Considered

- Do we need complex computation?

more biological-appearing actions than their computing-intensive counterparts (Wikipedia 2011)
History – W Grey Walter

Pair of Vacuum tube-based robots

History – Baitenberg: Vehicle 1
  Single motor, single sensor

History – Baitenberg: Vehicle 2
  Two motors, Two sensors – What behaviours can we get?
History – Baitenberg: Vehicle 3
Same as Vehicle 2 but inhibitory inputs – what happens.

History – Rodney Brooks
- Subsumption Architecture
- Cog

Subsumption Architecture
Break intelligent behaviours into layers of simpler behaviours
Subsumption Architecture

Human intelligence is hard so start with simpler intelligences.

Subsumption Architecture

If it works extend to higher levels of intelligence

Subsumption Architecture

Do we need human level intelligence?
Subsumption Architecture

Are insects intelligent?

Subsumption Architecture

A Mars Rover does it need intelligence? Discuss!

Augumented FSM (Brooks)
Augmented FSM (Brooks)

Stimulus can suppress/inhibited other active behaviour

Forage example (Brooks)

History - Mark Tilden

- Biology, Electronics, Aesthetics, and Mechanics.
- BEAM robotics
History – Mark Tilden

- Uses analogue circuits instead of processors

History – BEAM

- [http://www.youtube.com/watch?v=On8gYO1MitU&feature=youtube_gdata](http://www.youtube.com/watch?v=On8gYO1MitU&feature=youtube_gdata)
- [http://www.youtube.com/watch?v=9Cldds7LzM4&feature=related](http://www.youtube.com/watch?v=9Cldds7LzM4&feature=related)

Reference

Activity

- In four groups
  - Write code to control a lego robot, a vehicle 2 and vehicle 3 robots.
  - Write code to produce a bumper car robot.