

Inquire & Investigate

SKATEBOARD RAMP DESIGN

Your town is looking to design a skateboard park and they have asked for designs and suggestions. You and a group of your friends have some ideas for ramps and would like to submit them to the committee.

- **To decide on the size, shape, and angles of the ramps, take a look at some skateboard ramps, either online or at another park.** Some are relatively flat while others are quite steep with lips at the end. Think about what shape would be a good shape for your ramps. What questions do you need to consider. These could include:

- a) Who are the ramps intended for? Beginning boarders or more experienced ones?
- b) How much room do you have at the end of each ramp?
- c) How high can you make them?

WHAT KIND OF FRICTION?

Static friction is the friction between two objects that are not in motion, like your feet on the board.

Sliding friction is when one object slides along another object, which might happen if you fall off your board and slide down the ramp. Rolling friction is the friction between a wheel and the surface it's rolling on. Fluid friction is the friction between an object and a fluid, such as a skateboarder moving through the air.



ACTIVITY!

- **Consider the materials you'll want to use.** One of the main ideas surrounding a skateboard ramp is the concept of rolling friction. You want to maintain a good ride, while being as safe as possible. What type of material should you use to coat your ramps? Research what ramps are made of today and think about if this is what you want to use for your ramps. Which materials are best for safety? Which are best for tricks? Do some materials wear away more easily than others? Are there other, manufactured materials that are safe for the environment and for the user?
- **What shapes do you want to utilize?** Skateboarders are concerned with the heights they can reach as they come up over the top of the ramp and the distances they can cover. Which shapes would be best to achieve the greatest height with the least amount of force? How do the forces on the person and the skateboard differ with different ramps?

To investigate more, work with your group to design a scale model of your ramps. Test them if you can with toy skateboards. Compare your group's design with the design of others. Which would be the best ramp for experienced skateboarders? Which would be best for beginners?

Ideas for Supplies ▼

- graph paper
- pencil
- Internet

