



# Next Generation Science Standards

Teachers can use the giant screen film *Into Nature's Wild* with additional activities and discussion to support the following Next Generation Science Standards. A copy of the Educator Activity Guide can be found at <https://intonatureaswild.com/>

## Elementary

**K-ESS3-3 Earth and Human Activity** Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.



Many scenes in the film address how humans interact with their environment, and note the responsibility of people to take responsibility for the planet.



**3-PS2-1 Motion and Stability: Forces and Interactions** Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.



In the film the characters travel across the country by plane. Understanding how an airplane stays aloft, through the balance of lift, thrust, drag, and gravity is an example of balanced forces. Also, understanding how a grebe runs on top of the water requires an understanding of balanced forces.

**4-ESS3-2 Earth and Human Activity** Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.



Many scenes address the interaction between humans and their environment. The homes at Mesa Verde were designed to protect residents from the local environment, for example.

**5-LS2-1 Ecosystems: Interactions, Energy, and Dynamics** Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.



Particularly in the scene with the fallen tree, students see how decomposers return organic material to the ecosystem for use by other organisms.

**5-ESS2-1 Earth's Systems** Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.



Many scenes address the interaction between living things and their environment, which is an example of interaction between the biosphere and the planet. By making links from specific ecosystems to the global view from the International Space Station, students can be encouraged to see nature as interacting systems.



## Middle School

**MS-LS2-3 Ecosystems: Interactions, Energy, and Dynamics** Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.



The film depicts the cycling of matter through the decay of a fallen tree as one example. Material from the tree is put back into the ecosystem through the action of decomposers.

**MS-LS2-4 Ecosystems: Interactions, Energy, and Dynamics** Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.



We learn that the people of Mesa Verde left after a period of prolonged drought. This is an example of a change to an ecosystem that led to a change in the population in that ecosystem.

## High School

**HS-LS2-3 Ecosystems: Interactions, Energy, and Dynamics** Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.



The decay of the fallen log is facilitated by the action of fungi and bacteria, some of which work aerobically, and others anaerobically.

**HS-LS2-5 Ecosystems: Interactions, Energy, and Dynamics** Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.



Many scenes in natural settings can be used to motivate lessons addressing this standard. The abundance of food sources in the Pacific Northwest, such as in kelp forests, is one example.

**HS-ETS1-3 Engineering Design** Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.



The audio backpacks for the hearing impaired are a great example for this design standard. Students can compare the solution in the film to other solutions for amplifying sounds, and consider all the constraints they can see in the movie. In addition, the International Space Station is a huge engineering project that includes thousands of items all designed to the very particular constraints of operating in space.

