

Name Emilee Hammett

Lesson Plan Template

Learning Segment Focus Friction and Speed

Lesson 1 of 1 Topic Friction and Speed Date 4-6-2021
 Grade _____

Student Outcomes

Specific learning objectives for this lesson.	Students will understand that Friction can affect speed.
Justify how learning tasks are appropriate using examples of students' prior academic learning .	Students have priorly learned that speed is affected by the mass of the object.
Justify how learning tasks are appropriate using examples of students' personal, cultural, linguistic, or community assets .	Students encounter friction all of the time. Friction stops balls from rolling, stops people when they slide, etc.

State Academic Content Standards

List the state academic content standards with which this lesson is aligned. Include abbreviation, number & text of the standard(s).	4-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.
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Key Vocabulary

What vocabulary terms/content specific terminology must be addressed for students to master the content?	Ramp, Speed, Friction
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Academic Language Support

What are the Academic Language Function(s) (the content and language focus of the learning task represented by the active verbs within the learning objectives/outcomes) and explain how they are utilized in the lesson plan? What planned Academic Language Supports will you use to assist students in their understanding of key academic language to express and develop their content learning and to provide varying supports for students at different levels of Academic Language development? How do these supports address all three Academic Language Demands (vocabulary, syntax, and discourse) ?	Every key vocabulary word will be defined explicitly to the students. The words will be displayed on the board for the duration of the lesson.
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Materials

Materials needed by the teacher for this lesson. (such as books, writing materials, computers, models, colored paper, etc.)	Computer, powerpoint, youtube video about friction
Materials needed by students for this lesson. (computers, journals, textbook, etc.)	Computer, excel template, wooden ramp, plastic ramp, metal ramp, marble, golf ball, ping pong ball, bouncy ball

Lesson Timeline with Instructional Strategies & Learning Tasks

Amount of Time	Teaching & Learning Activities (This should be a BULLETED LIST)	Describe what YOU (teacher) will be doing and/or what STUDENTS will be doing during this part of the lesson. (This should be VERY DETAILED)
Day 1, 50 minutes	<p><u>Introduction:</u></p> <ul style="list-style-type: none"> • Friction Lab. 	<p>Students will conduct lab in small groups. They will time each type of ball going down each ramp for 5 trials. Students will record their results into the excel template.</p>
Day 2, 30 minutes	<p><u>Instruction:</u></p> <ul style="list-style-type: none"> • Teacher presentation about speed, mass, and friction. 	<p>Teacher will present powerpoint pertaining to speed, mass and friction. Students will fill out guided notes. Class will discuss their results from the lab. Class will answer questions such as which material creates more friction. Were there any possible errors during this experiment? What are they? Do our results make sense?</p>
Day 2, 20 minutes	<p><u>Closure:</u></p> <ul style="list-style-type: none"> • Youtube Video 	<p>Students will watch a youtube video that helps to explain friction.</p>

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Technology Integration

<p>Provide your rationale for your technology choices that accurately reflects those choices within your teaching context. Identify what technology(s) you are using as part of your lesson plan. Describe how the use of technology aligns to your learning objectives, content standards, and central focus. Explain how technology-based instructional strategies are essential to students accomplishing the learning objectives (beyond what could be accomplished without using the technology). Specify how the technology selections meet or exceed the needs/strengths of all students. Justify the “fit” of chosen technologies, showing how the content, instructional strategies, and technology “fit” together.</p>	<p>Students will be using excel the same way they would write down their times on paper. This gets them used to using spreadsheets so they will be prepared to use them more in depth as they get older. The color coded design and visual representations of the data in the form of graphs help students to see the relationship between the data.</p>
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Accommodations/Modifications

<p>How might I modify instruction for: <i>Remediation?</i> <i>Intervention?</i> <i>IEP/504?</i> <i>LEP/ESL?</i> (All students who have plans mandated by federal and state law.)</p>	<p>The teacher would be available to assist any group that may need it. Time for the lab can be extended as well.</p>
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Differentiation

<p>How might you provide a variety of techniques (enhanced scaffolding, explicit instruction, contextualized materials, highlighters/color coding, etc.) to ensure all student needs are met? (All students who are not on specific plans mandated by federal and state law.)</p>	<p>The information will be presented inductively, through the lab, visually, through the graphs, auditorily and explicitly, through the powerpoint presentation, and reinforced with a video.</p>
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Assessments: Formative and/or Summative

<p>Describe the tools/procedures that will be used in this lesson to monitor students’ learning of the lesson objective(s) (include type of assessment & what is assessed).</p>	<p><input checked="" type="checkbox"/> Formative / <input type="checkbox"/> Summative</p>	<p>Teacher will walk around the room during lab and ask questions to guide thinking.</p>
	<p><input checked="" type="checkbox"/> Formative / <input type="checkbox"/> Summative</p>	<p>Students will turn in their question sheet “Class will answer questions such as which material creates more friction. Were there any possible errors during this experiment? What are they? Do our results make sense?” These will be checked for understanding and graded for effort.</p>
	<p><input type="checkbox"/> Formative / <input checked="" type="checkbox"/> Summative</p>	<p>Students will turn in their excel results. The information taught will be part of the upcoming quiz.</p>

Research/Theory

<p>Explain connections to theories and/or research (as well as experts in the field or national organization positions) that support the approach you chose and justify your choices using principles of the connected theories and/or research.</p>	<ul style="list-style-type: none">• “Frank (1997) finds that, compared to students in a control class, students' homework scores increase when they participate in an experiment related to the homework topic.”
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Lesson Reflection/Evaluation

<p>What went well? What changes should be made? How will I use assessment data for next steps?</p>	<p><i>TO BE FILLED IN AFTER TEACHING</i></p>
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Include supporting material such as slides, pictures, copy of textbook, and handouts for any activities students will be using as part of your lesson.

Youtube Video: <https://www.youtube.com/watch?v=A-jb04sERNo>

*adapted from: <http://webcache.googleusercontent.com/search?q=cache:EsQcNWuG1ZoJ:web.mnstate.edu/harms/StudentTeachers/edTPA-LessonPlan.doc+&cd=2&hl=en&ct=clnk&gl=us>; <http://www.moreheadstate.edu/getmedia/cd3fd026-939f-4a47-a938-29c06d74ca01/Lesson-Plan-and-Reflections.aspx>;
<http://www.mcneese.edu/f/c/9cb690d2/Lesson%20Plan%20Rubric%20Aligned%20with%20InTASC.docx>; <https://www.uwsp.edu/education/Documents/edTPA/Resource12.pdf>; <https://www.uwsp.edu/education/Documents/edTPA/Resource11.pdf>;
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