**Introduction to Robotics**

This robotics introduction teaches the basics of the robot world, offering robot information covering everything from artificial intelligence to robot mechanics and robots in industries such as car manufacturing and the military.

Learn about robots with the concepts provided in this great technology lesson plan.

**Definitions:**

* What does the word ‘robotics’ mean? - The science or study of the technology associated with the design, fabrication, theory, and application of robots.
* What about ‘robot’? - Robots are any machine that does work on its own, automatically.

**Artificial Intelligence:**

* What is Artificial Intelligence (AI)? - The ability of a computer or other machine to perform those activities that are normally thought to require intelligence. It is also referred to as the branch of computer science concerned with the development of machines having this ability.

Some questions to think about:

* Will robots ever really be able to think for themselves?
* Will computers ever be smarter than humans? Are they already?
* Will robots ever pose a threat to humans?

**Robot Mechanics:**

* As well as programming robots to be as intelligent as possible, scientists also work hard on building robot that can perform a number of complex movements as well as utilizing a variety of sensors.

Important things to think about:

* Purpose - What is the robot being built to do?
* Materials - What will be used to build the robot? (Plastic, metal etc)
* Joints
* Size
* Centre of gravity
* Sensory inputs - Vision, Hearing, Touch, Smell, Taste

**Robots in Industry:**

* Robots are ideal for doing precise, repetitive or dangerous tasks. Around 90% of robots are used in factories with half of these being used in the automobile industry.

Robots and robotic arms are frequently used for:

* Car manufacturing
* Military - Bomb disposal, weapons, army surveillance
* Medical - Surgery, X-Rays, life support
* Space - Shuttles, International Space Station, mars rovers

**Fun Robot Activities**

Enjoy some great robot activities that your students will love. These fun robot ideas for kids feature activities that can be easily done in the classroom.

Teaching robotics is a blast and even better if you’ve got activities organized that will challenge children and make them think more about the role robots play in the modern world.

**Blindfold walking activity:**

* Senses are very important for both humans and robots, try walking around without the use of our most important sense, vision.
* Set up a simple course, split students into pairs and let one them try and walk around the course blindfolded as the other student follows them round and makes sure they don't walk into any trouble. Ask the students how they found walking around without being able to see, do they appreciate their sense of sight a bit more now?

**Chat bot activity:**

* Load up a website that features a good chat bot, for example [http://alice.pandorabots.com](http://alice.pandorabots.com/)
* How long will it take for us to confuse the chat bot? Why is it so hard for programs like these to understand our languages?

**Robots in the media:**

* List as many robot themed tv shows or movies as you can e.g. the Terminator, Robocop, Transformers etc. How many can you come up with? Are the robots seen in these shows good, bad or both? Why?

**Is it easy to make a robot that performs tasks like a human?**

* In a word, no. Tying your shoelaces is easy right? Would it be so easy if you were designing a robot to do it? Try tying your shoelaces with ice block sticks attached to yours index finger and thumb.
* Replicating the dexterity of human fingers is just one of the challenges that face scientists and engineers who make things like robotic arms and humanoid robots.