DC motors are used for all sort of robotic projects.

The motor shield can drive up to 4 DC motors bi-directionally. That means they can be driven forwards and backwards. The speed can also be varied at 0.5% increments using the high-quality built in PWM. This means the speed is very smooth and won't vary!

Note that the H-bridge chip is not meant for driving loads over 0.6A or that peak over 1.2A so this is for *small* motors. Check the datasheet for information about the motor to verify its OK.

To connect a motor, simply solder two wires to the terminals and then connect them to either the **M1, M2, M3,** or **M4**. Then follow these steps in your sketch

1. Make sure you #include <AFMotor.h>
2. Create the AF\_DCMotor object with **AF\_DCMotor(*motor#, frequency*)**, to setup the motor H-bridge and latches. The constructor takes two arguments.   
   The first is which port the motor is connected to, **1, 2, 3** or **4**.   
   ***frequency*** is how fast the speed controlling signal is.   
   For motors 1 and 2 you can choose **MOTOR12\_64KHZ**,**MOTOR12\_8KHZ**,**MOTOR12\_2KHZ**, or**MOTOR12\_1KHZ**. A high speed like 64KHz wont be audible but a low speed like 1KHz will use less power. Motors 3 & 4 are only possible to run at 1KHz and will ignore any setting given
3. Then you can set the speed of the motor using **setSpeed(*speed*)** where the ***speed*** ranges from 0 (stopped) to 255 (full speed). You can set the speed whenever you want.
4. To run the motor, call **run(*direction*)** where***direction*** is **FORWARD**, **BACKWARD** or **RELEASE**. Of course, the Arduino doesn't actually know if the motor is 'forward' or 'backward', so if you want to change which way it thinks is forward, simply swap the two wires from the motor to the shield.