



Creative Activities for Understanding Factors Affecting Friction in Year 4 Science

Here are 10 creative activities designed to help Year 4 students understand the factors affecting friction. These activities are varied, incorporating hands-on learning and technology, all aligned with the 2014 National Curriculum in England.

1. Friction Experiment Station

Set up various stations with different surfaces (e.g., sandpaper, smooth wood, carpet) and a toy car. Have students measure how far the car travels on each surface using a ruler. They can record their findings in a table and discuss how surface texture affects friction.

2. Friction Race Challenge

Organise a racing event where pairs of students use toy cars on different surfaces (e.g., grass, concrete, lino). Each pair should time how long it takes their car to travel a set distance and discuss how the surface affects the speed of the car.

3. Create a Friction Simulation using Coding

Introduce students to a simple coding programme (like Scratch). They can create a digital simulation showcasing different surfaces and their impact on friction when a character moves. This will integrate technology and allow for creativity.

4. Research Project on Real-World Applications

Assign each student a different profession (e.g., astronaut, race car driver, firefighter). They will research how friction is managed in their chosen profession and create a presentation using PowerPoint or another presentation tool to share their findings.

5. Friction and Forces Science Journal

Have students maintain a science journal where they document various friction-related experiments, reflections on what they learned, and drawings depicting their activities. This will reinforce their understanding and allow for personal expression.

6. Interactive Friction Puzzles

Create a set of puzzles where students match different materials to their frictional properties (high friction vs. low friction). They can work in pairs or groups to encourage collaboration and discussion on the findings.

7. Friction Measurement with Technology

Using tablets or computers, students can conduct a simple experiment where they measure the force required to slide different objects across various surfaces. They can use digital scales and record their results in a spreadsheet for analysis.

8. Create a Friction Board Game

Students will design and create a board game that incorporates obstacles affected by friction (e.g., moving through mud, sliding on ice). This can be played in groups and will encourage collaborative learning and application of concepts.

9. Virtual Reality Friction Exploration

If available, use virtual reality headsets to explore environments showcasing friction in real-world scenarios, such as sports or vehicles. After the session, students can discuss what they observed and how different factors influenced friction.

10. Friction Art Project

Have students create an art piece that visually represents the concept of friction. They can use materials that show different levels of friction (e.g., rubber vs. paper) and explain their choices in a short description. This combines creativity with scientific understanding.

These activities not only align with the curriculum but also engage students' curiosity and critical thinking, laying a solid foundation for understanding complex scientific concepts such as friction.