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Friction in everyday life for Grade 8

Practice worksheet - Science · Grade 8

Name: _____ Date: _____

Show your working. Answers and explanations follow on a separate page.

Try each task before opening its answer. Give an example or reason, not only a label.

Write an answer and your reason before opening the explanation. Check the reasoning as well as the final answer.

1. A book slides left on a desk. Which way is friction on it?

2. Can static friction be non-zero when an object is still?

3. Is static friction always at its maximum?

4. Can required friction be zero on a level surface?

5. Why can rubbing surfaces become warm?

6. Do wheels eliminate all resistance?

7. Why are tyre treads useful?

8. Why lubricate suitable moving machine parts?

Practice continued

9. What does normal mean in normal contact force?

10. Must friction always point opposite a person's forward motion?

11. Name the resistance from air around a moving cyclist.

12. Does more apparent contact area always mean more dry friction?

13. Should you oil a shoe sole to test reduced friction?

14. Give one helpful and one unwanted effect of friction.

Answers and explanations

Answer key - Science · Grade 8

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1. Right.
It opposes the relative sliding.
2. Yes.
It can oppose a tendency to slide.
3. No.
It adjusts up to a limiting value.
4. Yes.
If no force tends to cause sliding.
5. Mechanical energy is transferred into internal energy.
Friction dissipates organised motion.
6. No.
Rolling resistance and other losses remain.
7. They help maintain suitable grip, especially in relevant surface conditions.
The purpose is controlled contact rather than zero friction.
8. To reduce direct friction and wear.
Use depends on the machine design.
9. Perpendicular to the contact surface.
It does not mean ordinary or average.
10. No.
It opposes relative sliding at the contact and can act forward on a foot.
11. Drag or air resistance.
It depends on speed, shape and other conditions.
12. No.
The simple dry-contact model does not predict that automatically.
13. No.
That creates a slipping hazard.
14. For example: grip while walking; wear in machinery.
Its value depends on the task.