

Lesson Plan

Subject: General Studies

Duration: 60 minutes (a double lesson)

Topic: Force and motion

Level: Primary 6

Supervisor: Dr LAM Bick Har

Learning Objectives:

Upon completion of the lesson, students are able to:

Knowledge: understand the features and conditions of friction

1. characteristic of friction
2. uses of friction in daily life
3. factors that affected friction

Skills:



1. develop students' cooperative skills and critical thinking skills
2. nurture students' curiosity and experimental spirit

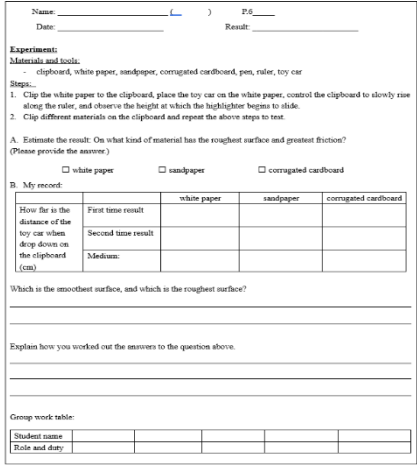
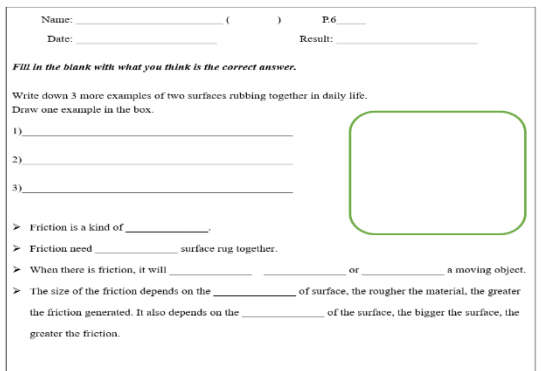
Prior knowledge:

1. motion and force
2. in-class experiment

Teaching resources (See appendix):

- Pictures of friction example in PowerPoint
- Textbook
- Visual teaching tools (books)
- Self-evaluation form
- Teacher assessment form

| Purpose of teaching / Stage | Teaching sequence and activities | Teaching materials / Resources | | | | | | |
|--|--|--|----------|------------------------------|------------------------|--|---|---|
| <p>Lead-in:</p> <ul style="list-style-type: none"> ✓ Motivate students' learning interest of the topic ✓ Introduce the topic: What is Friction? <p>(5 mins)</p> | <p>Teacher uses separating books experiment to introduce the ideas of friction.</p> | <p>➤ Separating Books</p>  | | | | | | |
| <p>Instruction:</p> <ul style="list-style-type: none"> ✓ Enable students to understand the concept of friction <ol style="list-style-type: none"> 1) Definition 2) Factors that affects friction 3) Examples of friction in daily life <p>(20 mins)</p> | <ol style="list-style-type: none"> 1. Teacher points out the characteristic of friction by summarize students' opinions. 2. Teacher brings out questions to stimulate students' thoughts and ideas on the common friction usage in daily life and the factors that affect friction. 3. Teacher uses PowerPoint (refer to Appendix 1) as a supplementary visual teaching aid. (i.e. show pictures and questions) 4. Teacher uses the consolidation mind map (refer to Appendix 2) and makes sure students have grasped the concept and ideas of friction. | <p>➤ PowerPoint slides (Refer to Appendix 1)</p> <p style="text-align: center;">What is Friction?</p> <p>The amount of friction depends on the size of the surfaces from which the two surfaces are made. The larger the surface, the more friction is produced.</p>  <p>The amount of friction depends on the materials from which the two surfaces are made. The rougher the surface, the more friction is produced.</p> <p>➤ Consolidation mind map (Refer to Appendix 2)</p> <p style="text-align: center;">Concept revision</p> <table border="1" data-bbox="940 1397 1490 1659"> <thead> <tr> <th style="background-color: #FFD700;">Features</th> <th style="background-color: #FFD700;">Factors that affect friction</th> <th style="background-color: #FFD700;">Friction in daily life</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> • Friction is a kind of _____ of _____. • Friction is created when _____ rub together. • Friction _____ a moving object or _____ it and produce _____. </td> <td> <ul style="list-style-type: none"> • _____ of two surfaces. • The rougher the surface, the more friction is produced. • _____ of two surfaces. • The larger/ smaller the surface, the more friction is produced </td> <td> <p>Friction are _____ in our life.</p> <p>Too much or too less friction can make troubles, but friction also very helpful when use in an _____.</p> </td> </tr> </tbody> </table> | Features | Factors that affect friction | Friction in daily life | <ul style="list-style-type: none"> • Friction is a kind of _____ of _____. • Friction is created when _____ rub together. • Friction _____ a moving object or _____ it and produce _____. | <ul style="list-style-type: none"> • _____ of two surfaces. • The rougher the surface, the more friction is produced. • _____ of two surfaces. • The larger/ smaller the surface, the more friction is produced | <p>Friction are _____ in our life.</p> <p>Too much or too less friction can make troubles, but friction also very helpful when use in an _____.</p> |
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| <p>Application:</p> <ul style="list-style-type: none"> ✓ Enable students to apply the knowledge in real life ✓ Develop students' critical thinking | <ol style="list-style-type: none"> 1. Teacher assigns groups with mix skills and abilities (4 to 5 people in a group). 2. Students cooperate to work in a group and choose one case to work on. Then students need to | <p>➤ In-class experiment worksheets (See Appendix 3)</p> | | | | | | |

| <p>ability and problem-solving skills</p> <p>(30 mins)</p> | <p>finish the worksheets (refer to Appendix 3).</p> <p>3. Students need to use the knowledge of friction to analyse and explain the findings in their case.</p> <p>4. Teacher assists students when there are in confusion during the experiment.</p> |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <p>Presentation:</p> <ul style="list-style-type: none"> ✓ Enable students to develop cooperative learning skills ✓ Practice students' presentation skills <p>(15 mins)</p> | <p>1. Teacher invites students to present their findings in the project to their classmates. Teacher chooses 2-3 students for presentation; all students need to fill in the table for their role and duty in the experiment worksheets (refer to Appendix 3).</p> <p>2. Teacher uses the rubrics (refer to Appendix 4) to evaluate students' acquisition of subject knowledge.</p> <p>3. Students use the self-evaluation forms (refer to Appendix 5) to evaluate their performance for the group work.</p> | <p>➤ Rubrics (Refer to Appendix 4)</p> <table border="1" data-bbox="1018 712 1436 1008"> <thead> <tr> <th>Attributes</th> <th>Attribute Skill A Goal</th> <th>Below Standard</th> <th>At Standard</th> <th>Above Standard</th> <th>Points Earned</th> </tr> </thead> <tbody> <tr> <td>Observations</td> <td>Consistently made observations without care or reflection. (1 point)</td> <td>Made some observations, spent little to no time to see data made sense. (2 points)</td> <td>Usually made careful observations, taking time to see that data made sense. (3 points)</td> <td>Consistently made careful observations, taking time to see that data was recorded correctly. (4 points)</td> <td>14</td> </tr> <tr> <td>Use of Class Time</td> <td>Unprepared. Not using effective use of time. Difficulty staying on task. (1 point)</td> <td>Was on task and made effective use of time some of the time. 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| <p>Conclusion:</p> <ul style="list-style-type: none"> ✓ Consolidate students' understanding of friction ✓ Enrich students' learning outcome ✓ Encourage students to be curious <p>(10 mins)</p> | <p>1. Teacher summarizes the lesson with bullet points.</p> <p>2. Teacher addresses the importance of experimental spirit and cooperative skills to students.</p> <p>3. Teacher distributes the worksheet (refer to Appendix 6) as homework for consolidation.</p> | <p>➤ Homework worksheets (Refer to Appendix 6)</p>  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |