

# Windmill Design Challenge

## Facilitator Instructions

**Time Needed:** approximately 45-minutes

### **Supplies needed:**

- At least one box fan (to test designs)
- **Optional:** extension cord (to plug in the box fan)
- A box of supplies for each group (ideally four groups of eight students or less)
  - Design challenge instructions
  - Six pieces of 8-1/2" x 11" copy paper (to make into blades)
  - Bag of K'Nex (all four boxes should have the same pieces to allow for fairness)
  - Roll of tape (Scotch works fine)
  - Scissors (for cutting paper into fans if needed)
  - 1m of string (this is what will get wound up around the windmill axle)
- Inspiration Photos (for groups struggling to come up with a concept)
- **Optional:** Candy like Jolly Ranchers for group members with "winning" design

### **Directions:**

Have students separate into four groups of eight students (or less depending on class size)

Give each group a box of supplies and have them read the instructions

After 10-minutes, if you see a group struggling show them the "inspirational photos"

Walk around and remind groups about the 1m height limit

When groups are finished with their build, allow them time to adjust and test their model

Time the design

Hand out candy to winners

With about 5-minutes remaining in the period, ask students to tear down their model and place all supplies back in the box.