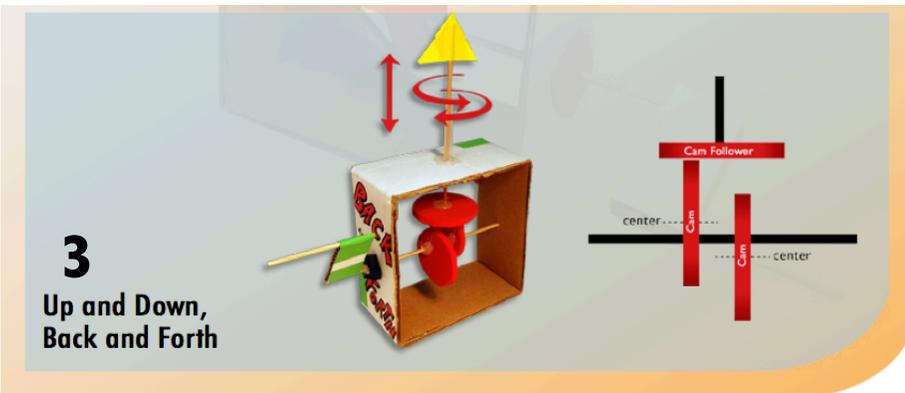
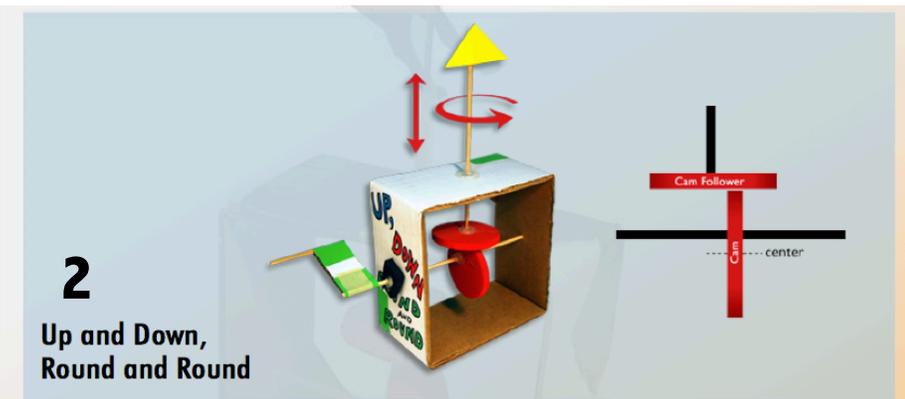
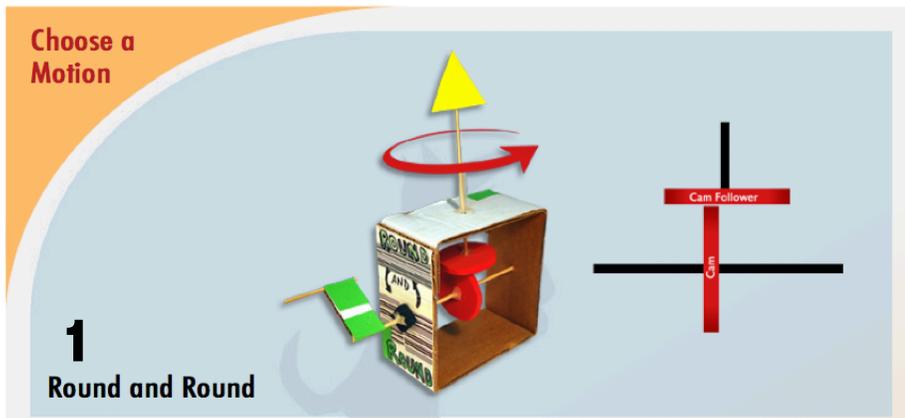


Kinetic Sculpture

Simple Machine Project

Your challenge: choose a motion for your simple machine. Build and test your cam and axle design.



This project is inspired by several different sources. Credit is due to The Pie Institute and Timothy Harkins, an Andover Public School Teacher. Download our eBook template using the link or scan below: bit.ly/masscue15.



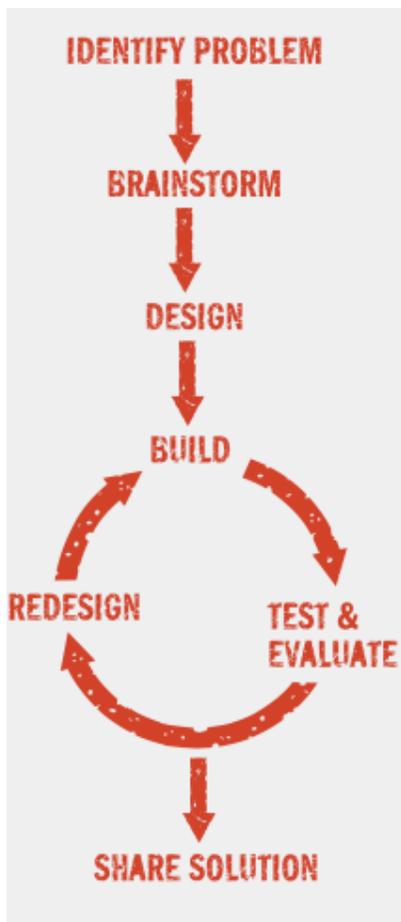
TRY THIS:

Create your own gears instead of cams!

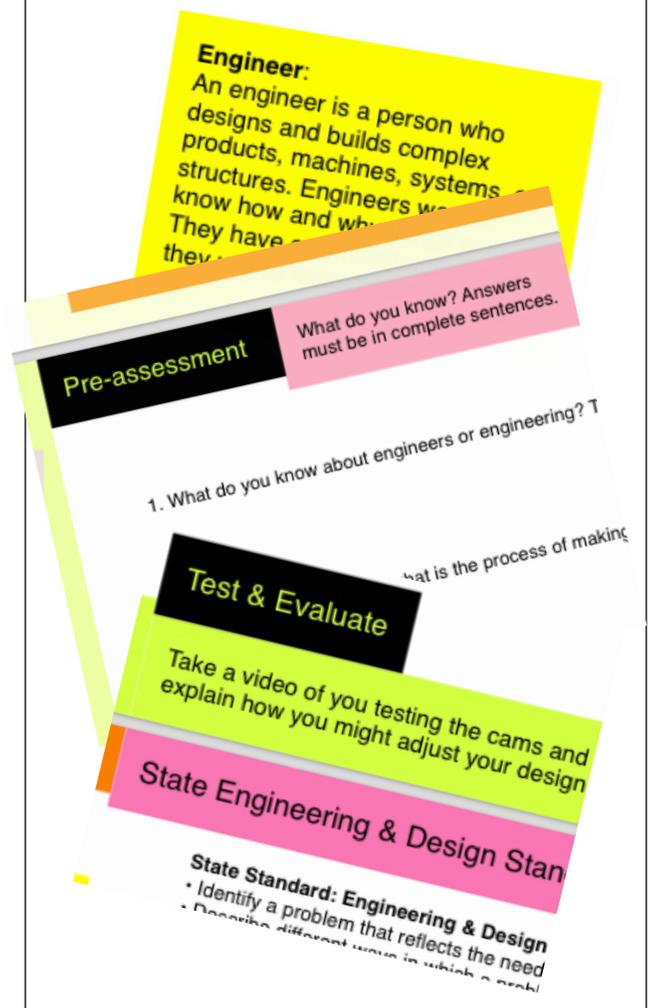
Lesson plan credit the Pie Institute: <http://www.exploratorium.edu/pie/index.html>

eBooks with Book Creator

A key aspect of the kinetic art project was an eBook template that students used to document their design process from start to finish. The eBooks template was developed by the art and technology teachers and based on the design process below:



Starting with a pre-assessment, students documented their process through answering writing prompts, creating labeled diagrams, photos of their brainstorming ideas and works in progress, audio recordings and videos.



About the Kinetic Sculpture/ Simple Machine Project

The Kinetic Sculpture/Simple Machines has been a project-based collaboration between the 5th grade classroom teachers, the art teacher, the Library/Media Specialist and the technology teacher. The classroom teacher introduced the concept of simple machines during their science blocks. Students documented and explained every day simple machines found in the kitchen: a can opener, knife, pizza cutter, etc. Teachers also set up an engineer “gallery walk” where students walked around the school makerspace and read about over 20 types of engineers. They were then tasked with finding two types of engineering they were interested in and explaining their interest. The project officially kicked off with a field trip to the MIT Museum to explore a kinetic sculpture exhibit called “5,000 Moving Parts.” After the gallery tour, students engaged in a hands-on workshop where they built their own kinetic sculptures led by museum staff and two local kinetic artists.

Back at the school, teachers shared the eBook template with each student, and they began by taking a pre-assessment and brainstorming solutions to problems based on “storage, shelter, or convenience” (based on the Massachusetts State Engineering and Design Standards). In the art room, students progressed through developing prototypes and testing their kinetic sculptures/simple machines, documenting their outcomes in their eBooks through writing prompts, images and video.

Midway through the process, we invited the kinetic artist from the MIT museum to come share his work and provide feedback on the student designs. Once the simple machine/kinetic sculptures were finished, the final step of the project was student developed public service announcements (PSAs), facilitated by the Library Media Specialist. Student teams worked collaboratively to write storyboards and film their videos in front of the green screen, editing their videos on iMovie, and presenting their work to their peers and teachers.