

# 8 LEGO BRICK BUILDING CLASSES

## AEROSPACE

Launch your imagination to new heights as you explore **aerospace engineering**! Discover the secrets of working in space ñ efficiency and compact design. Create a trussed space station module, then connect it with others to create a massive modular spacecraft.



## TOWERS

Reach for the sky! Find out how **structural engineers** use ideas from physics to solve problems. Work together to build a structurally sound tower with a working elevator, then test and improve your design for strength and stability.

## CARNIVALS

Feel the thrill as you build a spinning swing ride! Learn about the forces and **mechanical engineering** concepts behind some of your favorite amusement park rides. Then improve and test the design to create an even wilder ride.

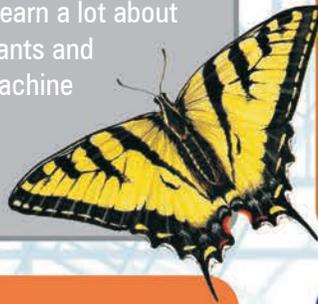
## BOATS

Create a sea-worthy vessel as you set sail with **nautical engineering**! Build and test a boat powered by potential and kinetic energy. Then try changing specific variables to improve speed, buoyancy, and stability.



## CREATURES

Discover nature's engineering secrets as we investigate **biomimicry**! We can learn a lot about efficient design from observing plants and animals. Build a walking insect machine then test different ways to help it climb up the steepest branch.



## BRIDGES

How can you build the strongest bridge? Work together with your fellow **civil engineers** to build and test different bridge designs. Then use what you've learned to create the strongest bridge possible.

## VEHICLES

Get in gear as an **automotive engineer**! Build a motorized vehicle and learn how to optimize it. Use wheels, axles and gears to reduce friction and make it work better. Then shift things into a higher gear to get a hands-on understanding of transmissions and gear ratios.

## MACHINES

Engineering is creative! Learn how gears, levers, and pulleys are useful tools for **mechanical engineers** then combine them with art and design to create and test a motorized drawing machine.

