

Answer Key

Get Your Gears Here!

1. The two smaller gears also turned. The smallest and middle gear turned more than the largest gear.
2. The middle gear turned in the opposite direction of the largest gear, and the smallest gear turned in the same direction as the largest gear.
3. The smallest gear.
4. More slowly.
5. Students should see that if you have twice the number of teeth on the larger gear than on the smaller gear, then the smaller gear will turn twice as fast, thus the speed of the gear doubles.

Fighting Force of Friction

1. Answers will vary, but should focus on the difference in the soles of the shoes.
2. A heavy, textured sole such as a cleat would create more friction than a smooth leather sole.
3. The smooth texture of the waxed paper decreased the amount of friction between the sole of the shoe and the waxed paper. A decrease in friction also caused a decrease in the force needed to move the shoes. Due to the rough texture of the sandpaper, friction increased; therefore, the amount of force needed also increased.
4. Answers will vary. Answers should focus on the soles of the shoes, the type of material the sole is made of, and the texture of the sole (cleat, roller blade, leather sole, rubber sole, and so on).
6. Answers will vary but might include tire treads that are used to grip a slippery road and the friction required to keep an elevator from slipping.

Simply Words

I N C L I N E D P L A N E A P P A R A T U S
S N M O S P S M F I B A B E H U G U Y I N I
G A C A M O R P D O V C A C X L R O L M D T
I B F D E P E R I A K M E I C L I P E D E P
P N S A A I O M B N H T I H B E L C H T R O
F H E D L T I U A I R A U X S Y L I S H R T
G K A I W O R K N K I N E T I C I I I Y O E
C J I L I E S N M D C J I L P L L E U D O N
B L S T Y I D J T Y B L S T U T A G O R F T
Z A I E H E R G E H Z A I E S I R V A I M I
S S M W E T I P E I T E E T H S C A R E D A
Q Z Q U I C K I A T O M M Y F R T E P U L L
R N L D S H I N D F R I C T I O N I T I X E
Y G E A R S Z A I O V C O U R T N E Y A I L
K I V N R T S S M R P I D N A I E N D J K E
J S E Y K O Q Z Q C Y I Y I M W N B O N I
H F R T J B S C R E W P E L L A A I I D A U
P E N E R G Y A E R T R K C I L A C S T R Y
U E R E P G S I D K Z U A A E R I S H I C T
Y K O T I I T G A D T B I E B I L L I I I S
T J B E S B E K I S R I H Y O T J A C O N I
S A E M A I M D H T A W P F I S L I Z Q U E
I G W I N C H E N N Y N I K K I N Y I R P V
O F A E B Z X R Q W R O R L F U L C R U M E

