



build a stationary bike

Play with this realistic model of a stationary bike and learn how simple machines work together in order to produce an outcome. Experiment and discover how velocity depends on the pulley's size.

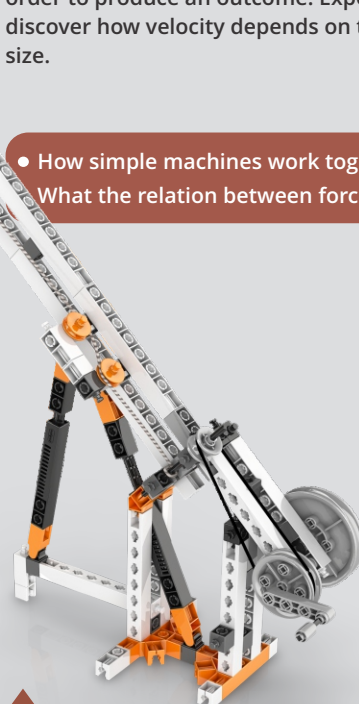
- How simple machines work together. What the relation between force-velocity is.



build a windmill

Construct this model of a high speed windmill and learn how pulleys can be used to transfer power from one position to another. Experiment and discover how a small pulley can drive a larger one and how the speed changes from one pulley to the other.

- What a belt drive is and how it is used.
- How to increase or decrease pulley's speed.



build a construction crane

This model of a construction crane is another example of the use of pulleys. Experiment and learn how force is transferred from one point to another and how we can gain mechanical advantage.

- How to transfer force.
- What the mechanical advantage of pulleys is.



build a crane bridge

Construct this model of a crane bridge and try to lift some objects, finding out how pulleys can help you lift heavy objects easily. Compare your model with different real life cranes and learn their differences.

- How to lift heavy objects with a pulley.
- How real-life cranes work.

DISCOVERING STEM

Science • Technology • Engineering • Mathematics

MECHANICS

pulley drives

Learn how Pulley drives can be used to transfer force with reduced friction and how they can increase force or speed at amazing levels. Pulleys have been used for thousands of years and are essential parts of complex machines in modern times, solving many technological problems. Build 8 working models such as a material lift, a stationary bike, a crane bridge, a blender, a construction crane and a windmill. You can find easy-to-follow building instructions for all models either online or in the booklet included. The booklet provides detailed explanations of the different scientific principles applied and incorporates innovative experimental activities for hands-on learning. A Quiz section is also available to challenge your newly acquired knowledge!

10

pages of
theory and amazing facts!

3

pages of
experimental activities!

2

pages of
revision quiz!

3

pages of
step by step instructions!

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