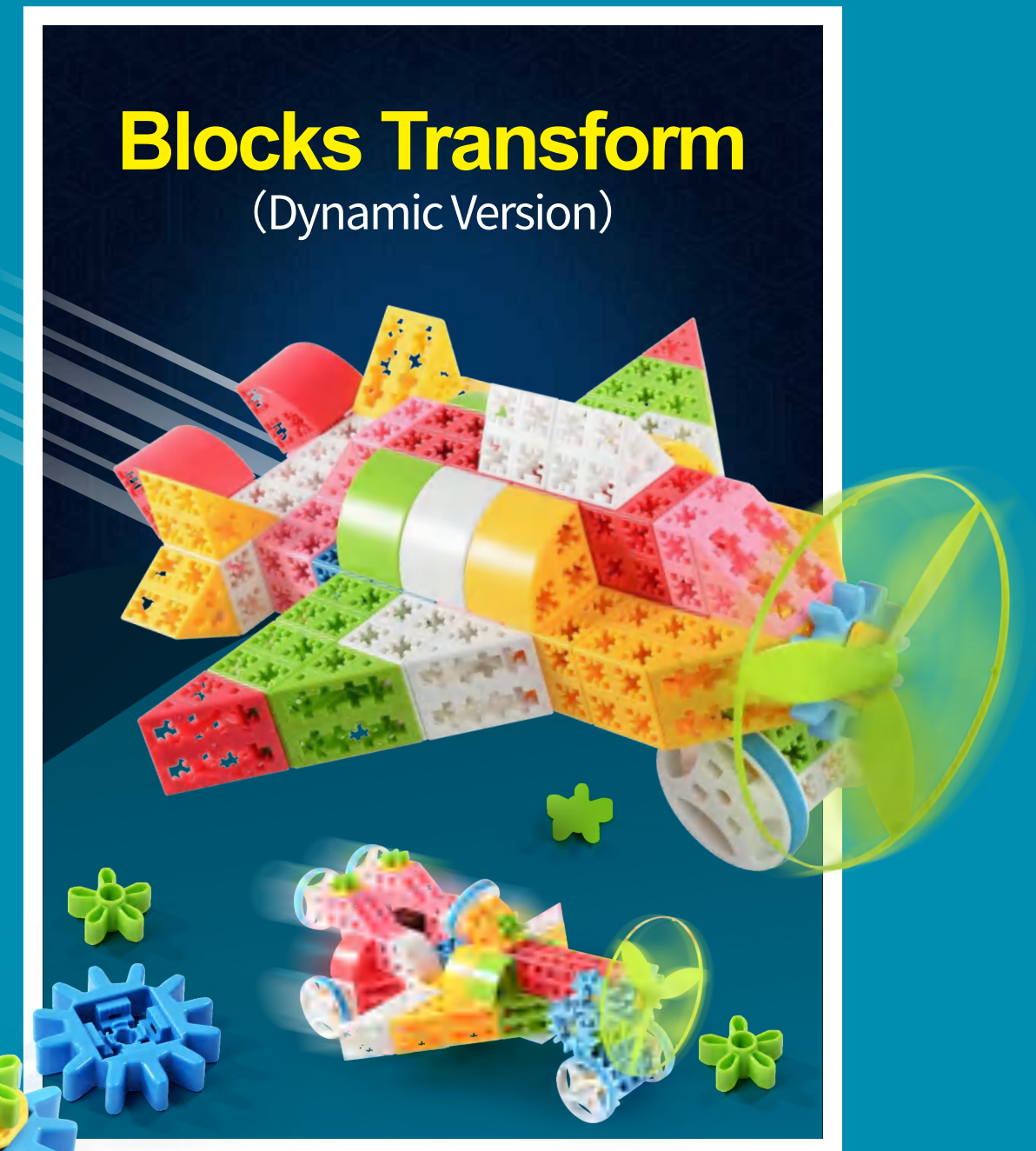
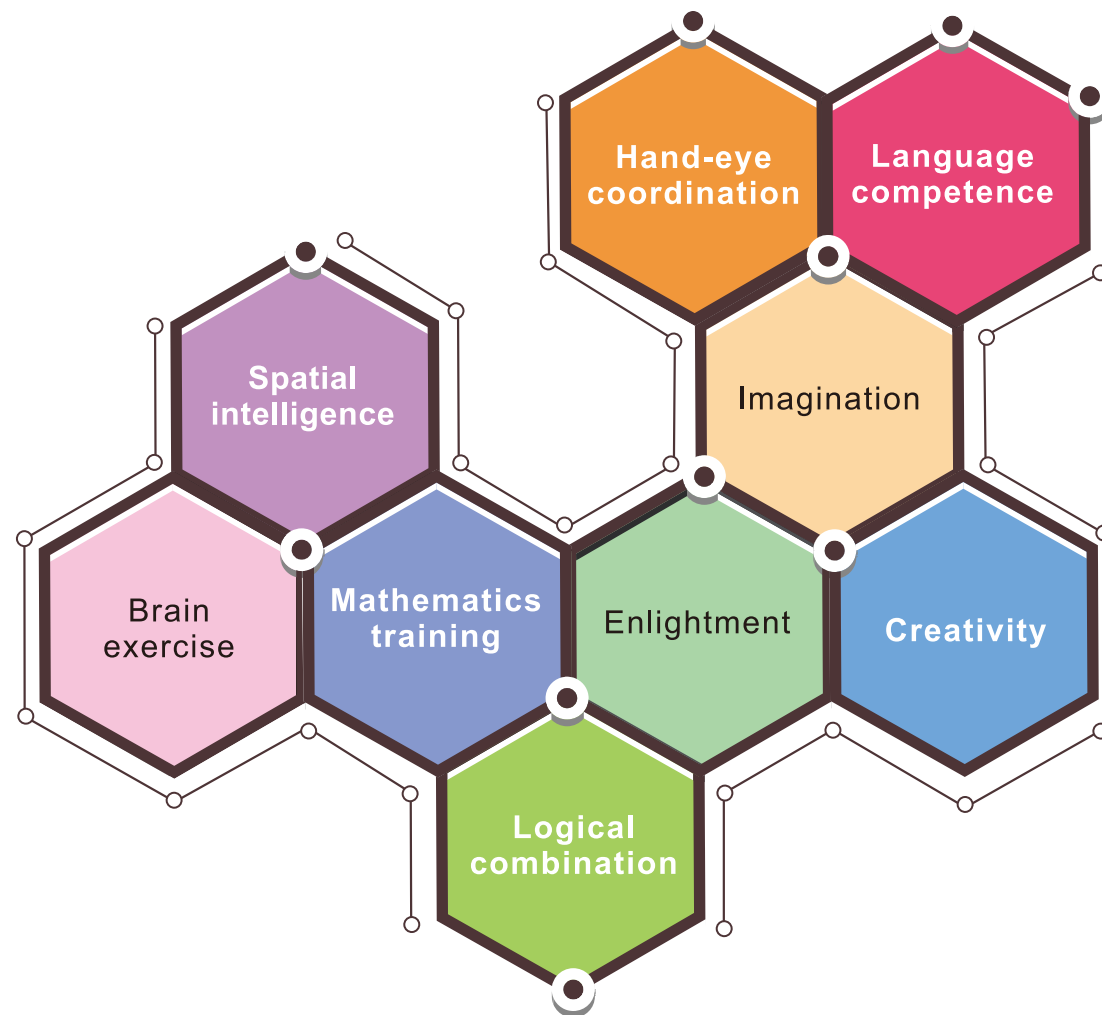


Primary **STEAM** Toy

Science · Technology · Engineering · Art · Mathematics



Please retain this instruction book for future reference.



Hands are the brain of body.

——Kant, a famous German philosopher.

Children's wisdom is on their fingers.

——Sukhomlinskii, a famous former Soviet educator.

Children always think by their hands and hands are the greatest tool in other body functions.

——Ruixue Sun, a famous China early education expert.



Primary **STEAM** Toy

Science, Technology, Engineering, Art, Mathematics

STEAM is a new "After Setting Science" which combined several different subjects. Nowadays, the cross-domain STEAM got more and more attention gradually. STEAM aims to blend boring science in interesting games and integrate basic knowledge with daily life so that enlightens children's science experience and stimulates their eagerness to explore the unknown world. Children can accept primary science early and easily, and learn much knowledge while they are playing.

Contents

01 Babies intelligent blocks

02 Learn to play and revolve your brain

04 Assemble accessories

12 Get blocks apart easily

14 Four playing themes

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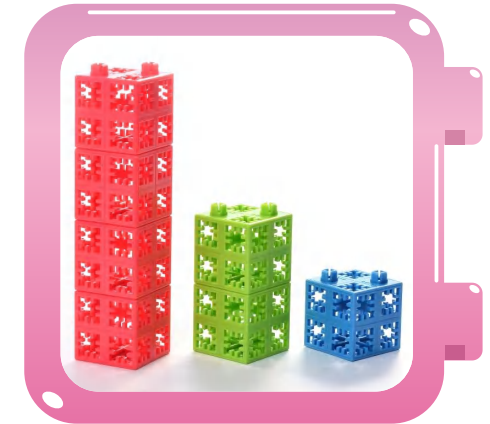
59 Multi-speed drive ——The spinning top and the propeller



Babies Intelligent Blocks

1.5y+Babies Catch & Touch

Babies usually catch or touch something when they are 1.5 years old. BabyFun such kind of bigger blocks not only bring babies more sense of touch because of its concave - convex and smooth surface, but also stimulate brain and wisdom of babies for its various shapes and bright colors.



2y+babies Connect & Separate

With babies growing up, their hands become more flexible and active. It is the best time for them to connect and separate blocks. When they create a interesting “artwork”, they may be much exciting and happy. And do more this kind playing, they will get more joys from games.

3y+babies Germination of Creativity

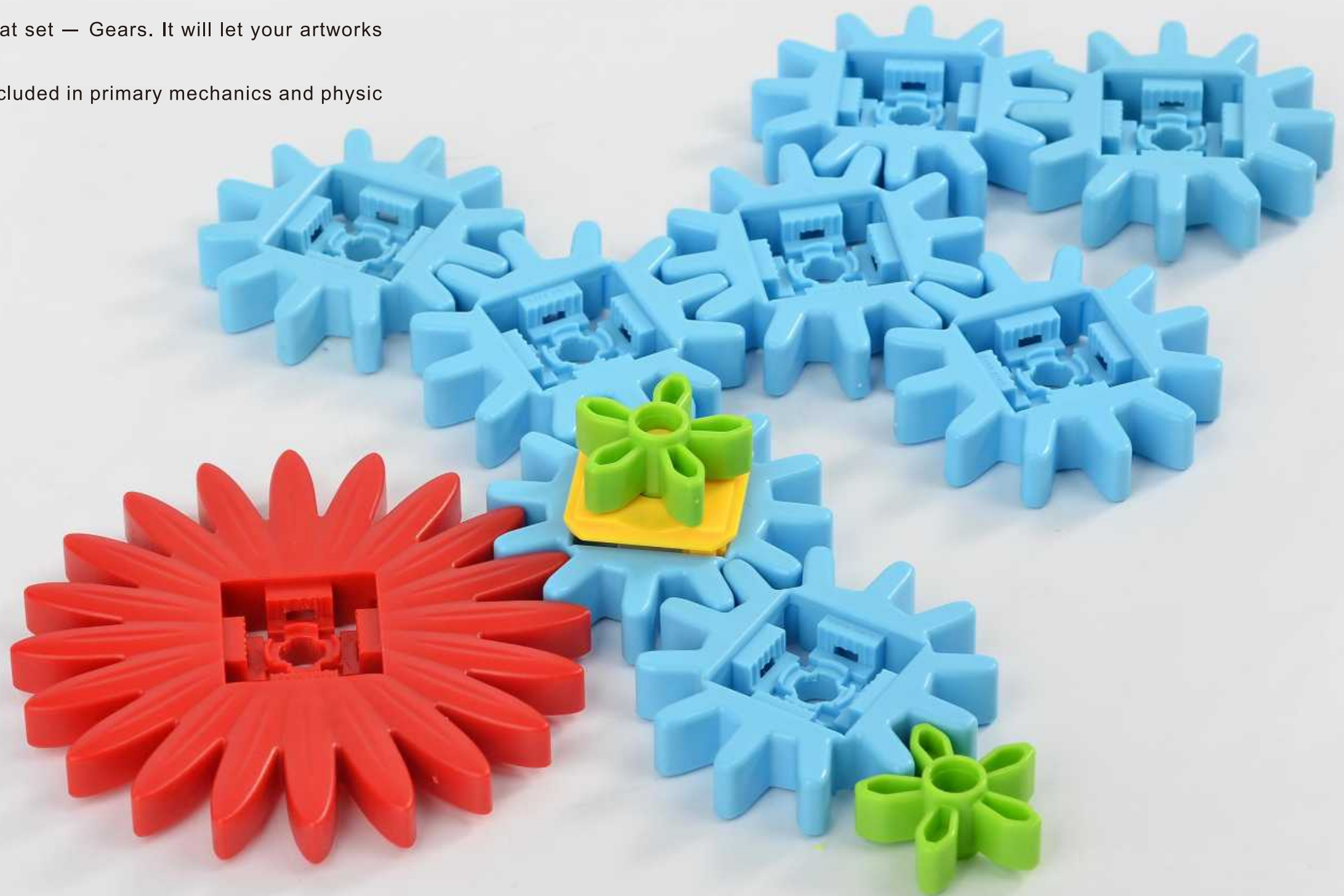
After 3 years old, babies enter into duration of germination. They intend to express themselves through what they want to build. Parents can help them to build some models according to the instructions, and babies can do this kind of imitative games to learn and input some cognition. Based on that, babies can imagine and create more and more models.



Learn to Play and Revolve Your Brain

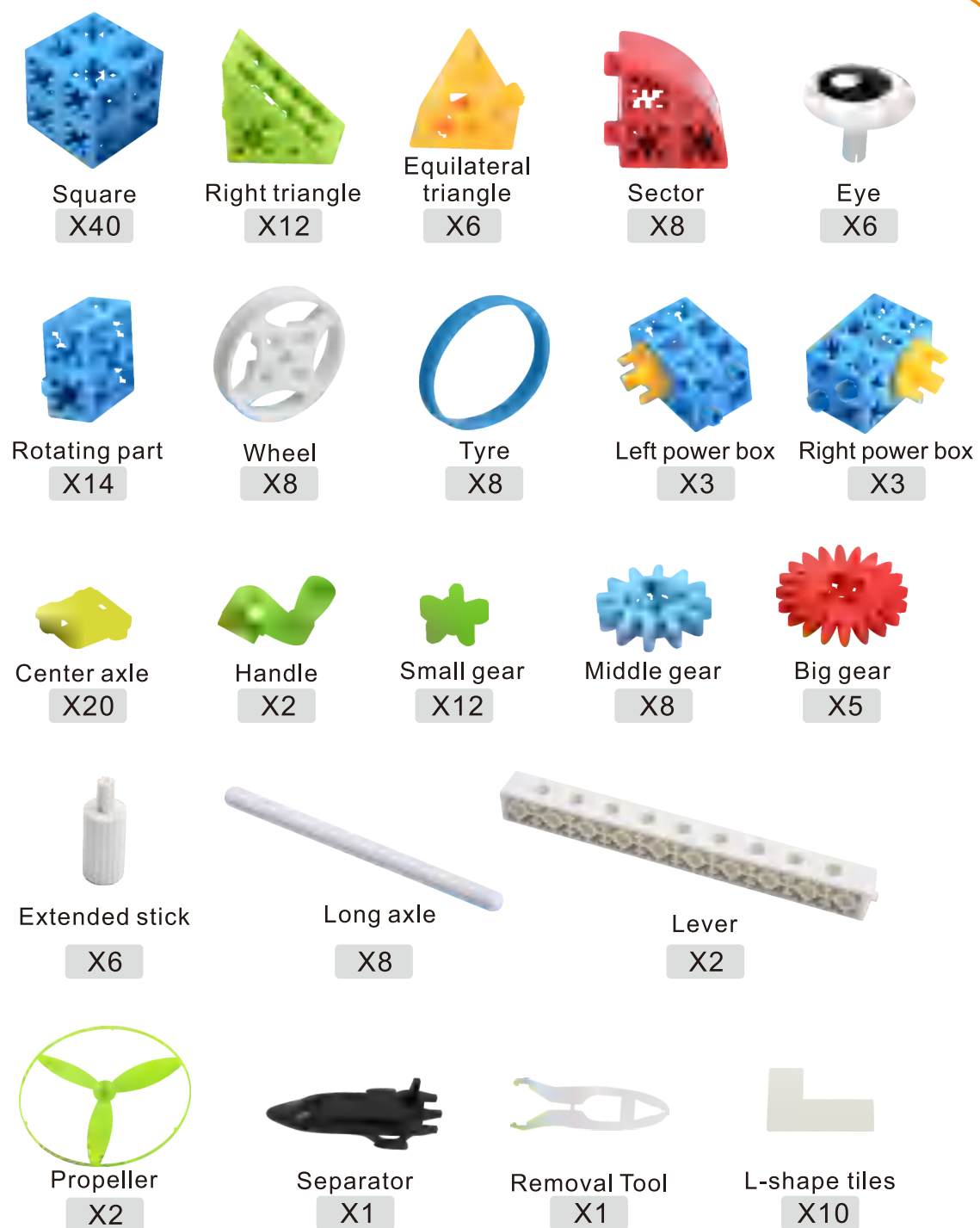
BabyFun has a great set — Gears. It will let your artworks come alive.

This set of toy is included in primary mechanics and physic experiments.



Assemble accessories

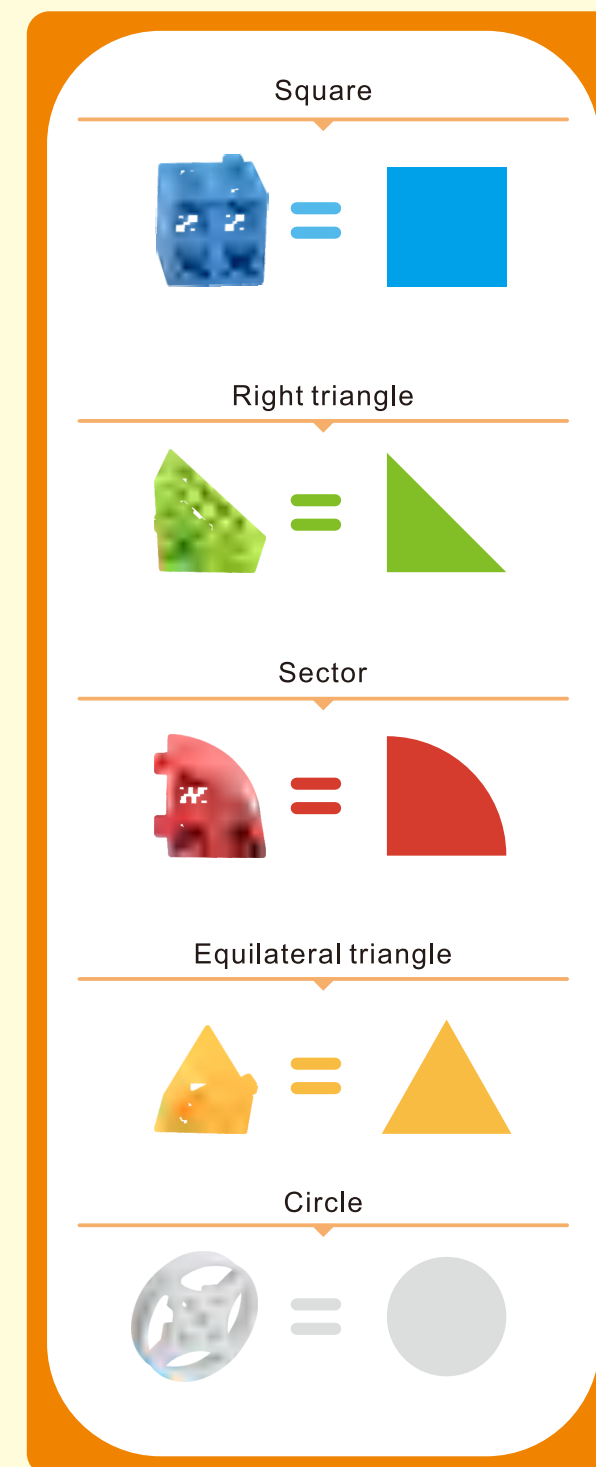
Pieces Included (Notice: each item includes multicolored pieces.)



Pictures are only for reference, please be subject to the actual products!

Assemble accessories

Shapes



Color Update



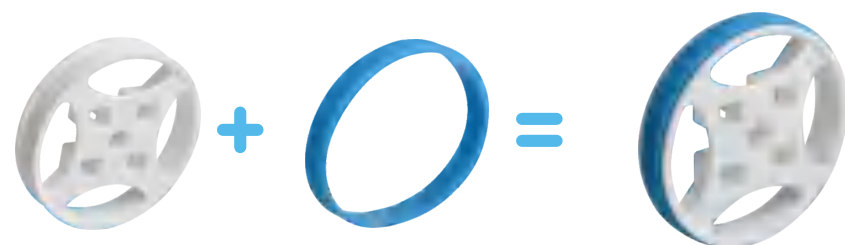
Assemble accessories

Irregular parts assembling

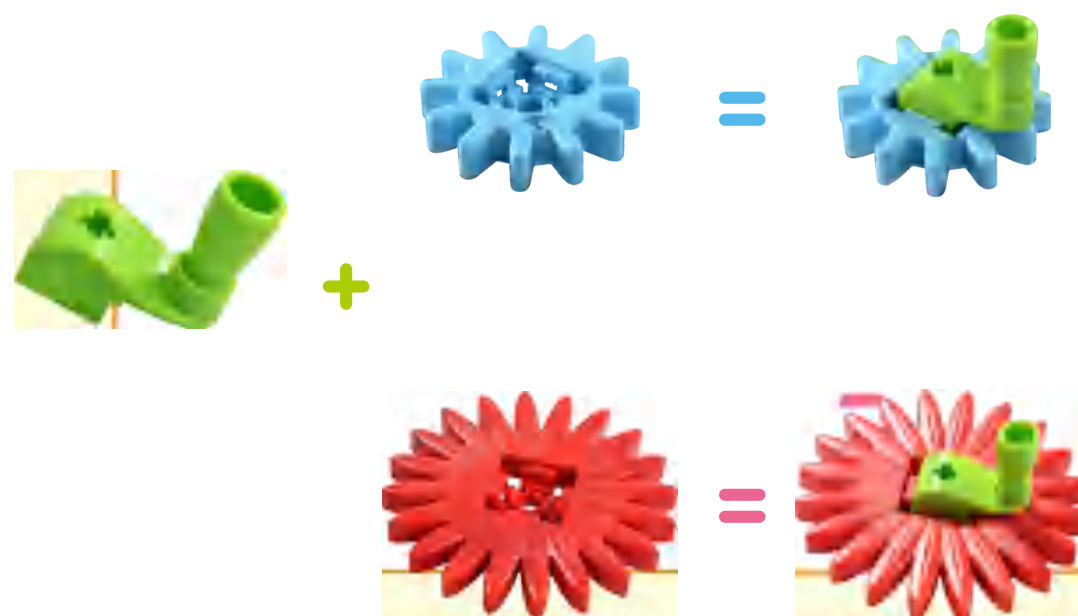
Eye



Wheel



Handle and gear

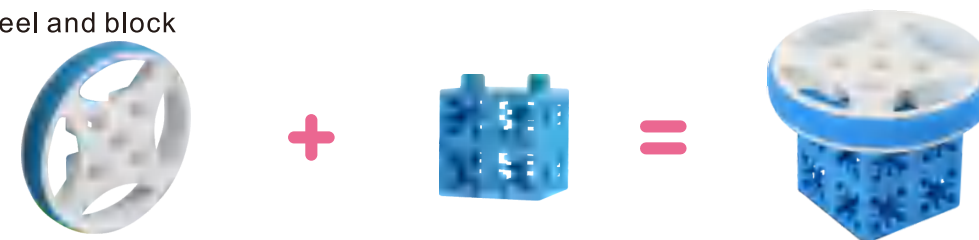


Assemble accessories

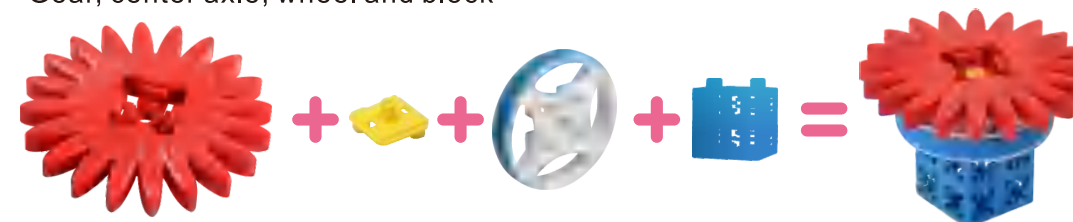
Gear and block



Wheel and block



Gear, center axle, wheel and block



Power box and block



Assemble accessories

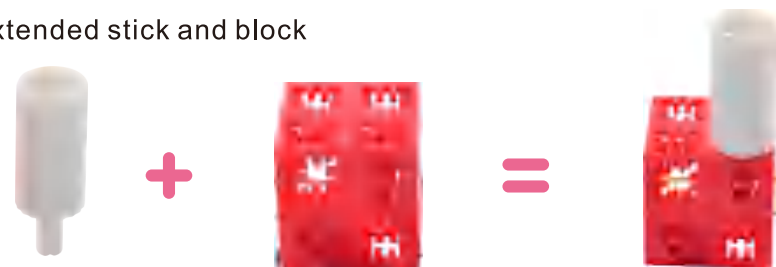
Center axle and propeller



Lever and block



Extended stick and block



Extended stick and lever

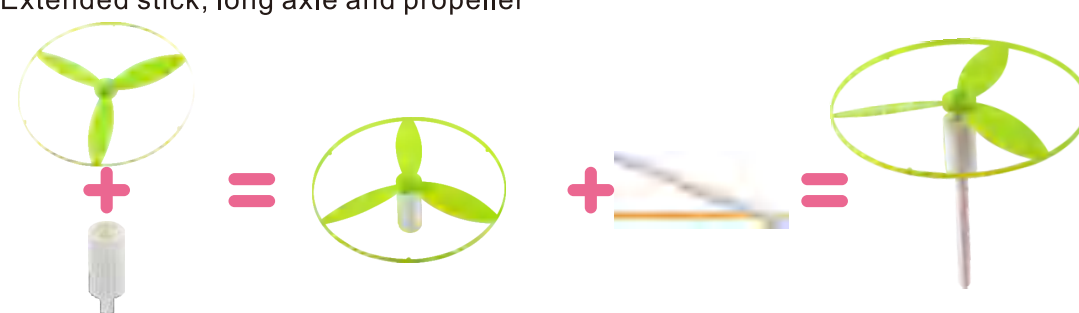


Extended stick and gear

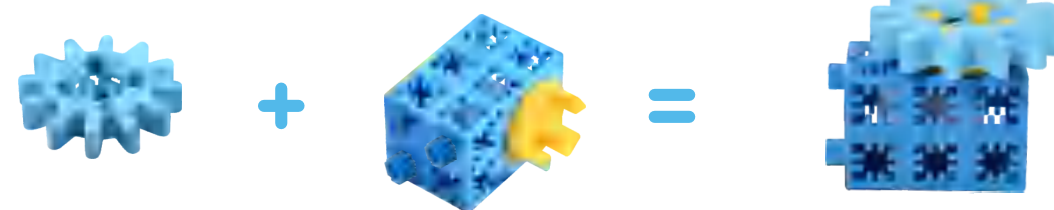


Assemble accessories

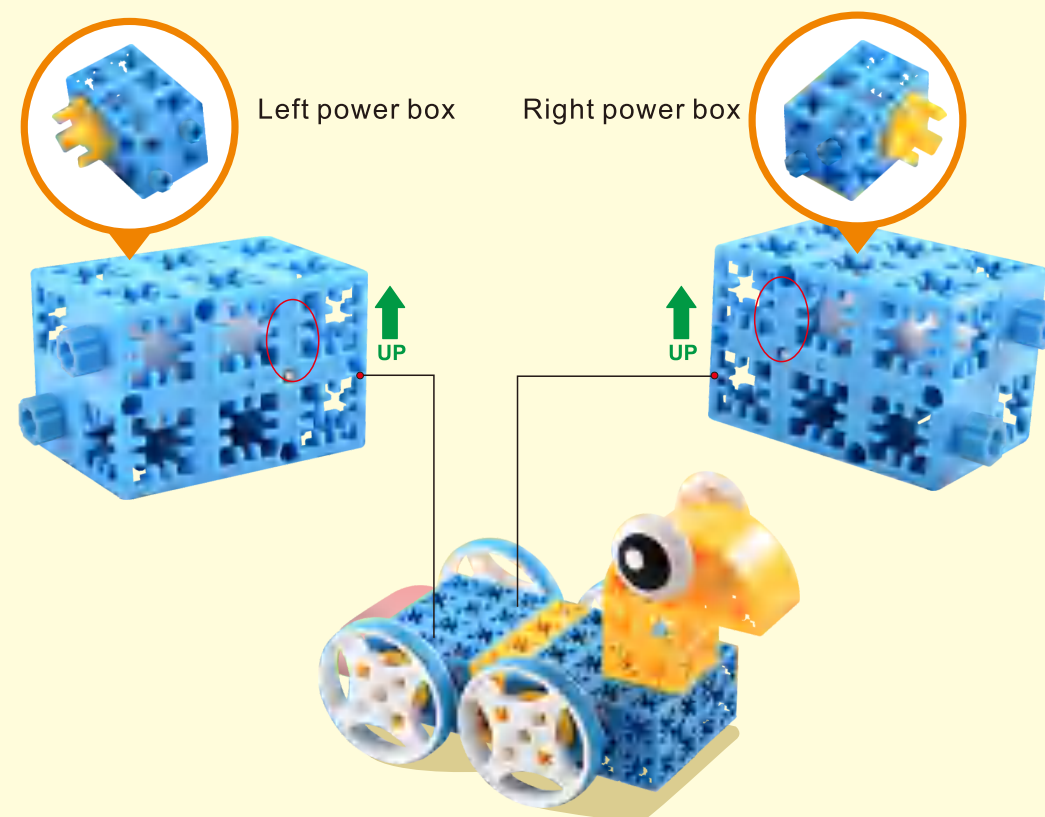
Extended stick, long axle and propeller



Gear and power box



◆ Distinguish left and right power boxes



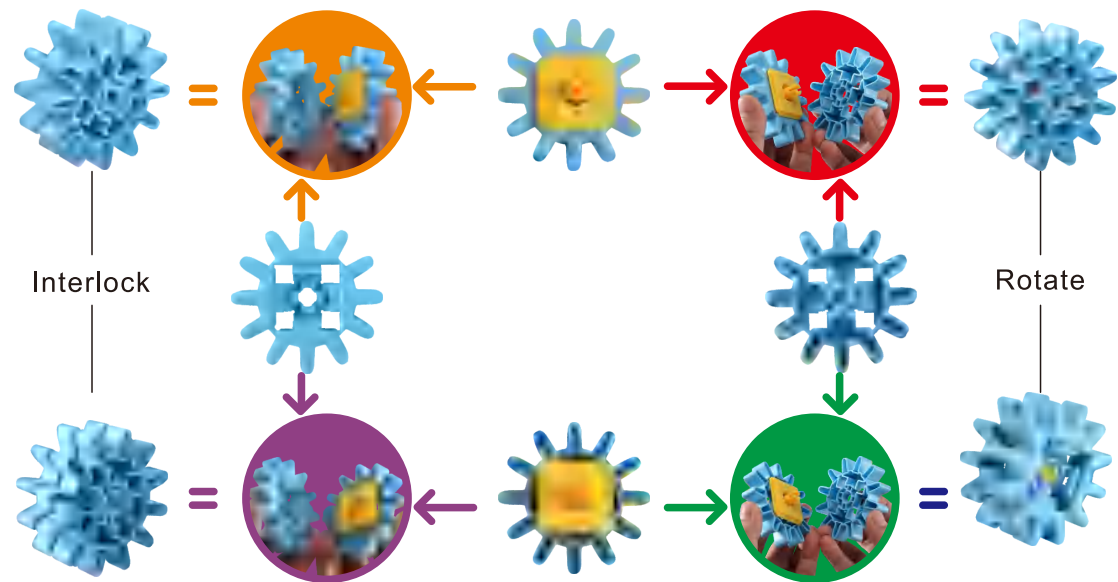
Assemble accessories

Center axle

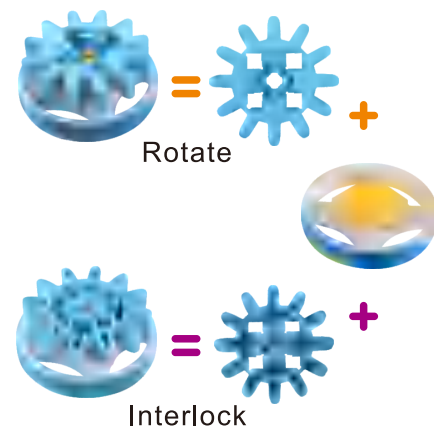


Center axle is an important part to link different parts in gear transmission.

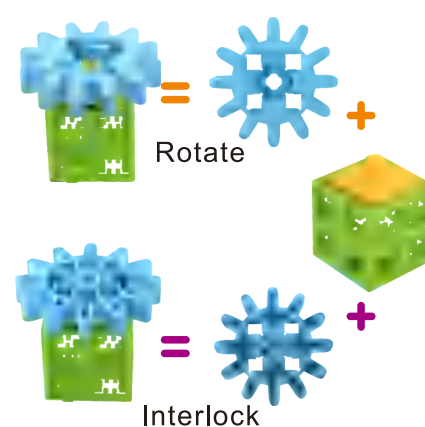
● Gear and gear



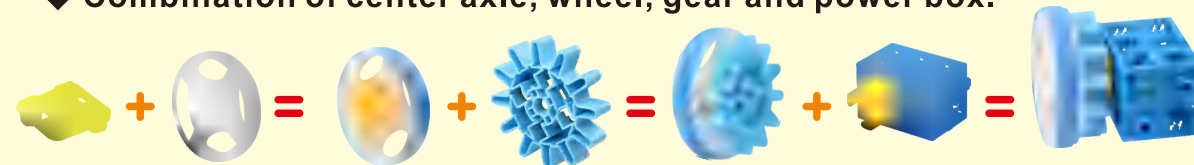
● Gear and wheel



● Gear and block



◆ Combination of center axle, wheel, gear and power box.



Assemble accessories

◆ Let's try to build it.



◆ Usages of Separator

Use the tip to pry up the accessory you want to separate.



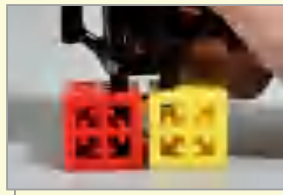
Nose

Mainly for separating 2 P1 blocks.



Vertical stabilizers

Use the 4 legs at the bottom to separator connected blocks.



Horizontal stabilizers

5 Functions



Circular removal hole

For dual-connectors /receivers only; insert the connector or receiver into the hole and lever it.



P1 blocks removal hole

For P1 blocks only; insert the block into the square hole and lever it.



◆ Usage of Removal Tool

Put the two points of the removal tool into the holes of the P4 Central Axis, squeeze tightly and pull.



◆ How to get blocks apart by long axle?

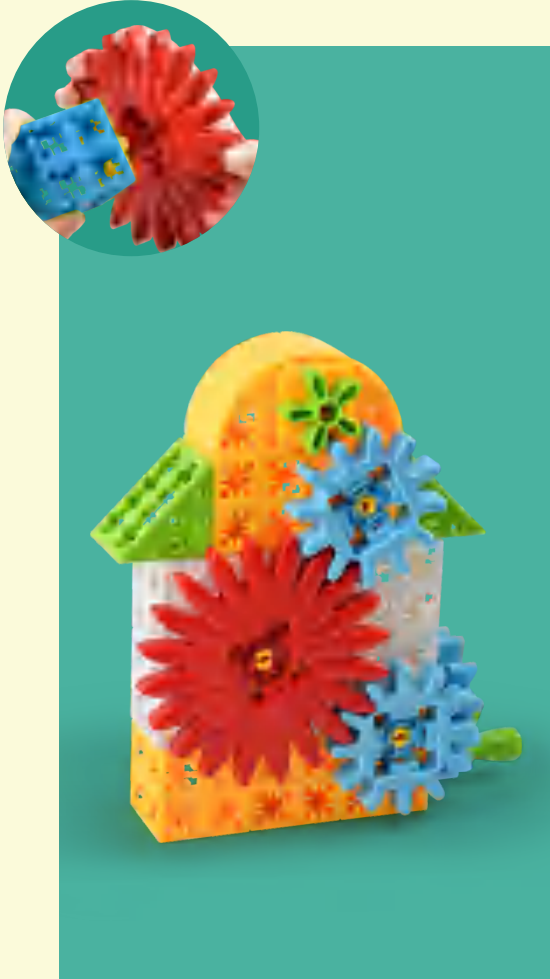


Four Playing Themes

A BabyFun blocks Basic construction



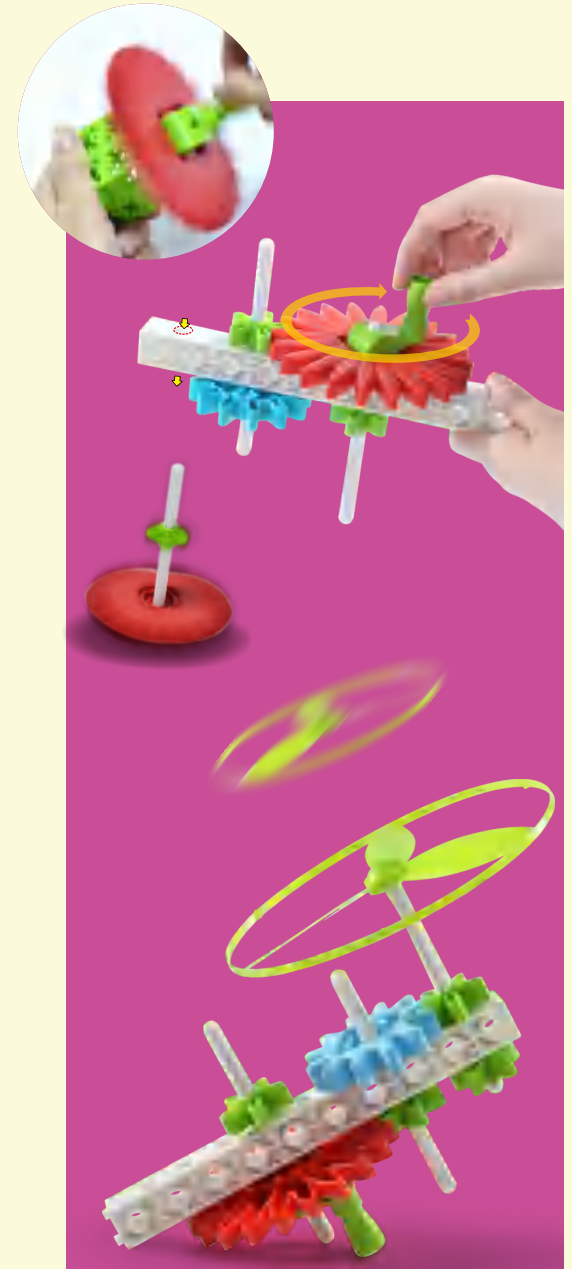
B BabyFun gears Gears transmission



C The power box A magical box can generate power



D Multi-speed drive The spinning top and the propeller



BabyFun

Basic construction



Basic construction — Animals







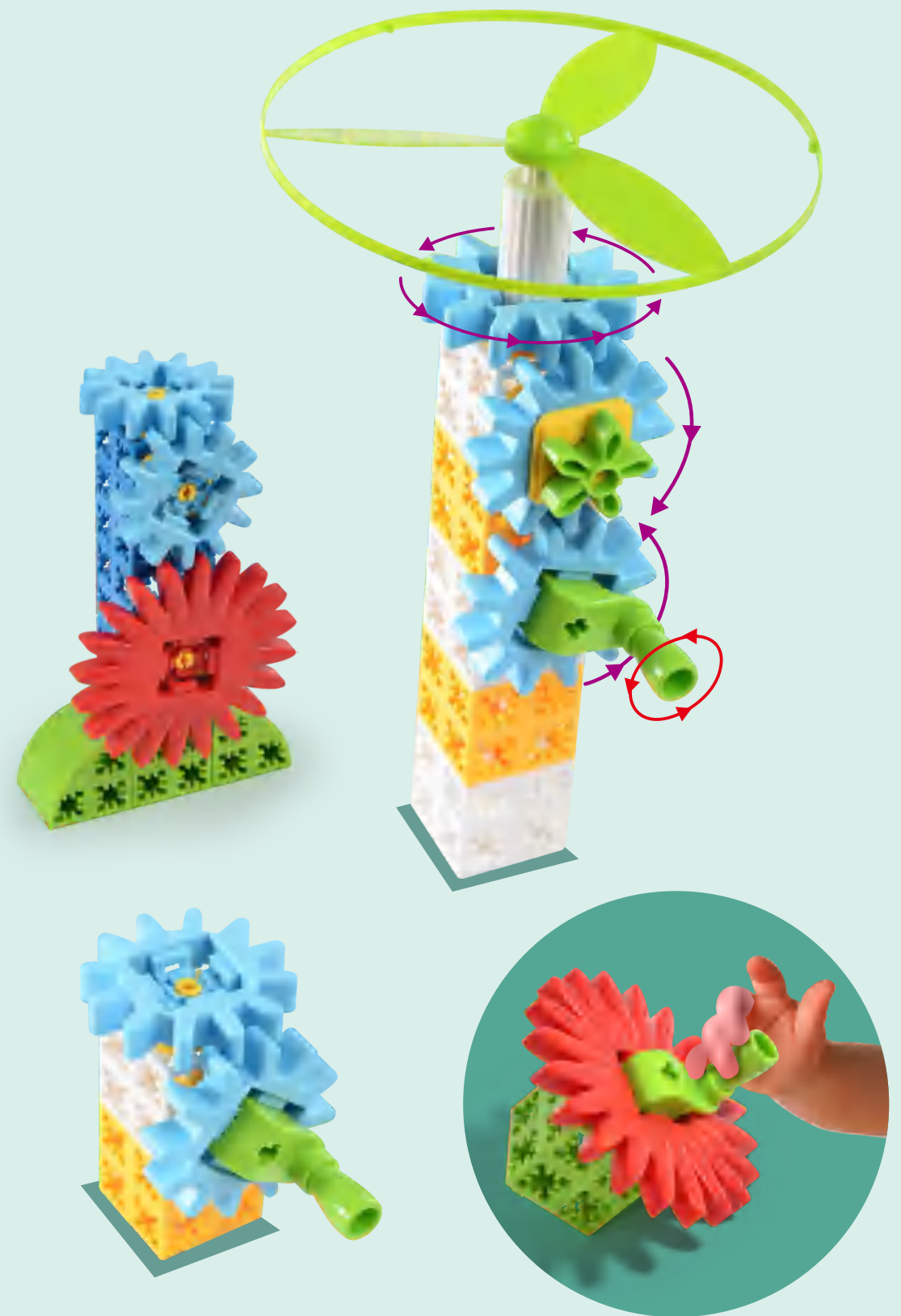


BabyFun

Gears transmission

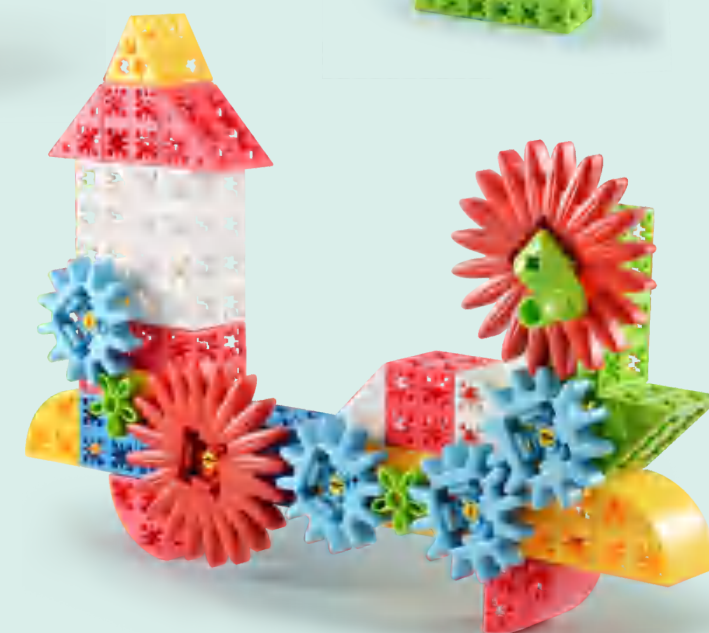
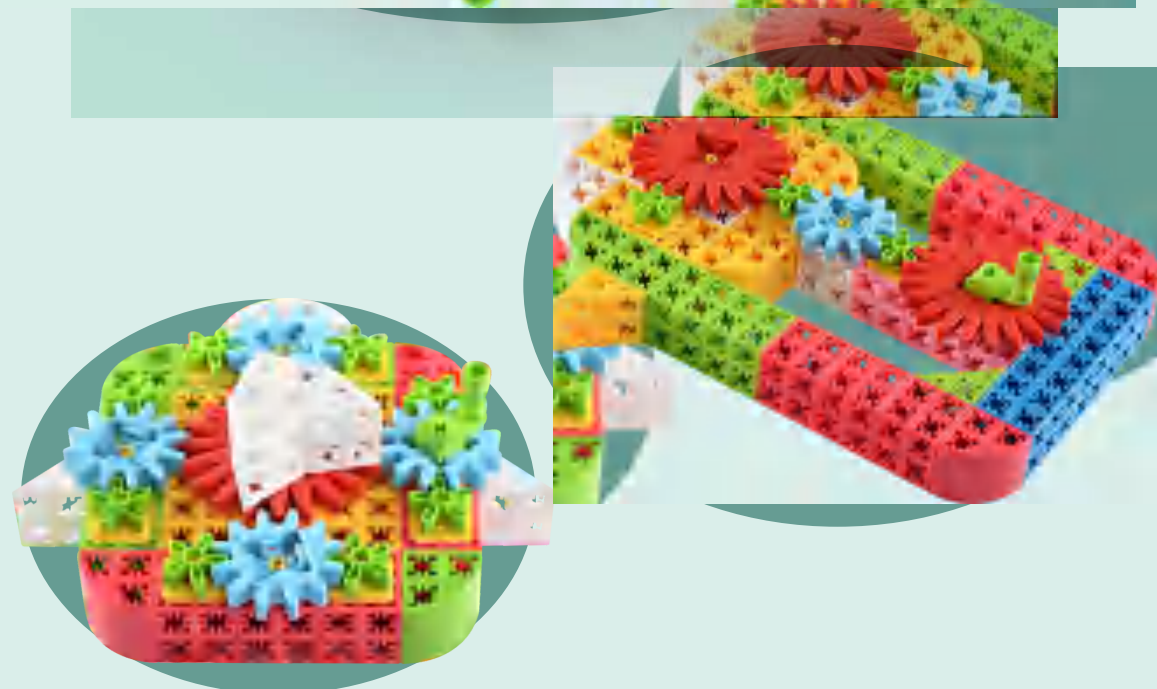


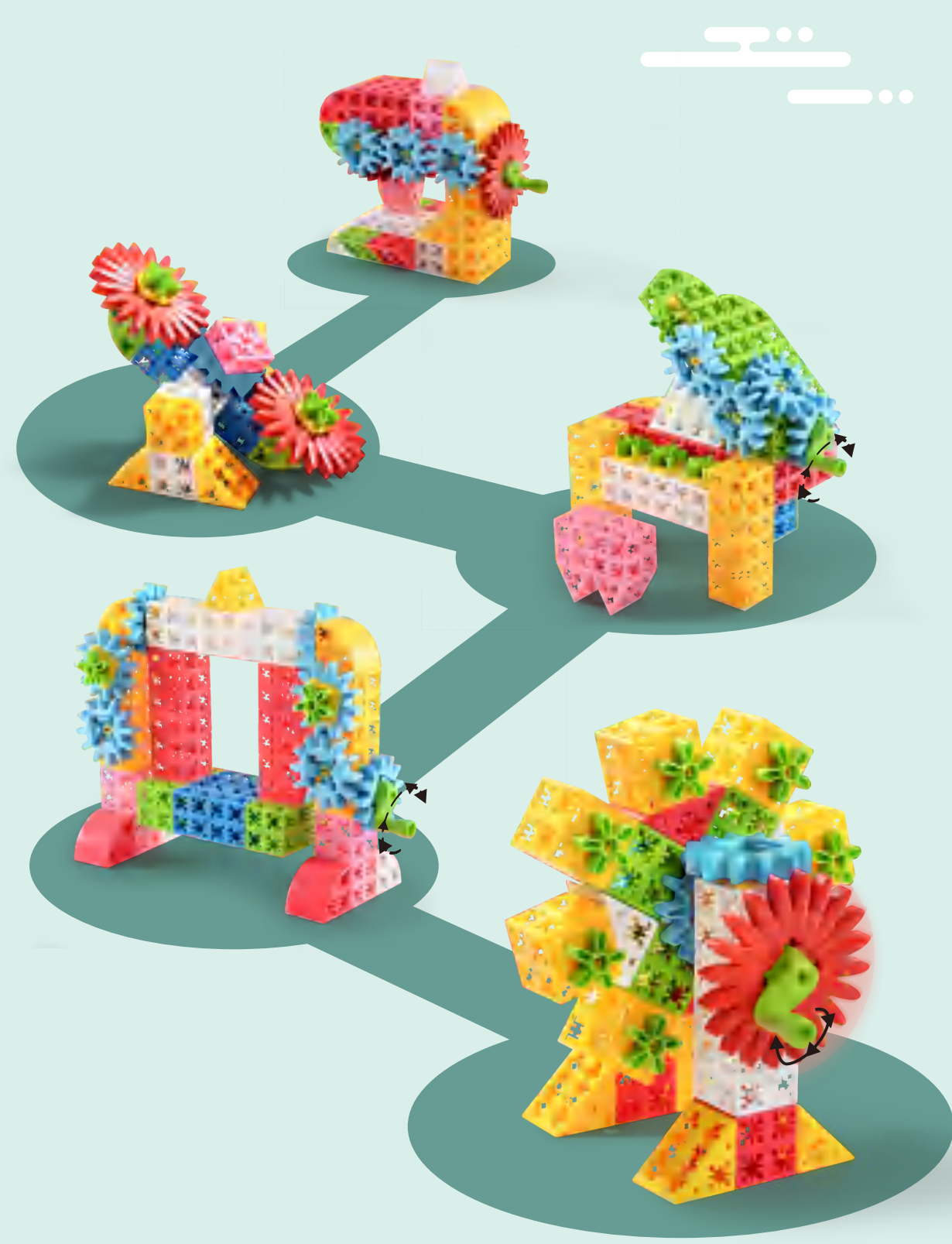
Gears transmission

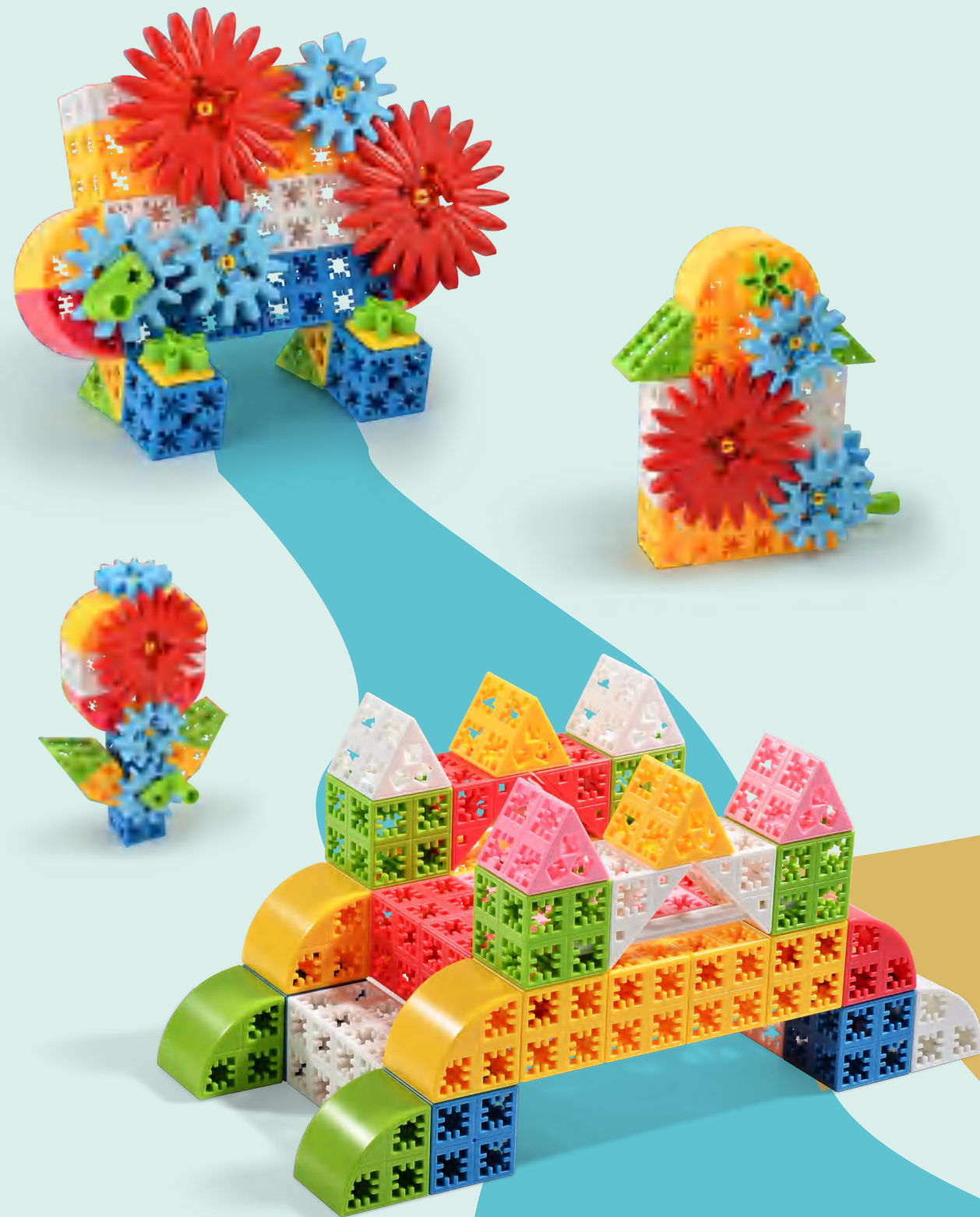












Power box

A magical box can generate power



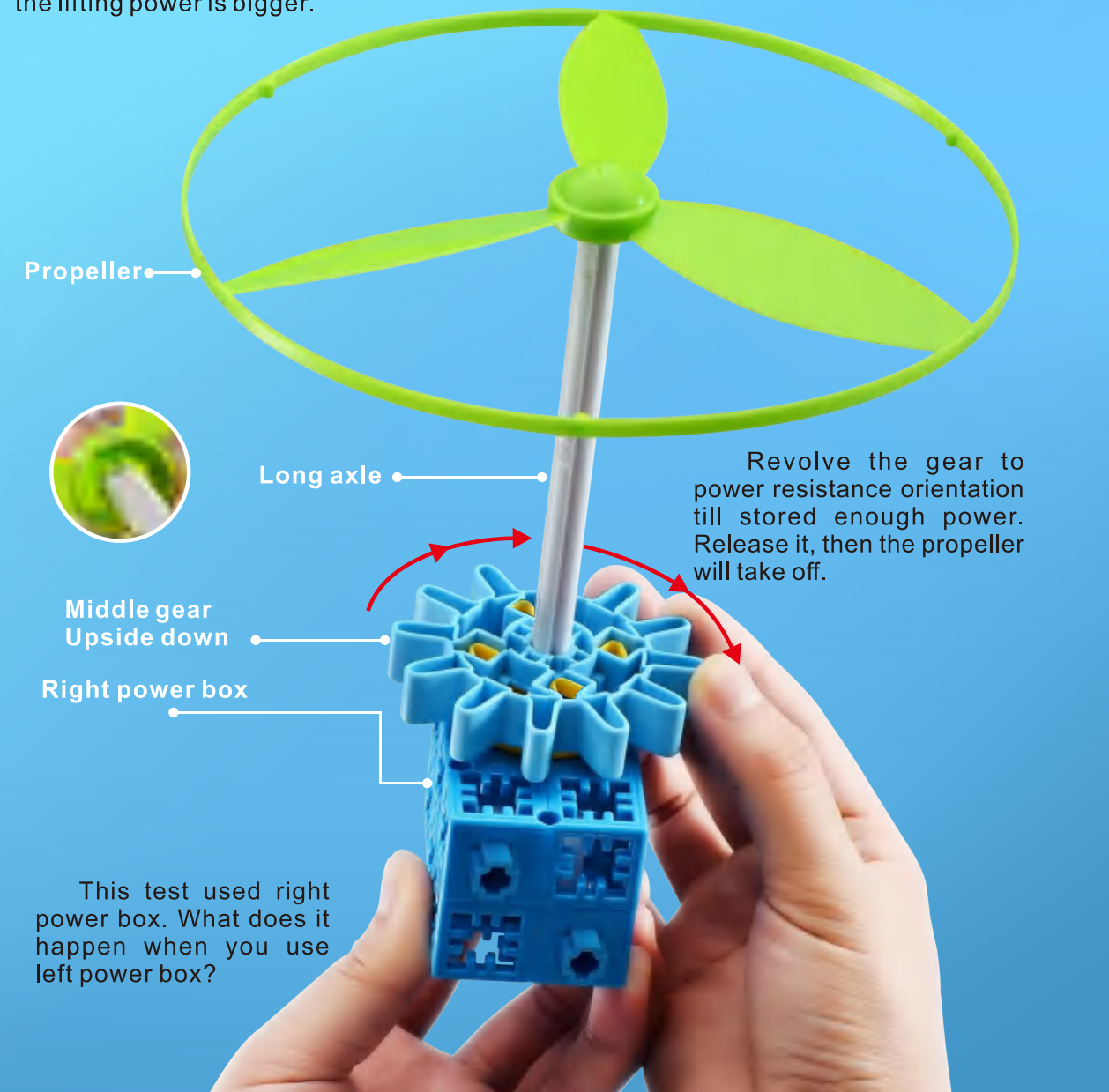
Experiment of power box

◆ Propeller lift experiment

Whose propeller flies higher?

The helicopter produces lifting power by rotating its large propeller.

When the propeller is rotating to stir air, it will produce lifting power. If the lifting power is bigger than the weight of helicopter, then the helicopter will take off. The helicopter rotates more quickly, the lifting power is bigger.



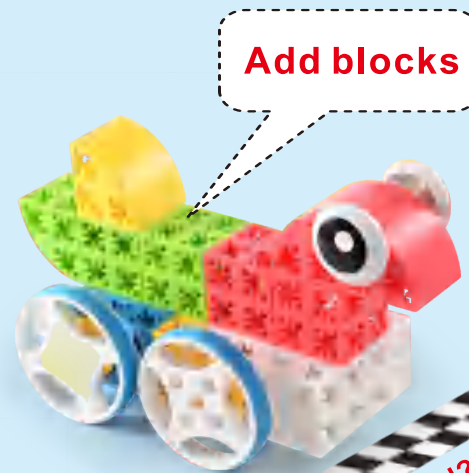
◆ Car racing experiment — Whose car runs faster?

⚙ Experiment 1

Build a car with 2 power boxes. Pull back a distance and release it. Feel its speed forward.

Add some blocks on the car or make the car more complex structure by adding some blocks. Pull back a same distance and release it. Feel its speed forward.

What did you get from this experiment about speed?



How many blocks did you add, the car would not go forward?

⚙ Experiment 2

Build a car with 4 power boxes. Pull back a distance and release it. Feel its speed forward.

Add some a set of gears on the car. Pull back a same distance and release it. Feel its speed forward.

What did you get from this experiment about speed?

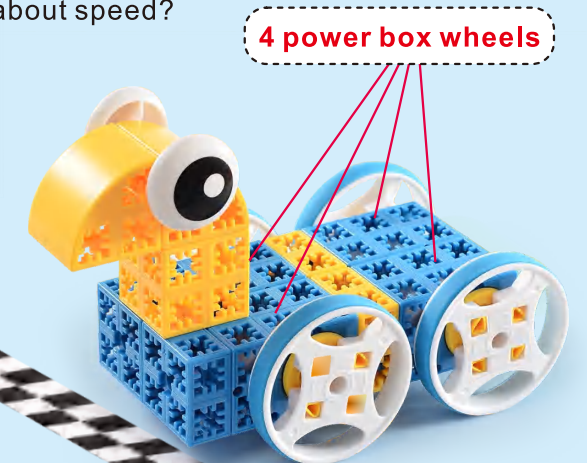


⚙ Experiment 3

Build a car with 2 power box wheels and regular wheels. Pull back the car and release it. Feel its speed forward.

Change the 2 regular wheels into 2 power box wheels. Pull back a same distance and release it. Feel its speed forward.

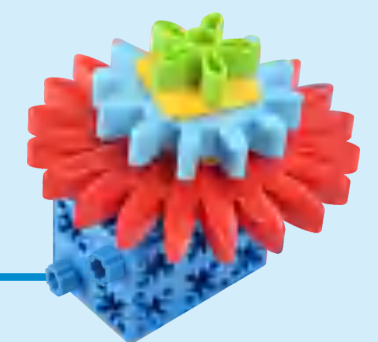
What did you get from this experiment about speed?



Conclusion

Through this experiment, babies will get much experience about what affects different speeds through the changes of different building constructions, weights and numbers of power boxes.

Frictional Force Resistant Force
Gravity Force Driving Force



Experiment of power box

◆ Experiment of color mixture — Allochroic small-windmill

Experiment object: To know phenomenon and theory of color mixture.

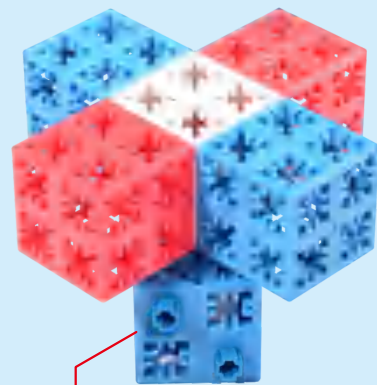
Experiment preparation: A power box and several different colors blocks.

Experiment operation: Assemble different color blocks on power box. Power box can be a rotating axle. Revolving the blocks to power resistance orientation can let them store much kinetic energy. Release it, and what will you see?

(Notice: It is more obvious under enough sunshine.)

Example:

- Take 2 red blocks, 2 blue blocks and 1 white block as a combination of small-windmill. Assemble them as below. Get the windmill revolving.

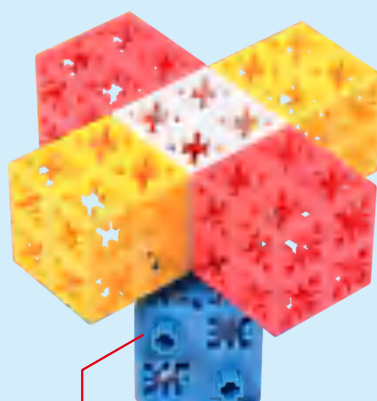


Power box



We found when windmill is revolving quickly, the color has been changed. It is purple now which is neither red nor blue anymore.

- Let's have a try the combination of red and yellow blocks.



Power box



The windmill color has changed again. It is orange.

Experiment of power box

What color combination will you want to test next?
What color could you guess it will be changed when they are revolving quickly?



What other different combinations do you want to test?

Science theory:

When small-windmill is revolving quickly, due to persistence of vision, we would see the mixed color but not any single color.

What is Persistence of Vision?

When human eyes see some object, the object will be a image in retina of eyes and optic nerves transform the image to brain. However, when the object is removed, the image will not disappear at the same time on optic nerve, but still keep 0.1-0.4 second. This phenomenon is called "Persistence of Vision".

Pull-back car — Power release

Pull back the car and just release it, then it goes forward.

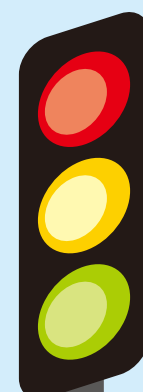


Toot, toot, toot.....



Create pull-back vehicles

Create pull-back vehicles



44

44

45

Create pull-back vehicles



46

Create pull-back vehicles



47

Create pull-back vehicles



Create pull-back vehicles



Create pull-back vehicles

Create pull-back vehicles



Create pull-back vehicles



Create pull-back vehicles



Create pull-back airplanes

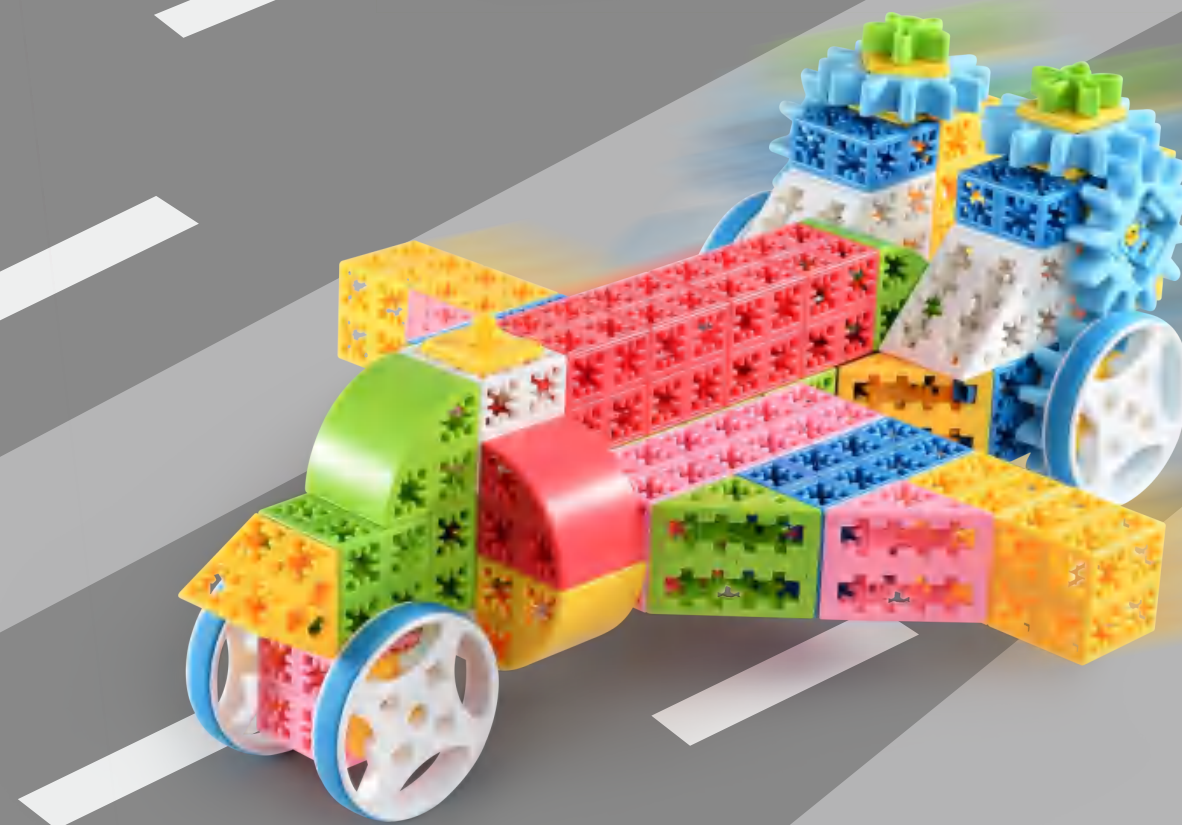


Create pull-back airplanes



Create pull-back airplanes

Create pull-back airplanes



Create pull-back airplanes



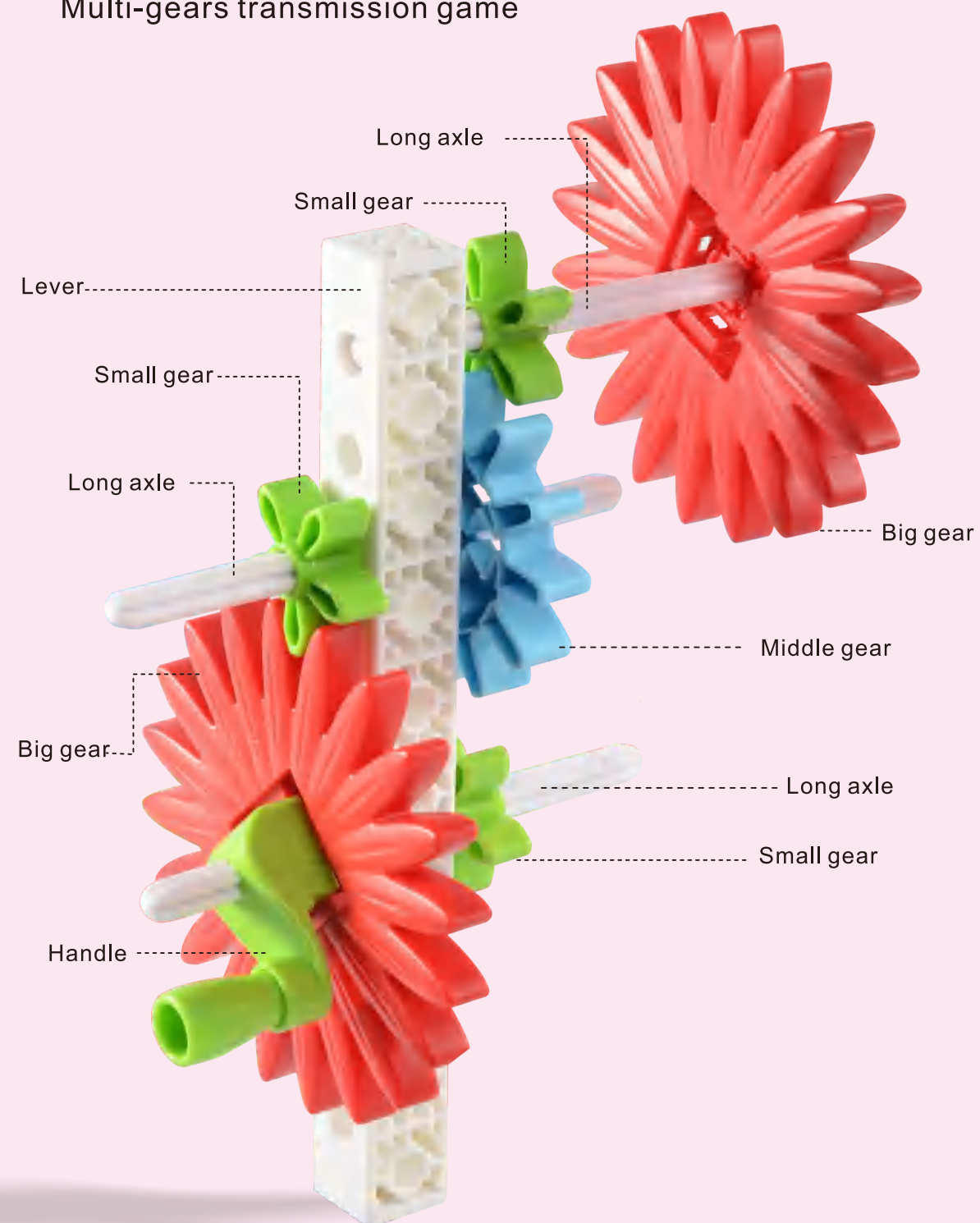
Multi-speed drive

The spinning top and the propeller



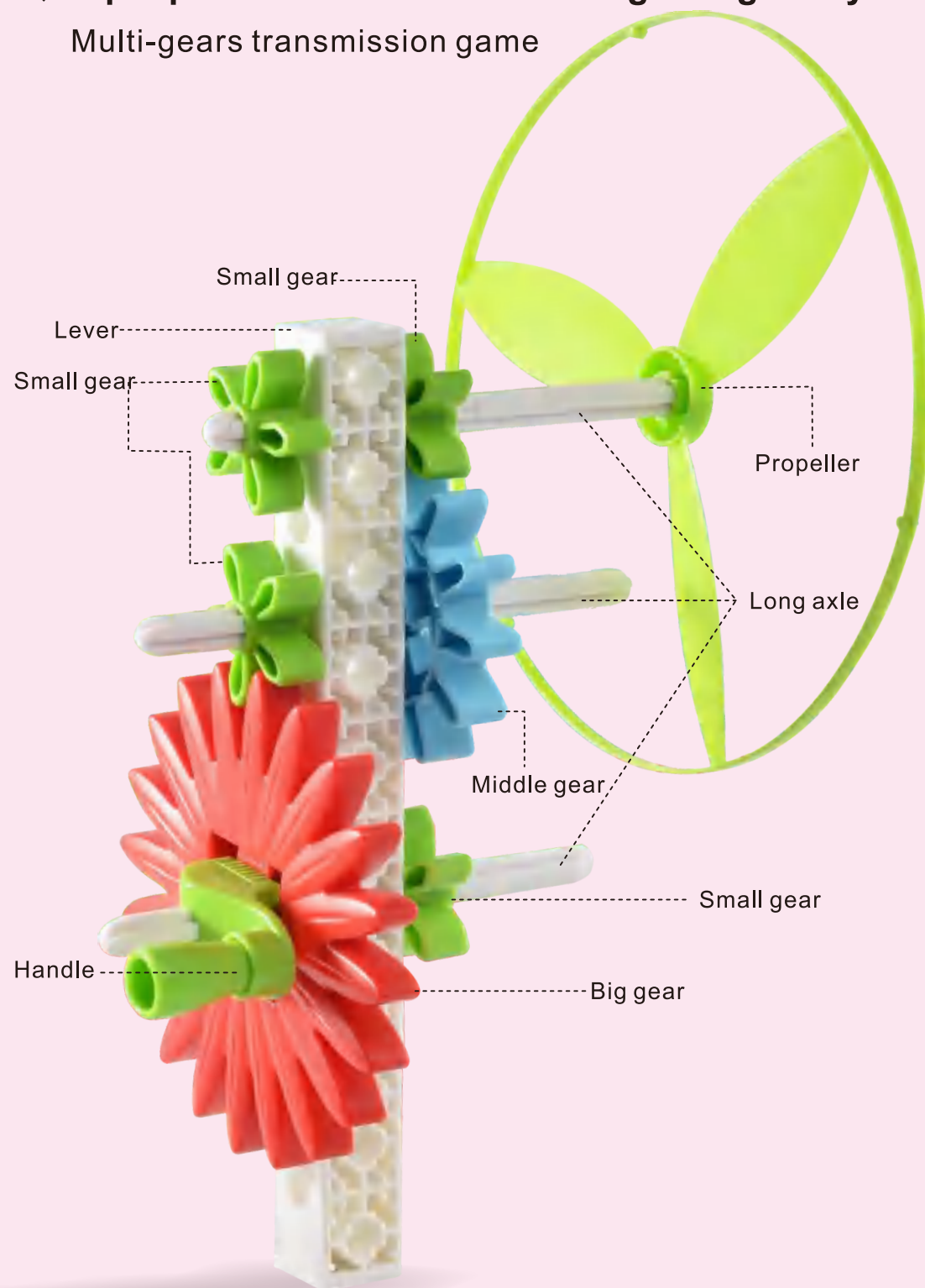
◆ The spinning top — Art of revolving and balance

Multi-gears transmission game



◆ A propeller — Art of revolving and gravity

Multi-gears transmission game



It is a similar structure with spinning top.

When you insert long axle in cap of propeller by a malposed way, the whole model is just like a windmill.



When you insert long axle in cap of propeller through correct thread and revolve the handle, the propeller will fly to the sky.

