What is Wonder Lab？Established by the Hanamaru Gakushukai，we are a company that creates services such as the popular learning app Think Think to bring excitement to children．We have also created the best－seller problems workbook＂Nazope＂and oversee the problems for global mathe－ matics tournaments．From April 2020，we will be starting a new service called＂WonderBox，＂a new form for communications－based learning in the much－talked about field of STEAM


Endorsement．Hanamaru Gakushuka
Representative：Masanobu Takahama
As our future society undergoes changes every day，it will demand both the ＂desire＂and＂thinking skills＂to resolve issues and problems．The Logical Newton series provides experiences that naturally allow logical thinking， bservation skills，analytical skills and the imagination to be employed while aving fun trough isire for play．Such and thoughtful sensibilitiesperience
ame Inventor
Oskar van Deventer
One of the world＇s leading puzzle designers，living in the Netherlands，
He has invented a lot of puzzles
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## ハナヤマ お客様相談センター

 T272－0803 干葉県市川市奉免町68推带•PHS．一部か1罱話からは：047－337－2215〈受付时閉〉月～金（祝•祭日を除く）10～12時／13～17 https：／／www．hanayamatoys．co．jp

## －警 告（けいこく）




## 注 意（ちゅうい）





## ロジルニッドリ <br> LOGICAL NEUTON $\approx$ <br> Newton＇s Apple

## Manual \＆Solutions

Naturally enhance cognitive abilities．．． 2
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Thank you for your purchase of the "Logical Newton Newton's Apple" Please read the cautions and instructions carefully prior to use. Please also keep this user manual/ solution book in a safe place for future reference.

## Naturally enhance cognitive abilities with Logical Newton Series

## Logical Thinking

Correctly dividing up the coins requires an understanding of the functions and movements of each panel, and a systematic approach to the relationship between the sequence the coins are entered and the panels. This allows logical thinking to be fostered while solving a variety of different problems and enjoying a game-like puzzle.

## Observation

Start from the Research Pages, fostering observation skills through repeated testing and observation until the movement of each panel is completely understood.

## Problem Solving

The Puzzle Pages allow you to challenge problems divided up by degree of difficulty. When a coin fails to fall in the desired direction, identifying the issue, thinking up and trying other sequences and methods will foster problem solving.

## Concentration

The clattering sound of the falling coins will stimulate curiosity, allowing you to play while being completely absorbed in the puzzle. Furthermore, as there are more than 1,200 different panel placements, you can enjoy the puzzle as much as you want.


Manual / Solution Booklet ... 1 book
 sort the coins correctly.
(1) Remove the window from the board and attach the panels as shown in the problems on each page
*The "Tidy Up" puzzles from page 24 also involve coins being placed inside the panels.

(2) Attach the window to the board, and fix it to the tray.
(3) Follow the problem and insert the coins from the top


Caution The placement for the problem is just one example

- Any panel combinations other than those shown in the problems may cause coins to collide or get jammed in the panels. If that happens, remove the window and combine the panels in a different order


## Study: <br> Panels \& Movement

The purpose of the Research Pages is to obtain a complete understanding of the movements and structure of the 7 patterns, 12 varieties of panel. Continue to play until you achieve that understanding.


First of all, look at the structure of the panels and the movements of the coins. Next, combine the panels and closely observe how they actually move. Then tackle the practice problems!

## Let' s Study PANEL A

A This panel has two places to insert coins!


* This panel can only be used in the top of the board. Caution: If two coins are inserted at the same time on the left and right, the coins will jam. Only insert coins one at a time.


## Let' s Study PANEL B

B1 Coins drop to the right!


B2 Coins drop to the left!


## A practical example!



Insert a coin and watch how it falls.


## Think Carefully

Insert the coins so that they will be correctly sorted.
no. of coins: $\times 2$
Success! $\leftarrow$ Tick this box once you know the correct sequence!

## Let' s Study PANEL C

## C



The direction of the switch changes every time when a coin is inserted- a coin will fall to the right, then to the left!



## A practical example!




Insert a coin and watch how it falls.


Insert the coins so that they will be correctly sorted.
no. of coins: $\times 2$ $\square$
$\square$ Success! $\leftarrow$ Tick this box once you know the correct sequence!



In this panel, the first coin will stop in the middle of the panel, and start moving again once a second coin is inserted!


## example



Think Carefully
Insert the coins so that they will be correctly sorted. no. of coins: $\times 2$ ) $\times 2$Success!


Insert the coins so that they will be correctly sorted. no. of coins: $\times 3 \times 1$

## $\square$ success!



Insert the coins so that they will be correctly sorted. no. of coins: $\times 1 \times 3$
$\square$ Success!


## A practical example!



Insert a coin and watch how it falls.

Insert in the order (8)
and watch closely to see which
coin falls first!


switch

This panel has two different patterns for falling coins, either stopping and needing a second coin or just falling through!


14 Answer of page 13: (8) Example(1): (b) (8) Example(2): (1) (5)


## Observe Closely

Insert a coin and watch how it falls.


Insert the coins so that they will be correctly sorted.
no. of coins: $\times 2$$\times 2$
Success! $\leftarrow$ Tick this box once you know the correct sequence!

© 2


The first and second coin stop inside the panel, and then the third coin gets them moving!

A practical example!


Insert a coin and watch how it falls.

## Think Carefully

Insert the coins so that they will be correctly sorted.

$$
\text { no. of coins: } \times 4 \bigcirc \times 2
$$

Success! $\leftarrow$ Tick this box once you know the correct sequence!





Level $\star \star \star$ 大きた

no．of coins：


no．of coins：

$\square$ Success！

no．of coins：


no．of coins：

$\square$ success！

no．of coins：

$\square$ success！


Level $\star \star \star \star \star \star$ 园


## PUZZLE 2 <br> Get the coin out！


（Level 大丈论证为）＊Make sure to set up the trapped coins as shown on the images．

no．of coins：
（b）$\times 0$（ $) \times 2$
$\square$ Success！

no．of coins：

$\square$ Success！

Level $\star \star \star \star \star$
＊Make sure to set up the trapped coins as shown on the images

no．of coins：
（6）$\times$
（ $0 \times 1$
$\square$ Success！

no．of coins：
（6）$\times 1$（5）$\times 2$
$\square$ Success！
38 （azs


## PUZZLE 3 <br> Find the Mistakes



Level $\star \star \star$ そう


coin sequence:
(6) (5) 5 (6) 5 (6)
$L L L R R L L L L$
$\square$ Success



Which is the

$\square$ Success!

$\square$ success!

$\square$ success!



55 coin sequence:
55 (1) (B)

$\square$ Success!
(1) coin sequence

1 coin sequence.

$\square$ Success!

56 coin sequence:
56 coin sequence:

$\square$ Success!

## Other Combinations

There are plenty of different combinations of panels besides the puzzles shown. Challenge yourself by combining different panels!


60 coin sequence: | $? 8$ |  |
| :---: | :---: |
| $?$ | $?$ |
| ? | $?$ |
|  | $?$ |Success!




Create Your Own Puzzles!
Draw the puzzles you designed on the images below.


puzzle (1) Sort Correctly

| (1) (b) ${ }^{(1)}$ | (16) (1) (b) (b) (b) (b) (1) $^{(1)}$ |
| :---: | :---: |
| (2) (0) (b) | (17) (1) (1) $^{(1)}$ |
| (3) (b) $0^{(1)}$ | (18) (6) $0^{(1) 50}$ |
| (4)000 |  |
| (5) (1) (b) |  |
| (6) (1) (b) |  |
| 7000 |  |
| 8 (6) (6) (1) (b) | 2300 (1) 3150 |
| (9) (1) $0^{(1)}$ |  |
|  |  |
| (11) 100 (6) | (26) (b) (b) (b) (1) $^{(1)}$ |
| (12) (8) (1) (3) $0^{10}$ |  |
| (13) (1) $0^{(15)}$ (1) |  |
| (14) (b) $0^{\circ}$ |  |
|  |  |

puzzle © Get the coin out!

| $\text { (31) } \begin{gathered} \text { (1) (0) } \\ \text { L R } \end{gathered}$ | $\begin{gathered} 35(1)(0)(0) \\ L L L K R \end{gathered}$ |
| :---: | :---: |
|  | (30 (8) (3) |
| (33) (1) (1) ${ }^{(1)}$ | (37) (1) (B) (b) ${ }^{(1)}$ |
| R R L | R R R L L L L |
| $\begin{gathered} 340(3) \\ L \quad L \quad R \end{gathered}$ |  <br> R R R R R R L LRRR |

puzzle © Find the Mistakes

puzzle © Find the Correct Panel


## Battle Time!

## Battile (1)Challenge Everyone!

<How to win the game>
Everyone attempts a puzzle one after the other, with the player who makes the least mistakes become the winner!

## <Battle Rules>

(1) Decide the combinations of the panels.

2 Decide the total number of coins to use.
(Each player decides which colors to use in their turns).
3 Decide the order in which players will attempt the puzzle
(4) The first player insert all coins and see how many coins fall into the correct tray
(5) Count the number of coins in the incorrect tray and pass to the next player.

<Examples of Panel Combination»

no. of coins used (example)

no. of coins used: (example)

no. of coins used (example)


## Battile (2)The Great Green Apple Robbery $\begin{gathered}\text { mo. of } \\ \text { Player }\end{gathered}$

<How to win the game>
The player with the most green coins in their own colored tray is the winner!

## <Battle Rules>

(1) Decide the combinations of the panels.
(2) Place all coins on the table.
(3) Each player decides their own tray color - red or green.
(4) Decide who will insert the first coin and start.
(5) Each player take turns to insert one coin from the table (any color) until all the coins from the table are gone.

<Examples of Panel Combination»


## Battle 3 Trip to the Green Tray <br> 

## Battle (4) Spending Spree

<How to win the game>
The player who gets the most of their own colored coins into the green tray is the winner!

## <Battle Rules»

(1) Decide the combinations of the panels.
(2) Place all coins on the table.

3 Each player decides their own coin color - red or green.
(4) Decide who will insert the first coin and start.
(5) Each player take turns to insert one coin from the table (any color) until all the coins from the table are gone.

<Examples of Panel Combination>

<How to win the game
Players take turn to insert coins and the player who can get rid of their coins the soonest is the winner!
<Battle Rules>
(1) Decide the combinations of the panels.
(2) Each player takes 5 red and 5 green coins.

3 Decide who will insert the first coin and start
(4) The starting player inserts one coin from their own pile of coins
(5) Check whether the coin falls into the correct tray. If the coin falls into the correct tray, the player can leave it in the tray. If the coin falls into the wrong tray, the player will need to pick it up again and wait for next round.

<Examples of Panel Combination»


