FOR GROWN-UPS

Japanese Car Legends

A guide to the book, from Torkel's Garage, Volume 3



AGES
9–12

ABOUT THIS BOOK

Japanese Car Legends is 50 missions in 5 chapters.

Each spread has two sides: three true facts and a math pit stop on the left, and the activity on the right: a puzzle or a picture to finish and color.

IN THIS GUIDE

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46
Japanese cars

12
puzzles

49
math pit stops

AFTER EACH PIT STOP, ASK

"How did you see it? Can you show it another way?"

HOW TO HELP

Let your child try first. A wrong answer is part of the game: ask what they tried, then try again together.

Ask your child to show you a favorite page, and to tell you what they did there.

1 What your child did

Every activity and the skill it practiced. Check the ones you have seen your child do.

DRAW AND COLOR — 8 activities

	ACTIVITY	PRACTICED	PAGES
☐	**Color the whole scene** Colored whole scenes.	Coloring a whole scene with their own choices.	5, 21, 35, 39, 57, 65, 67, 97, 99
☐	**Join the dots, then color** Joined dots in order.	Counting on in order.	7, 25, 69, 93
☐	**Finish the drawing, then color** Finished drawings, then colored them.	Finishing a drawing from what is already there.	11, 31, 51, 71, 75, 91
☐	**Draw into the empty space** Added their own drawing to a scene.	Adding their own drawing to a scene.	13, 33, 53, 81, 89
☐	**Color every part** Colored every part of pictures.	Coloring carefully inside each outline.	17, 29, 37, 41, 45, 61, 73, 77, 85, 101
☐	**Design the missing part** Designed missing parts.	Designing a missing part to fit the rest of the picture.	49, 95
☐	**Draw it step by step** Drew step by step.	Building a drawing in ordered steps.	83
☐	**Choose the parts, then trace them** Chose the parts of a design.	Making design choices and recording them.	103

PUZZLES — 6 activities

	ACTIVITY	PRACTICED	PAGES
☐	**Find the hidden things, then color** Searched busy pictures for hidden things.	Searching a busy picture carefully and counting what they find.	9, 19, 27, 47, 59, 79, 87

PUZZLES — 6 activities

	ACTIVITY	PRACTICED	PAGES
☐	**Draw the way through** Drew the way through a picture.	Planning a path from start to finish.	15
☐	**Match each one to its plaque** Matched plaques to what they tell.	Matching facts to what they describe.	23
☐	**Race a friend around the board** Played a board game.	Counting forward and back along a numbered track.	43
☐	**Find what is different** Spotted the differences between two pictures.	Comparing two pictures closely.	55
☐	**Use the clues to park the cars** Solved a parking puzzle.	Reasoning from clues to the one bay that fits each car.	63

2 The math pit stops

After each pit stop, ask: How did you see it? Can you show it another way?

GRADE a Common Core standard for grades 3 to 7 STRETCH from a later grade, met here as an early look

Each grade link names the Common Core math standards a task relates to, so you can see where it sits in school math. The pages practice a skill; they are not a test of it.

Bar charts

left-hand pages 4, 52

GOAL	Read values from a bar chart and compare them.
ASK THIS	How did you work out the difference?
COMMON MISTAKE	Reading the gridline above or below the bar's top.
MAKE IT EASIER	Read one bar's value first.
MAKE IT HARDER	Ask for the total of all the bars.
COMMON CORE	GRADE 3 3.MD.B.3

True or false?

left-hand pages 6, 66

GOAL	Check a number sentence, not only work out an answer.
ASK THIS	How could you change it to make it true?
COMMON MISTAKE	Judging by how close the numbers look, without working.
MAKE IT EASIER	Check the sum with counters or fingers.
MAKE IT HARDER	Write a false sentence for someone else to check.
COMMON CORE	GRADE 3 3.NBT.A.2

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Equal parts

left-hand pages 8, 80

GOAL	Fair parts are the same size; fractions count equal parts.
ASK THIS	How can you tell the parts are the same size?
COMMON MISTAKE	Counting the parts without checking they are equal.
MAKE IT EASIER	Fold a paper square in half, then in half again.
MAKE IT HARDER	Find two different ways to cut one shape fairly.
COMMON CORE	GRADE 3 3.NF.A.1 GRADE 4 4.NF.C.6

Rounding

left-hand pages 10, 68, 92

GOAL	Round a number to the nearest 10 or 100.
ASK THIS	Which end of the line is it closer to?
COMMON MISTAKE	Looking at the wrong digit, or always rounding up.
MAKE IT EASIER	Round to the nearest 10, with numbers under 100.
MAKE IT HARDER	Round the same number to the nearest 10 and 100.
COMMON CORE	GRADE 3 3.NBT.A.1, 3.OA.D.8 GRADE 5 5.NBT.A.2, 5.NBT.B.5

Sharing fairly

left-hand pages 12, 50

GOAL	Divide a number by one digit, naming the remainder.
ASK THIS	What does the leftover number mean here?
COMMON MISTAKE	Dropping the remainder instead of writing it down.
MAKE IT EASIER	Divide a smaller number by the same divisor first.
MAKE IT HARDER	Turn it into a story with full groups and a leftover.
COMMON CORE	GRADE 4 4.NBT.B.6, 4.OA.A.3

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Number machines

left-hand pages 14, 54, 94

GOAL	See the multiplication pattern as repeated groups.
ASK THIS	What does the machine do to every number?
COMMON MISTAKE	Doing the rule forwards when the in number is missing.
MAKE IT EASIER	Try the rule on small numbers first, with objects.
MAKE IT HARDER	Make up a rule for someone else to find.
COMMON CORE	**GRADE 3** 3.OA.C.7, 3.OA.A.4 **GRADE 4** 4.OA.C.5 **GRADE 5** 5.NBT.B.5

Trading tens

left-hand pages 16, 38, 58

GOAL	See that ten of one place make one of the next.
ASK THIS	What did you trade, and what did you get for it?
COMMON MISTAKE	Counting what was traded twice, in both places.
MAKE IT EASIER	Use real things: bundle each ten with a band.
MAKE IT HARDER	Try the same trade with bigger numbers.
COMMON CORE	**GRADE 3** 3.NBT.A.2 **GRADE 4** 4.NF.C.5, 4.NF.C.6 **GRADE 5** 5.NBT.A.1

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Compare numbers

left-hand pages 18, 64

GOAL	Compare big numbers from the left, one place at a time.
ASK THIS	Which digit is the first one that is different?
COMMON MISTAKE	Counting digits after the first place already shows which is bigger.
MAKE IT EASIER	Say each number aloud in thousands and ones before comparing.
MAKE IT HARDER	Compare numbers in the hundred thousands.
COMMON CORE	GRADE 4 4.NBT.A.2

Fact families

left-hand pages 20, 48, 86

GOAL	See that three numbers make two times facts and two divisions.
ASK THIS	If you know one times fact, what else do you know?
COMMON MISTAKE	Dividing the smaller number by the bigger one.
MAKE IT EASIER	Make the times fact with counters in rows, then turn it.
MAKE IT HARDER	Make a family with a two-digit number, like 12 × 4.
COMMON CORE	GRADE 3 3.OA.B.5, 3.OA.B.6, 3.OA.C.7

Shape numbers

left-hand pages 22, 70

GOAL	Find the missing number that makes both sides of a scale equal.
ASK THIS	What is the same on both sides, and what is left over?
COMMON MISTAKE	Adding the numbers on one side only.
MAKE IT EASIER	Cover the shape and say what the rest of its side weighs.
MAKE IT HARDER	Make a scale that reuses one shape's number from the last scale.
COMMON CORE	GRADE 4 4.OA.A.3, 4.NBT.B.4

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Arrays

left-hand pages 24, 76, 96

GOAL	See equal rows, and find the total without counting each one.
ASK THIS	Can you count by rows instead of one at a time?
COMMON MISTAKE	Mixing up rows and columns, or counting one twice.
MAKE IT EASIER	Build the rows with small things, then count them.
MAKE IT HARDER	Turn the page sideways: is the total the same?
COMMON CORE	GRADE 3 3.OA.A.1, 3.OA.C.7, 3.OA.B.5 GRADE 4 4.NBT.B.5

Factors and primes

left-hand pages 26, 72, 88

GOAL	Find every pair of numbers that multiplies to the target.
ASK THIS	How do you know you have found every factor?
COMMON MISTAKE	Stopping before checking every number up to the square root.
MAKE IT EASIER	Try dividing by 2, 3 and 5 first.
MAKE IT HARDER	Find the common factors of two numbers instead.
COMMON CORE	GRADE 4 4.OA.B.4 GRADE 6 6.NS.B.4

Elapsed time

left-hand pages 28, 46, 100

GOAL	Work out how long between two clock times.
ASK THIS	How did you count the minutes and hours?
COMMON MISTAKE	Forgetting to carry an hour past sixty minutes.
MAKE IT EASIER	Round both times to the nearest hour first.
MAKE IT HARDER	Find the start time from the end and the gap.
COMMON CORE	GRADE 3 3.MD.A.1

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Coins

left-hand pages 30, 78

GOAL	Add and compare money to the dollar, coin by coin.
ASK THIS	How much is each pile worth? How did you add it?
COMMON MISTAKE	Comparing how many coins, not their total value.
MAKE IT EASIER	Add the biggest coins first, then the rest.
MAKE IT HARDER	Ask what the two piles are worth together.
COMMON CORE	GRADE 4 4.MD.A.2

Column subtraction and carrying addition

left-hand pages 32, 74, 90

GOAL	Add or subtract multi-digit numbers, regrouping across columns.
ASK THIS	Which column did you carry into, or borrow from?
COMMON MISTAKE	Forgetting to regroup, or regrouping the wrong column.
MAKE IT EASIER	Line the columns up on squared paper first.
MAKE IT HARDER	Subtract across a zero, like 500 − 247.
COMMON CORE	GRADE 4 4.NBT.B.4

Decimals and percents

left-hand pages 34, 56, 82

GOAL	See tenths and hundredths as parts of one whole.
ASK THIS	Which digit tells you it is bigger?
COMMON MISTAKE	Comparing decimals like whole numbers, ignoring the point.
MAKE IT EASIER	Line up the decimal points before comparing.
MAKE IT HARDER	Ask for a percent of a bigger amount.
COMMON CORE	GRADE 4 4.NF.C.6, 4.NF.C.7 GRADE 6 6.RP.A.3.c

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Area and perimeter

left-hand pages 36, 60, 98

GOAL	Area counts the squares inside; perimeter measures the way round.
ASK THIS	Could you find the area without counting every square?
COMMON MISTAKE	For perimeter, counting the edge squares instead of their sides.
MAKE IT EASIER	Count the squares one by one, then each side.
MAKE IT HARDER	Draw a different rectangle with the same area.
COMMON CORE	GRADE 3 3.MD.C.6, 3.MD.D.8, 3.MD.C.7.a, 3.MD.C.7.d GRADE 4 4.MD.A.3

Number cages

left-hand pages 40

GOAL	Use factor pairs to find the numbers that fit each box.
ASK THIS	Which pairs of numbers multiply to this box's total?
COMMON MISTAKE	Repeating a number in a row or a column.
MAKE IT EASIER	Start with the box whose total has the fewest factor pairs.
MAKE IT HARDER	Try the bigger grid.
COMMON CORE	GRADE 4 4.OA.B.4

Magic lines

left-hand pages 42, 62

GOAL	Spot the number pattern, then make every line add up alike.
ASK THIS	Which circle is on more than one line?
COMMON MISTAKE	Making one line add up and losing another.
MAKE IT EASIER	Put the biggest number where two lines meet, then check each line.
MAKE IT HARDER	Work out the pattern of the numbers before placing any.

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Every rectangle for an area and same fence, new shapes

left-hand pages 44, 84

GOAL	Find every whole-number rectangle for a given perimeter or area.
ASK THIS	How do you know you have found them all?
COMMON MISTAKE	Stopping after the first rectangle found, or counting one twice turned round.
MAKE IT EASIER	Try every width from 1 up, one at a time.
MAKE IT HARDER	Find a rectangle's sides from its area and perimeter together.
COMMON CORE	GRADE 3 3.MD.D.8 GRADE 4 4.MD.A.3

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3 The Japanese cars we met

Point to one and ask: what do you remember about it?

CHAPTER 1 · WHERE IT STARTED

- [ ] Toyota AA 5
- [ ] Toyota Crown RS 7
- [ ] Subaru 360 9
- [ ] Mazda R360 11
- [ ] Prince Skyline 13
- [ ] Honda T360 15
- [ ] Toyota Corolla E10 17
- [ ] Suzuki Carry 19
- [ ] Datsun 240Z 21

CHAPTER 2 · BUILT FOR THE TRACK

- [ ] Nissan R90C 25
- [ ] Nissan Skyline GT-R R32 27
- [ ] Toyota GR Yaris 29
- [ ] Subaru Impreza WRC 31
- [ ] Honda Integra Type R 33
- [ ] Toyota GR010 Hybrid 35
- [ ] Mitsubishi Lancer Evolution VI 37
- [ ] Mazda 787B 39
- [ ] Toyota AE86 Corolla Levin 41

CHAPTER 3 · SMALL AND CLEVER

- [ ] Honda N-Box 45
- [ ] Toyota HiAce 47
- [ ] Autozam AZ-1 49
- [ ] Honda Beat 51
- [ ] Mitsubishi L200 53
- [ ] Daihatsu Hijet 55
- [ ] Suzuki Samurai 57
- [ ] Nissan Figaro 59
- [ ] Toyota Hilux 61

CHAPTER 4 · LEGENDS

- [ ] Toyota Supra 65
- [ ] Toyota Land Cruiser FJ40 67
- [ ] Honda NSX 69
- [ ] Toyota 2000GT 71
- [ ] Mazda MX-5 Miata 73
- [ ] Lexus ES 350 75
- [ ] Mazda RX-7 77
- [ ] Datsun 510 79
- [ ] Nissan 300ZX 81
- [ ] Nissan GT-R 83

CHAPTER 5 · WHAT COMES NEXT

- [ ] Honda NSX Hybrid 85
- [ ] Toyota Mirai 87
- [ ] Honda Prelude 89
- [ ] Nissan Leaf 91
- [ ] Nissan Ariya 93
- [ ] Toyota e-Palette 95
- [ ] Lexus LFA Concept 97
- [ ] Honda 0 Series Saloon 99
- [ ] Toyota Prius 101

4 Answers

By chapter: each spread's pit stops on its left-hand page, then its activity.

CHAPTER 1 · WHERE IT STARTED

Pages 4–5 Toyota AA

Pit stop, p. 4	5 more B than C

Pages 6–7 Toyota Crown RS

Pit stop, p. 6	TRUE

Pages 8–9 Subaru 360

Pit stop, p. 8	the bottom strip, 1/5
Activity, p. 9	How many paper lanterns? 7
	How many traffic cones? 5
	How many bicycles? 3
	How many cats? 3

Pages 10–11 Mazda R360

Pit stop, p. 10	about 1600 (755 rounds to 800, 760 rounds to 800)

Pages 12–13 Prince Skyline

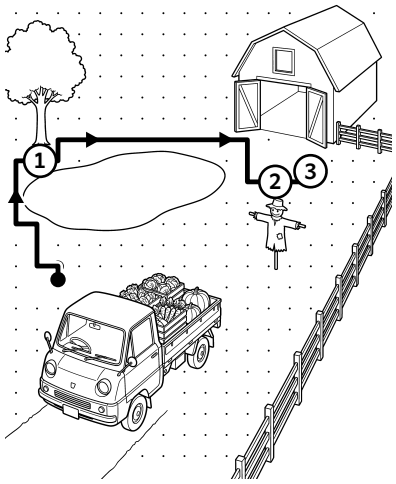
Pit stop, p. 12	19 each, 3 left over

CHAPTER 1 · WHERE IT STARTED

Pages 14–15 Honda T360

Pit stop, p. 14 in 3, out 40; between 9, 36

Activity, p. 15



Pages 16–17 Toyota Corolla E10

Pit stop, p. 16 chart 4, 9, 11; 501 − 149 = 352

Pages 18–19 Suzuki Carry

Pit stop, p. 18 <, >, <

Activity, p. 19
How many skateboards? 5
How many bicycles? 3
How many caps? 3
How many paper lanterns? 2

Pages 20–21 Datsun 240Z

Pit stop, p. 20 6×7=42 7×6=42 42÷6=7 42÷7=6

CHAPTER 1 · WHERE IT STARTED

Pages 22–23 The Museum of Firsts

Pit stop, p. 22 20, 42 (shape order)

Activity, p. 23

Plinth, then the plaque it belongs to:

- **6** Honda's first production automobile, a pickup
- **3** Nicknamed the "ladybug"
- **9** Won the East African Safari Rally in 1973
- **1** Toyota's very first production car
- **8** A kei truck built since 1961, and still made today
- **4** Mazda's first passenger car
- **2** Toyota's first cars shipped to the United States
- **7** Had its own engine plant and assembly plant
- **5** Introduced at a theater in Tokyo

CHAPTER 2 · BUILT FOR THE TRACK

Pages 24–25 Nissan R90C

Pit stop, p. 24 7 rows of 5, 35 in all

Pages 26–27 Nissan Skyline GT-R R32

Pit stop, p. 26 1×25, 5×5

Activity, p. 27
How many spare tires? 7
How many helmets? 4
How many fuel cans? 4
How many checkered flags? 2

Pages 28–29 Toyota GR Yaris

Pit stop, p. 28 start 5:30 p.m.

Pages 30–31 Subaru Impreza WRC

Pit stop, p. 30 the left pile: 91¢, not 54¢; 37¢ more

CHAPTER 2 · BUILT FOR THE TRACK

Pages 32–33 Honda Integra Type R

Pit stop, p. 32 831 − 685 = 146

Pages 34–35 Toyota GR010 Hybrid

Pit stop, p. 34 30% is more than 0.26

Pages 36–37 Mitsubishi Lancer Evolution VI

Pit stop, p. 36 area 21, perimeter 20

Pages 38–39 Mazda 787B

Pit stop, p. 38 chart 2, 9, 15; 305 − 189 = 116

Pages 40–41 Toyota AE86 Corolla Levin

Pit stop, p. 40

2	5	1	4	3
3	1	2	5	4
5	3	4	2	1
1	4	5	3	2
4	2	3	1	5

Pages 42–43 24 Hours Nürburgring

Pit stop, p. 42 70: 23+22+25, 25+24+21, 21+26+23

CHAPTER 3 · SMALL AND CLEVER

Pages 44–45 Honda N-Box

Pit stop, p. 44 1x12 P26, 2x6 P16, 3x4 P14; smallest perimeter 14, 3x4

CHAPTER 3 · SMALL AND CLEVER

Pages 46–47 Toyota HiAce

Pit stop, p. 46 took 40 min

Activity, p. 47
How many parcels? 8
How many balloons? 8
How many potted plants? 4
How many mailboxes? 3
How many dogs? 3

Pages 48–49 Autozam AZ-1

Pit stop, p. 48 9×6=54 6×9=54 54÷9=6 54÷6=9

Pages 50–51 Honda Beat

Pit stop, p. 50 39 each, 4 left over

Pages 52–53 Mitsubishi L200

Pit stop, p. 52 30 more D than C

Pages 54–55 Daihatsu Hijet

Pit stop, p. 54 in 5, out 80; between 30, 72

Activity, p. 55 see the full-size key on page 22

Pages 56–57 Suzuki Samurai

Pit stop, p. 56 30% of 120 is 36

Pages 58–59 Nissan Figaro

Pit stop, p. 58 5 + 0.6 + 0.08 = 5.68

Activity, p. 59
How many butterflies? 5
How many hats? 5
How many cats? 3
How many watering cans? 2

Pages 60–61 Toyota Hilux

Pit stop, p. 60 other side 4, perimeter 14

CHAPTER 3 · SMALL AND CLEVER

Pages 62–63 Tokyo Parking Puzzle

Pit stop, p. 62 75: 30+10+35, 35+25+15, 15+20+40, 40+5+30

Activity, p. 63

Bay 1: Nissan Figaro
Bay 2: Suzuki Samurai
Bay 3: Daihatsu Hijet
Bay 4: Honda Beat
Bay 5: Honda N-Box
Bay 6: Autozam AZ-1
Bay 7: Mitsubishi L200
Bay 8: Toyota Hilux
Bay 9: Toyota HiAce

CHAPTER 4 · LEGENDS

Pages 64–65 Toyota Supra

Pit stop, p. 64 >, >, <

Pages 66–67 Toyota Land Cruiser FJ40

Pit stop, p. 66 FALSE: DCCLXXXIV − DV = CCLXXIX

Pages 68–69 Honda NSX

Pit stop, p. 68 about 42000 (672 rounds to 700, 61 rounds to 60)

Pages 70–71 Toyota 2000GT

Pit stop, p. 70 25, 405 (shape order)

Pages 72–73 Mazda MX-5 Miata

Pit stop, p. 72 1,2,4,8; GCF 8

CHAPTER 4 · LEGENDS

Pages 74–75 Lexus ES 350

Pit stop, p. 74 — 5243 + 4398 = 9641

Pages 76–77 Mazda RX-7

Pit stop, p. 76 — 17 × 3 = 10 × 3 + 7 × 3 = 51

Pages 78–79 Datsun 510

Pit stop, p. 78 — the right pile: 70¢, not 56¢; 14¢ more

Activity, p. 79 — How many birds? 11
How many zebras? 5
How many acacia trees? 4
How many giraffes? 2

Pages 80–81 Nissan 300ZX

Pit stop, p. 80 — 2/4 = 0.50

Pages 82–83 Nissan GT-R

Pit stop, p. 82 — 75% of 220 is 165

CHAPTER 5 · WHAT COMES NEXT

Pages 84–85 Honda NSX Hybrid

Pit stop, p. 84 — areas 11,20,27,32,35,36; biggest 6x6, smallest 1x11

Pages 86–87 Toyota Mirai

Pit stop, p. 86 — 8×6=48 6×8=48 48÷8=6 48÷6=8

Activity, p. 87 — How many water drops? 10
How many fallen leaves? 6
How many birds? 4
How many solar panels? 4

Pages 88–89 Honda Prelude

Pit stop, p. 88 — 1,2,4; GCF 4

CHAPTER 5 · WHAT COMES NEXT

Pages 90–91 Nissan Leaf

Pit stop, p. 90 4622 − 3724 = 898

Pages 92–93 Nissan Ariya

Pit stop, p. 92 about 20000 (978 rounds to 1000, 24 rounds to 20)

Pages 94–95 Toyota e-Palette

Pit stop, p. 94 in 6, out 107; between 66, 99

Pages 96–97 Lexus LFA Concept

Pit stop, p. 96 16 × 9 = 10 × 9 + 6 × 9 = 144

Pages 98–99 Honda 0 Series Saloon

Pit stop, p. 98 area 20, perimeter 22

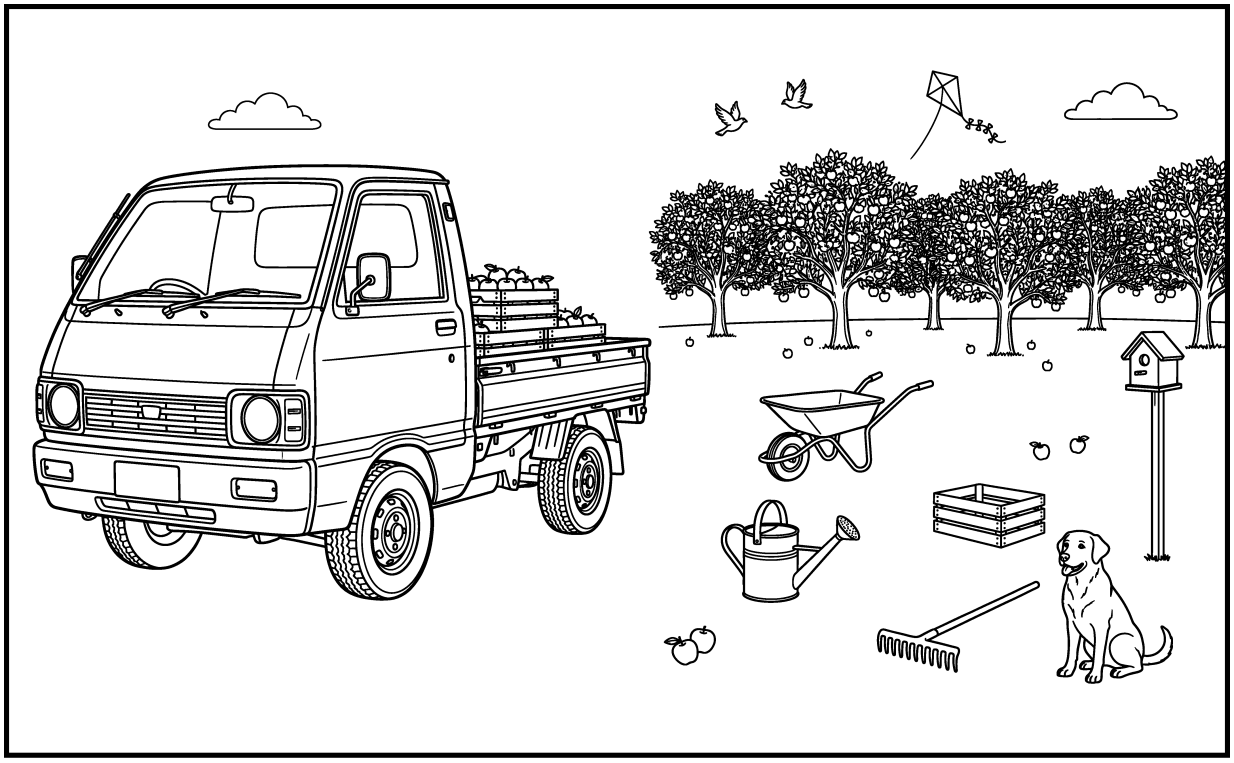
Pages 100–101 Toyota Prius

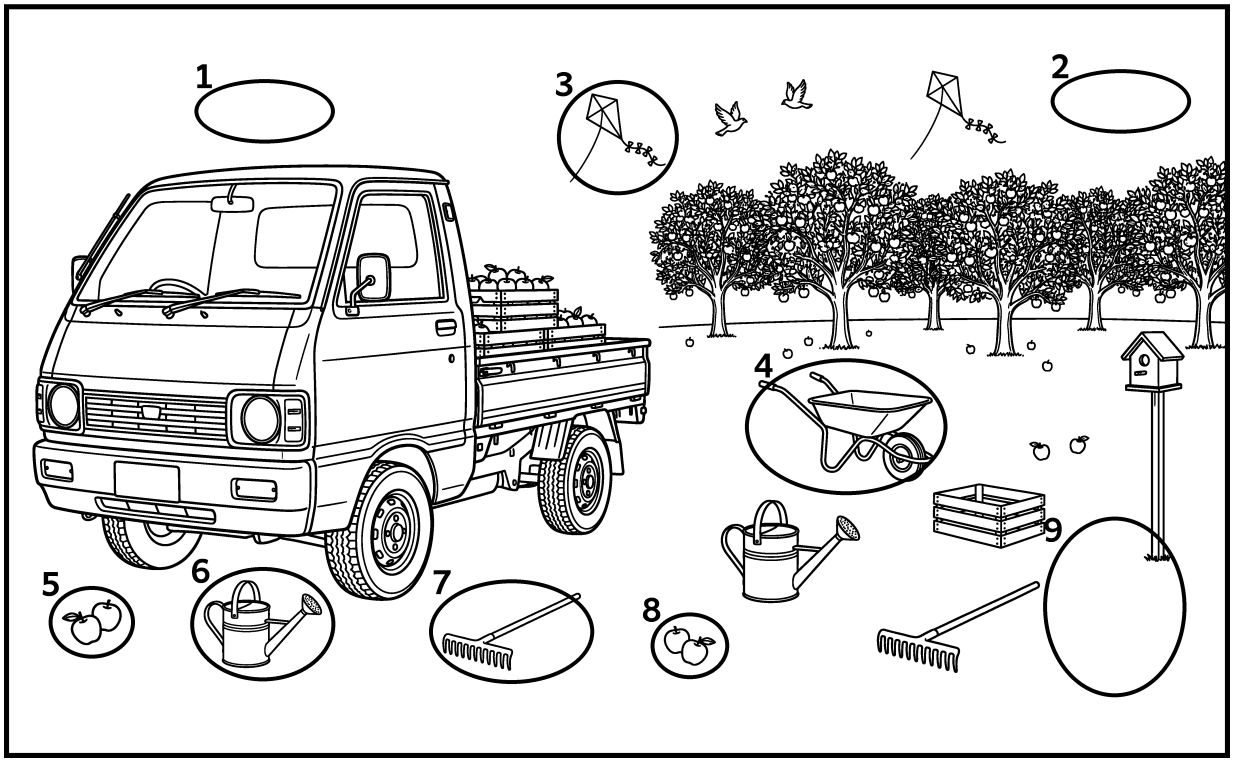
Pit stop, p. 100 start 7:25 p.m.

5 Full-size keys

The same answer as above, drawn bigger - these few pages print too small to read there.

Activity, p. 55 Daihatsu Hijet





6 More Torkel's Garage

Each book is its own adventure with Torkel, for its own age, so any one of them makes a gift for another reader.

Ages 3–5 Vol. 1



Big Machines at Work

Diggers, Dumpers, Cranes and Mixers to Color, Find and Finish

Ages 6–8 Vol. 2



Extreme Off-Road Adventures

Monster Trucks, Rock Crawlers, Rescue Rigs and Future Machines to Color, Complete and Build

Ages 9–12 Vol. 3 · this book



Japanese Car Legends

Japanese Cars to Color, Complete and Design, from Tiny Kei Cars to Race-Winning Legends

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