Kode •KLIX•

Coding, Electronics and Fun!

Ideas Book Five

Advanced coding KLIX and motors required
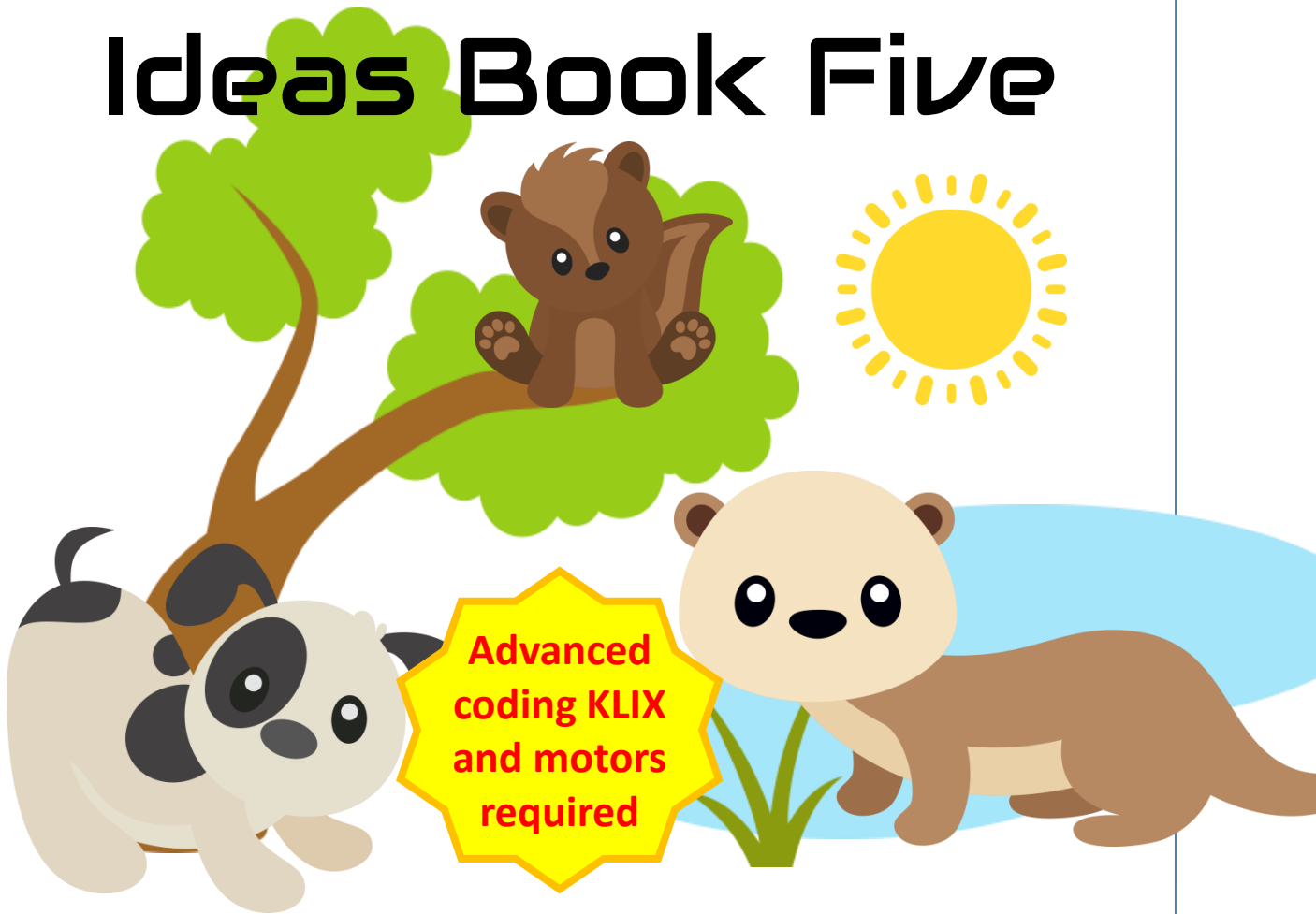
The rides at the fairground

Oscar's merry-go-round

Possum's Ferris wheel

Baxter's jet plane ride

Let's build a tricky ride

A ride with two motors

The rides at the fairground

Its summer and the days are long... its daylight until later at night.

The other great thing about summer is that the fairground comes to town!

Oscar and his friends love going to the fairground every year, as there are fun new rides to try each time.

Oscar likes the merry-go-round, because he likes to try the different seats.

Possum likes the Ferris wheel as it takes her up higher than her tree house.

Baxter likes the newest ride, a rocket powered jet plane.

When they come home, they are exhausted and go straight to bed.

When they wake the next day, they are still so excited about what they saw and tried at the fairground. They wish that they could do it all again.

Just then, almost all at once, the critters had an idea... "Why don't we make the rides we went on with building bricks, add motors and code to make them real!

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Oscar's merry-go-round

Oscar gets started with building a merry-go-round. The spinning platform has chairs, horses and other seats. His extra KodeKLIX pieces includes a **green motor** and a special KLIX with an M on it for coding.

Oscar reads the instructions that came with his kit and takes notice of the modifier KLIX needed to control the speed of the merry-go-round. He decides it should go slowly and so will need the [2] modifier to control the speed to ***slow backward***.

With a LOOP and a BUTTON, the ride attendant can control when the ride starts... once everyone has taken their seat of course.   **Do Build 1**
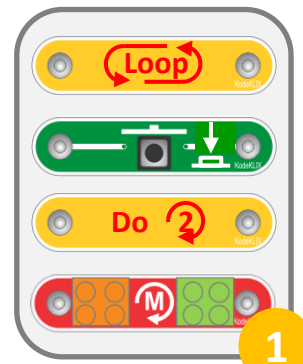
Help Oscar build his merry-go-round with construction bricks and then experiment with different modifier numbers to see if the results match with the codes in the table shown below.

Be careful how you connect the wires and which side to put the orange tile

Modifier	Rotational
-	Fast Forward
1	Fast Backward
2	Slow Backward
3	Stop
4	Slow Forward
5	Fast Forward

Brown (-)
Red (+)
Signal (S)

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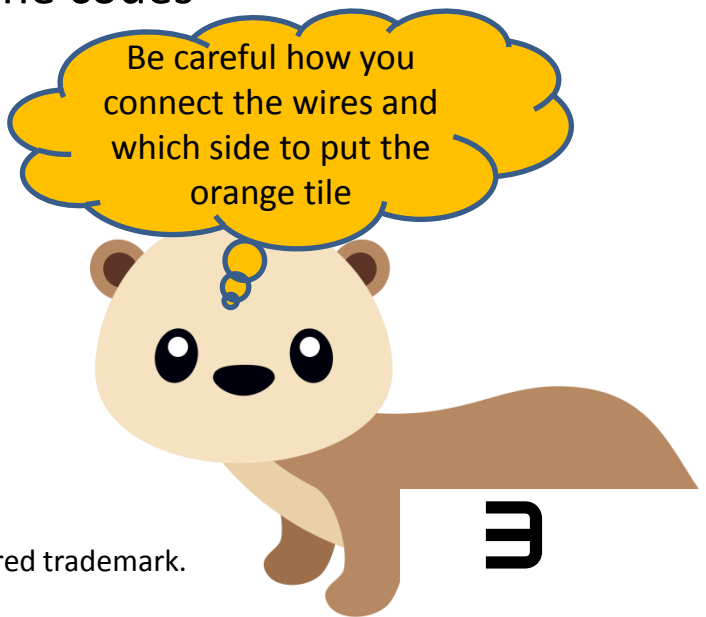
Possum's Ferris wheel

Possum likes the Ferris wheel for a few reasons.

The main reason is that when she gets to the top, it is much higher than her tree house, so she can look all across the forest.

The other reason she likes the Ferris wheel is that it can surprise her by sometimes going forwards, and sometimes going backwards, and sometimes fast and sometimes slow.

She builds her Ferris wheel using build bricks, and changes Oscar's code to use a RANDOM KLIX instead.
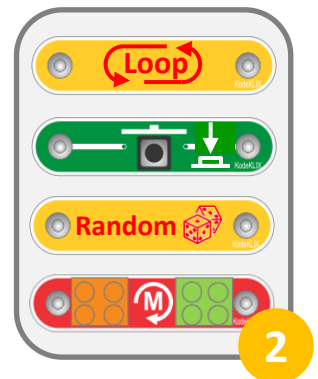
Do Build 2

Help Possum change the code to play music or blink coloured lights.

Baxter's jet plane ride

Baxter's jet plane ride uses a different type of motor. The motor swings from left to right, instead of around and around.

"It's a positional servo", Baxter explains to his friends. "This servo motor will lift my jet plane to point up to the sky, just like it would at take off", he continues. "I want to also make a rocket sounding roar before it takes flight." **Do Build 3**
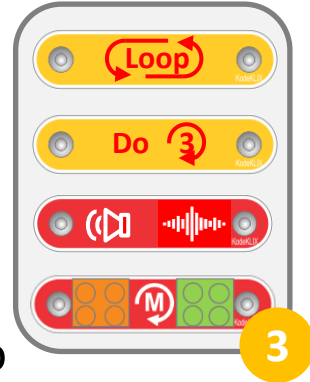
Experiment with different code and modifiers to see how the position of the servo changes and how that affects how high up the jet plane points at take-off.

Use the Grey Positional Servo

| Modifier	Positional
-	Full Forward
1	Full Backward
2	Backward
3	Centre
4	Forward
5	Full Forward

Let's build a tricky ride

Oscar, Possum and Baxter were exhausted after their time at the fair. But their minds were so excited by the technology built into the rides.

Baxter wondered if they could do something more with a ride than just go up and down, or round and round.

"I know," said Possum, "remember that we used the Special part to code a sequence – could we do the same with a motor?"

"I think we can!" exclaimed Oscar.

Do the SAVE CODE step
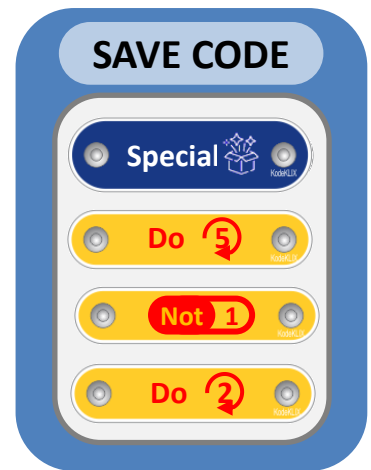
"With this code, the motor will go fast in one direction, then fast in the opposite, slow down," said Baxter. **Do Build 4**

The guys tested their code with just the motor connected. They first used the rotational motor and then the positional motor.

Now that we know how the motors will respond, help the guys build a ride with a mechanism…

Tip: the code changes the direction of the motor. The change in direction can be used to flick or pivot mechanisms. Perhaps use this feature to make a new ride.

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A ride with two motors

Oscar's cousin, Daisy, came to visit for the school holidays. She was a little younger than Oscar, but very curious and wanted to know all about Oscar's KodeKLIX® coding kits.

First she asked Oscar about how they could connect building bricks such as their Lego® to build and motorise models.

Oscar showed her all the adaptor pieces that came with his extension set that allowed the motors to be connected to the brick motors and models.
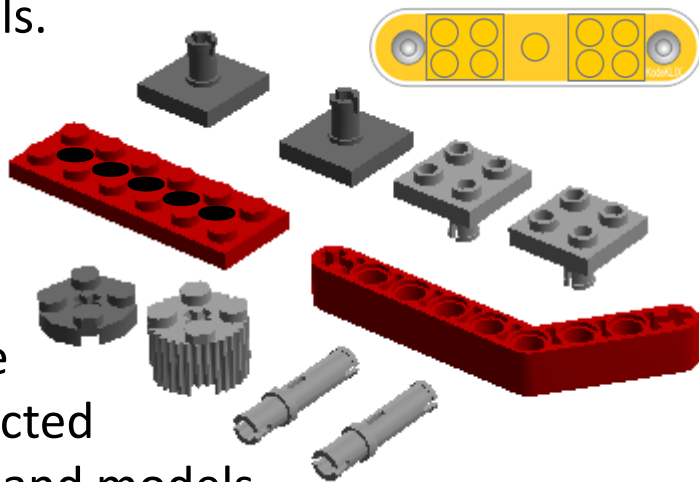
Then, his cousin asked Oscar a question about something he hadn't tried before. "How do we code for projects with two motors?"
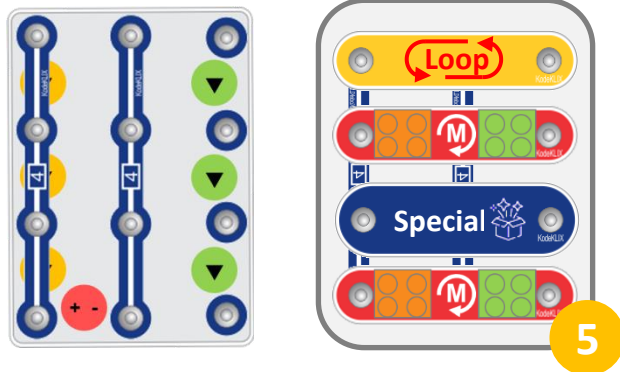
"I guess that's what these extra links are for. But, be careful since some of these are very small for young kids", said Oscar. **Do Build 5**
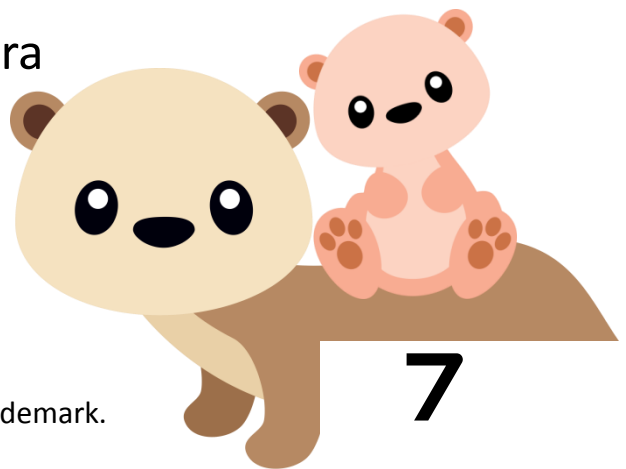
Want more stories?

Do you enjoy the adventures of Oscar and his friends Possum, Baxter and others?

Want to see what they get up to next?

How about you think about some adventures they can have and see if you can create some gadgets and code to help them have fun and discover answers to their questions.

Did you know with four coding steps and just 14 coding KLIX that there are over 25,000 coding possibilities! Have a play and see what fun and useful things you can create.

Decoration and construction ideas

Many of the projects and coding stories could be even more fun if you decorate the KodeKLIX® code block? Trying making the stories come to life by decorating a cardboard box to put over your KodeKLIX. Maybe you could make your box from play bricks such as Lego, Duplo… maybe it has wheels, or maybe it has wings. Let's see what your imagination can come up with!