Year 6 Science Assessment: Friction and Air Resistance

Name: _____

Date: _____

Section 1: Multiple Choice

1. What is friction?

   a) A force that pulls objects toward each other

   b) A force that opposes motion between two surfaces that are in contact

   c) A force that acts at a distance

   d) A force that causes objects to float

2. Which of the following is an example of air resistance?

   a) A car driving on a smooth road

   b) A bird flying through the air

   c) A book resting on a table

   d) A person pushing a shopping cart

3. What happens to the friction between two surfaces if one of the surfaces is made smoother?

   a) Friction increases

   b) Friction decreases

   c) Friction stays the same

   d) Friction disappears completely

4. In which situation would you most likely experience the least amount of air resistance?

   a) Riding a bike into the wind

   b) Running with a large parachute

   c) Dropping a feather

   d) Riding a bike with a streamlined helmet

5. What is one way to reduce friction between two surfaces?

a) Make the surfaces rougher

b) Increase the weight on the surfaces

c) Add a lubricant, like oil or grease

d) Increase the surface area of contact

Section 2: True or False

6. Friction only occurs between solid surfaces.

True / False

7. Air resistance always acts in the opposite direction to the motion of an object.

True / False

8. Friction is always a harmful force and never useful.

True / False

9. Reducing the surface area of an object will increase its air resistance.

True / False

10. The faster an object moves through the air, the greater the air resistance it experiences.

True / False

Section 3: Short Answer

11. Explain how friction helps a car to stop when the brakes are applied.

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12. Describe an example of how air resistance affects a falling object.

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13. Give two examples of situations where friction is useful and explain why.

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14. Why do athletes like cyclists and skiers wear streamlined clothing?

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Section 4: Practical Application

15. Design a simple experiment to test the effect of surface texture on friction. Describe your method and what you would measure.

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16. Imagine you are an engineer designing a new parachute. What factors related to air resistance would you need to consider to ensure it works effectively?

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Teacher's Notes:

- Ensure learners understand the concepts of friction and air resistance and their real-world applications.
- Encourage detailed explanations in the short answer and practical application sections.
- Assess understanding through both theoretical knowledge and practical application.

Scoring Rubric:

- Multiple Choice (5 questions, 1 point each): _____ / 5
- True or False (5 questions, 1 point each): _____ / 5
- Short Answer (4 questions, 2 points each): _____ / 8
- Practical Application (2 questions, 4 points each): _____ / 8

Total Score: _____ / 26

Comments:

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This assessment is designed to evaluate the learners' understanding of friction and air resistance, incorporating various question types to test both theoretical knowledge and practical application skills.