

Unleashed

Lesson Plan Day 4

LESSON OBJECTIVE

Students will be able to:

- Define friction
- Understand all types of friction
- Label the types of friction

ASSESSMENT

- Exit Questions
- Classwork

KEY POINTS

- Teacher will introduce students to friction
- Students will learn and understand all types of friction
- Students will watch the Ok Go Rube Goldberg video and label the types of friction
- Class will engage in a short discussion about what they have learned

COMPONENT	TEACHER & STUDENT ACTIONS	MATERIALS
Do Now [5 min]	Ask the question: If you kick a soccer ball down a field, why does it stop rolling?	Slidedeck Paper and pencil (or discuss out loud as a class)
Mini-Lesson [15 min]	Introduce students to friction	Slidedeck
Independent Activity [10 min]	Watch the Ok Go Rube Goldberg machine video and label types of Friction used	Slidedeck
Group Activity [20 min]	Complete a think-pair-share activity based on the types of friction found in the video - use the handout provided	Slidedeck & handout (access a pdf copy or make a copy of the digital version).

Closing [5 min]	Ask the questions: What force causes objects to have circular motion? Remind students to complete the daily learning log.	Slidedeck Paper and pencil (or discuss out loud as a class) Daily Learning Log
DIFFERENTIATION CONSIDERATIONS:		
- Choose either paper/pen/pencil or digital tools (Google Slides, Google Draw, etc) - Students can work individually or in groups - Students can have more teacher support where needed		

STANDARDS
NGSS MS-PS3-2. Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system. MS-PS3-5. Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object. MS-ETS1-4. Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved. Common Core CCSS.ELA-LITERACY.SL.6-12.1 - Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9-10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. CCSS.ELA-LITERACY.SL.9-10.2 Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source. CCSS.ELA-LITERACY.RST.6-12.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to <i>grades 6-12 texts and topics</i>.



*lessons adapted from "Everything you need to know about Science" by Micheal Geisen