

1. If you want to reduce the speed of a moving object using friction, what type of surface would be most effective for it to move on?
2. Imagine you are looking at your reflection in a funhouse mirror that makes you look very tall and thin. What property of light allows you to see your reflection?
3. A farmer notices that a patch of soil in his field has become very dry and hard, and plants are struggling to grow there. What simple change to the soil's composition could significantly improve its ability to retain water and support plant growth?
4. You hear a fire engine siren approaching you, and the pitch of the siren sounds higher. As it passes and moves away, the pitch sounds lower. What is this phenomenon called?
5. What makes the inner core of the Earth solid, even though it is extremely hot (hotter than the surface of the sun)?
6. Which of these is a major component of air that plants take in for photosynthesis?
7. A student uses a magnifying glass to look at a small insect. How does the magnifying glass help them see the insect in more detail?
8. Why do some animals hibernate during winter?
9. You have a mixture of iron filings and sand. What is the easiest way to separate these two components?
10. Why is it important for scientists to repeat experiments multiple times and for other scientists to try to replicate their findings?
11. Explain how a pulley system can make it easier to lift a heavy object.
12. A student places a plant in a dark room for several days. What will happen to the plant's leaves, and why?
13. Which of the following activities involves using potential energy that is converted into kinetic energy?
14. Imagine you are trying to pull a heavy sack of rice up a ramp into a truck. How does using the ramp (an inclined plane) help you, even though you are still doing the same amount of 'work' in lifting the sack to the same height?
15. Imagine you are standing near a deep well and you drop a stone into it. You hear the splash after a few seconds. Why is there a delay between seeing the stone hit the water and hearing the splash?
16. When you hear an echo in a large empty room, what phenomenon of sound waves are you experiencing?
17. A gardener wants to grow plants that attract butterflies. Which characteristic of flowers would be most important for them to consider?
18. Why do some animals, like chameleons, have the ability to change their skin color?

19. How is the process of evaporation important in the Earth's water cycle?
20. A healthy ecosystem has a wide variety of plants and animals. What is the scientific term for this variety of life, and why is it important for the health of an ecosystem?