MS. Human Impacts

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A Performance Expectations MS.ESS3.HI

1 Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. MS.ESS3.2

2 Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment. MS.ESS3.3

3 Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems. MS.ESS3.4

B Science and Engineering Practices MS.HI.SEP

1 Analyzing and Interpreting Data MS.HI.SEP.1

a Analyze and interpret data to determine similarities and differences in findings. (MSESS3-2) MS.HI.SEP.1A

2 Constructing Explanations and Designing Solutions MS.HI.SEP.2

a Apply scientific principles to design an object, tool, process or system. (MS-ESS3-3) MS.HI.SEP.2A

3 Engaging in Argument from Evidence MS.HI.SEP.3

a Construct an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem. (MS-ESS3-4) MS.HI.SEP.3A

Skip to main content

C Disciplinary Core Ideas MS.HI.DCI

1. ESS3.B: Natural Hazards MS.HI.DCI.ESS3.B
   a. Mapping the history of natural hazards in a region, combined with an understanding of related geologic forces can help forecast the locations and likelihoods of future events. (MSESS3-2) MS.HI.DCI.ESS3.B.1
2. ESS3.C: Human Impacts on Earth Systems MS.HI.DCI.ESS3.C
   a. Human activities have significantly altered the biosphere, sometimes damaging or destroying natural habitats and causing the extinction of other species. But changes to Earth's environments can have different impacts (negative and positive) for different living things. (MS-ESS3-3) MS.HI.DCI.ESS3.C.1
   b. Typically as human populations and per-capita consumption of natural resources increase, so do the negative impacts on Earth unless the activities and technologies involved are engineered otherwise. (MS-ESS3- 3),(MS-ESS3-4) MS.HI.DCI.ESS3.C.2

D Crosscutting Concepts MS.HI.CC

1. Patterns MS.HI.CC.1
   a. Graphs, charts, and images can be used to identify patterns in data. (MS-ESS3-2) MS.HI.CC.1A
2. Cause and Effect MS.HI.CC.2
   a. Relationships can be classified as causal or correlational, and correlation does not necessarily imply causation. (MSESS3-3) MS.HI.CC.2A
   b. Cause and effect relationships may be used to predict phenomena in natural or designed systems. (MS-ESS3- 4)
3. Influence of Engineering, Technology, and Science on Society and the Natural World MS.HI.CC.3
   a. All human activity draws on natural resources and has both short and long-term consequences, positive as well as negative, for the health of people and the natural environment. (MS-ESS3-4) MS.HI.CC.3A
   b. The uses of technologies and any limitations on their use are driven by individual or societal needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions. Thus technology use varies from region to region and over time. (MS-ESS3-2),(MS-ESS3-3) MS.HI.CC.3B
4. Science Addresses Questions About the Natural and Material World MS.HI.CC.4
   a. Scientific knowledge can describe the consequences of actions but does not necessarily prescribe the decisions that society takes. (MS-ESS3-4) MS.HI.CC.4A