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Scientix webinar: AutoSTEM – automata to teach STEM subjects to young learners
Presenters: Joel Josephson and Oliver Thiel

Date: 22 September 2020
AutoSTEM – automata to teach STEM subjects to young learners

Erasmus KA201 large-scale project to create innovative resources

For students from 4 to 8 years

- How they introduce STEM areas?
- What are automata?
- What are they made from?

Partners
University of Coimbra Portugal, Queen Maud University College Trondheim Norway, 32 SU School “Sv.Kliment Ohridski” Sofia Bulgaria, Eurek@ Perugia Italy, Kindersite UK
AutoSTEM – automata to teach STEM subjects to young learners

- Step by Step Teacher Guide
  - What are automata and STEM.
  - The theoretical framework and pedagogical concepts.
  - Key concepts for constructing automata

- Automata Pedagogical Guidelines and Construction Instructions

- Detail on the next section
- Scenarios to implement Automata.

- Ideas how to take the ideas further holistically and in to additional subject areas

- Resources for planning and reflection
Mathematics + Science
Engineering
Evaluation

• Children’s play with automata is important
• The project facilitates creativity and wonder
• The workshop is interdisciplinary
• Do not do too much at a time
• Provide enough time
  • to build automata
  • for exploration
  • to test and play with the automata
• Do not have too many children in the group
### Evaluation

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AutoSTEM – automata to teach STEM subjects to young learners

- Jelly Bird
- The Talking Elephant
- The Dancing Doll
- The Balloon Car
- The Amphicar
- The Snapping Crocodile
- The Catapult
- The Acrobat
- The Wind Turbine
- The Colour Spinning Disk
- The Eco Car
- The Elevator
- The Drawbridge
- The Returning Tin Can
- The Grabbing Hand
- The Two Faces
- The Butterfly
AutoSTEM – automata to teach STEM subjects to young learners

What areas of STEM learning are included

How to make video

Full teachers step by step guide

Media examples of children making the automata

Templates to print off
AutoSTEM – Step by Step teachers guide

• Introducing STEM Concepts
• How to construct the JellyBird
• Parts and tools
• Method
• How the JellyBird can be used to learn STEM

Activity details:
The body is round, but not a circle.
It is oblong and pointed at one end.
There is a left-hand side and a right-hand side of the body.
The wings are rectangles. A rectangle has four sides and is oblong. There will be one wing on either side of the bird.
The eyes are round, almost like circles. There will be one eye on either side of the body.
The beak is a triangle. It has three corners. The sharp corner points outwards. The bird uses the beak to pick. The beak will be in the front.
The tail is a trapezium. It has four sides. The widest side points outwards. The bird uses the tail to steer. The tail will be in the back.
Thank you for your attention

Website: https://www.autostem.info

Videos: https://www.youtube.com/channel/UCaVYKg0qYXnUNNdqwNtLAVQ

Facebook: https://www.facebook.com/AutomataforStem

Email: joel@kindersite.info