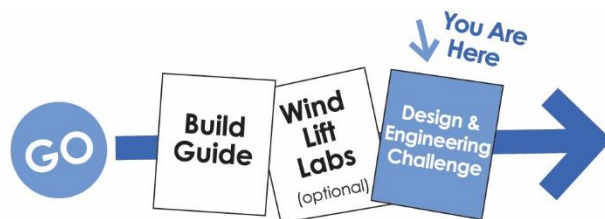


# Heavy Lift Wind Lift Challenge



## The Challenge

Engineer your Wind Lift to raise the most pennies possible.



Download Documents at [teachergeek.com/learn](http://teachergeek.com/learn)



### Before you start...

Make sure you have built a **Wind Lift** for use on this challenge.

### Constraints: (rules and limits for your design)

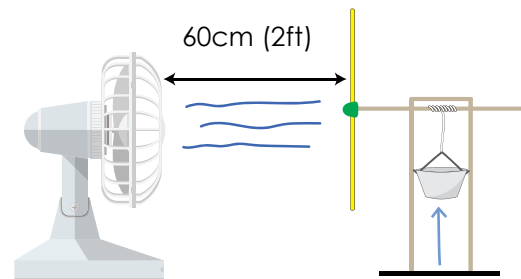
- The **Wind Lift** may be no closer than **60cm (2ft)** from the fan.
- **A Successful Lift:** The bucket must raise at least **15cm (6in)** in under **20 seconds**.
- Pennies must be lifted in the bucket using *only* the power from the wind.
- You may change the **number** of blades, **angle**, **shape** and **area** of blades.
- The **Wind Lift** tower, string and bucket may not be altered (they must be as shown in the **Wind Lift Example Build Guide**).
- You may bring in materials for your blades, if the materials are:
  - **Teacher Approved**
  - **Non-Hazardous** (no sharp edges, harmful chemicals)
- You will have \_\_\_\_\_ to complete the challenge.

*Fill in how much time you have*



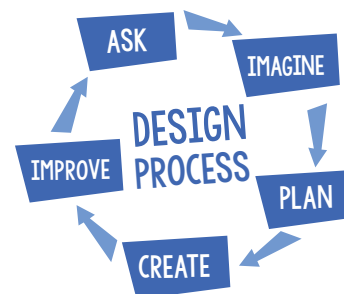
### Challenge Supplies:

**Wind Lift**, material for blades (cardboard, recycled packaging, paper), tape, ruler, scissors, Philips screw driver, ~100 pennies, Engineering Notebook pages, stopwatch.



### The Engineering Design Process:

You will be using the **Engineering Design Process**. What does that mean? Your design is never finished; it can always be improved. There is no such thing as a perfect design. Fill out a new Engineering Notebook page each time you design/redesign your **Wind Lift**.



# Wind Lift Heavy Lift Challenge



## Class Data

Class: \_\_\_\_\_

Set: \_\_\_\_\_

Record the number of pennies each design was able to lift.

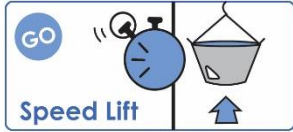
Group Name	Design #1	Design #2	Design #3	Design #4	Design #5	Design #6	Design #7	Design #8	Design #9	Design #10



# Wind Lift Challenge

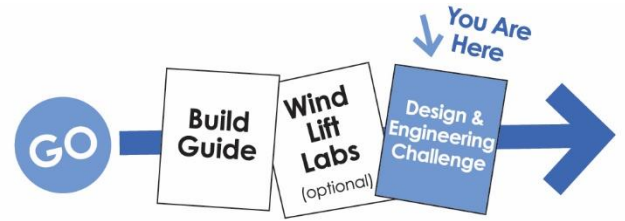
## The Challenge

Engineer your Wind Lift to raise 10 pennies as fast as possible.



### Before you start...

Make sure you have built a **Wind Lift** for use on this challenge.

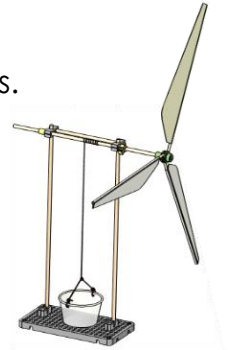


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### Constraints: (rules and limits for your design)

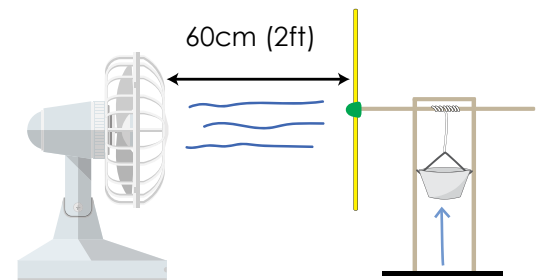
- The **Wind Lift** may be no closer than **60cm (2ft)** from the fan.
- **Lift Time:** The **amount of time** it takes to raise ten pennies **20cm (8in)**.
- Pennies must be lifted in the bucket using only the power from the wind.
- You may change the **number** of blades, **angle**, **shape** and **area** of blades.
- The **Wind Lift** tower, string and bucket may not be altered (*they must be as shown in the **Wind Lift Example Build Guide***).
- You may bring in materials for your blades, if the materials are:
  - **Teacher Approved**
  - **Non-Hazardous** (no sharp edges, harmful chemicals)
- You will have \_\_\_\_\_ to complete the challenge.

Fill in how much time you have



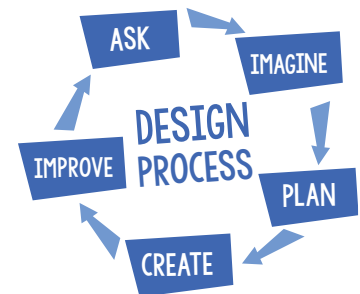
### Challenge Supplies:

**Wind Lift**, material for blades (cardboard, recycled packaging, paper), tape, ruler, scissors, Philips screw driver, ~100 pennies, Engineering Notebook pages, stopwatch.



### The Engineering Design Process:

You will be using the **Engineering Design Process**. What does that mean? Your design is never finished; it can always be improved. There is no such thing as a perfect design. Fill out a new *Engineering Notebook* page each time you design/redesign your **Wind Lift**.



# Wind Lift Challenge



## Class Data

Class: \_\_\_\_\_

Set: \_\_\_\_\_

Record the time each design took to lift 10 pennies.

Group Name	Design #1	Design #2	Design #3	Design #4	Design #5	Design #6	Design #7	Design #8	Design #9	Design #10