Zippy Bots

ROBOTICS, MOTION + ENGINEERING DESIGN

What Students Do

Students build a vibration-powered bristle robot, observe how motor vibration creates motion, test movement patterns, change one approved variable, and compare before/after performance. They also distinguish a simple robot from an AI system and use physical evidence to decide whether a design recommendation actually improves performance.

24	90	3-6	1
STUDENTS	MINUTES	GRADES	SHARED AI DEVICE

KNT Classroom Pack Includes

- Teacher Guide and facilitator resources
- Student Activity Book + Robotics & Motion Data Sheet
- Bristlebot build components: brush base, vibration motor, approved power component, adhesive, pipe cleaners, and decorative eyes
- Challenge / test cards for observing movement and redesign
- Printed AI design-recommendation backup card for no-internet settings
- Test surfaces, lane tape, and stopwatch are site-supplied

Students Learn To

- Explain how electrical energy powers vibration and motion
- Distinguish a robot from an AI system
- Observe movement patterns such as straight, curved, spinning, slow, or fast
- Change one approved variable and compare before/after results
- Use evidence to explain whether the redesign improved performance
- Verify an AI recommendation through physical testing

How It Works

1. **BUILD** — Assemble the bristle robot with brush base, motor, approved power component, and lightweight design pieces.
2. **TEST** — Run three short baseline trials and record the dominant movement pattern.
3. **MODIFY** — Change one approved variable such as balance, motor position, or test surface.
4. **VERIFY** — Retest, compare evidence, and decide whether the change improved performance.

AI Can Suggest. Engineers Test. Evidence Decides.

AI may recommend one variable to test, but actual movement depends on the real bot, its surface, weight distribution, and motor placement. Students test the prototype before accepting the suggestion.

Pairs with KNT curriculum, classroom kits, staff training, and expanded-learning implementation.

Kids N Technology

Hands-on AI + STEM learning for schools, afterschool, summer, and youth-serving programs.

Discuss Curriculum + Kits

kidsntechnology.net/contact