

# Applies to all Build-It-Yourself camps at Park School 2017

## Sample Schedule

8:30 – 8:45	Drop off and arrival
8:45 – 9:00	Review lessons learned and set daily goals
9:00 – 10:30	Presentation followed by exercise
10:30 – 10:45	Snack and outside free time
10:45 – 12:00	Presentation followed by exercise
12:00 – 12:45	Lunch and outside free time
12:45 – 1:45	Guided building, show and tell
1:45 – 2:00	Change for swimming
2:00 – 2:45	Free Swim
2:45 – 3:00	Summarize day's accomplishments
3:00 – 3:30	Dismissal

# Minecraft Extreme Engineering 103

<http://build-it-yourself.com/k-missions/proj-minecraft/minecraft-guru.php>

## Presentations followed by exercises:

- Introduce the Build-It-Yourself Laboratory, the laws of the lab, and the importance of teamwork.
- Introduce PowerPoint tools and start a PowerPoint lab book
- Introduce and document the problem and the mission
- Research and document solutions
- Introduce:
  - Value of presenting your ideas
  - Problem solving techniques
  - Logic gates, Oscillators, Flip Flops, Truth tables, Boolean algebra
- Introduce the value of modular construction
- Document building and project planning tricks

## Building assignments include:

- Use Redstone, Boolean algebra, oscillators, logic gates and flip-flops to create advanced:
  - Clock activated devices
  - Parkour games
  - Chain reaction machines
  - Use of admin tools to build quickly
  - Server and mods setup
  - Other applications that sense events and use Boolean algebra logic to activate events

# Minecraft Engineering 102

<http://build-it-yourself.com/k-missions/proj-minecraft/minecraft-hotshot.php>

## Presentations followed by exercises:

- Introduce the Build-It-Yourself Laboratory, the laws of the lab, and the importance of teamwork.
- Introduce PowerPoint tools and start a PowerPoint lab book
- Introduce and document the problem and the mission
- Research and document solutions
- Introduce:
  - Value of presenting your ideas
  - Problem solving techniques
  - Redstone basics
- Introduce the value of modular construction
- Document building and project planning tricks

## Building assignments include:

- Use Redstone to create:
  - Door greeters
  - Fireworks show
  - Traps
  - Combination locks
  - Other devices as requested by campers

# Nature Engineering

<http://build-it-yourself.com/k-missions/proj-nature-engr/index-nature-engr.php>

## Presentations followed by exercises:

- Introduce the Build-It-Yourself Laboratory, the laws of the lab, and the importance of teamwork.
- Introduce PowerPoint tools and start a PowerPoint lab book
- Introduce and document the problem and the mission
- Research and document solutions
- Introduce:
  - Value of presenting your ideas
  - Problem solving techniques
  - The logic that drives evolution (survival of the fittest)
  - 'Miracles' of mother nature
  - The art in nature
- Document building and project planning tricks

## Building assignments include:

- Build an environment where nature, art and technology can live in harmony.
- In the Build-It-Yourself Jungle Garden we will pretend to be:
  - bees building a honey comb to store food
  - birds building a nest home
  - ants digging a tunnel
  - plants growing a structure that will not bend or break in the wind

# Catapult Engineering

<http://build-it-yourself.com/k-missions/proj-catapult/index-catapult.php>

## Presentations followed by exercises:

- Introduce the Build-It-Yourself Laboratory, the laws of the lab, and the importance of teamwork.
- Introduce PowerPoint tools and start a PowerPoint lab book
- Introduce and document the problem and the mission
- Research and document solutions
- Introduce:
  - Value of presenting your ideas
  - Problem solving techniques
  - History of catapults
  - 4 factors that determine catapult trajectory
  - Sensors and fuses to trigger a catapult
- Document building and project planning tricks

## Building assignments include:

- Build a catapult that chucks a water balloon at a target. (An unwelcome guest)
- Build the mother of all catapults that can launch a projectile for the galaxy record.
- Build sensors and fuses that trigger a catapult to repel the evil doers.