COMPLEX MECHANICAL FUNCTIONS

STUDENT BOOK | Chapter 12, page 389

GOAL

Observe complex mechanical functions in various technical objects.

OBSERVATION CRITERIA

1. What is a system?

2. What is a complex mechanical function?

3. Complete the table below, providing the name and definition of the two main complex mechanical functions.

Complex mechanical function	Definition

4. In a technical object, what are the three types of motion that parts can relay?

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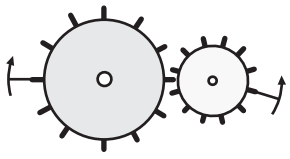
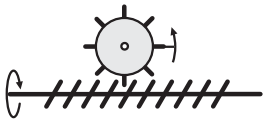
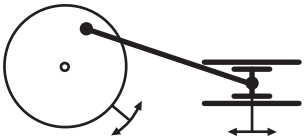
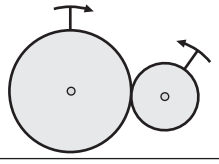
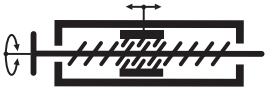
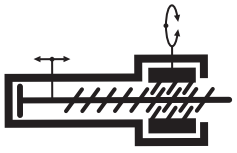
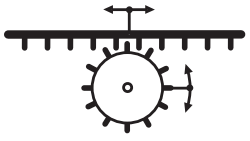
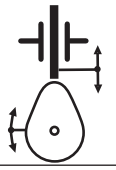
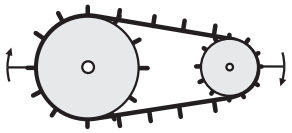
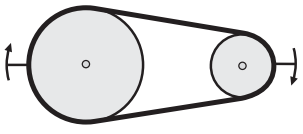
5. Complete the table below, indicating the name and complex mechanical function of the system shown in each diagram.

Diagram	Name of system	Complex mechanical function
		
		
		
		
		
		
		
		
		
		

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MATERIALS

- drill press
- manual eggbeater
- glue stick
- corkscrew
- pipe wrench
- salad spinner

PROCEDURE

Drill press

1. Open the pulley safety guard on the drill press.
2. Turn on the drill press.
3. Observe the motion of the moving parts inside the pulley safety guard.
4. Record the complex mechanical function you observe.
5. Indicate the name of the system that fulfills the function of the complex mechanical function you observe.

Manual eggbeater

1. Turn the crank on the eggbeater.
2. Observe the motion of the moving parts of the eggbeater.
3. Record the complex mechanical function you observe.
4. Indicate the name of the system that fulfills the function of the complex mechanical function you observe.

Glue stick

1. Take the cap off the glue stick.
2. Twist the wheel at the base of the tube until the top of the glue stick appears above the tube opening.
3. Observe the motion of the moving parts of the glue stick.
4. Record the complex mechanical function you observe.
5. Indicate the name of the system that fulfills the function of the complex mechanical function you observe.
6. Re-cap the glue stick.

Corkscrew

1. Lift up and press down the levers of the corkscrew.
2. Observe the motion of the moving parts of the corkscrew.
3. Record the complex mechanical function you observe.
4. Indicate the name of the system that fulfills the function of the complex mechanical function you observe.

Pipe wrench

1. Turn the screw on the pipe wrench.
2. Observe the motion of the moving parts of the pipe wrench.
3. Record the complex mechanical function you observe.
4. Indicate the name of the system that fulfills the function of the complex mechanical function you observe.

Salad spinner

1. Take the cover off the bowl of the spinner.
2. Turn the crank on the cover.
3. Observe the motion of the moving parts of the salad spinner.
4. Record the complex mechanical function you observe.
5. Indicate the name of the system that fulfills the function of the complex mechanical function you observe.

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OBSERVATIONS

Record your observations in the table below.

Object	Complex mechanical function observed	System fulfilling complex mechanical function observed
Drill press		
Manual eggbeater		
Glue stick		
Corkscrew		
Pipe wrench		
Salad spinner		

REFLECTING ON YOUR OBSERVATIONS

1. Were you able to observe all three types of motion? If the answer is yes, give an example of one object for each type of motion. If the answer is no, indicate the type(s) of motion you were unable to observe.

2. Did this lab help you to better understand complex mechanical functions?

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