

You know you can use the Iditarod XXXV DVD in your classroom to show the beauty, wonder, intensity, and reality of the race. Here's a way to use it to illustrate some physical science concepts. As your students are watching, pause the DVD and ask them to point out examples of these things.

physical science concept	examples from Iditarod
<p>Newton's laws of motion:</p> <ol style="list-style-type: none"> a. an object at rest remains at rest unless acted on by a force b. an object in motion remains in motion unless acted on by a force 	<ul style="list-style-type: none"> ▪ dogs and mushers starting to move/run propelled by the force of their muscles and friction of their feet on the ground ▪ dogs/mushers stopping due to friction of their feet and the ground ▪ dogs continuing to run after a musher falls off the sled ▪ a musher's sled getting caught on a tree
<p>friction, both helpful and hindering</p>	<ul style="list-style-type: none"> ▪ mushers hands on bow of sled ▪ bare, rough trail ▪ icy, slick trail ▪ dogs' feet on trail ▪ sled runners on trail ▪ deep snow in chute at Anchorage start ▪ anyone standing up (friction between feet and ground) ▪ the snowhook being dropped to slow the team ▪ dog team running into the wind
<p>gravity</p>	<ul style="list-style-type: none"> ▪ sleds tipping over ▪ sleds moving faster downhill ▪ sleds moving slower uphill ▪ mushers falling down ▪ straw being dropped to the ground for the dogs to sleep in ▪ a sled returning to the ground after being raised into the air by a tussock

<p>balanced forces</p>	<ul style="list-style-type: none"> ▪ the sled and supplies loaded onto it ▪ a dog team standing still ▪ a musher standing upright on the runners ▪ a cooker sitting still on the ground ▪ a dog team running at a steady pace without changing direction ▪ a dog curled up, nose tucked into its tail asleep
<p>unbalanced forces</p>	<ul style="list-style-type: none"> ▪ a tipping sled ▪ a turning sled ▪ a sled moving quickly downhill ▪ a dog team changing direction ▪ a musher unloading/loading needed gear out of/into the sled ▪ a musher stirring dog food in a cooler ▪ a team stopping ▪ a musher lifting his/her arms in triumph after crossing the finish line