

Name \_\_\_\_\_

## The Science of Disney Imagineering – Friction

**Before you watch the video answer questions 1-3.**

**During or after watching the video answer questions 5-19. There is a word bank at the end.**

**Before the video:**

1. What is friction?

2. When is friction helpful?

3. When is friction unhelpful?

**After or during the video (continues on back):**

1. What is the difference between static and kinetic friction?

2. What is rolling friction?

3. What is drag?

4. What can you do to reduce friction? What can you do to reduce drag?

5. The force that opposes the motion of an object that wants to rub or slide against another object is called \_\_\_\_\_.

6. **True or False** Asperities are mountain-like peaks where the surface of one object meets another object.

7. **True or False** The cause of friction is the touching of atoms at contact points between two surfaces.
8. **True or False** The more two surfaces press on each other, the fewer contact points you get.
9. If you double the amount that two surfaces press on each other, you \_\_\_\_\_ the amount of friction.
10. The resistant force due to an object's shape and surface properties is called \_\_\_\_\_.
11. **True or False** Drag is what you feel when you try to walk quickly through a pool.
12. To reduce drag, you can design the shape of an object to be hydrodynamic, which means that it's \_\_\_\_\_.
13. The resistive force you have to overcome to get an object moving is called \_\_\_\_\_ friction.
14. The force that must be overcome to keep an object sliding over another object is called \_\_\_\_\_ friction.
15. **True or False.** A lubricant reduces friction between two sliding surfaces.
16. The force of friction transforms (changes) the energy of motion into \_\_\_\_\_.
17. The force that resists the rotation of a wheel is called \_\_\_\_\_ friction.
18. Rolling friction takes energy away in the form of \_\_\_\_\_.
19. **True or False.** A rollercoaster experiences drag from the air it moves through.

Word Bank (some may not be used at all)

Friction	Sliding	Single	Double	Drag	Streamlined	Smooth
Rough	Static	Kinetic	Heat	Gravity	Rolling	Potential