QUBS

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CODY'S CITY GUIDE

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CREDITS
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printed in China
Illustrations by João Fazenda

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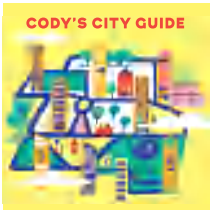
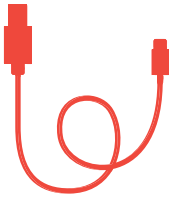
IN THE BOX YOU WILL FIND:

Cody!
A little wooden car with big adventures

16× City Blocks
Cody's commands



A City Guide
to help you through your journey!

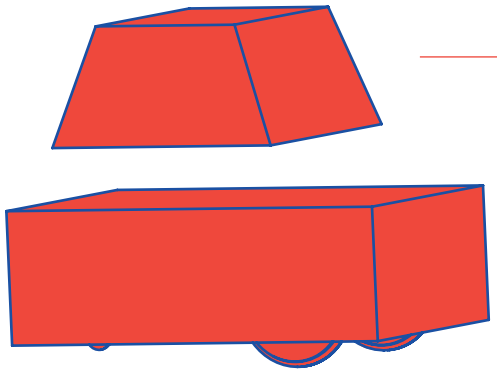


USB to USB-C power cable
to recharge Cody

It's a busy city! Go on adventures with Cody and help him find his way home by driving through the cityscape one Block at a time! Learn and develop the basics of coding, no words or screen needed. Simply place the City Blocks around Cody to guide his direction and movements.
It's hands-on programming!

WHO IS CODY?

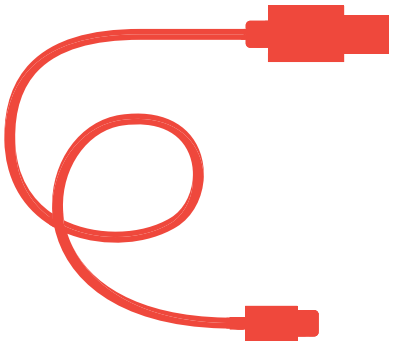
Cody is a little wooden car with big adventures! After a long day's exploring, he needs help finding his way home through his neighbourhood. Cody is made of two components:



When you connect them together, Cody starts driving! He will stop only when he reaches his little red house. All that's missing are your instructions to drive him there!

POWERING CODY

To get Cody started you need to refuel him!



In the box you'll find a red USB to USB-C recharging cable. With the help of an adult, connect the cable to a power source and plug it into the bottom of Cody. When the LED light is ON Cody is charging and getting ready for his next adventure! When the LED light turns OFF the battery is charged and Cody is full of energy. You can disconnect the cable and start playing! Remember to also snap off Cody's face from its wheels when you are done playing with him, or his battery will run out!

THE CITY BLOCKS

The City Blocks help you to guide Cody home. They come in many shapes and colours and each Block gives Cody a different instruction. When Cody reaches a Block, he will magically follow its direction. Can you guide him home?

These are the Blocks you will find in the box:

[PINK]

4 × TURN LEFT 90°

When facing this Block, Cody will turn left 90°.

[YELLOW]

4 × TURN RIGHT 90°

When facing this Block, Cody will turn right 90°.

[GREEN]

2 × TURN 180°

When facing this Block, Cody will turn 180°.

[ORANGE]

1 × REPEAT LAST COMMAND

When facing this Block, Cody will repeat the last command he was given.

[WHITE]

2 × FUNCTION RECORD

When facing the first Function Record Block, Cody will start recording the distance and sequence of subsequent Blocks. Cody will do this until he encounters the second Function Record Block. You always need 1× Record Block to open the function (start recording) and 1× Record Block to close the function (stop recording). Cody can only store one function at a time, so choose wisely!

[GREY]

2 × FUNCTION PLAY

When facing this Block, Cody will play the last function recorded between the Function Record Blocks. You can use more than one Play Blocks while you play. Remember: Cody can store only one function at a time. If you place another Play Block in your sequence, Cody will repeat the same function again!

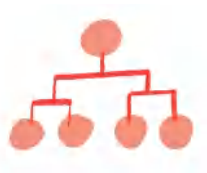
[RED]

1 × STOP

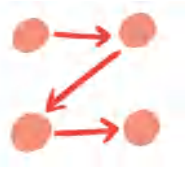
When facing this Block, Cody will stop and take a rest until his next adventure!

WHAT YOU CAN DO WITH CODY

Cody introduces basic coding concepts to inquisitive minds! But what will they learn? And how? We chose to create a tangible programming language that kids can actually touch with their hands, following the Montessori proposition that kids learn best by experiencing the environment around them.



Algorithms are sets of instructions that define sequences of tasks. When children lay out the City Blocks for Cody to follow they are, in reality, giving Cody instructions on how and where to move.



Sequencing is the specific order in which instructions are performed in an algorithm. It is important that the steps in an algorithm are performed in the correct order, or the algorithm will not work as planned. In the same way Cody follows the order of the City Blocks, one missing or misplaced Block in the sequence will lead Cody in the wrong direction, away from his home.

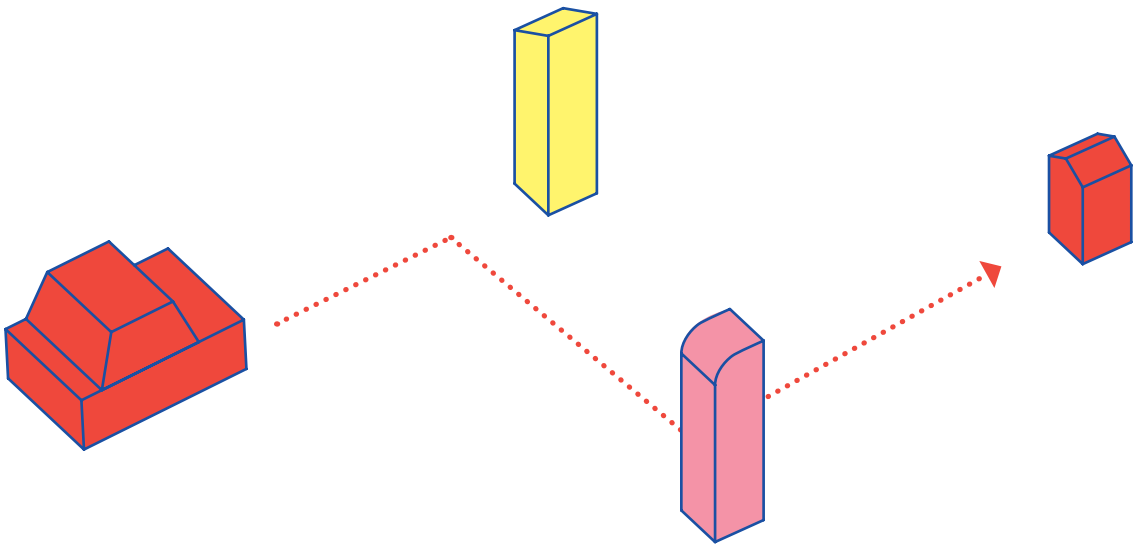
Debugging is the process of identifying an error (known as a *bug* in code) and then correcting it. The City Blocks are tangible and placed on physical surfaces for the little ones to see, making it easier for them to spot and correct bugs in their code.

Functions are self-contained bits of code that can be defined and then used within a wider algorithm. With Cody, kids can define a function and then record it. Cody will remember that function and perform it again every time he encounters a *Play Function* Block.

Logical thinking is a skill which empowers children to tackle complex problems by breaking them down into sequences of smaller, more manageable steps. It is a powerful tool that can be used in every field and all sorts of day-to-day tasks!

HOW TO WRITE A SIMPLE PROGRAM WITH CODY

To write a program, place a Block in front of Cody. You can place it as near or as far as you want, your playground is the only limit! Just make sure Cody will face the front of the Block once it arrives near to it. Once you've written your program, snap Cody on the main body of the car and watch him go!



HOW TO USE THE FUNCTION BLOCKS

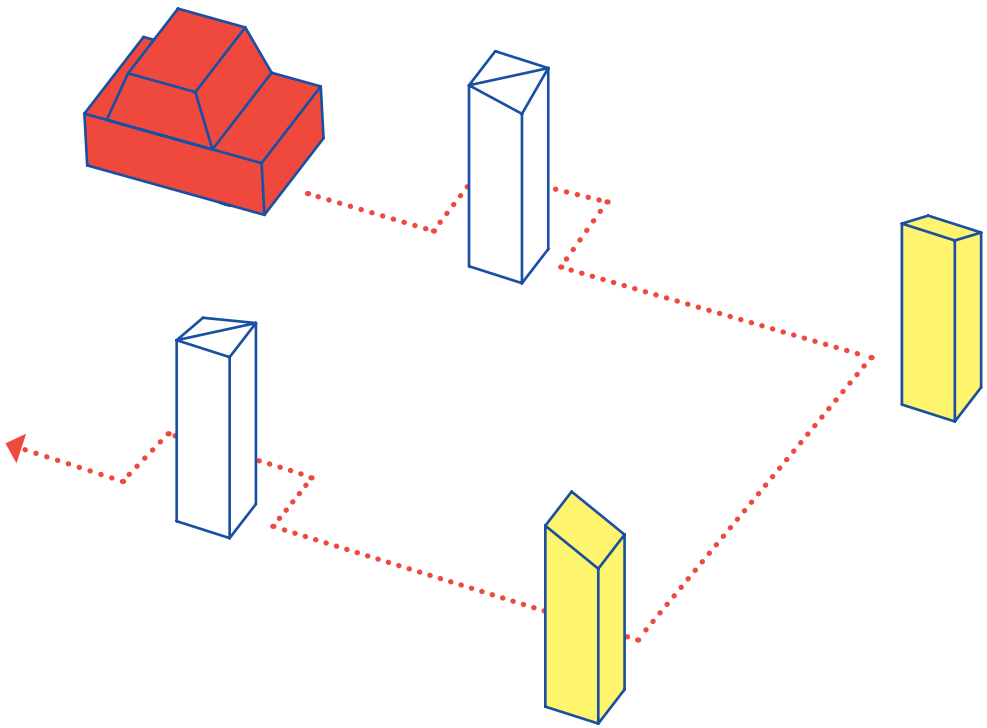
If you want to give the same set of instructions more than once you can use a function.
To record a function, place a Function Record Block on the floor. Cody will read it and then go around it to move forward.

Place the Blocks you want to insert in the function after the Function Record Block, just as you would write a normal program.

Remember to close the function by placing another Function Record Block at the end of it! Note that it will record both directions and distances.

Now Cody will remember that function until you record a new one. Every time you want to recall the last recorded set of instructions, just place a Play Function Block into your code.

①



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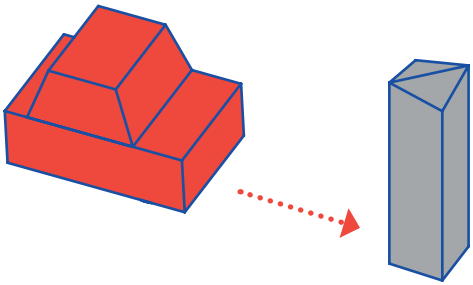


ARE YOU READY TO PLAY?

LET'S GET STARTED!

CODY MOVES TO THE CITY

Cody is moving to the city and is excited to explore his new neighbourhood! Everything seems so big and scary at first but Cody learns that, as he gets to know the city, all the buildings become like friendly faces.

Today, Cody is moving from his sleepy countryside home to the buzzing, bustling Qubs City. He has heard many stories of big cities from his nana's tales, but has never visited one before.

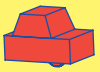
Are there animals in the city?
And is it quiet, or loud?
Will he make new friends?

Cody takes a big gulp of air as he arrives. Everything looks so large and strange... He wheels nervously towards a bright red house up ahead.

WELCOME TO QUBS CITY

1. FIRST STEPS

INTRODUCING THE STOP BLOCK

×1  ×1

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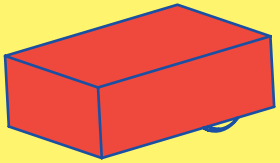
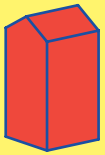
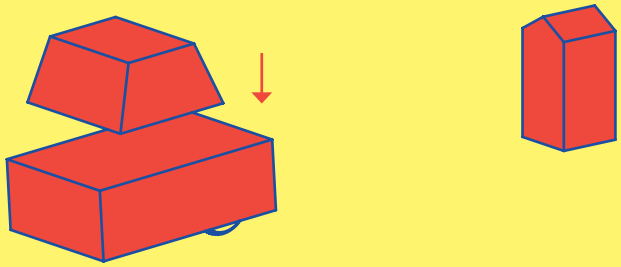




Exercise 1:

1. Place Cody's house (the little red Block) in front of Cody and face him towards his new home.
2. Snap Cody's head and wheels together.
3. Watch what happens... Does Cody make it to his new house?

②



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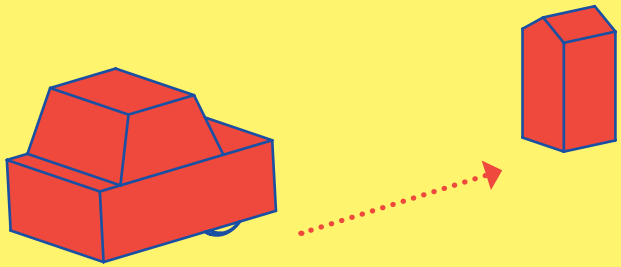
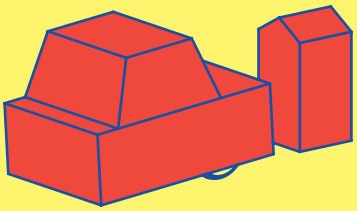


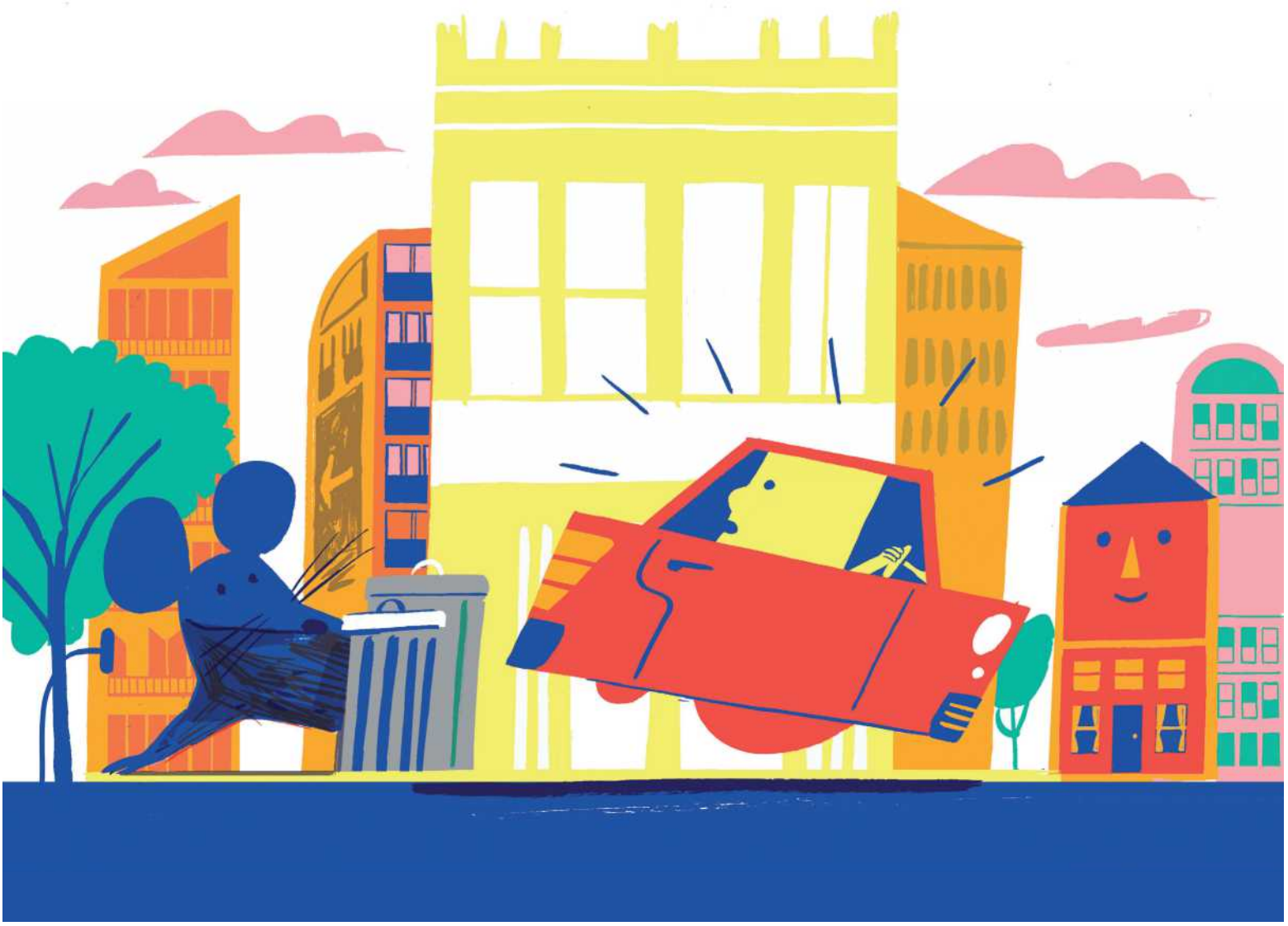


Cody peeks out onto the rustling street. The yellow tower near his home rises so high it's lost in the clouds! Just as Cody goes to take a closer look...

S Q U E A A K K K ! !

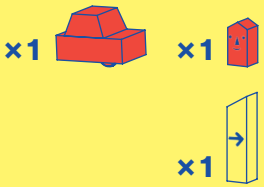
A ginormous grey rat scurries out from behind a nearby dustbin. There are animals in the city! But this one looks nothing like the little country mice Cody is used to!

Cody turns in fear and darts home as fast as he can.



2. THE RUNAWAY

INTRODUCING THE RIGHT BLOCK



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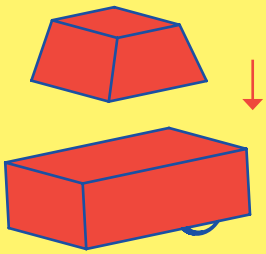


Exercise 2:

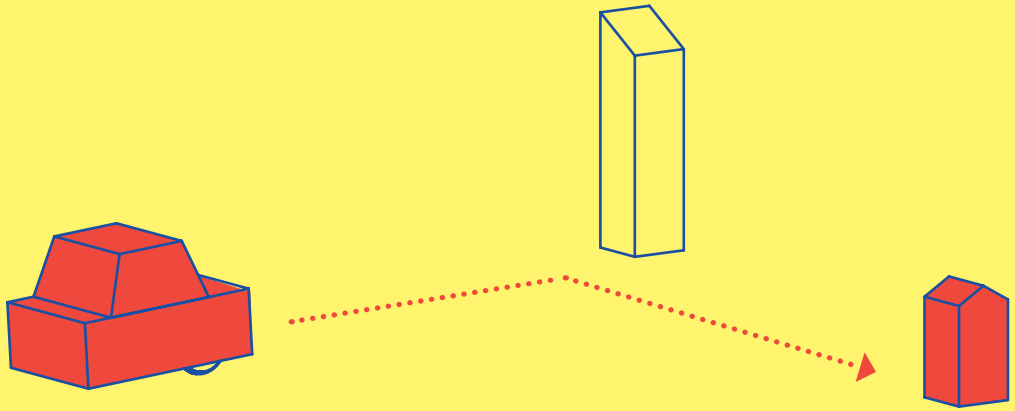
① **Place the yellow tower (the Turn Right Block) in front of Cody and Cody's house to its right.**

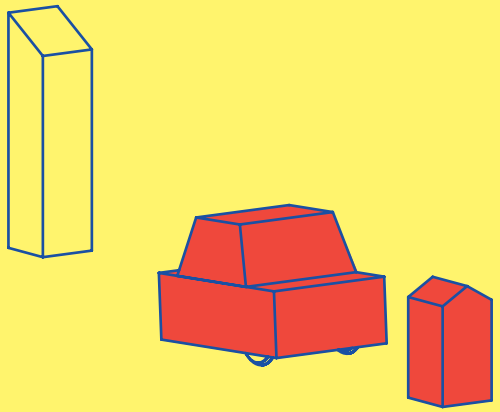
② **Face Cody towards the yellow Block and snap his head and wheels together.**

③ **What does Cody do when he reaches the yellow Block?**

Try swapping it with a pink Block. What changes? Does Cody make it to his new house?

③





Cody lets out a long, heavy sigh. He misses the countryside. The countryside was safe and he knew all the best spots and hideaways there. Here, everything is unknown.

Refusing to give up, Cody summons the courage to step outside once more. He winds through peaceful parks and striking pink skyscrapers before the once fluffy clouds turn grey and gloomy.

PIT...

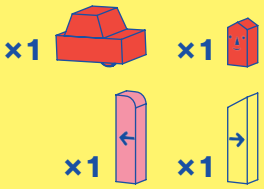
PAT...

BOOM!

The sky rumbles.
A storm is coming!

3. ESCAPE THE RAIN

INTRODUCING THE LEFT BLOCK



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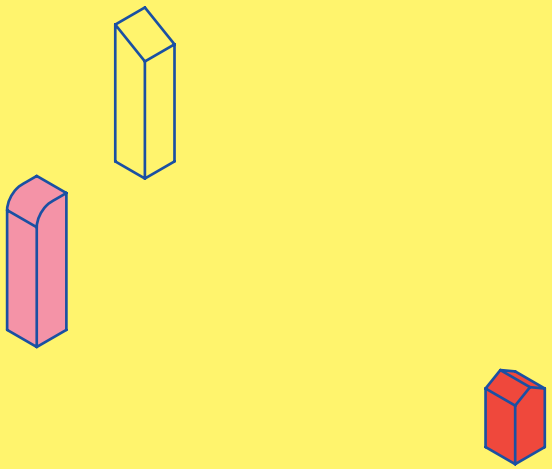


Exercise 3:

Quick! Can you get Cody to shelter?

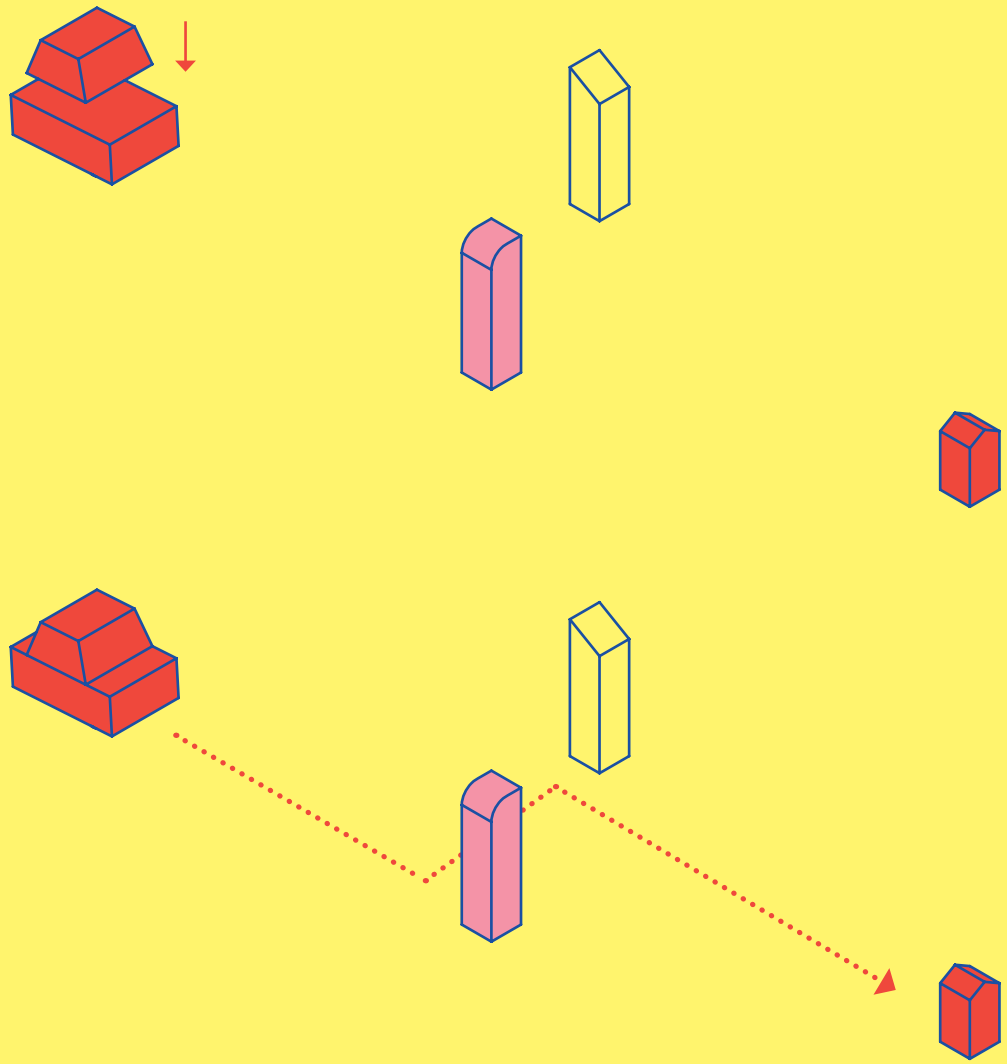
① **Set up the yellow Block and Cody's house as before.**

② **Place the pink skyscraper (the Turn Left Block) in front of the yellow Block, and Cody to its left.**

③ **Face Cody towards the pink Block and snap his head and wheels together.**

Did Cody make it home in time or did the rain catch him?

③



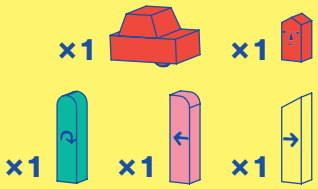
The city after rain seems like a different world to Cody. A shimmering rainbow beams over it. Giant puddles reflect the skyline. The buildings suddenly aren't so tall and scary when Cody looks at them from this new perspective.

S P L A S H !

Cody vroooooms through some muddy puddles and chases after the glowing rainbow lights. This is fun!
He hopes there's a pot of gold at the end!

4. FOLLOW THE RAINBOW

INTRODUCING THE TURN 180° BLOCK



① + ②

Exercise 4:

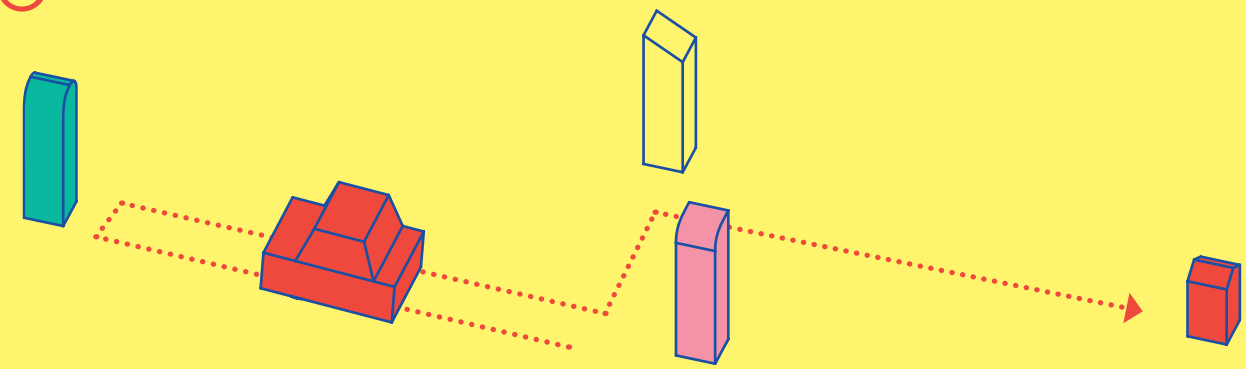
① Set up the yellow and pink Blocks and Cody's house as before.

② Now place the green Block (the Turn 180° Block) to the left of the pink Block, where Cody was parked before.

③ Place Cody between the pink and green Blocks, facing the green one. Snap his head and wheels together.

④ What does Cody do? Can you count how many turns Cody makes?

③



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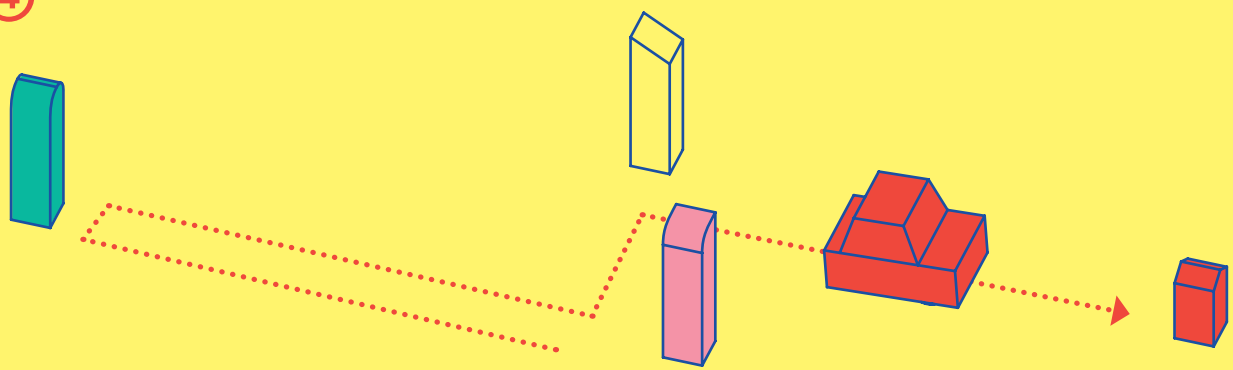
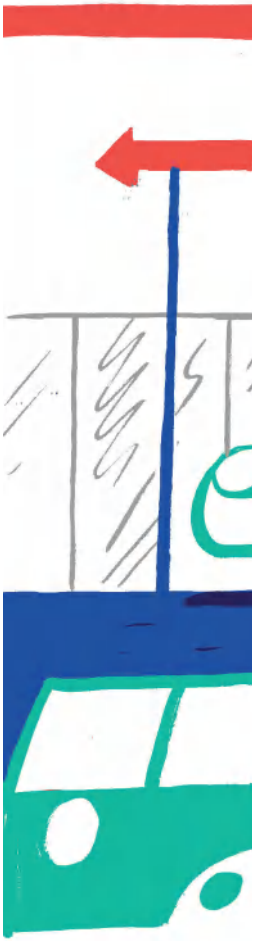


Cody starts gaining confidence. The city doesn't seem so bad now! And after all this exploring his engine lets out a little grumble. There's a market by the green building. Perhaps he can fuel up there with a special treat?

Cody dashes over and buys a special chocolate chips cookie. He gobbles up every last crumb.

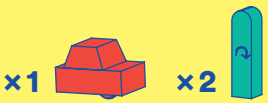
YUMMM!!



But when it's time to leave, Cody can't find his way out of the parking lot... He goes ROUND and ROUND searching for the exit.

5. PARKING LOOP

INTRODUCING THE 2× 180° BLOCKS LOOP



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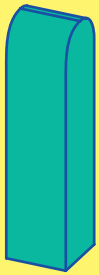
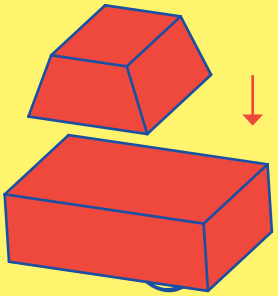




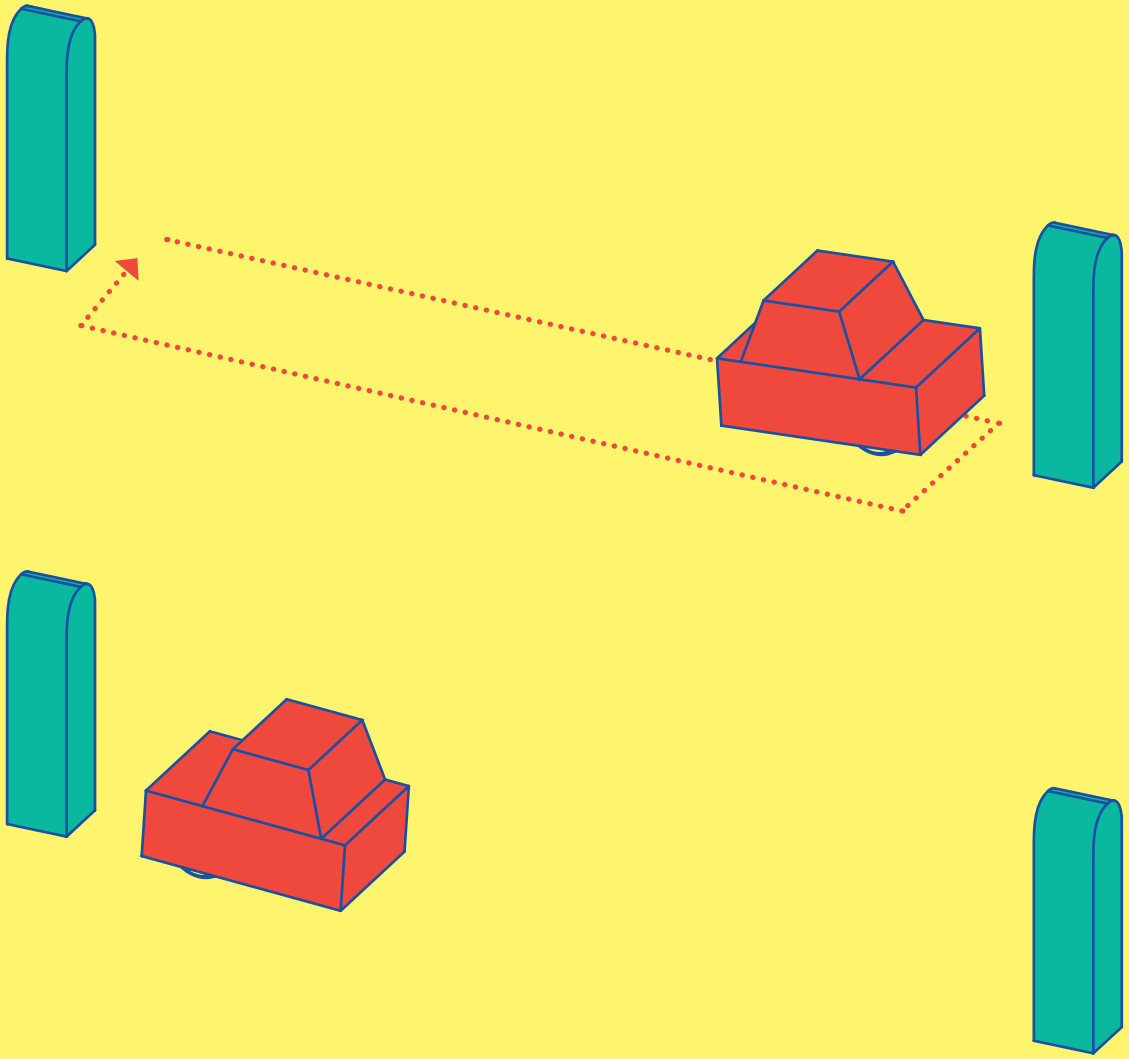
Exercise 5:

① **Place Cody between two green Blocks.**

② **Snap his head and wheels together.**

③ **You've just created an infinite loop!**

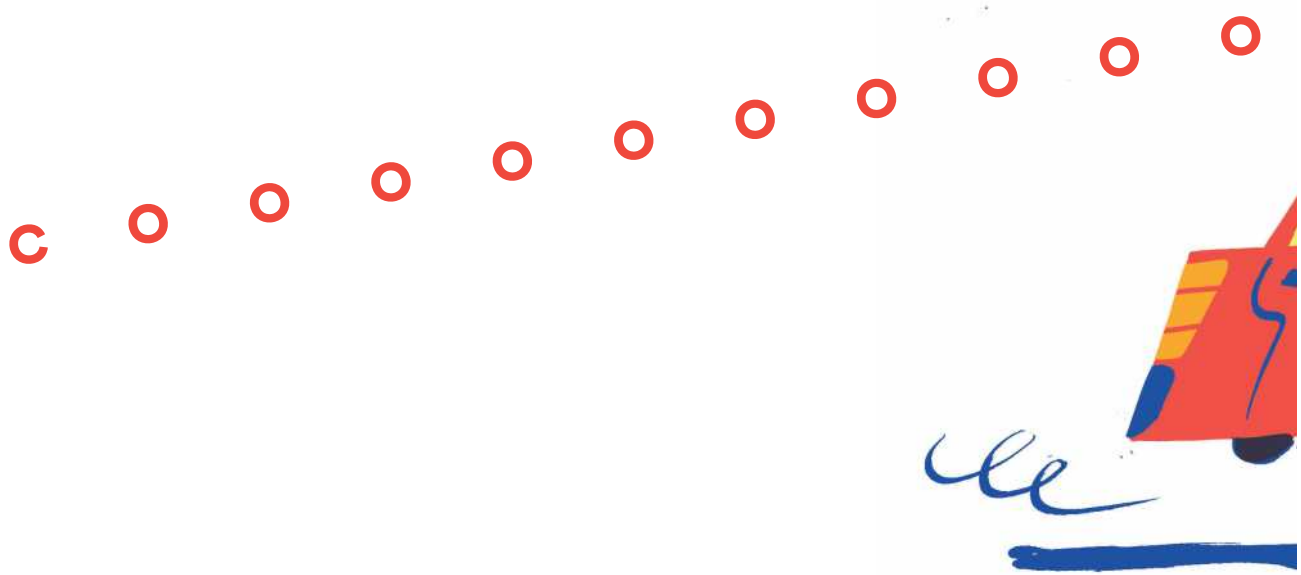
③



All this turning is making Cody's head spin!
He squints his eyes as hard as he can,
but he doesn't recognise any of the buildings
around him.

Is that the yellow tower?
No... wait... the pink one?
How will he find his way back?

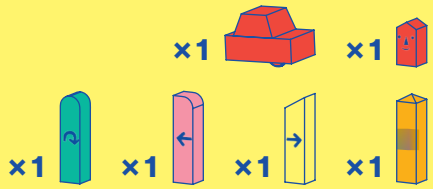
Cody sobs. Tears fill and fill his eyes.
Everything blurs when suddenly...



A warm, feathery blob swooshes past Cody's bonnet.
A homing pigeon! Cody races after it with a last glimmer of hope.

6. TAKE FLIGHT

INTRODUCING THE REPEAT LAST BLOCK



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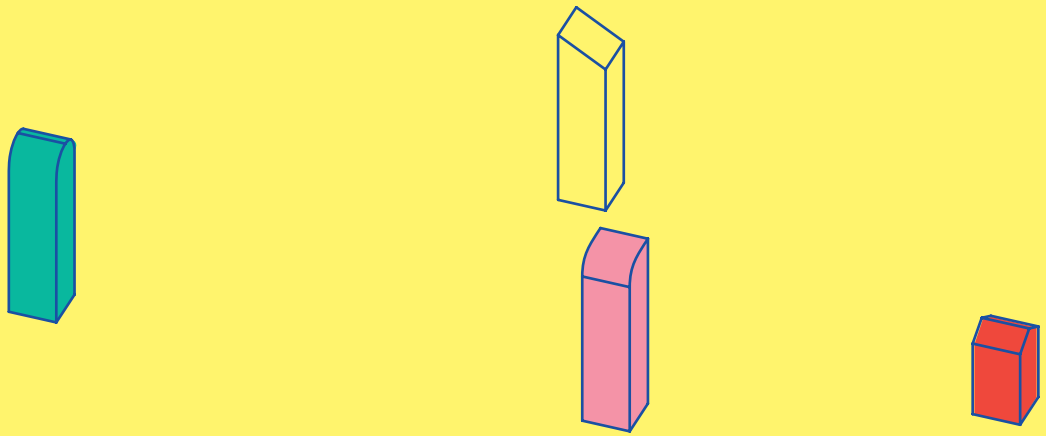

Exercise 6:

1. The pigeon seems to be swooshing close to the rainbow! Set up the Blocks and Cody's house as on exercise 4.

2. Now swap out the green Block for a pink Block, and the other pink Block for an orange Block (it's a mystery!).

3. Face Cody towards the pink Block and snap his head and wheels together.

4. Try replacing the pink Block with other Blocks. What changes when Cody reaches the orange one? (Hint: You've just discovered Repeat!)

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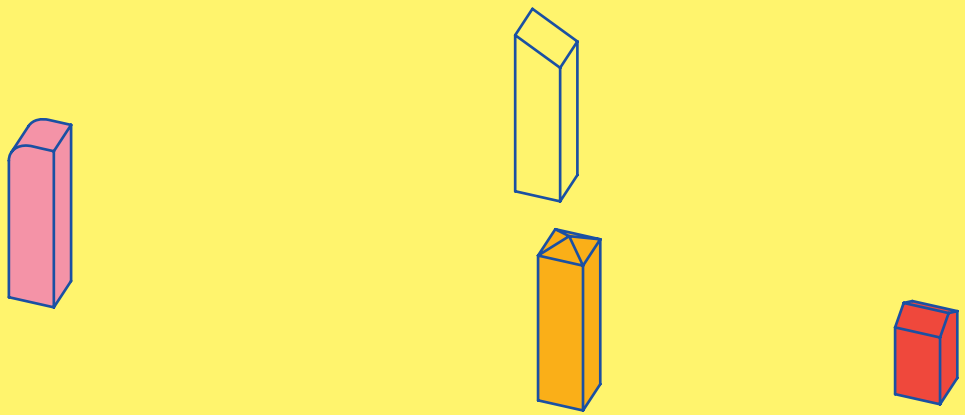

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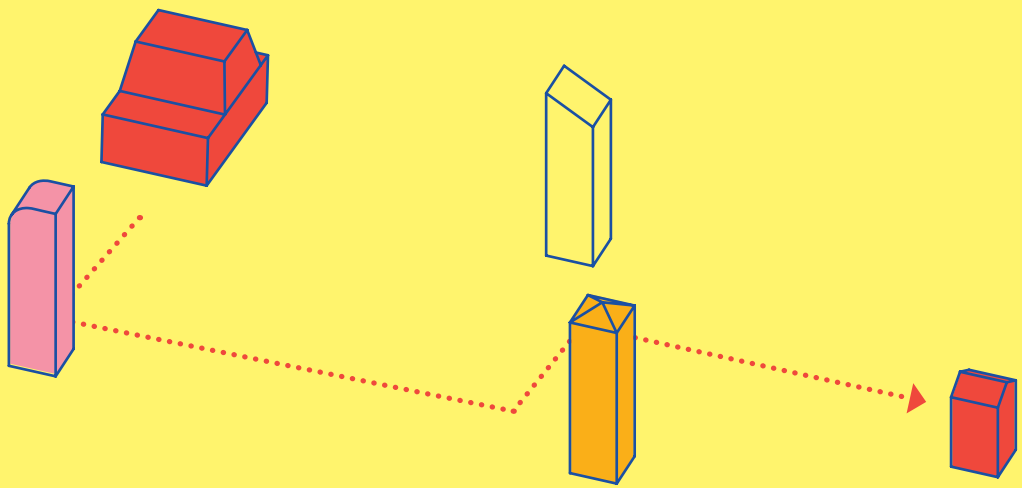
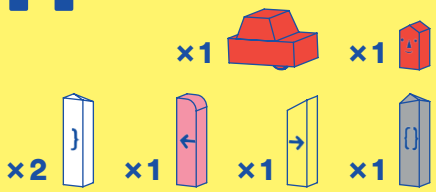


From his home, Cody can see other cars passing by. They don't seem to mind all the spaghetti-looped roads and tall houses. And they don't seem to get lost either. Maybe if Cody keeps on trying, he'll get used to the city after all!

Armed with courage and the company of his new winged friend, Cody sets out again to explore. The pair swoop, swerve and steer through the city streets.

7. FIND YOUR PATH

INTRODUCING THE RECORD AND PLAY FUNCTION BLOCKS



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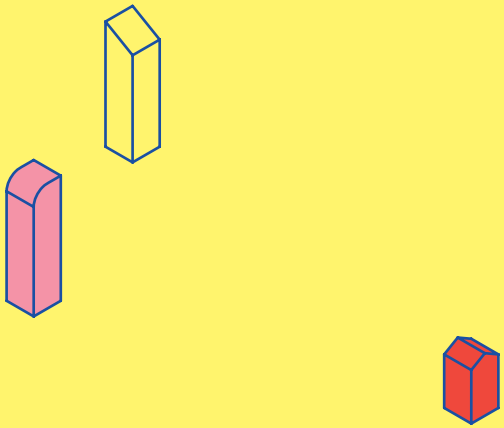


Exercise 7:

1. Set up the Blocks as on exercise 3.

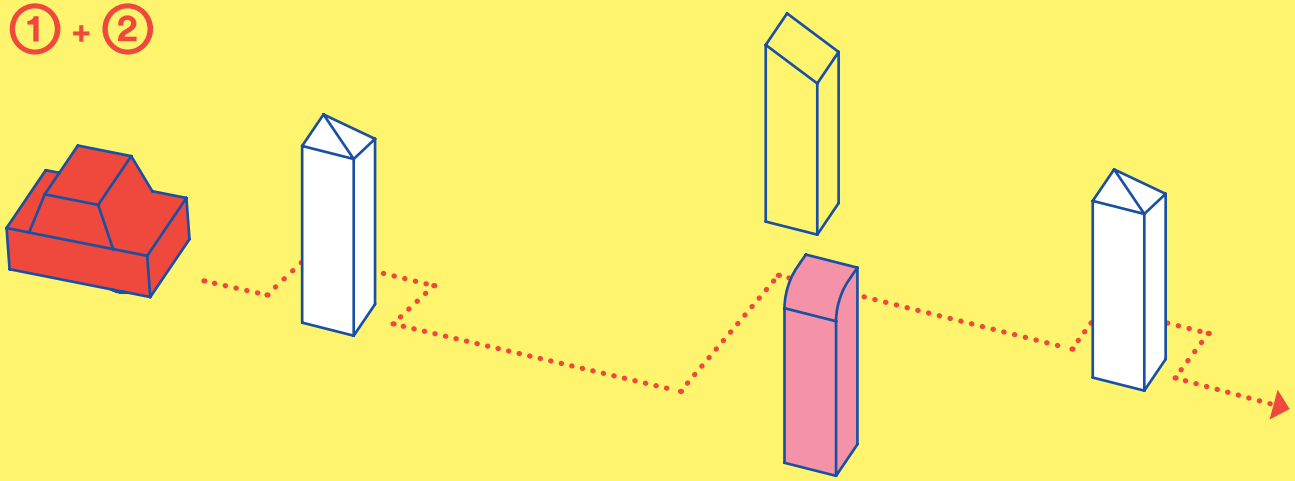
2. Set down two white Blocks, one before the pink Block and one in place of Cody's house.

   Cody will now remember this path!

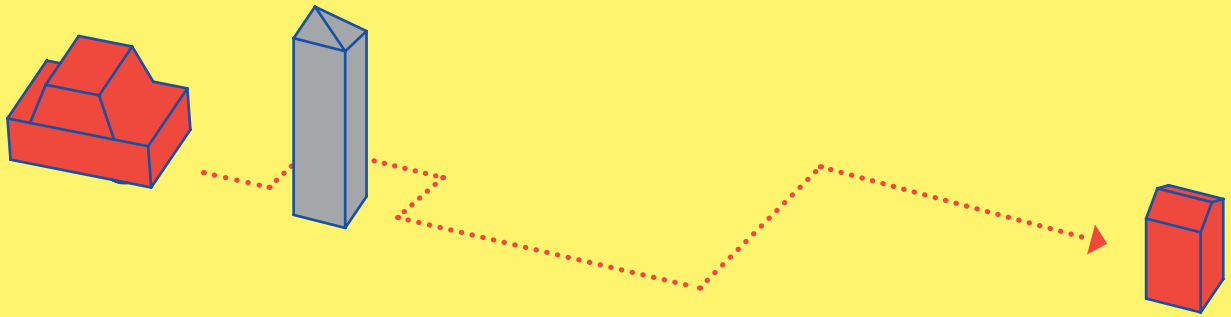
3. Take the Blocks away and replace the last placed white Block with Cody's house, and the first placed white Block with a grey Block.

   Hoorah! Cody can find his way because he remembers the directions and distances YOU have taught him!

① + ②



③



Now, Cody has become quite familiar with his neighbourhood! Just like back in the countryside, he knows ALL the best spots and hideaways.

'That's the yellow tower next to my house!
And after that there's the shimmering
pink skyscraper!
I know that's the way to get
to the market!'

His eyes sparkle with excitement.

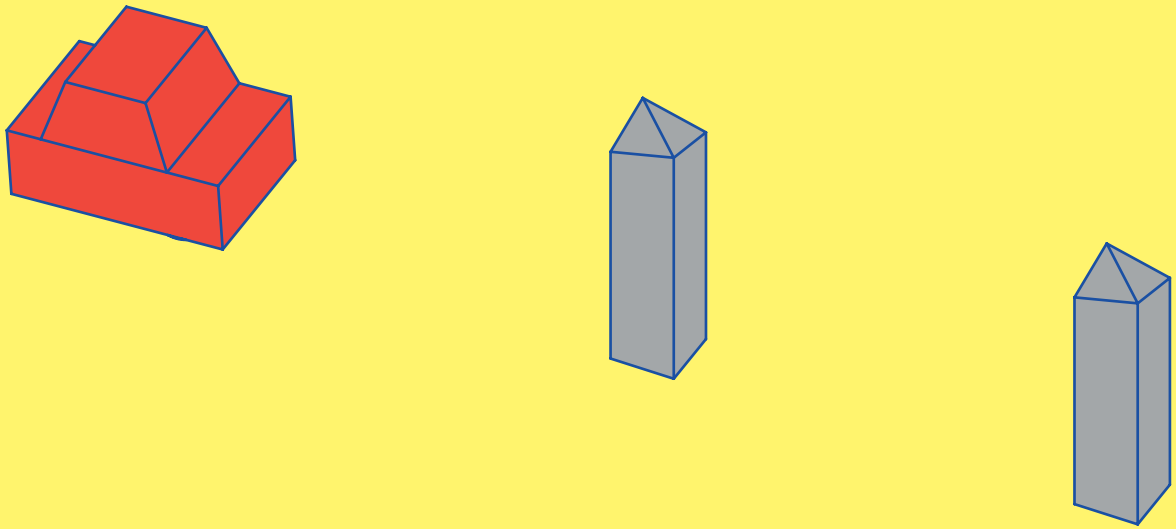
'But what an adventure it has been!
I think I might want to sleep now...'

What new adventures await tomorrow?

Q

8. ONE LAST ADVENTURE

FREE PLAY



Exercise 8:

Congratulations!
You've led Cody all the way through his new city.

→ **Now you know all the moves, have a play and try placing two grey Blocks in a sequence.**

Remember, when Cody finds a grey Block he will follow exactly the same route you previously taught him. Try to record new paths and see what happens!

FCC statement

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
1) this device may not cause harmful interference, and
2) this device must accept any interference received, including interference that may cause undesired operation.
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
--Reorient or relocate the receiving antenna.
--Increase the separation between the equipment and receiver.
--Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
--Consult the dealer or an experienced radio/TV technician for help.
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
FCC Radiation Exposure Statement
This device complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.