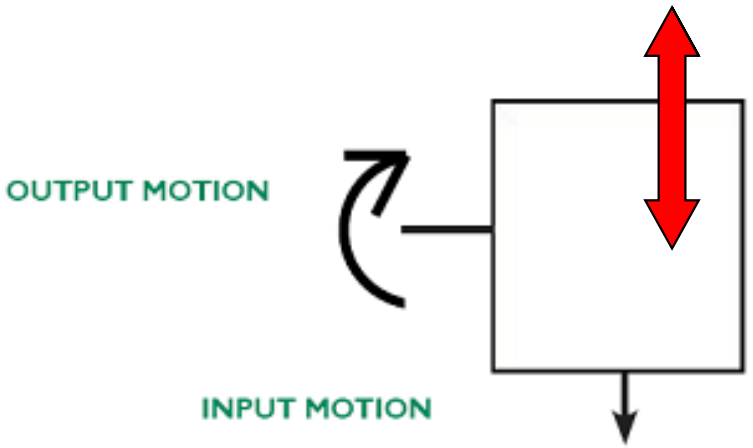
Mechanical Motion

Fifteen minutes

- Given the materials provided to you and your partner, create a device in which a linear input motion creates a rotary output motion.



Mechanical Examples

- On the blank box on your warm up sheet, list three mechanical devices which are similar to the device you created.

Mechanical Systems

- Components
- Simple Machines,
Gears
- Cams, Linkages,
Brakes

Control
Performance Evaluation
Mechanical Advantage
Work Efficiency

Mechanical Vocabulary

- Force
- Motion
- Energy
- Work
- Power
- Efficiency
- Gravity
- Friction

Force

- Force is the push or pull that cause a change in motion of an object.
- The unit for force is Newtons.
- Type of forces:
- Gravity: between objects
- Friction: forces opposing mo

Motion

- The action or process of moving or of changing place or position; movement.

Energy

- Energy is the ability to do WORK
- Two forms of energy; chemical and mechanical
- Energy cannot be created or destroyed
- Two types of energy
- Potential: stored energy
- Kinetic: energy in motion

Work

- Work depends on two factors:
- Force applied
- Distance the force is applied

- Unit for work is Joules

Therefore the equation for work is:

Work = Force x distance

Power

- Power is the amount of *work* done over a period of *time*.
- Therefore the formula for power is:
- The unit for Power is the watt.
- Power = Work/Time

Efficiency

- The ratio between the input work to the output work.
- An ideal, frictionless machine would have an efficiency of 100%.

- Mechanical Basketball Player Activity