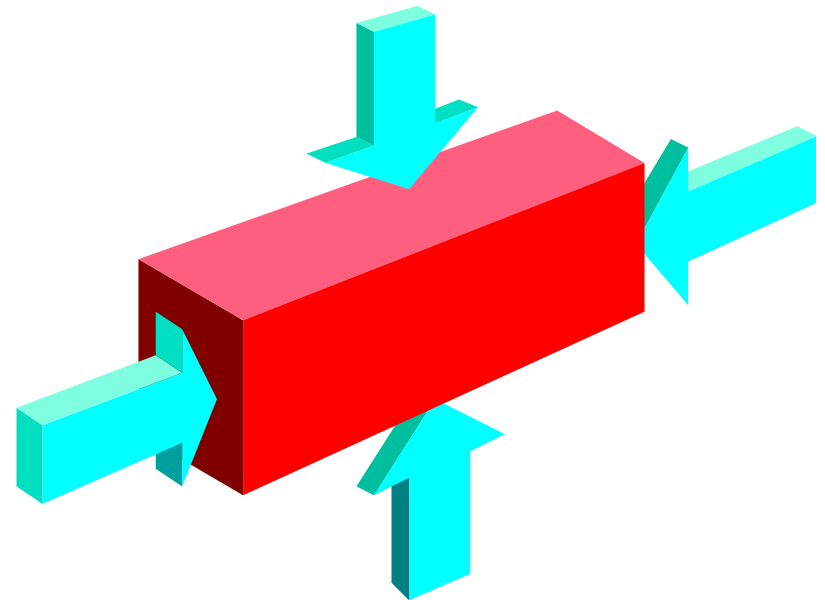


# Deformation

- Stress and Strain
- Faults
- Folds

# Stress and Strain

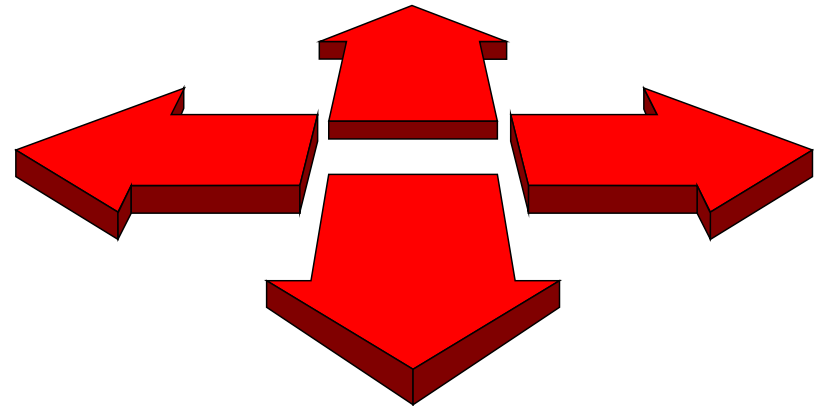
- Compression
  - Forces opposite
  - Act towards each other



# Stress and Strain

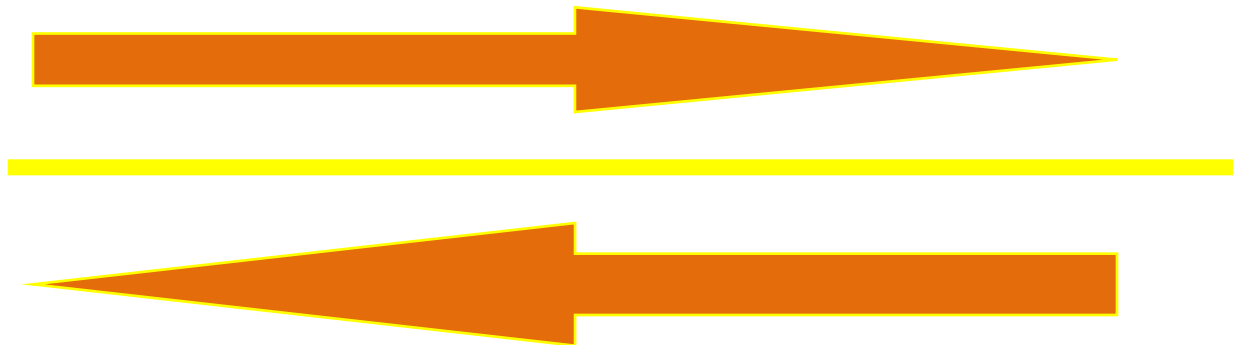
- Tension

- Forces opposite
- Act away from each other



# Stress and Strain

- Shear
  - Forces opposite
  - Act parallel
  - But across a plane



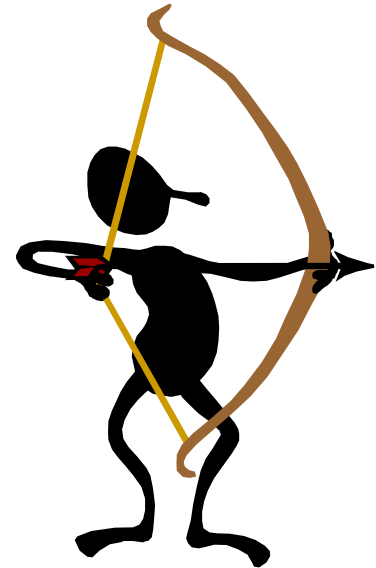
# Stress and Strain

- Strain (Deformation)
  - Change in shape or size
  - Response to stress (or force)



# Stress and Strain

- 1) Elastic deformation
  - *Temporary* change in shape or size
  - Recovers when stress is removed



# Stress and Strain

- 2) Ductile (plastic) deformation
  - Permanent change in shape or size
  - Not recovered when the stress is removed
  - (Folding)
  - Playdough, clay







# Stress and Strain

- 3) Brittle deformation (rupture)
  - (Faulting)

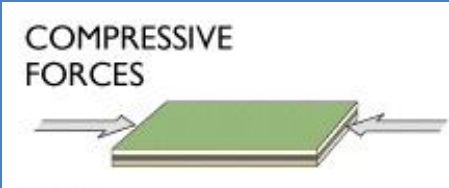
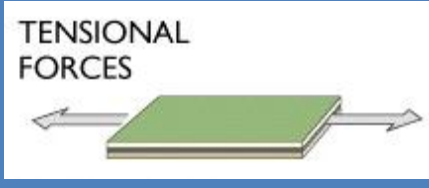





# Stress and Strain

- Factors that affect deformation
  - Temperature
  - Pressure
  - Strain rate
  - Rock Type
- Will it fault or fold?

# Matching activity

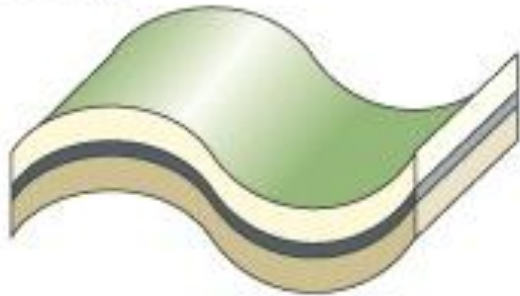
	 <p>COMPRESSIVE FORCES</p>	 <p>TENSIONAL FORCES</p>	 <p>SHEARING FORCES</p>
Elastic	1	2	3
Brittle	4	5	6

# Tectonic Forces and Resulting Deformation

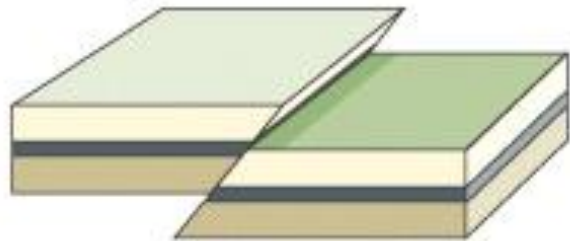
COMPRESSIVE FORCES



Folding



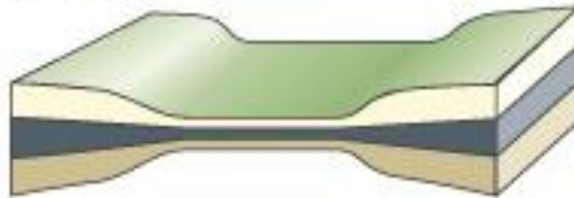
Faulting



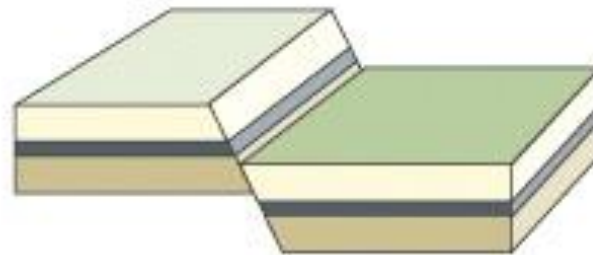
TENSIONAL FORCES



Stretching and thinning



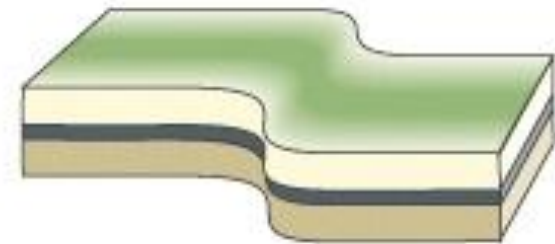
Faulting



SHEARING FORCES



Shearing



Faulting

