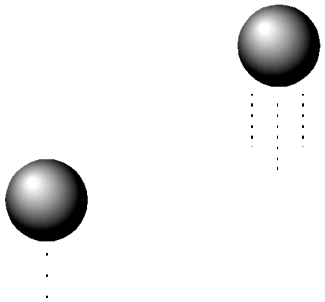
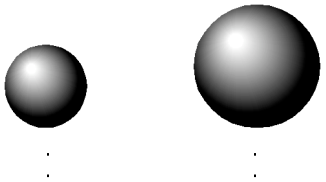
PhyzSpringboard:
Introduction to Power

1. Two balls are lifted. The balls have the same mass. One is lifted higher than the other. Both are lifted for the same time. Compare the mass, height, work done, time interval, and power involved in lifting the two objects.



m	=	m
h	<	h
W	<	W
t	=	t
P	<	P

2. Two balls are lifted. One ball has more mass than the other. Both are lifted to the same height. Both are lifted for the same time. Compare the mass, height, work done, time interval, and power involved in lifting the two objects.



m	<	m
h	=	h
W	<	W
t	=	t
P	<	P

3. After completing questions 1 and 2, what **single** conclusion might you make about power?

__ $P \propto m$ __ $P \propto 1/m$
__ $P \propto h$ __ $P \propto 1/h$
__ $P \propto W$ __ $P \propto 1/W$
__ $P \propto t$ __ $P \propto 1/t$

>>> Go to question 4 >>>

5. After completing question 4, what **other** conclusion might you make about power?

__ $P \propto m$ __ $P \propto 1/m$
__ $P \propto h$ __ $P \propto 1/h$
__ $P \propto W$ __ $P \propto 1/W$
__ $P \propto t$ __ $P \propto 1/t$

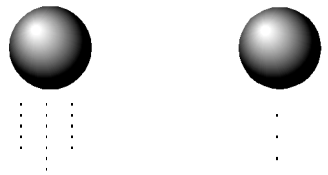
6. After completing questions 3 and 5, what might you conclude about power?

$P \propto W/t$

Power is the rate at which work is done OR the rate at which energy is transformed.

Units: J/s = W
also hp

4. Two balls are lifted. Both balls have the same mass. Both are lifted to the same height. One is lifted in less time than the other. Compare the mass, height, work done, time interval, and power involved in lifting the two objects.



m	=	m
h	=	h
W	=	W
t	<	t
P	>	P