



algodoo

Algoryx Simulation also develops AgX Multiphysics - a nextgen 3D multiphysics simulation engine with superior fidelity, functionality and performance highly optimized for multicore and stream processors.

Algoryx business focus is on professional applications, such as vehicle simulators, off-shore and shipping simulators, medical training simulators with haptics, learning and education, robotic design, bio mechanics, 3D-design and virtual prototyping, visual effects and also on technical and scientific computing.

Algoryx is an off-spring from Umeå University, Sweden.

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Design, interact and explore
It's physics like never before!

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about algodoo

Algodoo is a 2D-simulation environment for creating interactive scenes in a playful, cartoony manner, making use of the physics that we use to explain our real world. Algodoo is designed to encourage young people's own creativity, ability and motivation to construct knowledge. The synergy of science and art makes Algodoo as educational as it is entertaining. Algodoo applies a constructionistic learning paradigm - learning by designing, constructing and exploring physical systems.



Algodoo is optimized for the Intel® powered convertible Classmate PC and makes innovative use of its webcam for creating physical models from live photos, the touch screen and digital pen input for drawing objects, and the accelerometer for virtual experiments and very direct interaction with the physical simulation. Learn more about the classmate PC at: www.classmatepc.com

- **functionality:** create and edit scenes using simple drawing tools, save and load scenes, start and stop simulation, interact with simulation by click, drag, tilt and shake. Add color traces, force and velocity vectors for enhanced visualization.
- **physics:** rigid bodies, fluids, chains, gears, gravity, contacts, friction, restitution, springs, hinges, lock, motors, laser rays, optics.
- **user community:** algodoo and its precursor Phun has a large community with 1.3 million downloads, over 10.000 user provided scenes and thousands of entertaining YouTube clips. Among the users are youths, animators, teachers and science centers.
- **portal:** The algodoo portal enables educators to exchange ideas, lectures and scenes, as well as collaborative work between pupils.
- **methods:** algodoo is based on highly competitive technologies for interactive multiphysics simulation, including variational mechanical integrators and high performance numerical methods.

For licensing on the Intel powered Classmate PC (available from local manufacturers) and other platforms, please contact: algodoo@algorix.se

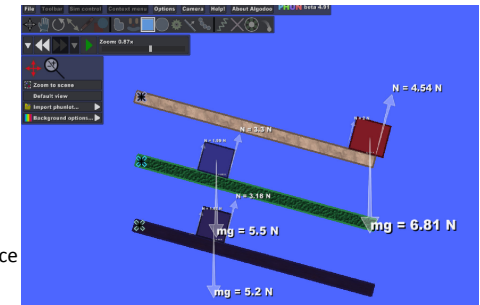
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examples

Planes with different friction

- 1 Create three planes
- 2 Give them materials: ice, rubber, wood
- 3 Lock the planes to the world
- 4 Tilt the planes
- 5 Create three boxes - above each plane
- 6 Start the simulation
- 7 Experiment with materials, inclination,...
- 8 Compare normal force and friction force

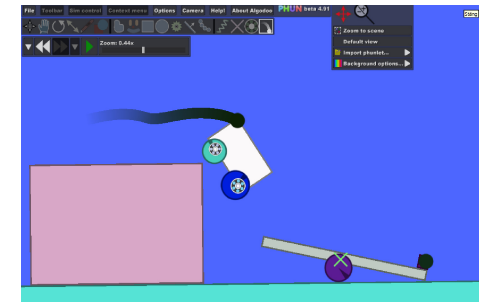
Learning objective: stick/slip, friction and materials, force balance.



Car jumping on seesaw

- 1 Create a ground plane and a box
- 2 Lock a box and circle to form a seesaw
- 3 Put a small box on the seesaw
- 4 Lock the planes to the world
- 5 Make a car by hinging circles to a box
- 6 Add a motor to the hinge
- 7 Add color marker to car and box
- 8 Start the simulation
- 9 Watch car hit the seesaw and the box fly

Learning objective: lever mechanics, energy conversion



Mechanical devices:

Springs, motors, gears, chains to construct simple vehicles, robots and machines

Optics: Rays, reflection/refraction, prisms and lenses

Gas diffusion: Mixing of a hot and cold gas

Fluids and buoyancy: Fluid lift force from a metal shell, Archimedes' principle

For sample lectures, demo videos and demo download visit: www.algorix.se/algodoo

