Dream Big: Engineering Our World is a film for IMAX® and giant screen theatres that offers exciting opportunities to transform students' understanding of engineering and inspire them to want to learn even more about the "E" in STEM.

Curriculum Tie-Ins

Dream Big explores how we use science and technology to build, invent and shape our world. Curriculum addressed in the film include:

- Engineering
- Science and Technology
- Mathematics
- Social Studies
- Geography

High school students from Mississippi are featured in the film as they compete in the World Solar Challenge in Australia.

Educational Resources for Your Classroom

Dream Big is more than just a film. It's an entire education program with resources to help enhance the learning from the film.

- **Educator Guide** features 12 lesson plans for grades K – 12 that align with Next Generation Science Standards (NGSS).
- **Education Website** will include all these educational resources, including ideas for working with your local science center and volunteer engineers. www.DiscoverE.org/dreambig (launches Nov. 1)
- **Activities Booklet** contains 52 hands-on engineering activities, some of which are even featured in the film.
- **10 Educational Webisodes** that offer detailed information on topics such as wind and earthquake engineering, alternative energy sources and extreme engineering. 3 to 5 minutes in length.
- **Education Trailer** for teachers and school personnel to gain an understanding of the educational value of the film.

www.DreamBigFilm.com

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Educator Guide

Twelve lesson plans for grades K–12

The *Dream Big* Educator Guide integrates engineering into the classroom curriculum. Inspired by the *Dream Big* film, each lesson plan focuses on two or more of the Next Generation Science Standards and the Engineering Design Process. Students learn to define a problem, gather information, plan, engineer a solution, test, refine, and evaluate. They will also explore crosscutting principles. Each activity will reference the NGSS standards, making it easy for teachers to match their curriculum needs.

Lesson 1: Kindergarten
Reach for the Skies
Investigate the force of gravity on buildings in natural disasters.
Topics: Natural hazards, forces and motion, weather, climate

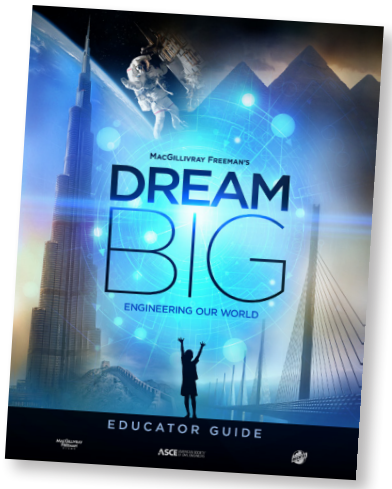
Lesson 2: 1st Grade
Daylight in a Bottle
Harness solar energy to light a room.
Topics: Electromagnetic radiation, refraction, use recycled materials

Lesson 3: 2nd Grade
Surviving Storm Surge
Build a paper-based house to withstand a storm-surge.
Topics: History of earth, earth's materials and system, tides, weather

Lesson 4: 3rd Grade
Maglev Train
Design a magnetic train.
Topics: transportation, convert energy from one form to another, magnetic objects

Lesson 5: 4th Grade
Wind-powered LED
Design a wind turbine to power on an LED.
Topics: energy transferr, alternative energy sources

Lesson 6: 5th Grade
Take Out the Trash: Cleaning Our Rivers
Design a way to eliminate trash that threatens a river.
Topics: Relationships in an ecosystem, water filtration



Lesson 7: 6th Grade
Desert Island Desalination
Turn saltwater into fresh water through desalination.
Topics: Electromagnetic radiation, structures and properties of matter, develop a model

Lesson 8: 7th Grade
Building the Pyramids
Determine how Egyptians moved giant stones.
Topics: Team work, Forces and motion, ancient cultures and mythologies

Lesson 9: 8th Grade
Water Purification Device
Design a portable water purification device.
Topics: natural hazards, and natural resources, water filtration, the water cycle

Lesson 10: High School Chemistry
Making an Impact on Habitat
Create a safe way to neutralize the byproduct of a factory.
Topics: Engineering in the real world, runoff from pollution, runoff from mining, reduce impact of human civilization

Lesson 11: High School Life Sciences
Endangered Species
Engineer a method to support a local species and its future sustainability.
Topics: ecosystem dynamics, functioning, and resilience, biodiversity and humans, environmental niche and adaptive biology

Lesson 12: High School Physical Sciences
LED Holiday Card
Design a greeting card that illuminates two LED lights.
Topics: Convert mechanical energy to radiant energy with aesthetics, design, electromagnetic field, circuits, electricity