

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

A graphic of a clapperboard with yellow and black diagonal stripes. The clapperboard is tilted upwards to the right. The text "in SCIENCE" is written in white, with "SCIENCE" underlined, and "the MOVIES" is written below it. The clapperboard is set against a black background.



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





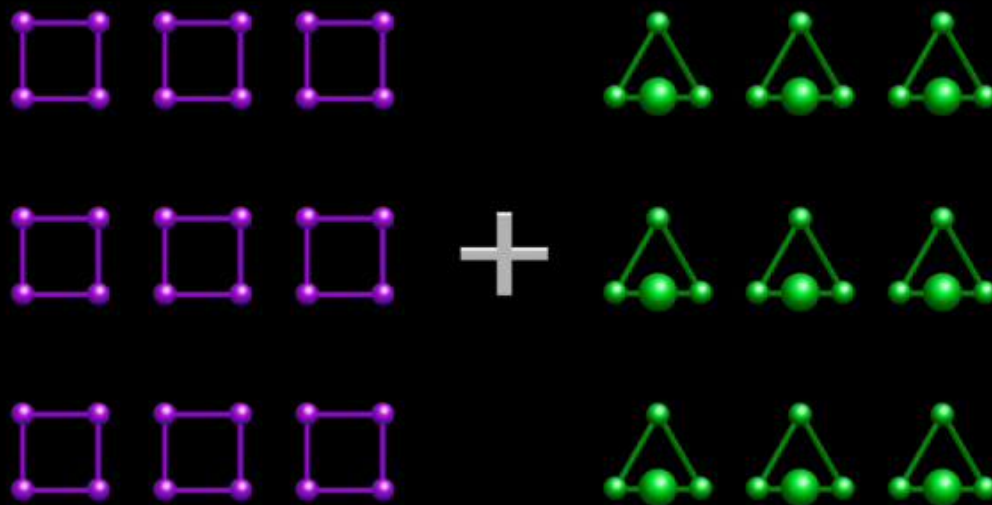
**Read
Labels!**

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





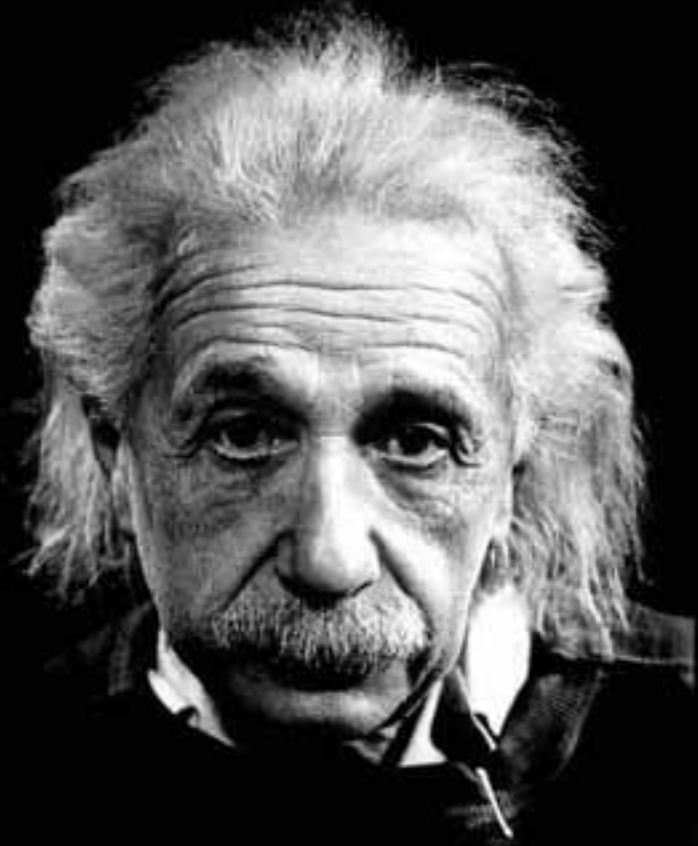
Animation of person landing in airbag





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**



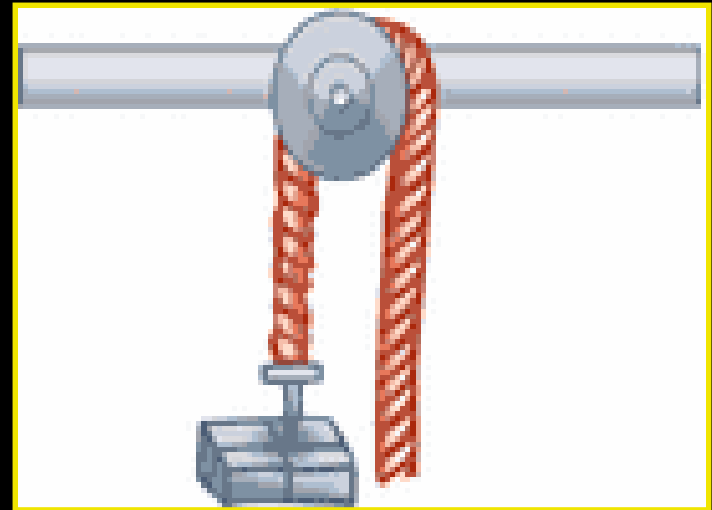
The Six Simple Machines!

- 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

**D
R
O
P**


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

The word "Pressure" is written in a large, bold, rounded font. The letters are filled with a horizontal gradient: the 'P' and 'e' at the ends are blue, while the 'r', 'e', 's', 's', 'u', 'r', 'e' in the middle are pink. The entire word is outlined with a thick green border. The text is centered on a black background, with yellow and black diagonal hazard stripes at the top and bottom.



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.