ROBLOX LESSON 3

CONSTRAINTS PT2

CodeCreate

REVIEW: NAME THE CONSTRAINT

trampoline

tic-tac lid

Pogo stick

fishing line

wind turbine

wheelbarrow

walking escalator

automatic train door

sculture

CLASS ACTIVITY: CONSTRAINTS PT2

1. First, let's start by adding a mechanism that lets our fan spin from left to right! Let's add an attachment point to the top of our base to allow constraints to be added!

2. Next, let's add a cylindrical constraint between the base attachment and the cylinder. This will let our fan to rotate along the base!

3. Next, let's move the fan components back to place and add a torque to the second cylindrical constraint!

4. Let's test this system by clicking the play drop-down in the tab menu. Then, click on the run button.

EXTENSION ACTIVITY: TRAMPOLINE

Getting Started

1. Download the Lesson3_Extension.rbxl

Hint: This model uses four regular springs in the corners of two identical rectangular parts to construct the trampoline. Have a think about how it works and how you can build it.

Hints: Anchored guides are added to the sides to add a safety barrier for the trampoline! Just like in real life.

Challenge: See if you can play around with the different string properties to get the desired trampoline effect! Remember how last week we talked about special string properties; **damping**, **stiffness** and **limits.**

Properties - SpringConstraint "SpringConstraint"

Filter Properties (Ctrl+Shift+P)

Appearance	
Data	
ClassName	SpringConstraint
Name	SpringConstraint
Parent	Part
Behavior	
Limits	
MaxLength	20
MinLength	10
Derived	
Spring	
Damping	2
FreeLength	20
LimitsEnabled	☑
MaxForce	inf
Stiffness	10000
Attachments	
Attachment0	Attachment
Attachment1	Attachment

TERM PROJECT: RACING GAME

1. Continuing from last week, let's move the wheel module together using the move tool so our wheel is right next to the wheel mount.

2. Let's test our spring's settings by anchoring the spring (tick the checkbox).

3. Once you're satisfied with the "springiness", continue to the next step.Next, we should move the wheels next to the base using the move tool..

4. Next, we can duplicate this wheel four times to give our four driving wheels.

5. Next, let's weld the wheel mounts to the base so they don't fall off when we start driving!

Protip: Before we start, let's show the weld details so we know what we're working with. In the Models tab, check show welds.

6. Select welds from create. Click the wheel mount, then the blue base. This should create a single weld. Repeat this for both back wheels (wheels further from seat).

7. Next, we should hinge the front wheels. Let's select the hinge constraint from the model tab.

Then select the wheel mount and the closest attachment point on the blue base. It should look like this:

8. We should select both hinges in the Explorer and set their properties. We should change the default properties to the following.

B. Set Hinges as Servos

Properties - HingeConstraint "HingeConstraint"	
Hinge	
ActuatorType	Servo
LimitsEnabled	☐

C. Set Servo Properties

Servo	
AngularSpeed	5
ServoMaxTorque	100000
TargetAngle	0

9. Finally, let's move the hinge attachment points closer to the base so that the car turns better. Move the attachment point on the wheel mount one click towards the blue base. You should end up with the following result.

10. Don't forget to rename our four wheels to: WheelBL, WheelBR, WheelFR, WheelFL.

Have fun customising your vehicle!

Try adding colours, shapes, changing springiness or other components we've covered in this course.