



Learning Outcomes

- Design a mind-map showing the factors that affect friction.
- Design and plan an investigation into one of the factors affecting friction.
- Carry out an investigation, record data and analyse the results.
- Draw conclusions.
- Report and discuss the findings.

Curriculum Content

Forces, friction, application of friction, lubrication, use of data logging sensors, IT and the analysis of quantitative data.

References

- Anderson, R. D. (2002) Reforming science teaching: what research says about inquiry. *Journal of Science Teacher Education*, 13(1):1-12.
- Kennedy, D. (2012). Practical work in Ireland: A time of reform and debate. *Eurasia Journal of Mathematics, Science & Technology Education*, 2012, 8(1), 21-34
- Wenning, C. J. (2010) Why the resistance to inquiry oriented science teaching? *Journal of Physics Teacher Education Online*, 5(3), December 2010

GRIP IT OR SLIP IT

Objective

To allow students gain an understanding of the factors that affect friction by conducting a series of investigation.

Activities

1. As a group students had to try to identify with the aid of a mind map all the factors that contribute to a bus tyre gripping or slipping the road.
2. Each group then had to chose a single factor to investigate. They designed an experiment to see if their chosen factor did affect the tyre's ability to grip the road.
3. Each group then carried out their investigation.
4. They then discussed their findings and gave a short presentation to their fellow class mates.



Results

- Analysis of student accounts of the investigations shows that they engaged in a significant amount of IBSE during lessons.
- Feedback from students showed that the module had a positive impact on student motivation.
- Students found that the lessons were relevant for society.

Evaluation

- The module placed a strong emphasis on group work.
- Students worked independently of the teacher.
- The module was successful in presenting students with a scientific problem they had to solve.
- The scenario was not as effective as had been hoped in initially motivating students.

Conclusions

- The module was effective in promoting IBSE.
- The scenario and title were only partly effective in motivating students.

8. The level of importance to society in general of the topics I study in my lessons in the above subject may be described as:

