

YTP - Module YTP01

Arduino & Micro-Controllers

**Teachers Handbook LESSON 8**

**Servos**

# Goals & Success Factors

### Lesson Goal

* To understand what a servo is
* Build a servo circuit with Arduino
* Code the circuit, test it and experiment
* Complete the challenge circuit
* Stretch goal – explain for loops

### Lesson Success Factor(s)

* Able to explain what a servo is
* Demonstrate a working servo circuit
* Able to explain how the code works
* Stretch SF: Explain for…loops

# Runsheet (Guideline)

PART 1

00:00 Introduction

00:05 Goals & Success Factors

00:10 Recap of last week

00:15 Introduction to servos

00:20 Watch servo video how to

00:25 Servos in action - discuss

00:30 Build a simple servo circuit. Code/Test/Verify (with instructor)

01:00 BREAK

PART 2

01:15 Challenge project – Light one or more LEDs with a servo

01:25 Build the circuit

01:40 Code/Test/Run the circuit

02:00 FINISH

**Extension(s)**

Add more than one LED to the circuit

# Students Pre-work

Watch the following video:

N/A

# Teachers Pre-work

Read the following tutorial about Servos:

<https://www.sciencebuddies.org/science-fair-projects/references/introduction-to-servo-motors>

Watch the following video:

**Servos Tutorial: https://youtu.be/kUHmYKWwuWs**

Student Homework

More servo videos: https://youtu.be/SfmHNb5QAzc

# Handouts (optional)

N/A

Materials Needed

**Software**

Arduino IDE

**Hardware**

Arduino UNOs

Breadboards

Jumper wires

LEDs

100 - 220 Ohm resistors

SG90 Tower Pro Servos

# Handbook

Handouts

n/a

Resources

**n/a**