

Accessing the Unit Materials



BOSTON COLLEGE
Lynch School of Education
and Human Development
OPENSIED EQUITABLE
INSTRUCTION INITIATIVE



The main page for each unit has many shortcuts for finding things. From here you can:

- Download or preview the unit
- Access the storyline
- Access the videos for the unit (student-facing and teacher prep)
- Find kit content lists and information about kit providers
- Access simulations
- Find quick references to information about the unit

OpenSciEd

Why OpenSciEd ▾ Curriculum ▾ Professional Learning ▾ Purchase Support ▾

Unit Overview

8.1 Contact Forces

Why do things sometimes get damaged when they hit each other?

Middle School Instructional Materials ▸ 8.1 Contact Forces

Unit Summary

Oh, no! I've dropped my phone! Most of us have experienced the panic of watching our phones slip out of our hands and fall to the floor. We've experienced the relief of picking up an undamaged phone and the frustration of the shattered screen. This common experience anchors learning in the Contact Forces unit as students explore a variety of phenomena to figure out, "Why do things sometimes get damaged when they hit each other?"

Student questions about the factors that result in a shattered cell phone screen lead them to investigate what is really happening to any object during a collision. They make their thinking visible with free-body diagrams, mathematical models, and system models to explain the effects of relative forces, mass, speed, and energy in collisions. Students then use what they have learned about collisions to engineer something that will protect a fragile object from damage in a collision. They investigate which materials to use, gather design input from stakeholders to refine the criteria and constraints, develop micro and macro models of how their solution is working, and optimize their solution based on data from investigations. Finally, students apply what they have learned from the investigation and design to a related design problem.

Student Videos Teacher Videos Unit Webinar

Why do things sometimes get damaged when they hit each other?

Unit standards

This unit builds toward the following NGSS Performance Expectations (PEs) as described in the OpenSciEd Scope & Sequence:

- MS-PS2-1
- MS-PS2-2
- MS-PS3-1
- MS-LS1-8
- MS-ETS1-2
- MS-ETS1-3

Reference to kit materials

The OpenSciEd units are designed



OpenSciEd units can be downloaded for free in several formats. Downloading with Google allows syncing with Google Classroom and easy editing of documents. Downloading with PDF provides the most polished formatting. Errata and updates for the OpenSciEd materials are provided on this [spreadsheet](#). Users can access these updates by downloading a new copy of the unit.



Using Google Versions

- Preview the Unit in Google Drive >
- Copy the Unit to Your Google Drive >
- Create a Google Classroom Version >



Using PDF Versions

- Download Print-Ready PDFs >
- Download Screen-Ready PDFs >

In the Google Versions, you can:




























- Preview each lesson and documents without making copies.
- Make copies into your Google Classroom for assigning to students.
- And soon, download the whole unit into your Google Drive.




































In the PDF Versions, you can preview the entire teacher edition:

- Print-ready → for printing purposes
- Screen-ready → for e-reading purposes

Navigating OpenSciEd's Google Drive Folders

Each Unit folder has a subfolder for each lesson, and at the bottom, several files that are not specific to a particular lesson, but that are more general to the unit/curriculum. Definitely take a look at the Unit Overview Materials (the storyline and assessment system are here, along with things you'll need for the big-picture view). There is also a .pdf with all of the video links collected into one place. There is a bunch of useful material in the main folder, don't overlook it!











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 8.1 Contact Forces Unit Overview Materials	 OpenSciEd A...	May 13, 2023	4.7 MB
 8.1 Elements of NGSS Dimensions.pdf 	 OpenSciEd A...	May 13, 2023	235 KB
 Communicating in Scientific Ways Poster - Spanish.pdf 	 OpenSciEd A...	May 13, 2023	409 KB
 Communicating in Scientific Ways Poster.pdf 	 OpenSciEd A...	May 13, 2023	137 KB
 Middle School Kit Materials Lists.pdf 	 OpenSciEd A...	May 13, 2023	64 KB
 Middle School Program Overview.pdf 	 OpenSciEd A...	May 13, 2023	21.9 MB
 Middle School Scope & Sequence.pdf 	 OpenSciEd A...	May 13, 2023	1.1 MB
 Self Evaluation Classroom Discussion.pdf 	 OpenSciEd A...	May 13, 2023	94 KB
 Teacher Handbook 2022-23.pdf 	 OpenSciEd A...	May 13, 2023	6.6 MB
 Unit 8.1 Contact Forces Video Links.pdf 	 OpenSciEd A...	May 13, 2023	63 KB



Inside the lesson folders you'll find:

- The teacher edition for that lesson
- Student-facing slides for that lesson
- Student handouts, readings, and resources
- Spanish translations

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