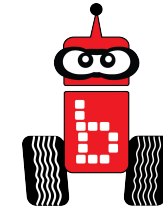# Kit Overview

- **Key Concepts**
  - **Learn and identify robot parts and uses.**
- **Pacing**
  - **45 minutes**
- **This is an unplugged unit** (no computer needed)

Table of Contents
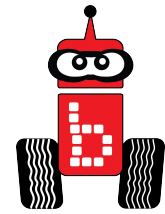
Click on me to return to Table of Contents

Kit Overview

Goals

- Learn the kit components and be able to identify individual parts
- Be able to group parts into categories (KIPR Metal Parts, LEGO, Sensors)
- Distinguish between a motor and a servo motor
- Keep track of parts

Robot Kit Scavenger Hunt

Materials: Interactive board, kit components, printed checklist, and writing utensil

Preparation

Place all of the kit components out on a table and have the students use:

1. A checklist (something very helpful in engineering) to identify and account for all parts (checklist).
2. Have the students use a science/engineering/robotics/digital notebook to make their own checklist to account for all parts.
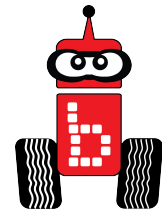
Resources

The online KIPR store is a good resource to help with the identification of specific kit components.

TIP Having a tool box or plastic bins with lids to store kit components is helpful and keeps them from getting lost in the classroom.

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Scavenger Hunt Activity

1. Sort and identify all of the robot kit components and use a checklist to make sure you have everything.
2. Generate your own checklist using your notebook and sort and identify all of the robot kit components.
3. Use a Venn diagram to compare and contrast motors and servo motors (or other components in the kit).

Be the expert (Jigsaw)! Each team member must describe and identify a kit component explaining how they identified it until all items have been correctly identified.
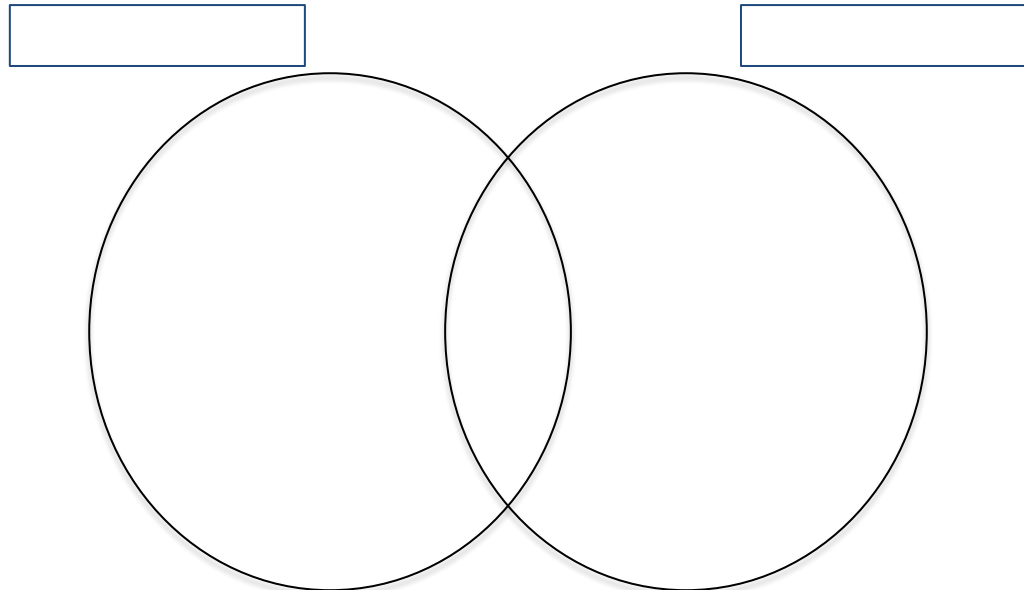
Introductory Kit Checklist
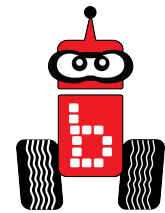
General Parts
- [ ] (1) KIPR Wallaby Controller
- [ ] (1) KIPR Wallaby Charger
- [ ] (1) KIPR Wallaby Mini USB Cable
- [ ] (1) Botball Screwdriver

- [ ] (1) 1/4 Wrench
- [ ] (2) LEGO Bags
- [ ] (2) Motors - SG-5010 Motor
- [ ] (2) SG-5010 Servos
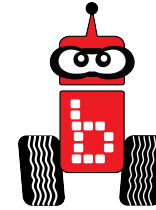- [ ] (1) Bag of Screws & Stand-offs
- [ ] (1) Bag of Push Rivets

KIPR Metal Parts
- [ ] (1) Metal Ball Caster
- [ ] (2) Motor Brackets
- [ ] (1) Chassis
- [ ] (1) Angle Bracket
- [ ] (2) Long Servo Horns

Sensors
- [ ] (1) Light Sensor
- [ ] (1) Small Touch
- [ ] (1) Large Touch
- [ ] (1) Long Lever Sensor
- [ ] (1) ET Rangefinder
- [ ] (2) Small IR

Resources - Bot Basics

USB to Micro USB
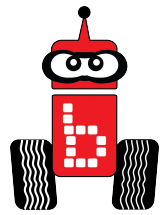(download cable)

Motor

KIPR Wallaby Controller

Servo Motor

Resources - Analog and Digital Sensors

Large Touch Sensor

"ET"-rangefinder

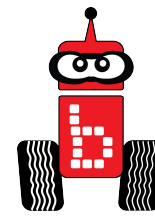Small Touch Sensor

Long Lever Sensor

USB Camera
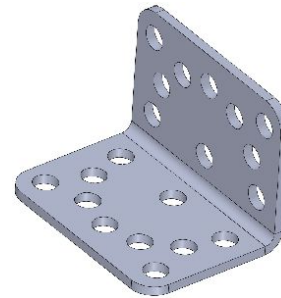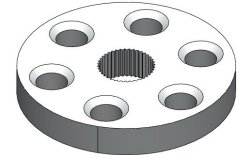
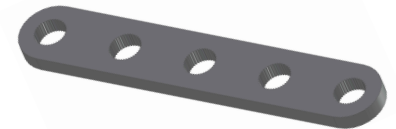Small IR Reflectance Sensor

Light Sensor

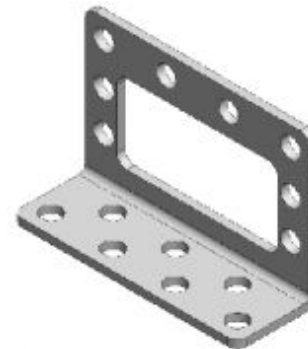# Resources - Hardware

KIPR Metal Part (KMP) Chassis

LEGO Bags

KMP Round Servo Horn-
(Only Kits prior to 2015)

KMP Angle Bracket

KMP Long Servo Horn

KMP Motor Bracket

Assessments and Rubrics

Suggestions: *Understanding* rubric and or Group collaboration