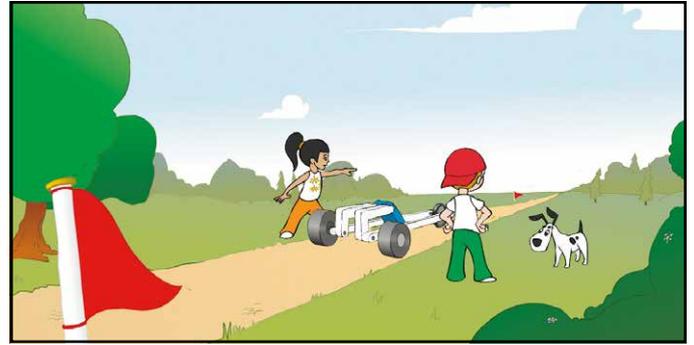


# Dragster

Name(s): \_\_\_\_\_  
 \_\_\_\_\_

How can we make the dragster go further?  
 Let's find out!



## Build the Dragster and Launcher

(all of book 12A and book 12B to page 10 step 13)

- Place the dragster on the launch ramp and lift it up by pressing down on the handle
- The big gear on the launcher should mesh with the gear on the dragster
- Start the motor by pushing down the battery switch
- Lower the ramp. The dragster should roll off smoothly onto the floor

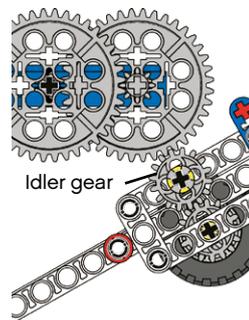


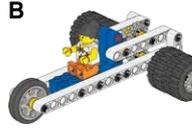
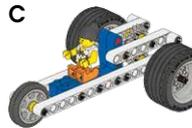
## How far will your dragster go?

- First predict how far dragster A will travel. Then test your prediction. Next, follow the same procedure for dragsters B and C. Which will travel the furthest?
- Test several times to make sure your results are consistent. Test results may vary depending on surface of your test track.

### Did you know?

An idler gear changes the direction of rotation, but does not affect the output speed.



	My Prediction	My Measurements
A 		
B 		
C 		

**Tip:** If your dragster vibrates, one of the tires might be sitting unevenly on its hub. This increases axle friction and leads to large energy losses.

Can you explain what happened when you changed the wheels?

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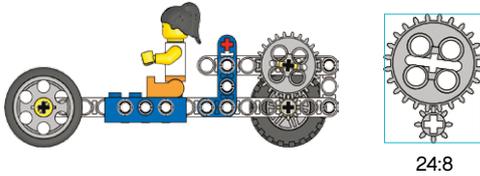
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### Can your dragster go even further?

To gear up your dragster, first disassemble it (book 12B to page 3, step 3), and then:



Replace the 16:16 gearing with a 24:8 gearing. Now build your geared-up dragster (book 12B to page 9, step 12).

- First predict how far geared-up dragster D will travel. Then test your prediction. Next, follow the same procedure for your geared-up dragsters E and F. Which will travel the furthest?
- Try other ideas and combinations to make your dragster travel even further.  
How far does your best dragster travel?

	My Prediction	My Measurements
D 		
E 		
F 		

### My Dragster

Draw and label your favorite dragster design. Explain how the 3 best parts work.