Hot Science Cool Talks

UT Environmental Science Institute

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Science in the Movies: The Science Behind Stunts & Special Effects

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in SCIENCE
the MOVIES

Steve Wolf

Stunt & Special Effects Coordinator

Science & Safety

Movie Star Tips!

- Get plenty of sleep
- Eat healthful foods
- Exercise regularly
- Stay away from drugs and alcohol
- Stay away from cigarettes and cigarette smoke

Three States Of Matter

- Solids
- Liquids
- Gases

LIQUID

\+ HEAT

GAS

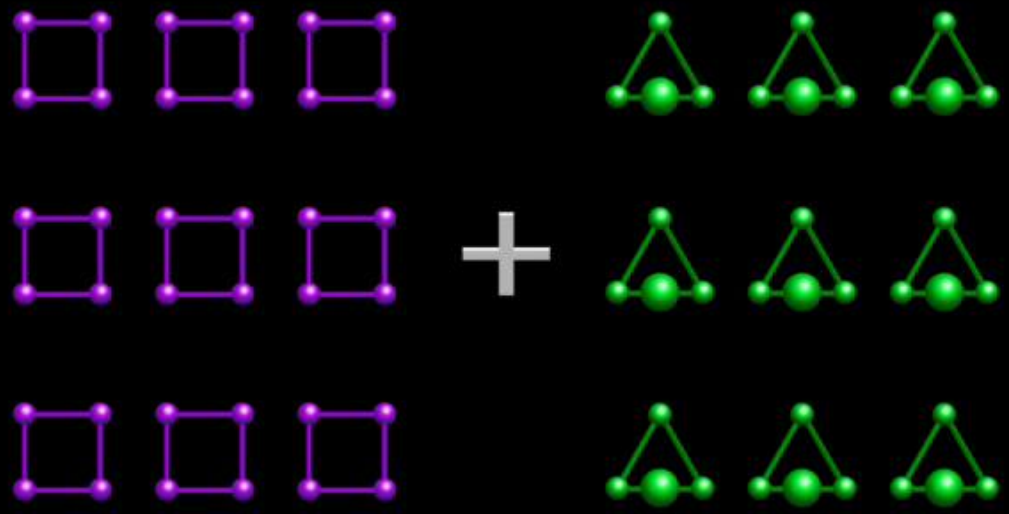
Animation of liquid to gas

Read Labels!

Components of Fire:

- Fuel
- Oxygen
- Heat
- Chemical Reaction

Chemical Reaction



Fluid

Fluids take the shape of the container you put them in

Life on Earth is based on

CARBON

If there is a fire in the house

GET OUT!

If there is a fire in the house

GET OUT!

Dial

911

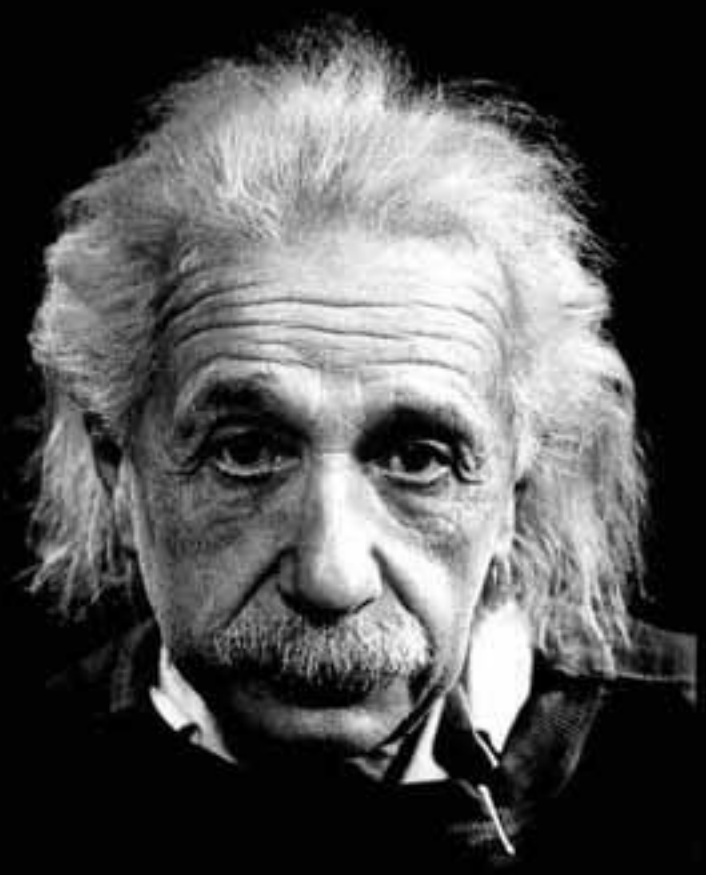
GRAVITY

Humpty Dumpty

Animation of person landing in airbag

Gases are

Compressable



"Things should be made as simple as possible, but not any simpler."

-Albert Einstein

Simple Machines

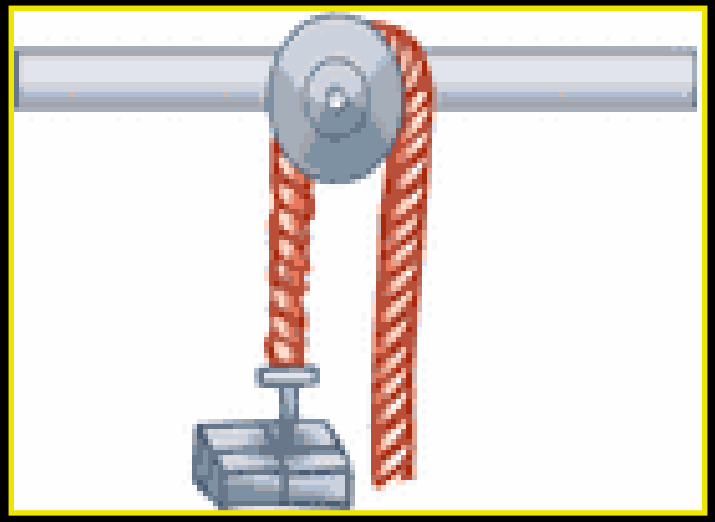
Basic tools that make work easier

The Six Simple Machines!

- Levers
- Ramps
- Wheels & Axels
- Screws
- Wedges
- Pulleys

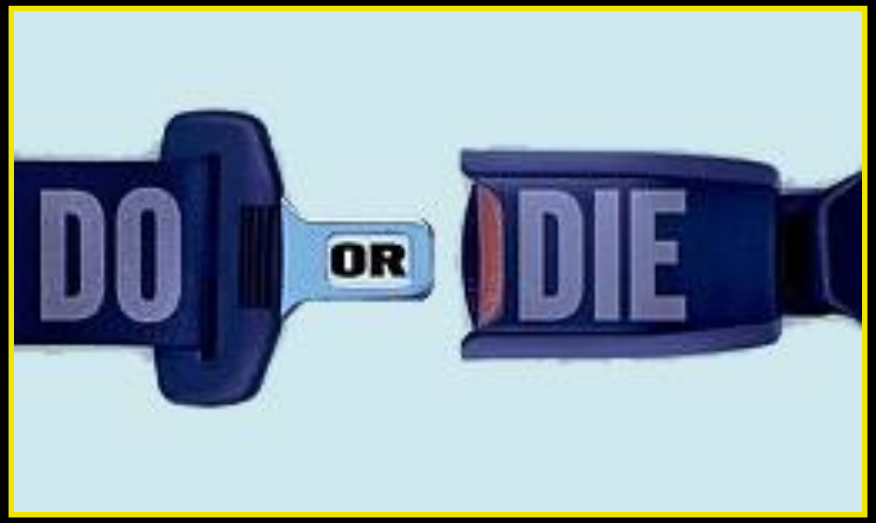
Pulley

A wheel with a rope around it.



Effort is multiplied by the number of rope sections supporting the load.

Always Wear Your SEATBELT!



Tensile Strength

A property of matter that measures how much you can pull something before it breaks.

When materials rub together they create **FRICTION** and friction creates **HEAT**

Pressure and Force

Pressure

A force acting against a surface


STOP
DROP
Roll

Insulators resist the flow of energy

Choose the right insulator for the job!

Components of Fire:

- Fuel
- Oxygen
- Heat
- Chemical Reaction

Materials that burn faster than the speed of sound are

Detonating

The speed of sound is 1100 feet per second

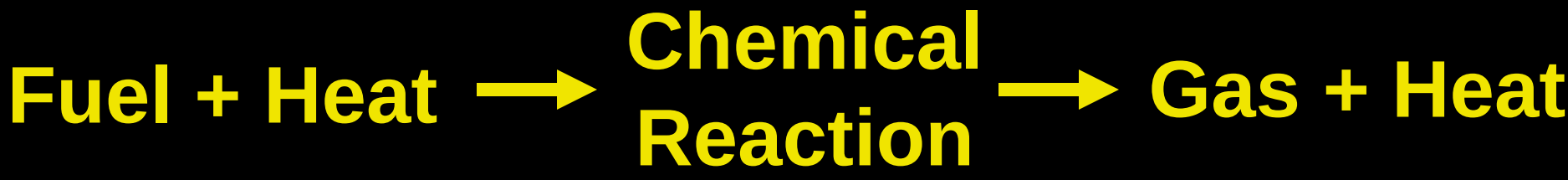
Or

335 meters per second

If you find a gun…

1. Stop.
2. Don’t Touch!
3. Leave the area.
4. Tell an adult.

Follow Directions!


Fuel + Heat
Chemical Reaction
Gas + Heat

Law of Conservation of Energy:

Energy can neither be created nor destroyed but can be changed from one form to another.

Electric Circuit Animation

Electric Circuit

Conductivity

Friction

Heat

Chemical Reaction

Change of State

Animation

Solid to Gas

Pressure

Force


KABOOM!

Science in the Movies

www.scienceinthemovies.com

1-800-STUNT-FX

Steve Wolf

Steve is an experienced stunt and special effects coordinator who is passionate about how exciting science can be. When he heard that US students were ranked among the lowest in developed nations for science knowledge, he decided that he could make a difference. By using the science that he encounters every day in his movie and television work, Steve was able to create a program that makes science exciting and fun for children. Steve also works with teachers to help them use some of the same approaches to teaching science in the movies.