Collect Them All!

(Sold separately)

Rally Track Set

Raptor Racers Track Set

Build A Mega Track!

DISCOVER MORE SETS

For USA

www.vtechkids.com/turboedgeriders

For Canada

www.vtechkids.ca/en/turboedgeriders

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STUNT FLIGHT TRACK SET

TURBO EDGE RIDERS™

5640

COMPONENTS

T-01

x2

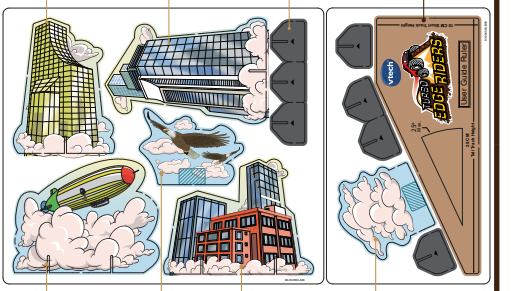
T-02

x2

T-03

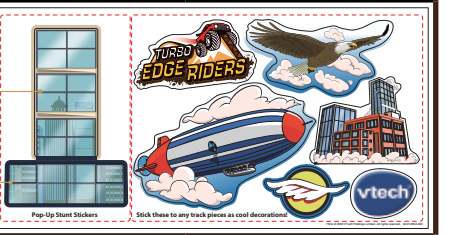
x2

P-01 P-02 P-03 x7 Ruler



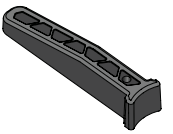
P-04 P-05 P-06 P-07

L-01 L-02



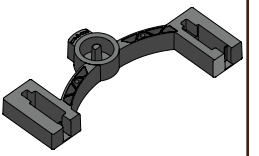
x1

C-01



x1

C-02



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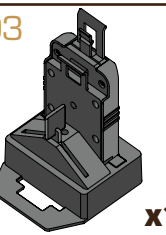
C-03



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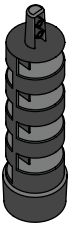
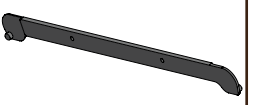


x1

C-05

x1

C-06



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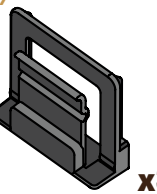
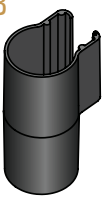
C-07



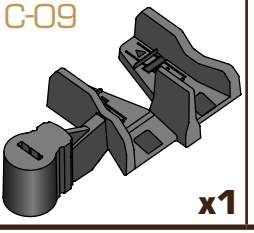
x3

C-08



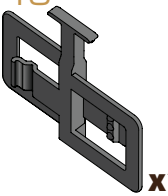
x1

C-09



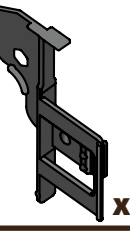
x1

C-10



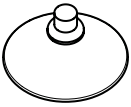
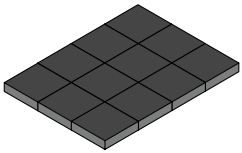
x12

C-11

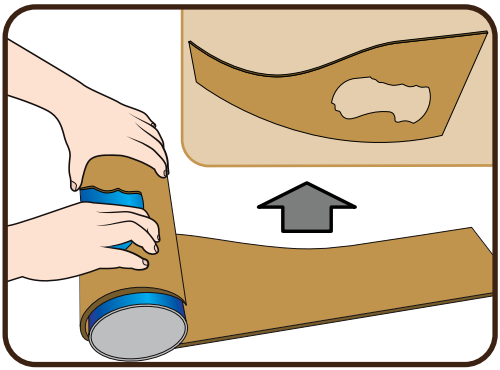


x2

COMPONENTS

C-12	C-13	C-14
		
x12	x6	x5

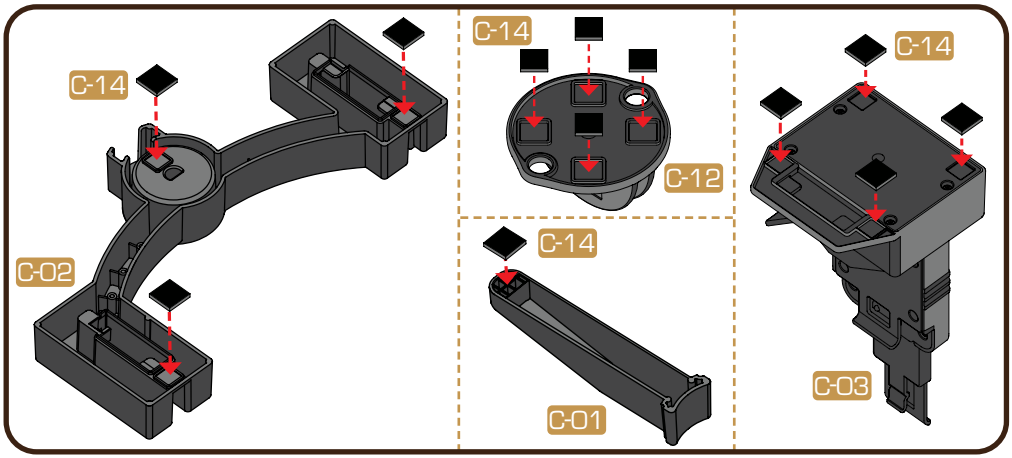
Color the Cardboard. **Roll T-01 and T-02** up with a can to make smooth curves.



ASSEMBLY INSTRUCTIONS

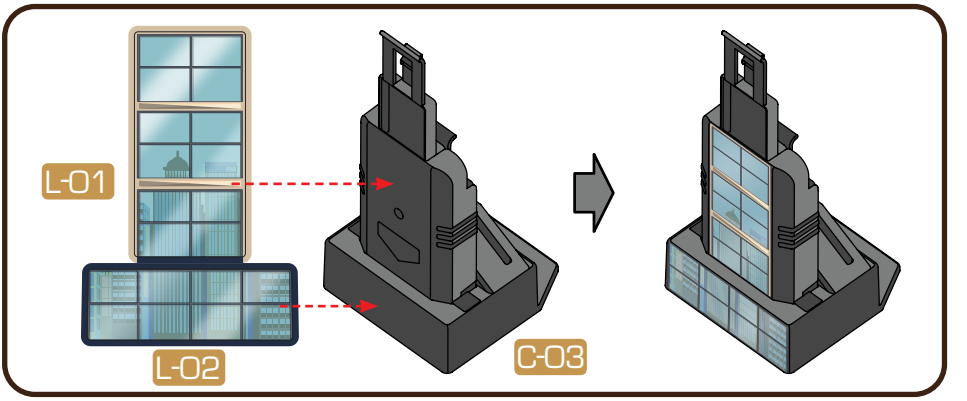
With the **Turbo Edge Riders™ Stunt Flight Track Set**, safety comes first. Adult assembly required. For your child's safety, do not let them play with this toy until the initial assembly steps are completed.

Stick the rubber label under the stands

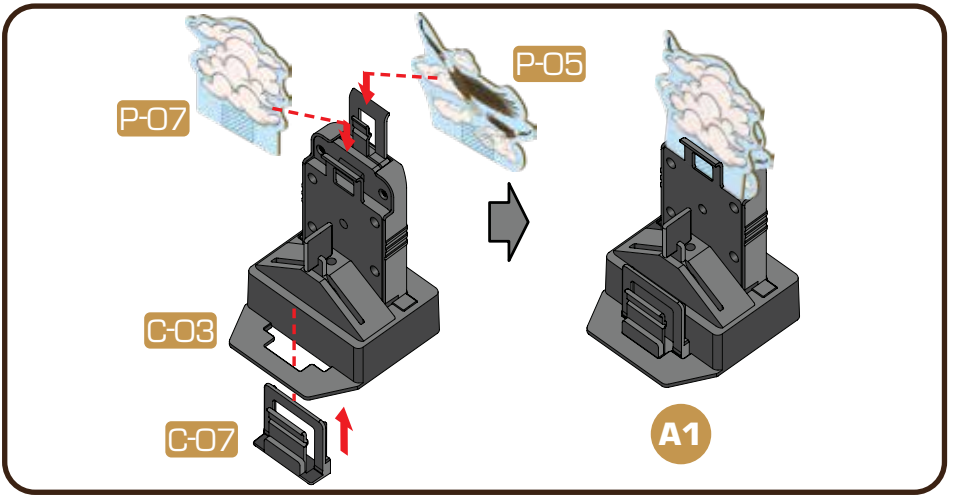


INITIAL ASSEMBLY

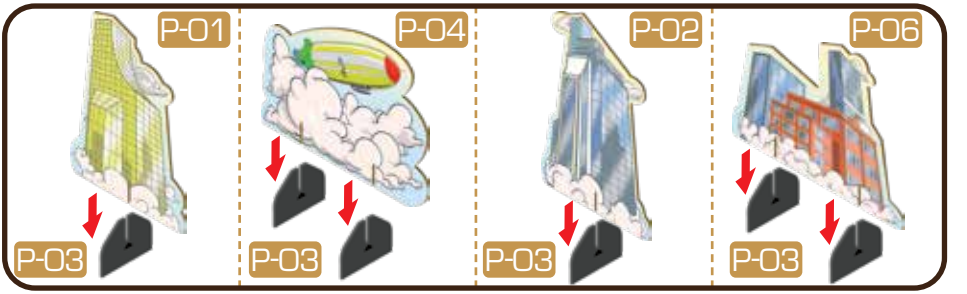
LABEL APPLICATION



BUILDING THE POP-UP STUNT



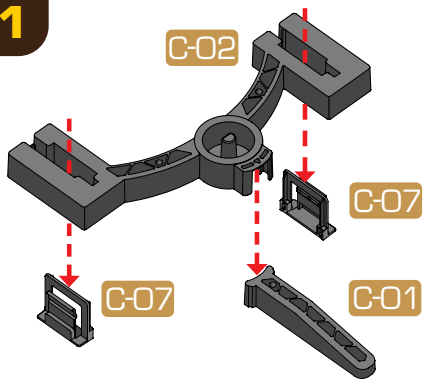
USING THE PAPER STANDS



TRACK ASSEMBLY

BUILDING THE LOW U-TURN TRACK

1



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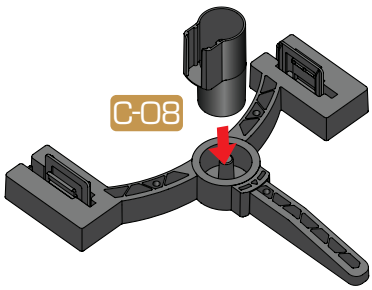

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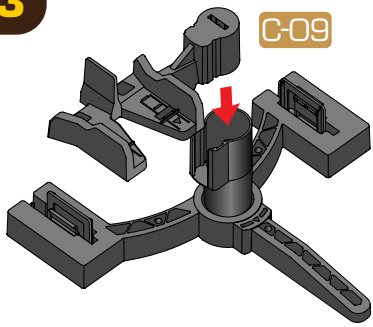

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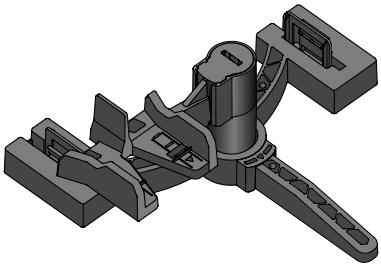

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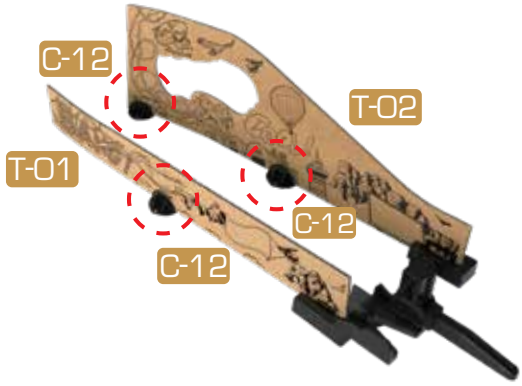
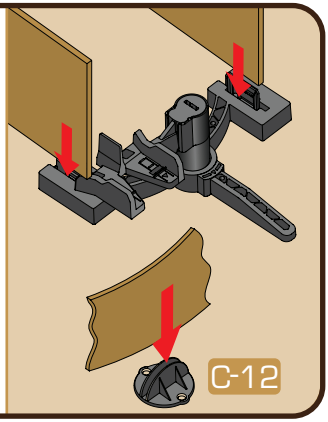
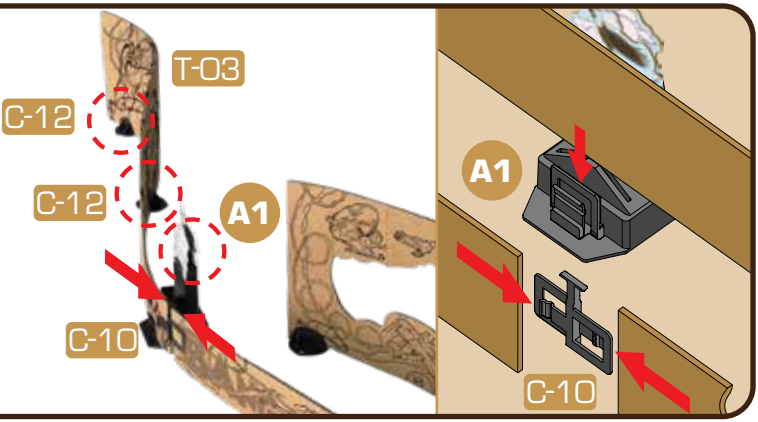




TRACK ASSEMBLY

BUILDING THE LOW U-TURN TRACK

6



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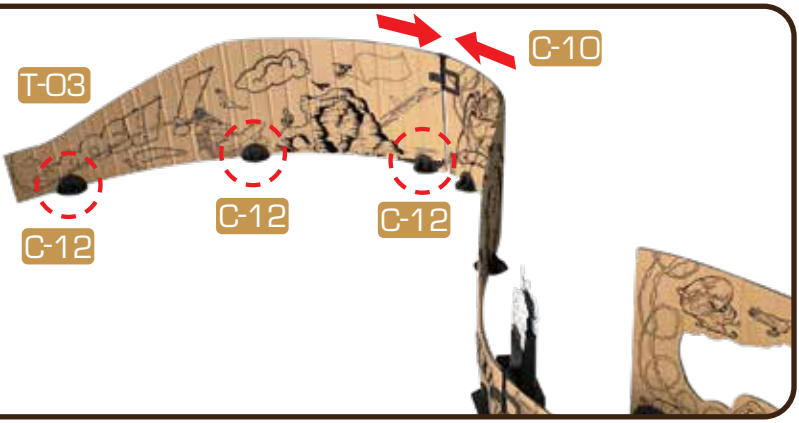

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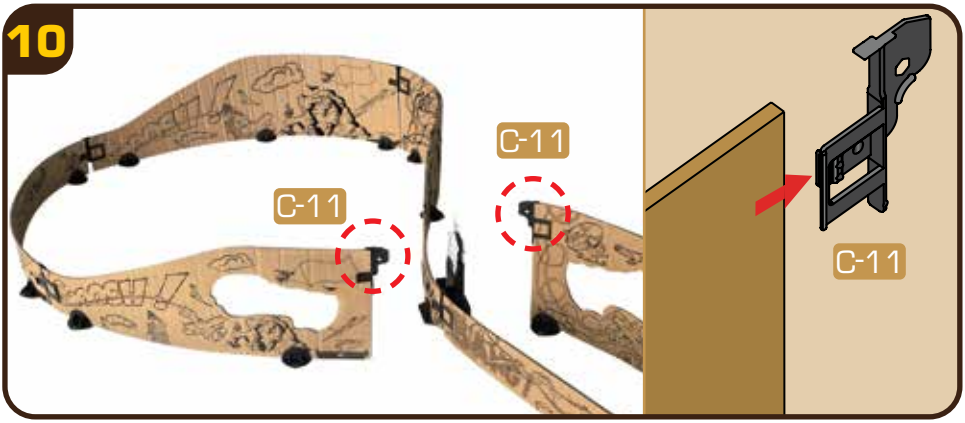
TRACK ASSEMBLY

BUILDING THE LOW U-TURN TRACK

9

10



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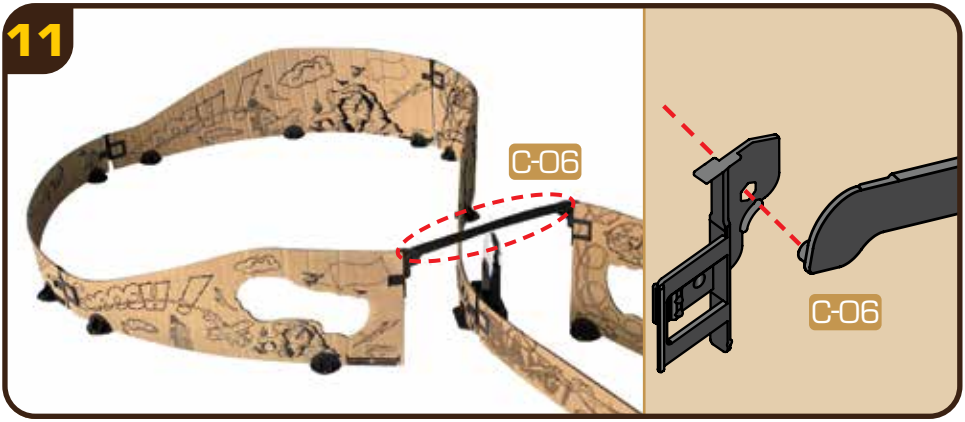
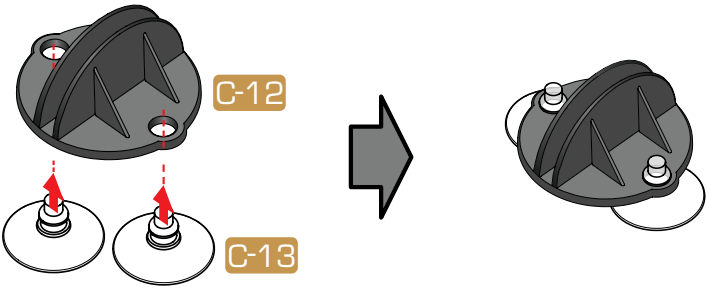


TRACK ASSEMBLY

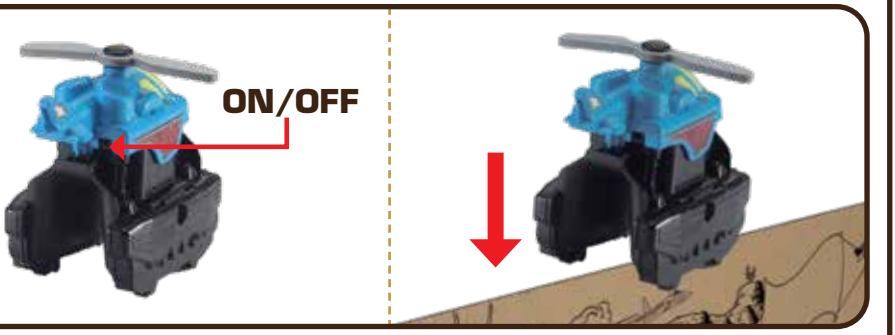
BUILDING THE LOW U-TURN TRACK

12

If necessary, add suction cups to one stand to make it stay on the floor firmly.



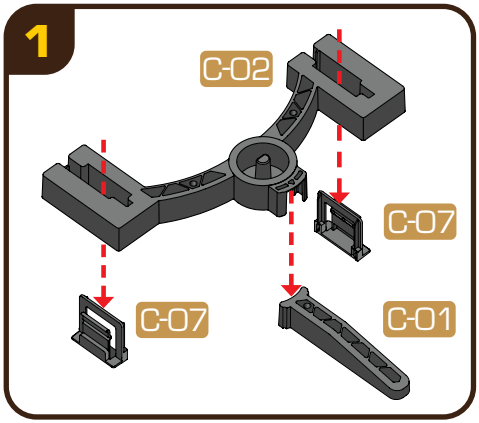
Switch the helicopter on and place it carefully on the track to start the rush.

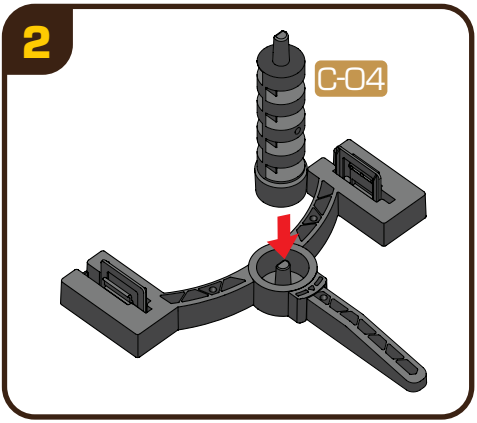


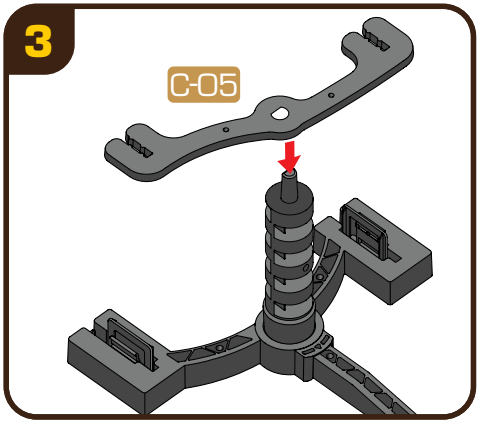
TRACK ASSEMBLY

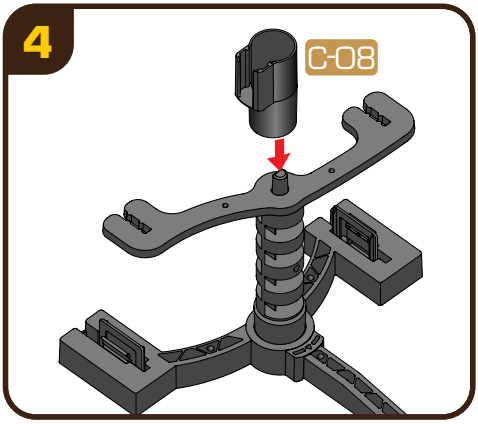
You may build a higher platform too!

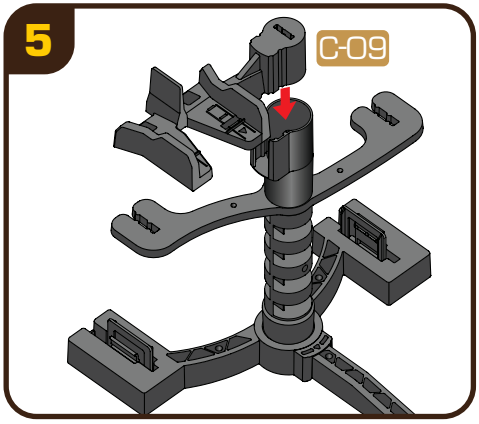
BUILDING THE HIGH U-TURN TRACK

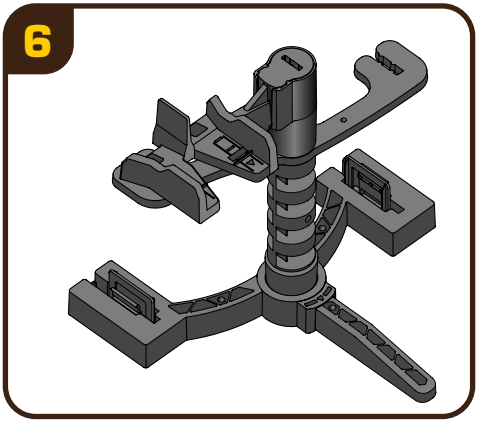






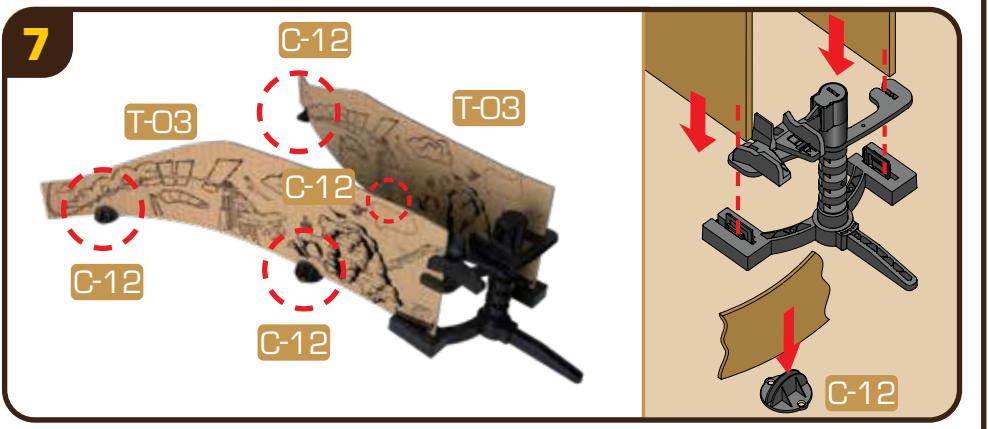


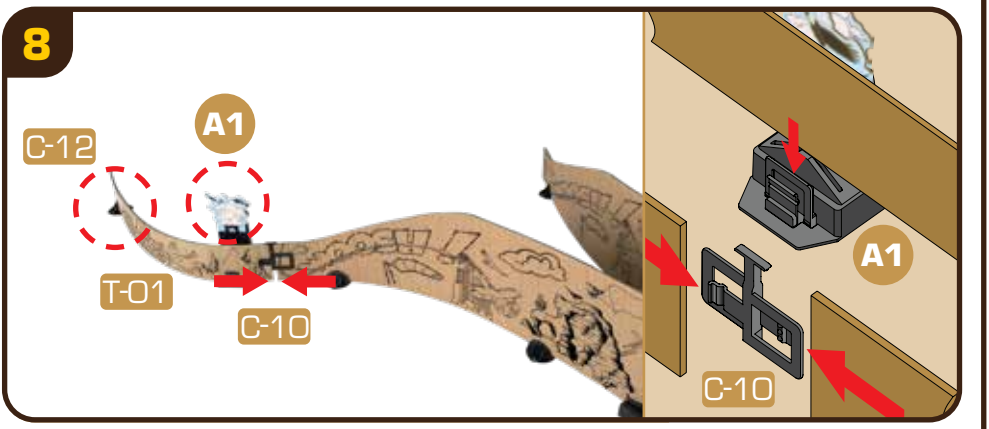


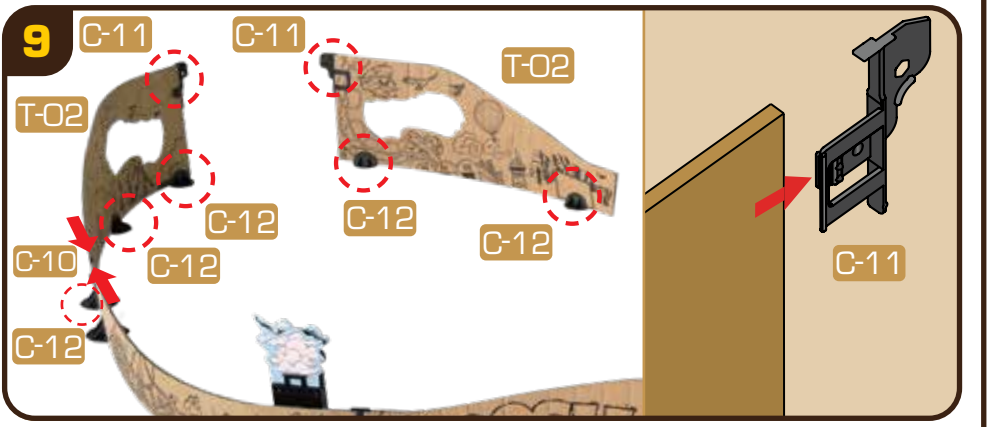


TRACK ASSEMBLY

BUILDING THE HIGH U-TURN TRACK



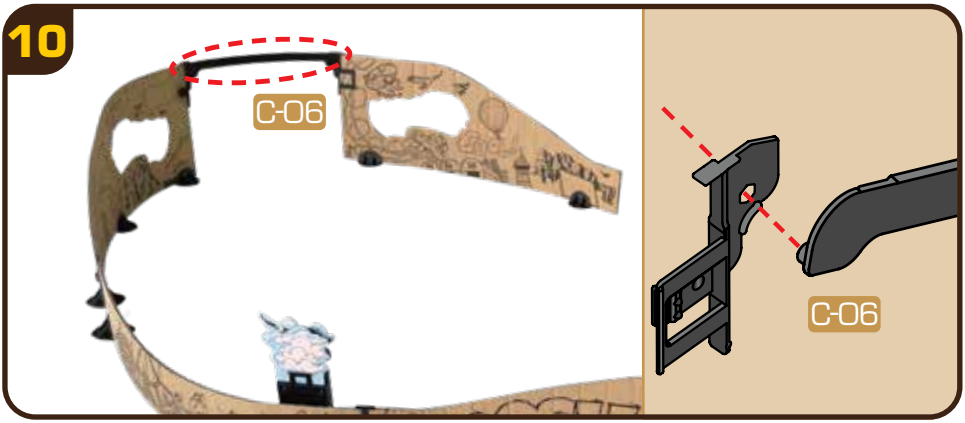




TRACK ASSEMBLY

BUILDING THE HIGH U-TURN TRACK

10



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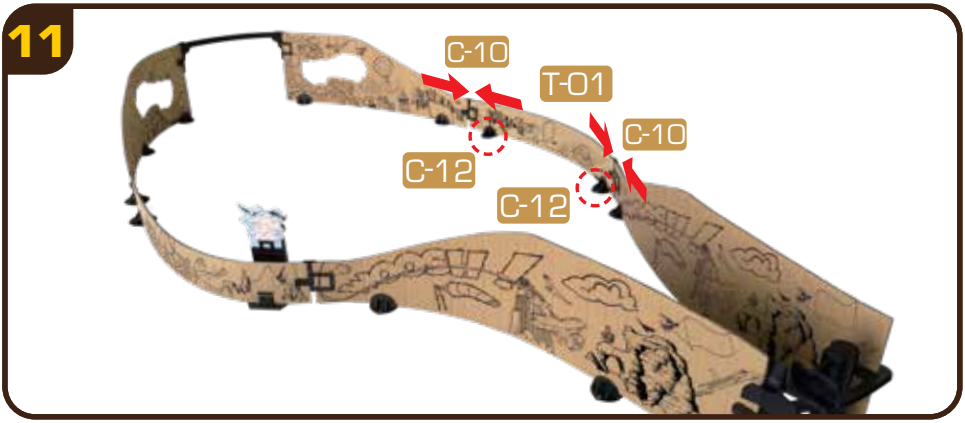


12

Getting Started

DIY

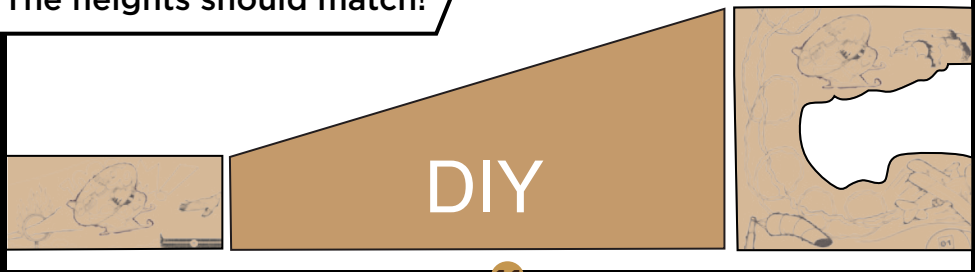
Gather your DIY tools.

Warning: Adult supervision is required.
Attention : Ce jouet doit être assemblé par un adulte.

Recycle any spare cardboard with thickness of approximately 6-8mm to make new tracks.

Use the ruler to measure the height.

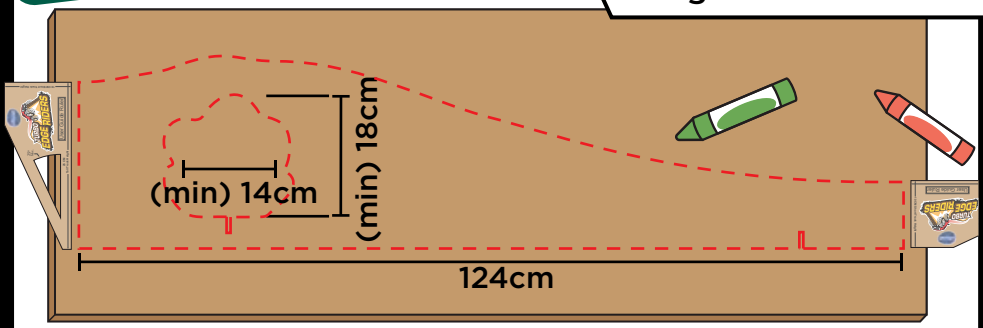
The heights should match!

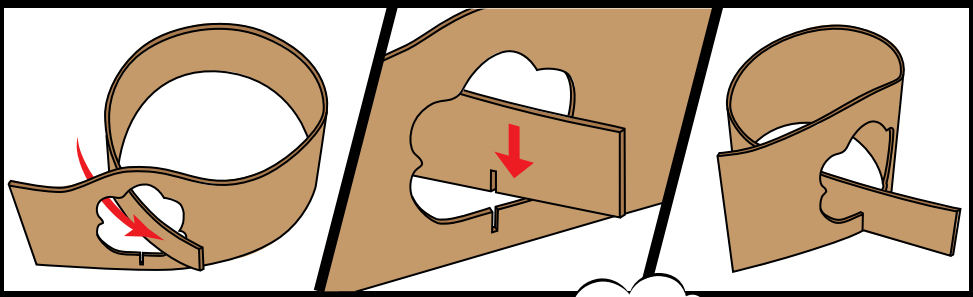


DIY

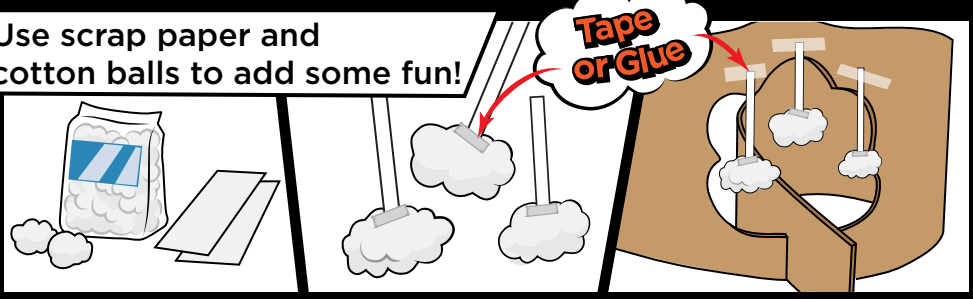
More Tracks, More Fun

Design some DIY track.

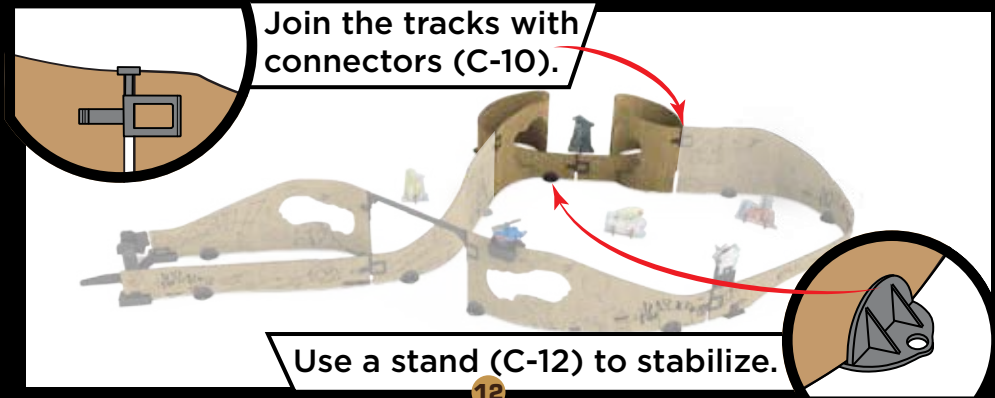




Use scrap paper and cotton balls to add some fun!



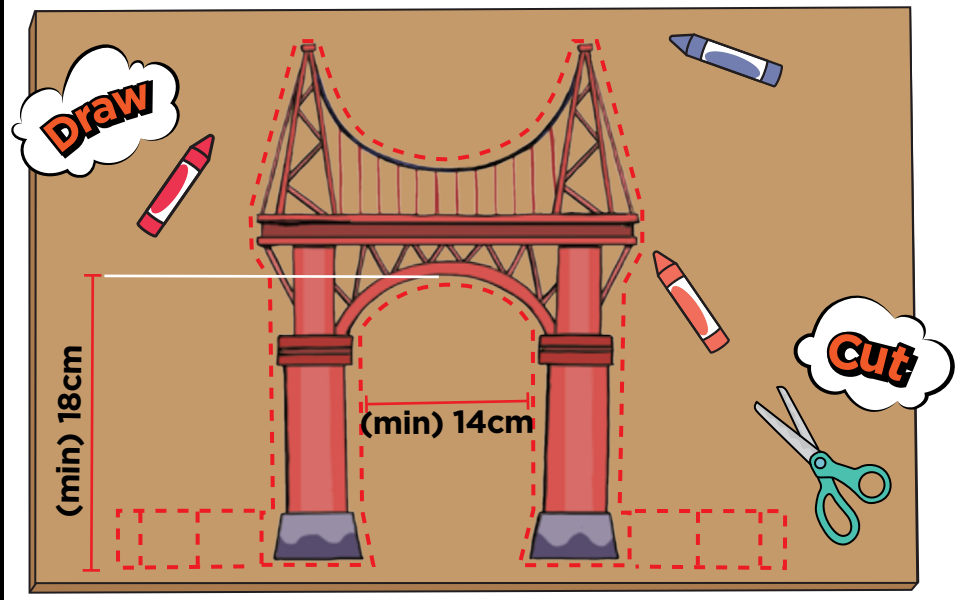
Join the tracks with connectors (C-10).



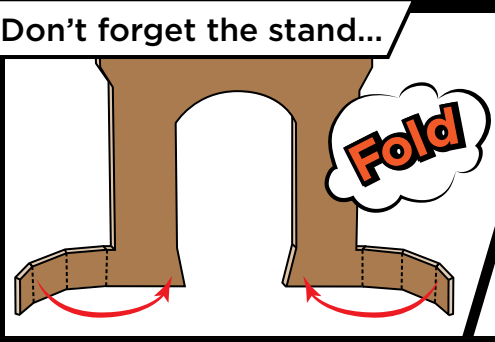
Use a stand (C-12) to stabilize.

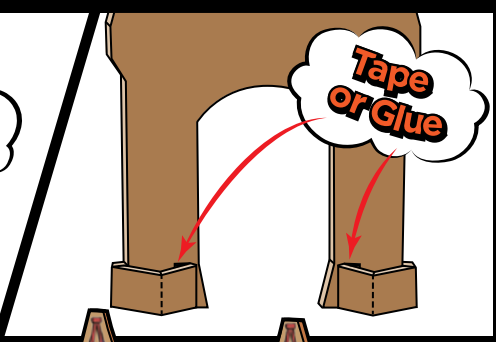
DIY

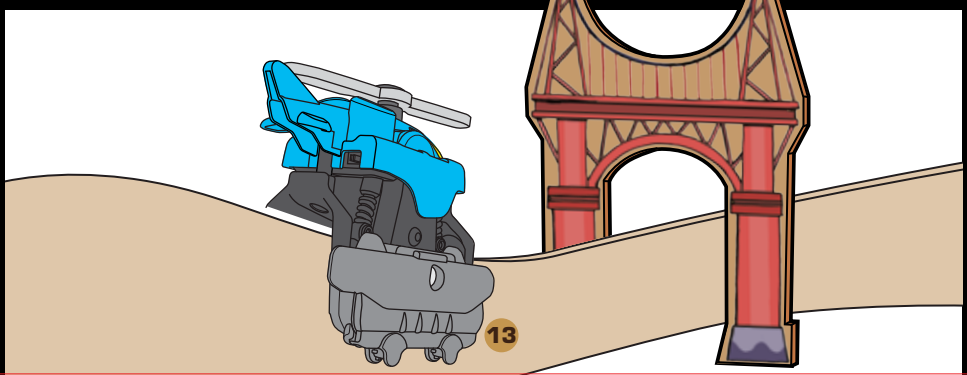
Design Fun Accessories



Don't forget the stand...

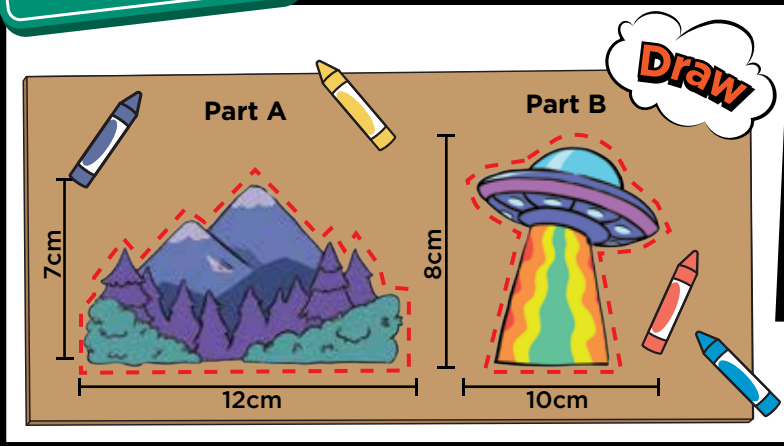


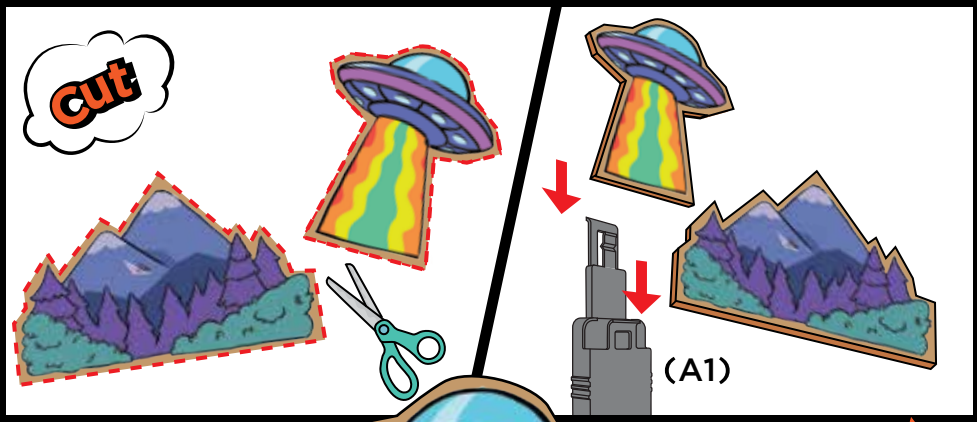




DIY

Make a Pop-up UFO





STEAM
Think Like an Engineer!

What Engineers Do?
- Design
- Build
- Fix things

The Engineering Design Process
is a way of thinking to solve problems.

1 Start with a question

Example:

How can I make a paper airplane that flies across the room?

2 Plan and Design

Start by researching.

Write or sketch ideas.

Pick an idea to try.

There are no bad ideas in brainstorming.

Brainstorm
- Different colors of paper
- Throw plane harder
- Use thick paper
- Change size of wings
- Try new folding method

Start to build

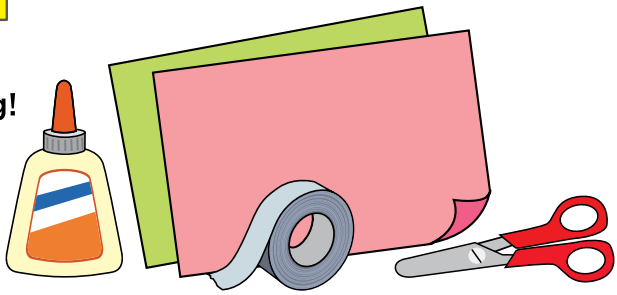
STEAM
Think Like an Engineer!

! Ask an adult for help with safety.

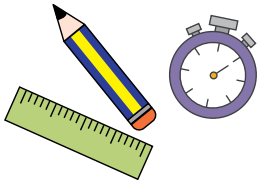
3 Build

Gather materials and start creating!

It doesn't have to be perfect!



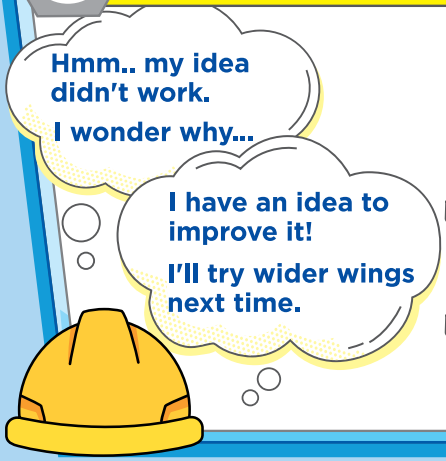
4 Test



Gather testing tools.

- Set up a testing environment.
- Test your solution in different ways.
- Take notes as you go.
- Test your solution a few times.

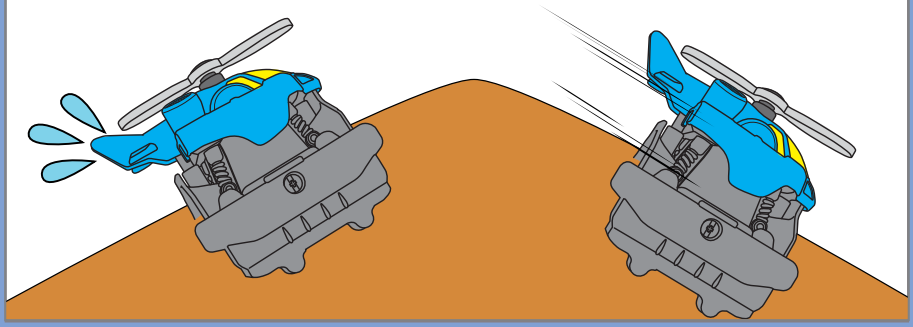
5 Reflect and Improve



- ? What went well?
- ? What could you do differently?
- Go back to the Plan and Design phase to make adjustments.
- Use what you learn on your next try.

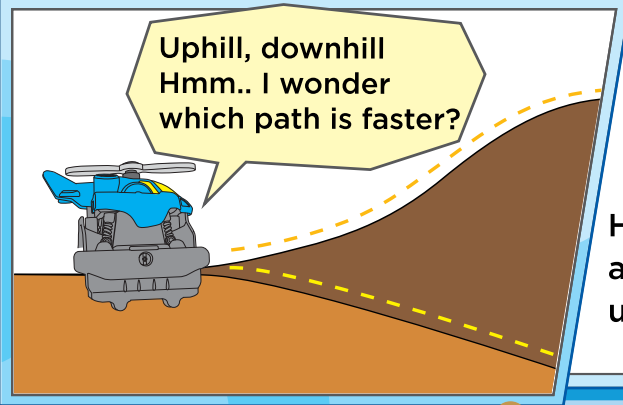
Knowledge Pit Stop 1

- **Gravity** is the force that pulls objects to the Earth.
- When an object tries to go uphill, it must work harder to go against gravity.
- When an object goes downhill, it works with gravity.



Engineering Challenge

1 Start with a question

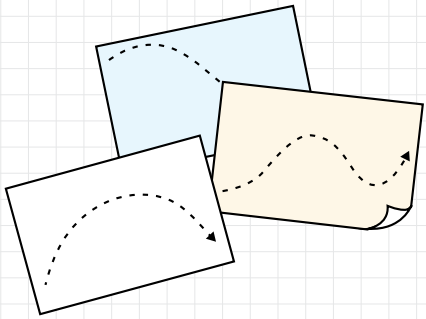


How does the speed of a car change driving uphill versus downhill?

2 Plan and Design

Sketch out track pieces with slopes that go uphill and slopes that go downhill.

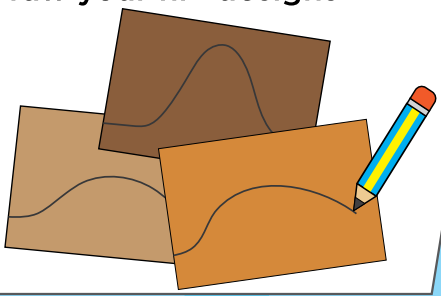
Try out slopes with different levels of steepness.



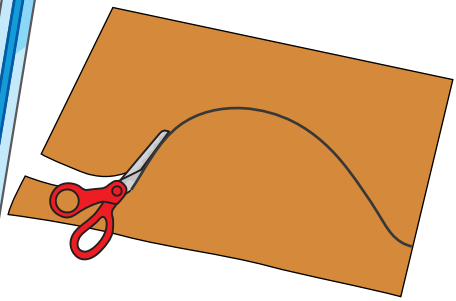
Pick an idea you'd like to try

3 Build

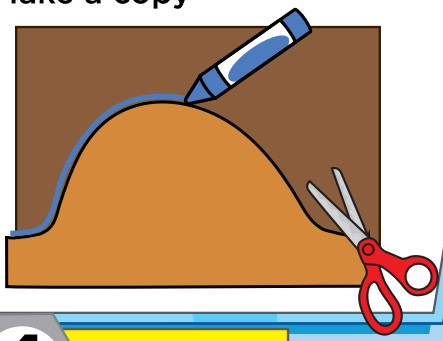
Step 1:
Draw your hill designs



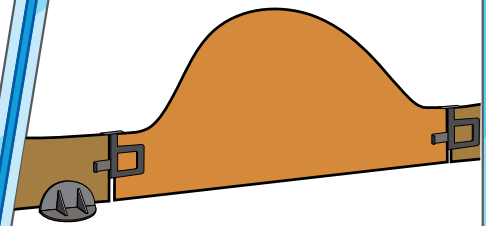
Step 2:
Cut your designs



Step 3:
Make a copy



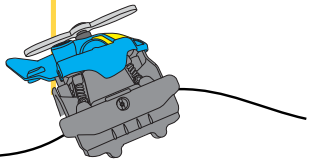
Step 4:
Assemble your track



4 Test

Faster going uphill or downhill?

Hill A	Hill B	Hill C	Hill D



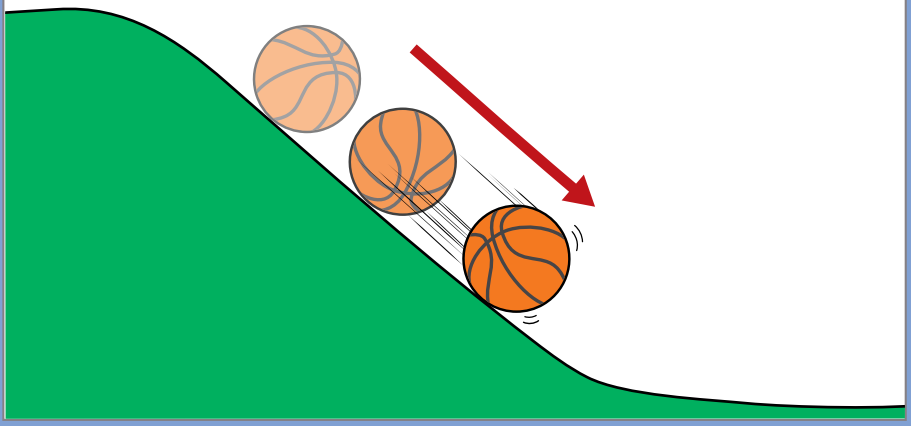
Rank the speed from *1* (fastest) to *4* (slowest) at the highest or lowest point

5 Reflect

- Is it faster for cars to go uphill or downhill?
- How does the steepness of the slope change the speed?
- Can you adjust the copy to make each hill too steep to climb up?

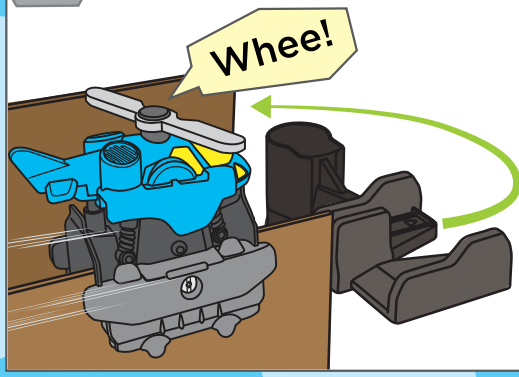
Knowledge Pit Stop 2

- **Momentum** is the force of an object in motion. With faster speeds, an object has more momentum.
- A moving object continues moving in the same direction unless another force acts on it.



Engineering Challenge

1 Start with a question



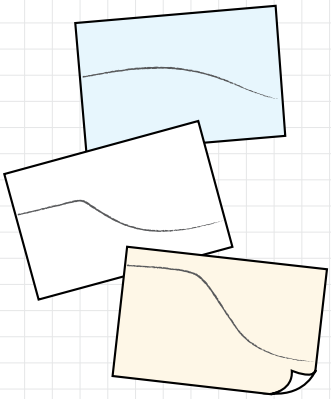
?

How can we make sure the helicopter completes the U-turn?

2 Plan and Design

Think about what you learned from Challenge #1 to make the car move at a faster speed.

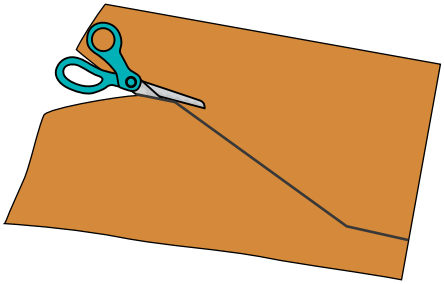
Sketch tracks with different levels of slopes and curves.



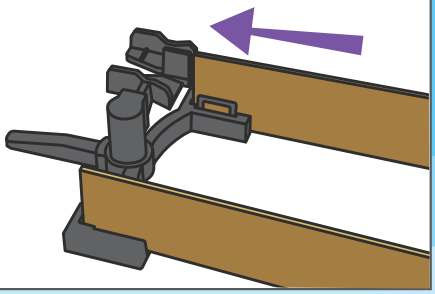
Pick an idea you'd like to try

3 Build

Step 1:
Draw your designs

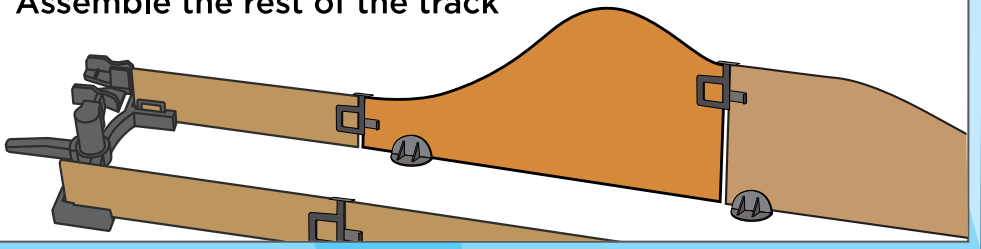


Step 2:
Provide a straight track leading up to the U-turn



Step 3:

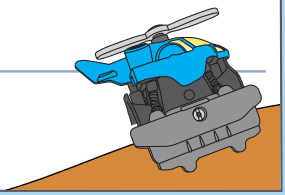
Assemble the rest of the track



4 Test

Try the different slopes, curves, and tracks.
Fill out the chart below with whether the helicopter can complete the turn.

Draw 3 track pieces below	Can the car complete the U-Turn?

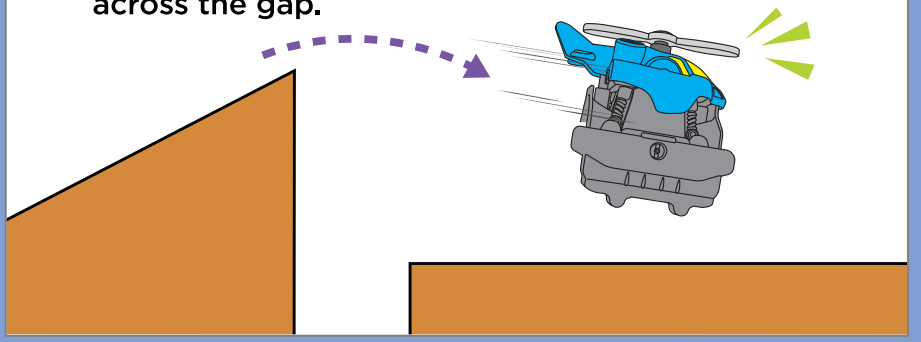


5 Reflect

- Which track pieces worked best to complete the U-Turn?
- Did any track pieces not work?
- Why did the best piece work better than other pieces?

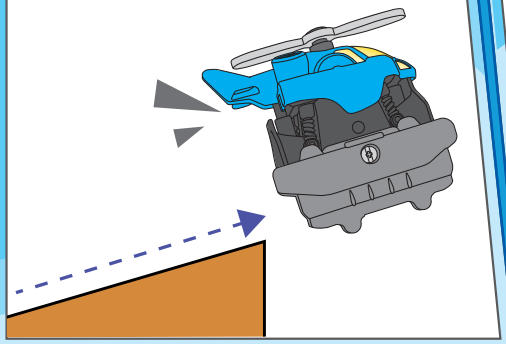
Knowledge Pit Stop 3

- The Turbo Edge Rider builds **momentum** as it moves along the track.
- The faster it goes, the greater the momentum.
- When a Turbo Edge Rider leaves a ramp, gravity will try to pull it down.
  But with enough momentum, the vehicle can get across the gap.



Engineering Challenge

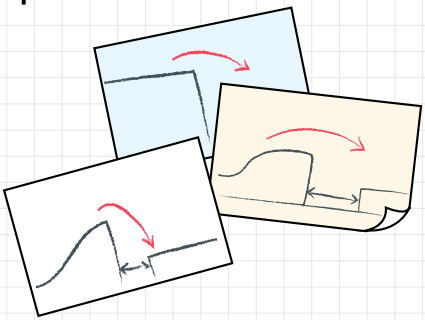
1 Start with a question



How can I make the Turbo Edge Rider jump as far as possible?

2 Plan and Design

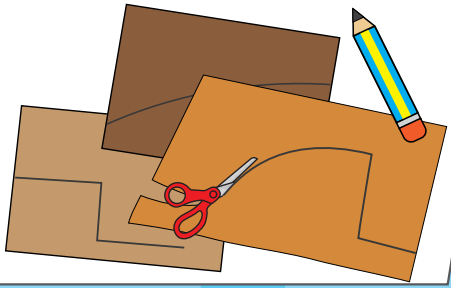
A Turbo Edge Rider needs to go fast and to be pointed upward before it can make a jump.



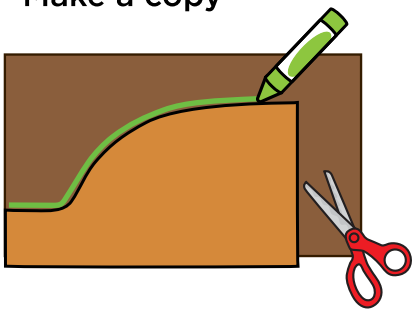
Pick an idea you'd like to try

3 Build

Step 1:
Draw and cut your designs

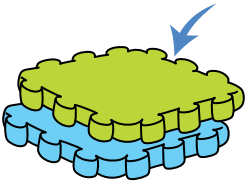


Step 2:
Make a copy



Step 3:
Assemble the track and prepare a landing zone with a mat

soft materials
example: foam mats



4 Test

Draw different kinds of gaps in the Test Table below.

Gaps (Draw 3 gaps below)	Can the Turbo Edge Rider jump across safely?
Gap A	
Gap B	
Gap C	

Test your best jump!

5 Reflect

? Can Turbo Edge Rider jump all 3 gaps safely?

? What kind of ramps can a Turbo Edge Rider jump?

Jr. Engineer

CERTIFICATE

Awarded to:

_____

vtech®

_____ _____

Date **Awarded by**