Lesson 2 Using Machines

Predict *three facts that will be discussed in Lesson 2 after reading the headings. Record your predictions in your Science Journal.*

Main Idea

What is a machine?

I found this on page _____.

I found this on page _____.

How do machines make work easier to do?

I found this on page _____.

Details

Distinguish *the functions of machines.*

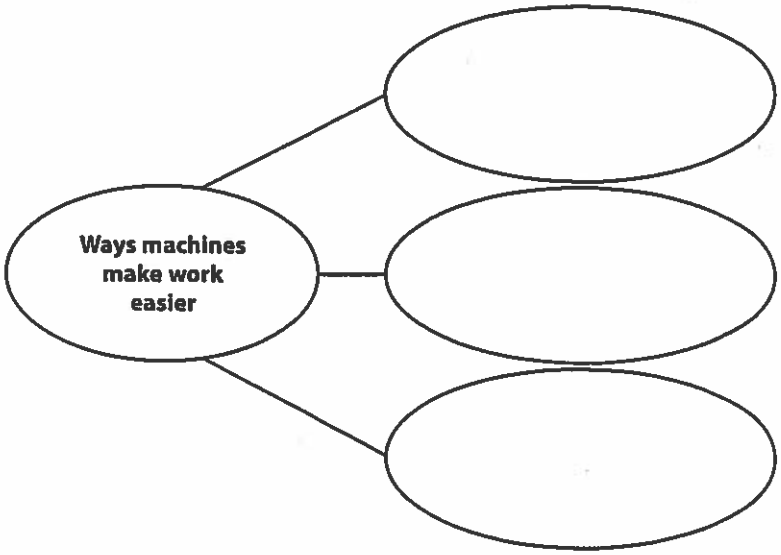
Machines Do	**Machines** Do Not

Organize *details about input work and output work.*

Input work (W_{in})		
	×	

Output work (W_{out})		
	×	

Cite *3 ways machines make work easier.*



Main Idea

Details

Analyze *ways in which machines make work easier.*

Change	Input Work	Output Work
Make the output force greater than the input force	Drawing:	Drawing:
	A smaller force over a longer distance converts to →	
Make the output distance greater than the input distance	Drawing:	Drawing:
	A greater force over a shorter distance converts to →	
Make the direction of the output force different from the direction of the input force	Drawing:	Drawing:
	Force and distance remain the same, but →	

I found this on page _____.

I found this on page _____.

I found this on page _____.

What is mechanical advantage?

I found this on page _____.

Define mechanical advantage.

_____

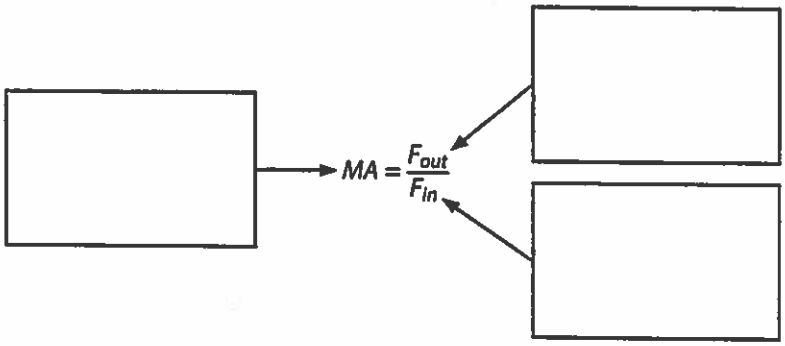
_____

Main Idea

I found this on page _____.

Details

Identify *components of the* mechanical advantage *equation. Include the units for the F variables.*



I found this on page _____.

Complete *the statement about* mechanical advantage. *Use the symbol > or <.*

MA > 1	means that	output force	_____	input force

What is efficiency?

I found this on page _____.

Define efficiency, *and complete the* efficiency *equation.*

Efficiency: _____

_____

efficiency = $\frac{\square}{\square} \times \square$

I found this on page _____.

Explain *the effect of friction on the* efficiency *of a machine.*

_____

_____

_____

_____

Analyze It Explain why a machine that has an output force less than its input force can still be useful. Give an example.

_____

_____

_____