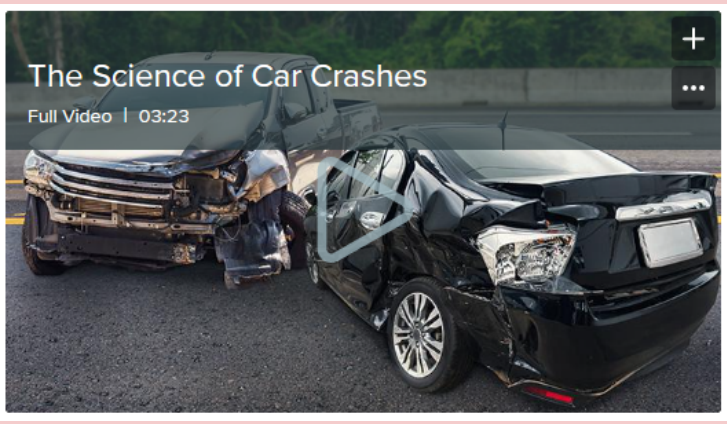
Grade 4 Unit 1 Discovery Education Pacing (Tam)

Below are the activities and pace of activities that I like to use with Grade 4 Unit 1: Car Crashes / Collisions. You'll also find commentary which include connections to other subjects as well as general suggestions when teaching. For 4th grade in particular, highlighted in teal is what you might want to consider using as a grade.

THE PACING IS ONLY A SUGGESTION. EXERCISE YOUR RIGHT TO TEACH THE STANDARDS AS YOU SEE FIT.

Anchor Phenomenon



The Science of Car Crashes

Lots of things happen in a car crash. There's a lot of noise. Things get broken and thrown about. People get hurt. This video shows one way in which car crashes are studied. We learn about the things that can happen in a crash and what causes them as we study this unit.

Guiding Questions

1. What happens to energy when objects collide?
2. Why do car crashes cause so much damage?

Alternative Phenomenon

The Highest Mountains in the World

Should students find the topic of car crashes heavy or triggering, a conversation around the highest mountains in the world can be had instead. There are only a few mountains that go above the 8000 meter range and they're actually mostly located in one place in the world - the himalayas. Alongside Mount Everest, there's Annapurna and Shishapangma which could only be created by a massive collision between two masses of land.

Guiding Questions

1. What happens to energy when objects collide?

Concept 1.1: Starting and Stopping

	Day 1	Day 2	Day 3	Day 4
Synchronous	Activity 2: Takeoff and Landing Activity 5: Objects in Motion	Introduce Investigative Question: How Do We Know an Object is Moving? Activity 6: Motion Activity 5: Objects in Motion Activity 7: Force	Activity 9: Stopping Motion Activity 11: Hands-On Investigation: Rolling Cars I think that given the choice between Activity 11 and 12, I would choose 11. I know that a lot of teachers don't like to do back to back labs, but you can take a lot of elements from 12 and use them in 11.	Activity 13: Force and Energy Activity 14: Energy, Work, and Force
Asynchronous	Activity 4: What Do You Already Know About Starting and Stopping?		Activity 10: Mission to an Asteroid	Activity 15: All Aboard!

Concept 1.2: Energy and Motion

	Day 1	Day 2	Day 3	Day 4
Synchronous	Activity 2: Roller Coasters Activity 5: Kinetic and Potential Energy Activity 6: Energy Basics	Introduce Investigative Question: Does Energy Disappear When It is Changed? Activity 7: Conservation of Energy Activity 8: Law of Conservation of Energy	Introduce Investigative Question: What are Different Forms of Potential and Kinetic Energy? Activity 9: Forms of Potential and Kinetic Energy Activity 10: Types of Energy Activity 11: Forms of Energy	Activity 12: Energy Transformation in Engines Activity 14: Energy Used to Move Objects Two readings seems a little excessive. I may just otto show the picture in Activity 12
Asynchronous	Activity 4: What Do You Already Know About Energy and Motion?		Activity 13: Forms of Energy. I would say combine Activity 11 and 13 for a grade.	Activity 15: Easy Life Tool

Concept 1.3: Speed

	Day 1	Day 2	Day 3	Day 4	Day 5
Synchronous	Activity 2: Cheetah Speed Activity 3: Catching Own Pass Activity 4: Measuring Wind I might not spend all	Activity 9: Speed and Time Activity 11: Describing Motion This is a huge math skill moment, so	Activity 12: Calculating Speed Activity 10: Hands-On Investigation: Measuring Speed	Activity 13: Predicting Speed Calculations	Activity 16: Changing Speed Activity 17: RC Racing Cars

	the time doing the activities, but I feel as though 4th graders can have a skewed understanding of speed and how fast things are. Activity 6: Basics of Speed	feel free to take your time on getting this down. Some division involved.			
Asynchronous	Activity 5: What Do You Already Know About Speed?	Activity 8: Measuring Speed		Activity 14: Comparing Speeds	Activity 18: Train Race and Going for a Drive

Concept 1.4: Energy and Collisions

	Day 1	Day 2	Day 3	Day 4
Synchronous	Activity 5: Energy and Collisions Activity 6: The Effect of Speed on Collisions	Activity 7: Hands-On Investigation: Speed and Collisions I think you almost combine labs 7 and 9 to show the effects of speed and mass. A collision can either be dangerous by something traveling very fast or be very massive. Interactions between objects that move and contact each other leads to the transfer of energy.	Activity 10: The Effect of Mass on Collisions Activity 9: Hands-On Investigation: Mass in Collisions	Activity 11: Energy Conversion during a Collision Activity 13: Kinetic Energy of Vehicles
Asynchronous		Activity 8: Micrometeorites		