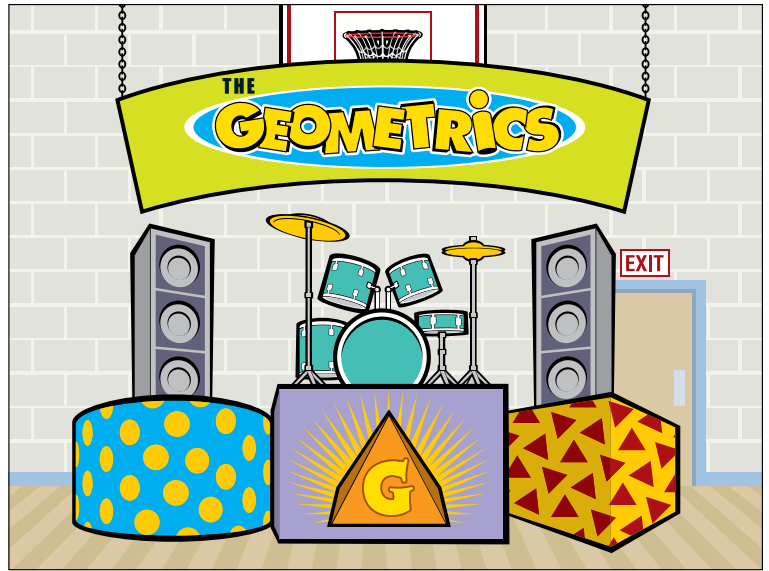


Turn Up the Volume!

The Geometrics like to play loud. Using volume formulas, the Geometrics Stage Crew can tell them how loud they can play.



- 1 The Geometrics decide to play a concert in the gym. The gym measures 100 feet long by 60 feet wide by 30 feet tall. The band asks the stage crew how loud they can play in this gym. After some experimenting, the stage crew calculates that the band can turn up their amplifier volume one notch for every 18,000 cubic feet. **So how loud can The Geometrics have their amplifiers in this room?**

- 2 The gym can fit 1,200 people. The Geometrics usually attract 1,500 people. **How many square feet should the floor be to accommodate that crowd based on the measurement above?**

- 3 The Geometrics Stage Crew finds another gym at a nearby school to put on the show. It has a floor area of 8,000 square feet and a total volume of 280,000 cubic feet. **How tall is the ceiling?**

- 4 The Geometrics Stage Crew creates a huge hologram of the band's square pyramid logo that they can project into the audience. They want the projected pyramid to look like it's resting on the floor, with its peak touching the 30-foot-high ceiling. The band also wants the volume of the pyramid to be 6,250 cubic feet. **Based on these numbers, how long would one side of the pyramid's base be?**