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 **Findley Oaks STEM Connect**

 **4th Grade Design Brief**

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| **Month****February** | Air Powered Car | **Unit**Forces and Motion |

**Standard:**

Students should follow the **Engineering Design Process.**

**Background/Problem: The Johns Creek Toy company needs a prototype for a new toy they are developing. They would like a toy car that runs on air-pressure and travels at least 3 meters. Design and build a car to meet prescribed criteria.**

**Design Challenge:** Students will demonstrate their understanding of forces and motion by designing an air powered car.

**Criteria: Your car must:**

1. Car is made of recycled materials
2. Car uses air-pressure to move
3. Car travels at least 3 meters

Constraints:

1. You must work individually or with a partner - teacher discretion.
2. Make sure you have a design plan before you start.
3. You must budget your money – your team has 20 dollars to spend. No exchanges for returns
4. Your team has 45 minutes to complete this challenge.

Materials: (per person) 2,3, or 4 (teacher discretion)

Toilet Paper Tube $1

Paper Towel Tube $1

1 meter of masking tape $5

Cereal Box / Tissue Box $5

Craft Stick $1

Toothpicks (10) $1

Balloon \* $1

Construction Paper $1 per sheet

1 Meter of string $4

Bottle of Glue $5

Pipe Cleaner $3

Paper plate / bowl $1

CD $2 ea.

Bottle Caps $1 ea.

Water Bottle $5

Tools:

* Markers
* Crayons
* Colored Pencils
* Planning and Reflection Sheets
* Meter Sticks

Paper and pencils to plan.

Options: Brainstorm ideas…. make sure the students have time to plan.