

# **SAFETY ISSUES with ROBIX ROBOTS**

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The Robix™ Rascal is **not intended for use by children under 12 years of age** unless supervised by an adult. Also, groups of two or more children aged 12 and over may still require adult supervision since **children in groups may be more playful and incautious than the same children are individually.**

The **main hazard** which we have so far identified in using the Rascal is the potential for someone to be **poked in the eye if their face is too close to a powered robot.** Below we discuss how eye-poke accidents might happen, and provide simple Safety Rules to help prevent them.

**Other hazards exist and are generally identifiable by common-sense examination of your robotic setup.**

All users, children and adults, must bear in mind that

**\*\*\* ROBOTS MAY MOVE SUDDENLY AND WITHOUT WARNING \*\*\*  
(even if they have been not done so before)**

That is, robots which appear to be stopped may suddenly start moving, and robots which appear to be moving in a consistent pattern may suddenly change their motion pattern sharply. Sudden motion happens routinely when the robot starts up, and from intentional or unintentional programming of the robot, and can also happen from equipment malfunction.

You should demonstrate sudden motion to yourself and your students or children. Sudden motion occurs for instance when the robot is first powered up or when the "control/restart" menu selection is selected. The robot will move sharply to its starting position. For emphasis, repeat the demonstration with a few objects in the robot's path which it knocks over as it moves.

**KEEP YOUR FACE CLEAR OF POWERED ROBOTS.**

**SAFETY GOGGLES OFFER USEFUL BUT ONLY INCOMPLETE PROTECTION IF AN OPERATOR HAS THEIR FACE CLOSE TO A POWERED ROBOT, SINCE THE ROBOT COULD DISLodge THE GOGGLES AND POKE THE EYE IN A SINGLE MOTION.**

**SAFETY BOUNDARIES SHOULD BE MARKED WITH BRIGHTLY COLORED TAPE AT A GENEROUS DISTANCE AROUND A ROBOT'S WORKING AREA BEFORE POWERING UP.**

To maintain safety, use common sense and observe these rules:

**IMPORTANT SAFETY RULES FOR ALL RASCAL USERS:**

**ALWAYS KEEP YOUR FACE OUTSIDE ROBOT SAFETY BOUNDARIES WHEN WORKING WITH A POWERED ROBOT, AND WEAR SAFETY GOGGLES AS EXTRA PROTECTION IF YOU REACH ACROSS SAFETY BOUNDARIES TO HANDLE YOUR POWERED ROBOT.**

**NEVER CROSS SAFETY BOUNDARIES AROUND SOMEONE ELSE'S ROBOT.**

**NEVER HAVE A ROBOT THROW ANYTHING EXCEPT A TABLE-TENNIS BALL OR A SOFTER, LIGHTER OBJECT. ESPECIALLY DON'T THROW MARBLES OR ROCKS.**