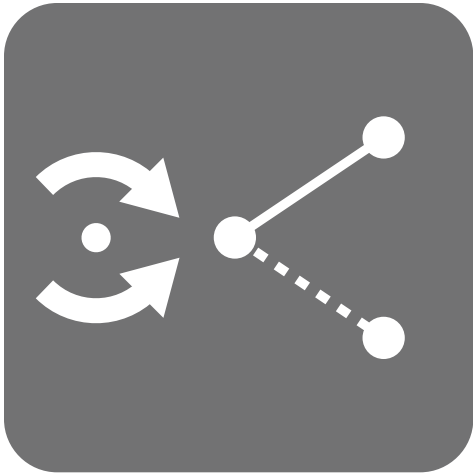


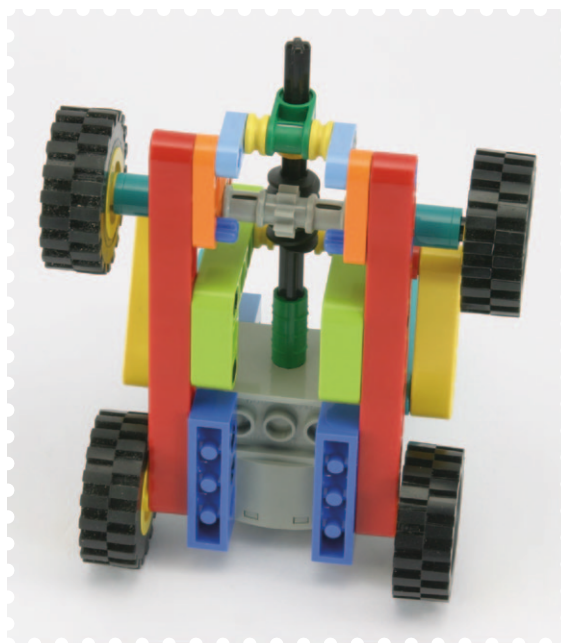
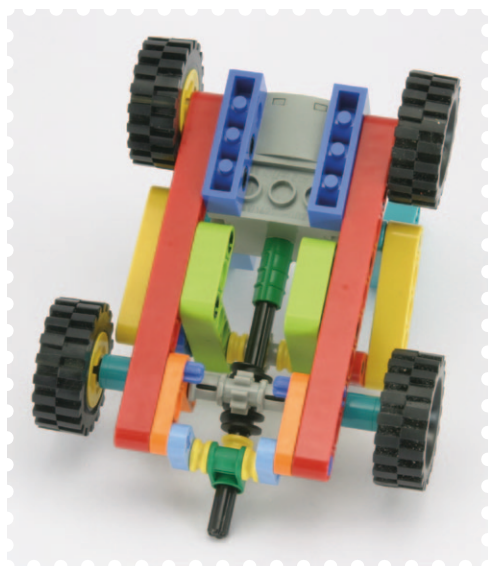
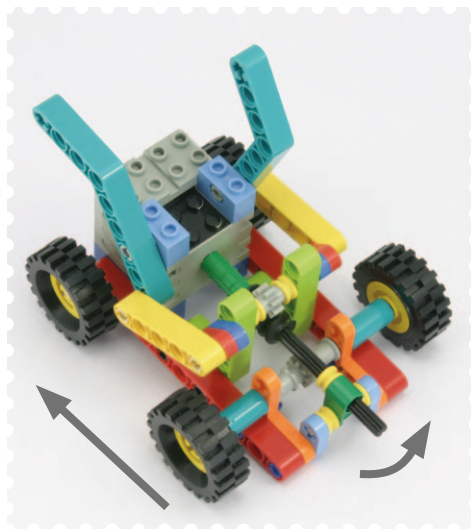
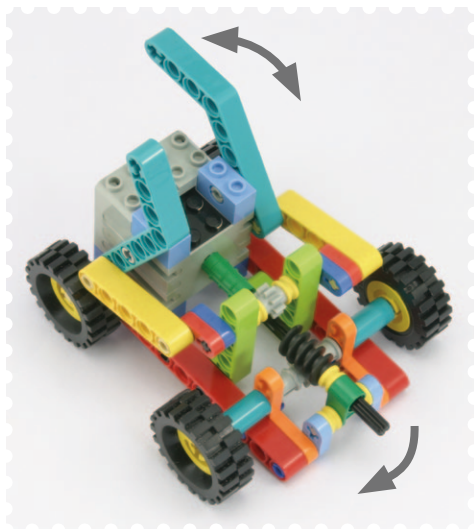


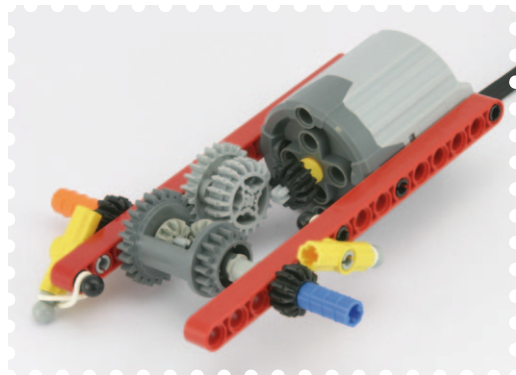
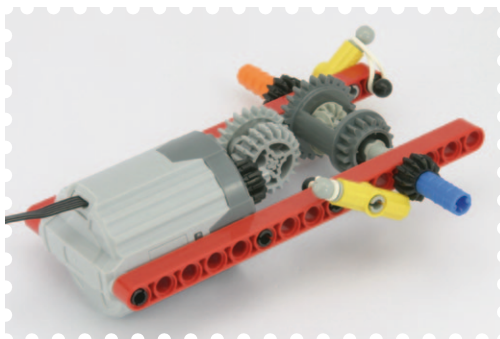
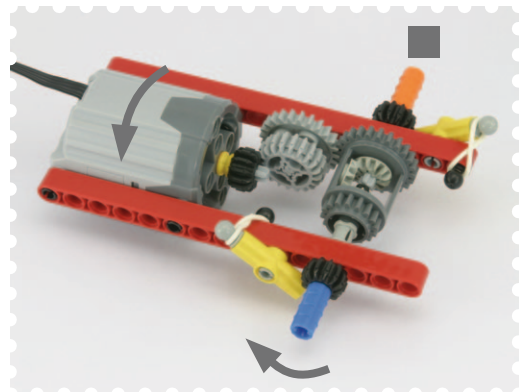
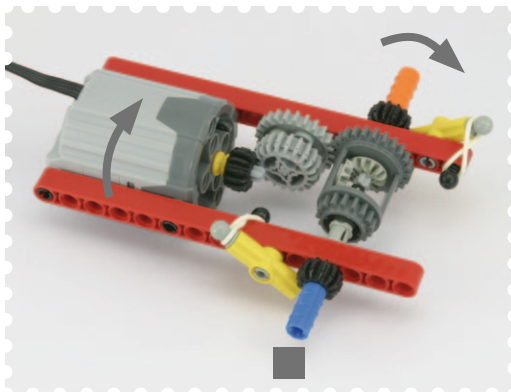
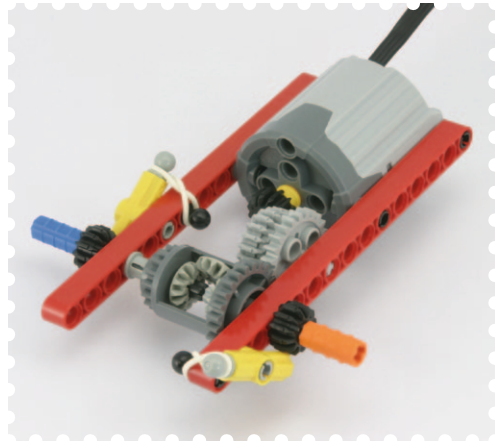
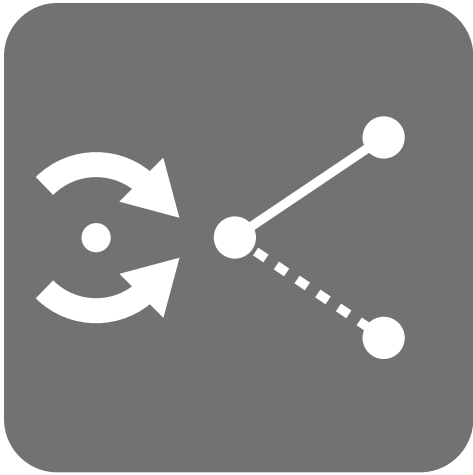


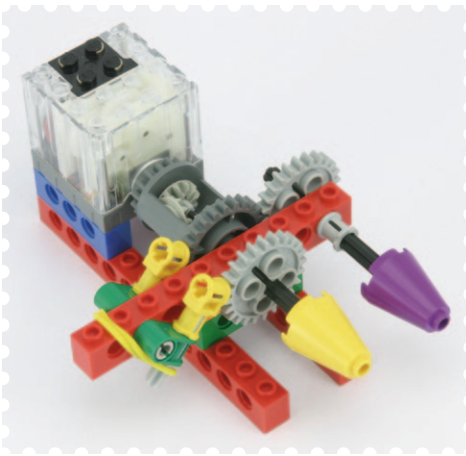
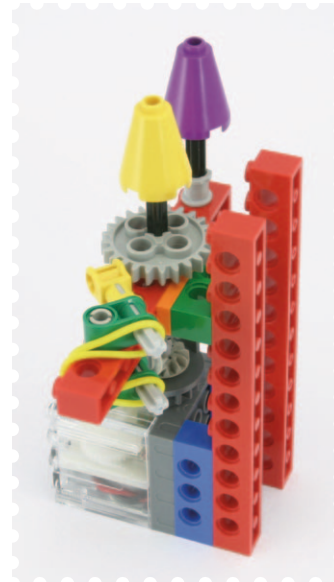
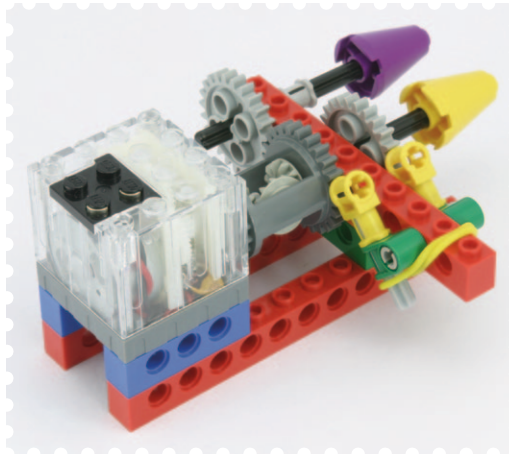
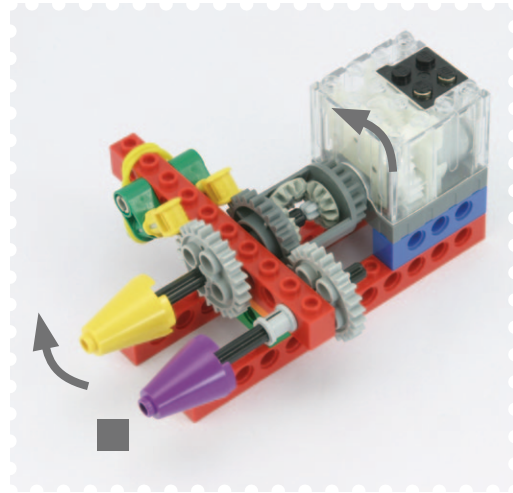
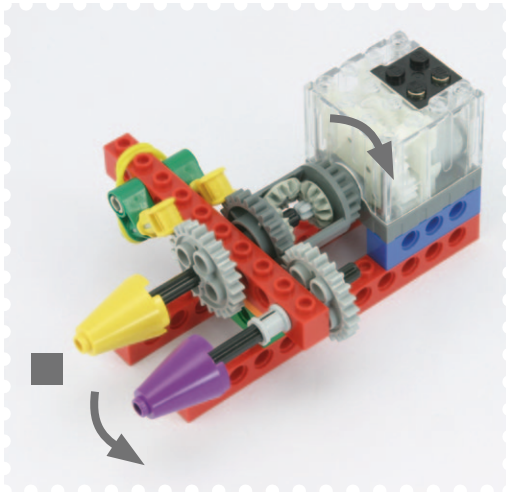


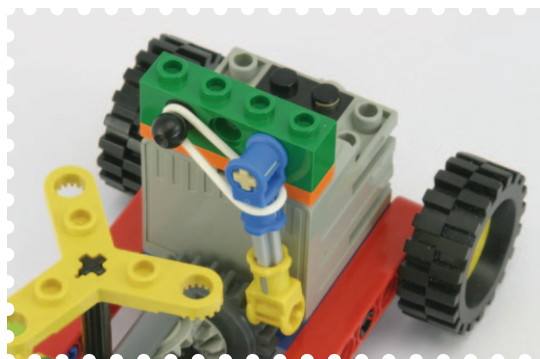
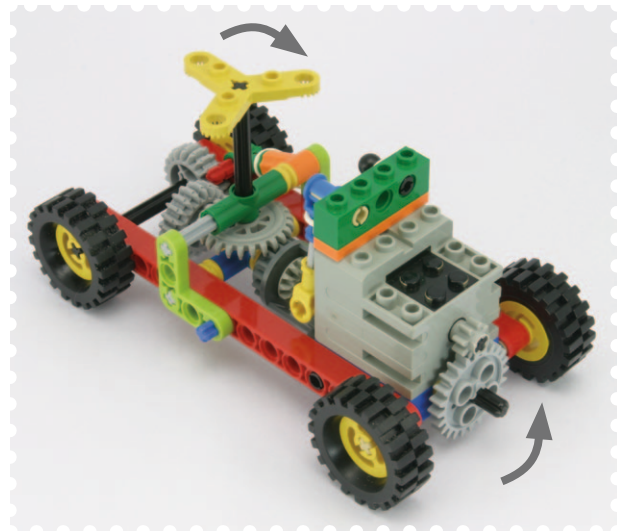
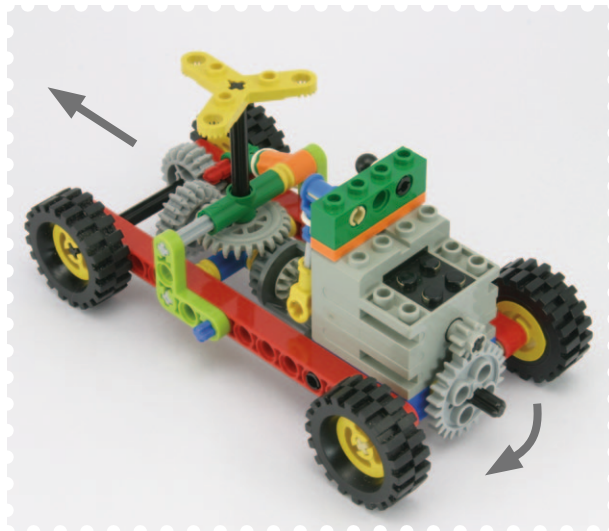
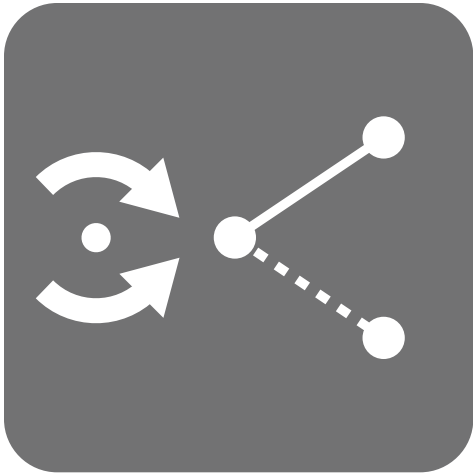


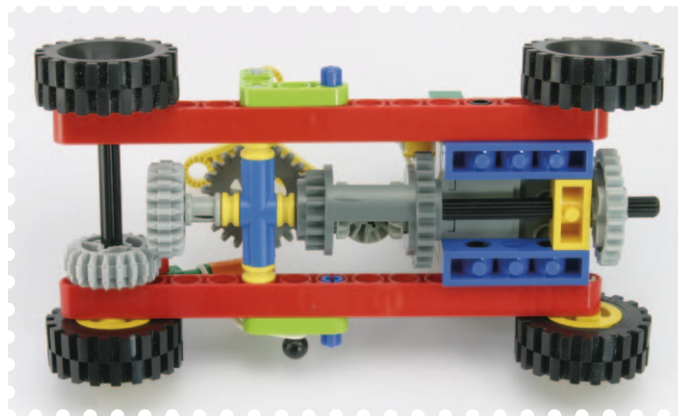




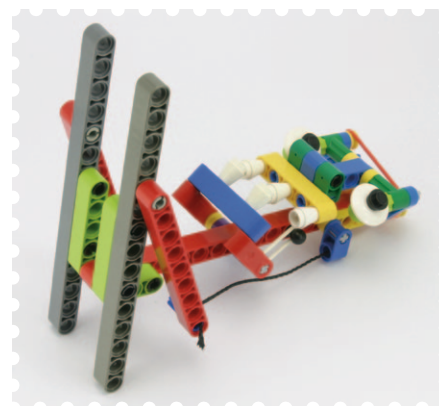
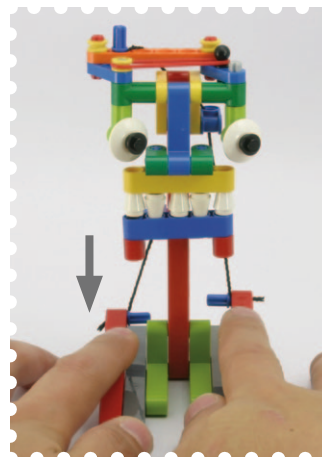
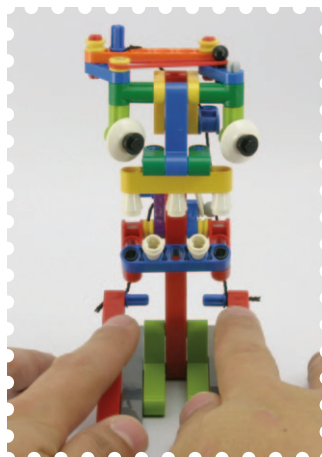


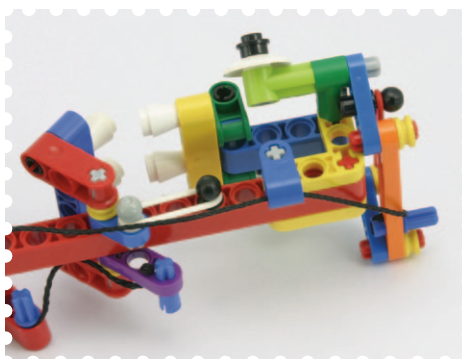
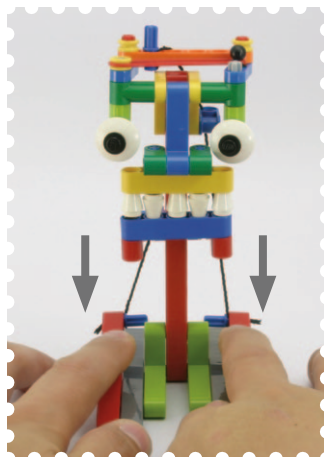
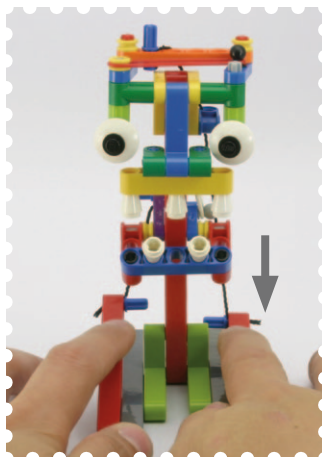






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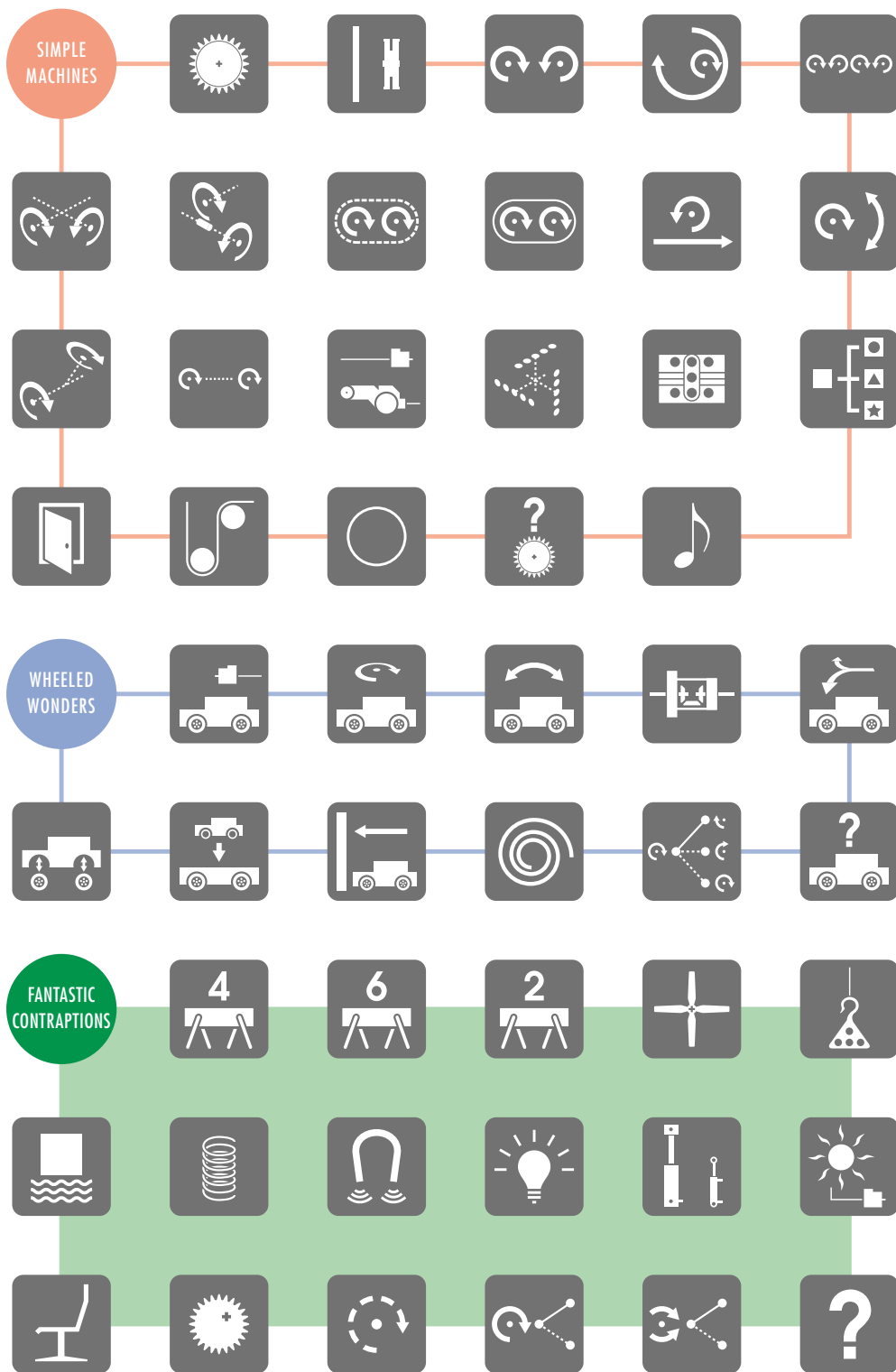




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