Air Resistance Worksheet

New words

Air resistance streamline invisible inventions

Worksheet: Exploring Air Resistance

Instructions: Read the passages carefully and answer the questions that follow.

Passage 1: What is Air Resistance?

Air resistance is a force that pushes against objects as they move through the air. It's like a gentle hand trying to slow things down. When you stick your hand out of a car window and feel the air pushing against it, that's air resistance in action. Objects of different sizes, shapes, and speeds experience different amounts of air resistance.

Questions:

1. What is air resistance?
2. How can you feel air resistance when sticking your hand out of a moving car?
3. What factors can affect the amount of air resistance an object experiences?

Passage 2: Factors Affecting Air Resistance

Size, shape, and speed are important factors that influence air resistance. Larger objects face more air resistance than smaller ones. Objects with streamlined shapes, like rockets, encounter less air resistance. Faster-moving objects experience more air resistance than slower ones. Imagine dropping a feather and a book – why does the feather fall slower?

Questions: 4. How does size influence air resistance?

5. What is a streamlined shape, and why does it reduce air resistance?
6. Why does a feather fall more slowly than a book?

Passage 3: Real-life Examples

Air resistance affects many things in our daily lives. When you ride a bicycle, you feel the force of air resistance against your face. Birds spread their wings wide or

tuck them in to control their flight by adjusting air resistance. Parachutists use large parachutes to slow down their fall by increasing air resistance.

Questions: 7. How do birds adjust their air resistance while flying?

8. Why do parachutists use large parachutes?

Passage 4: Engineers and Air Resistance

Engineers and designers take air resistance into account when creating vehicles and other objects. They design sleek and aerodynamic shapes to reduce air resistance, making things move faster and more efficiently. Can you think of any vehicles or sports equipment that might benefit from reduced air resistance?

Questions: 9. How do engineers use their understanding of air resistance?

10. Why do engineers design sleek and aerodynamic shapes for vehicles?

Bonus Challenge: Think about a bicycle and a car. How does air resistance affect each of them differently when they're moving?

Conclusion: Air resistance might not be visible, but it plays a big role in how things move through the air. Understanding air resistance helps us design better vehicles and objects for various purposes.

Answers:

1. Air resistance is a force that opposes the motion of objects through the air.
2. You can feel air resistance when the air pushes against your hand as you stick it out of a moving car window.
3. Size, shape, and speed can affect the amount of air resistance.
4. Larger objects experience more air resistance than smaller ones.
5. A streamlined shape allows air to flow smoothly, reducing air resistance.
6. The feather falls more slowly because it experiences more air resistance due to its slow speed.
7. Birds adjust their air resistance by spreading their wings wide or tucking them in.
8. Parachutists use large parachutes to slow down their fall by increasing air resistance.
9. Engineers use their understanding of air resistance to design vehicles and objects that move efficiently.

10. Engineers design sleek and aerodynamic shapes to reduce air resistance and improve efficiency.

Remember, this worksheet is designed to help you learn about air resistance. Take your time and think through each question carefully.