

Nova's Forces Adventure: The Great Friction Investigation

Learning objective: To identify and explain how different surfaces affect the movement of objects through friction.

Nova the owl is testing how fast a toy wooden block slides down different surfaces. Look at the surfaces in the word bank and sort them into the table below based on how much friction they create. Then, answer the questions to show your understanding of how forces work.

Word bank: Polished wood · Rough sandpaper · Deep carpet · Smooth glass · Rubber mat · Shiny metal tray

1. Complete the table: Sort the words from the bank into 'Low Friction' (the block slides quickly) and 'High Friction' (the block slides slowly). (6 marks)

2. If Nova wants the wooden block to travel the furthest distance, which surface from the word bank should she choose and why? (2 marks)

3. Explain what friction is in your own words. How does it affect the movement of the wooden block? (2 marks)

4. Max the monkey wants to slide across the floor in his socks. Should he choose a wooden floor or a carpet to slide further? Explain your answer. (2 marks)

5. True or False: Friction is a force that acts in the same direction as the moving object. Explain your reasoning. (2 marks)

Draw: Draw a diagram showing Nova the owl pushing the wooden block down a ramp. Draw an arrow to show the direction of the movement and a label pointing to where the friction is happening between the block and the ramp.



Extension challenge: Nova noticed that when the wooden block became wet, it slid faster on the carpet. Write a short paragraph explaining why you think a liquid might change the amount of friction between two surfaces.