

Building Simple Robots with K'NEX



Why use K'NEX to build simple robots?

There are four main reasons to consider using K'NEX or Kid K'NEX when building simple robots:

- K'NEX and Kid K'NEX are more than just easy-to-use construction kits – they are true structural and mechanical engineering systems, which are ideal for building both vehicular robots and static robots.
- Building and testing simple robots with K'NEX and Kid K'NEX therefore gives students a valuable educational experience
- There are a number of low-cost control devices available, which allow both programmable and radio-controlled K'NEX and Kid K'NEX robots to be built (see below)
- Building simple robots with K'NEX and Kid K'NEX is great fun!

What equipment will I need?

If you already have a medium-sized K'NEX or Kid K'NEX set, then you probably have enough K'NEX to start building simple robots.

In addition, you will need a simple control device, such as **Make'n'Go** or **Egg-Box**. A summary of each of these devices is included in this information sheet.

If you also find that you need more K'NEX or Kid K'NEX, our website www.knexusergroup.org.uk includes K'NEX parts, sets, and kits.

Make'n'Go

With Make'n'Go, children aged 3+ can design and build their very own remote control vehicle or robot - simply add as many Kid K'NEX pieces as you like to the sturdy yellow motorised base.

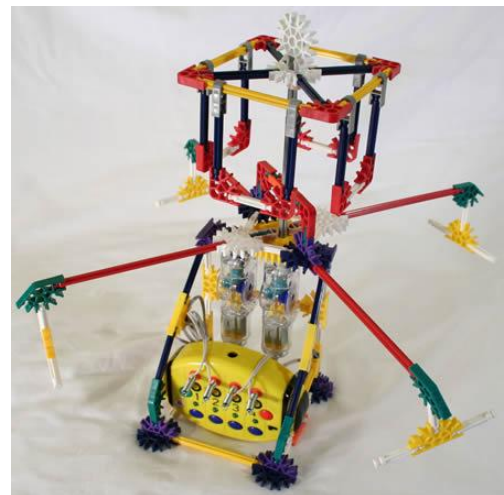
The easy-to-use remote control handset moves the vehicle forwards and backwards, with steering to right or left.



Egg-Box

The Egg-Box is a neat, cost-effective device that allows you to control lights and motors.

Children as young as 5 can use the Egg-Box to record and then play back a simple sequence of motor commands, such as "motor 1 clockwise" and "motor 2 anticlockwise", in a K'NEX model such as a Theme Park ride or a Dancing Robot.



Can all ages build simple robots?

Kid K'NEX robots can easily be built by children aged 3 to 7, using Make'n'Go. Older students aged 7 to adult will probably prefer to build K'NEX robots using Egg-Box.

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What skills will be learned?

The best way to build simple K'NEX or Kid K'NEX robots is for students to work in pairs or small groups. The skills they learn will then include:

1. An understanding of how simple robots work - an important part of the Design and Technology curriculum.
2. Team-working skills.
3. Problem-solving skills.
4. Communication skills.
5. Self-esteem.

A typical simple K'NEX robot project

A typical project using the K'NEX Dancing Robot kit and an Egg-Box might proceed as follows, with students working in pairs to:

1. Search for information and photos about vehicular robots on the internet.
2. Build the Dancing Robot from the instructions provided in the kit (see photo below).
3. Record a simple sequence of actions, so as to become familiar with recording actions via the Egg-Box.
4. Write a sequence of actions which will enable the robot to repeat a "Dance". For instance, forward, turn right, backward, turn left, forward, circle completely, start again.



Who might enjoy building simple robots?

In our experience, the following will enjoy and benefit from building simple robots with K'NEX and Kid K'NEX:

- ✓ *Primary Schools*
- ✓ *Secondary Schools*
- ✓ *Children's clubs*
- ✓ *Childcare schemes*
- ✓ *Family Learning programmes*



For more information

If you have any questions about building simple robots with K'NEX or Kid K'NEX, please visit:

www.knexusergroup.org.uk/acatalog/knex-robots.html

Or email us on info@knexusergroup.org.uk