Mechanix is an interactive display for children to build, test, and discover Rube Goldberg designs. It offers a theoretically-grounded, alternative approach that progresses from exploration of tangible objects to the construction of compound systems in a socially-mediated museum environment.

Situated in a challenge-based narrative framework, children guide a marble back to its friends by placing simple machines on a semi-transparent magnetic surface. Successful configurations are saved for reference by subsequent children, and users are invited to create their own challenges for others.

**Learning Progression**

Mechanix is informed by Constructionist and Social Constructivist learning theories, as well as the 2009 National Research Council recommendation for the design of targeted, interactive, and multimodal environments for informal science education.

Mechanix offers multiple and progressive levels of engagement to facilitate movement from a state of minimal knowledge to one of active knowledge:

- Physical exploration of tangible simple machines
- Connecting tangible objects with symbolic representations and formal theory of simple machines
- Revising knowledge structures via construction of tangible compound machines
- Applying knowledge in the construction of challenges for others

Mechanix’s display supports rear-projected program graphics, camera-captured object recognition, and slow motion video capture to record the marble’s path through the system, enabling children to debug and reflect on their designs.

**Interface**

- **Wheel & Axle**
- **Pulley**
- **Wedge**
- **Lever**
- **Inclined Plane**
- **Home**

**Framework**

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