**Raise the Roof! Engineering Challenge**

**What:**

* In an eﬀort to help solve the country of Ghana’s recycling challenge and better utilize resources, you are going to create a simulation of a basic housing structure in order to design and build a more sustainable and leakproof roof.
* Once the housing structure and roof are built, water will be poured on it and left for ﬁve minutes.

**Rules:**

* The housing structure must be a 6 in. by 6 in. box with no windows, doors, ceiling, or ﬂoors.
* The roof:
	+ Must cover the entire housing structure, but not hide the housing structure.
	+ Must not hold water.
	+ Must not have any leaks.
	+ Must be made out of resources available to the country of Ghana and recycled materials.
* The shape of the roof will determine the housing structure shape.
* The more recycled materials added, the better the grade.

**Checklist:**

1. Ask questions.
2. Conduct research.
3. Imagine three prototypes.
4. Choose one prototype design.
5. Build the design.
6. Test the prototype.
7. Improve the prototype.

**Grading:**

You will be graded on the following criteria:

* How well the water runs oﬀ the roof.
* How the resources were utilized.
* How much of the structure is made of recycled materials.
* How well the roof holds its shape after ﬁve minutes.