MS

On my ESTEM Quest, I

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Student name & grade

pledge to take small actions every day for a big green impact!

Waste Reduction	Energy & Conservation	Neighborhood & Nature	Upcycling & Innovation
School / home lifecycle analysis Research the full lifecycle of a common single-use item (e.g., plastic water bottle) and write a 3-step proposal to replace it.	**Household energy calculation** Calculate the estimated energy usage of 3 home appliances using wattage labels and brainstorm a efficiency plan.	**Storm drain protection** Adopt a local storm drain; clear debris, leaves, and trash to prevent polluted runoff from reaching local waterways.	**E-STEM prototype** Design a functional prototype (e.g., self-watering planter, rainwater collector) using only recycled materials.
Local recycling guide campaign Create an infographic or digital guide clarifying tricky Seattle sorting rules (e.g., compost vs. garbage) for younger students.	**Flow rate investigation** Measure the flow rate (gallons per minute) of a household faucet using a measuring cup and timer; propose low-flow solutions.	**Transit & carbon analysis** Calculate the estimated carbon footprint difference between driving vs. taking Metro transit for a local trip you make regularly.	**Upcycled fashion / gear** Transform old textiles (tote bags, clothing, towels) into a new, functional piece of gear or apparel using basic sewing/knotting.
Composting & soil science Document the biological process of composting; analyze what soil inputs are created and how it sequesters carbon.	**Passive solar study** Track thermal differences in rooms facing north vs. south throughout the day; propose window treatment/shade strategies.	**Invasive vs native species audit** Survey a 10x10 outdoor area; document the ratio of native species to invasive species and research management practices.	**Electronics / material reclamation** Safely disassemble an obsolete non-working device (with permission) to catalog recyclable metals, plastics, and board components.
Contamination mitigation Design a visual sign or color-coded bin system for your home or a classroom that eliminates waste-sorting errors.	**Appliance management plan** Audit heavy draw electronics (gaming consoles, computers, TVs) and set up sleep-mode/power-saving settings on all family devices.	**Community stewardship action** Participate in or organize a 30-minute community clean-up or habitat restoration project in Northeast Seattle.	**Environmental advocacy** Take a common packaged product, engineer an upcycled alternative, and write a pitch letter to the manufacturer advocating for zero-waste packaging options.

Parents: Please initial when your child reaches each milestone

5 ☐ **10** ☐ **16** ☐