

Iowa Common Core Standards for Science

4-H Youth Development Curriculum and Kits from Iowa State University Extension and Outreach, Scott County

Name	Target Grade	Number of Lessons	Iowa Core Content Anchor Standard in Science	Specific Standard(s)
DNA Extraction	5-12	1	Life Science Physical Science	<p><u>Grade Five</u> Develop a model to describe that matter is made of particles too small to be seen. (5-PS1-1) Conduct an investigation to determine whether the mixing of two or more substances results in new substances. (5-PS1-4)</p> <p><u>Grade Six</u> Develop models to describe the atomic composition of simple molecules and extended structures. (5-PS1-1) Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred. (5-PS1-2) Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. (5-LS1-1) Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function. (5-LS1-2) Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. (5-LS1-3)</p> <p><u>Grade Seven</u> Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. (MS-LS1-5)</p> <p><u>Grade Eight</u> Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. (MS-LS4-4)</p> <p><u>Grade Nine</u> Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells. (HS-LS1-1)</p>

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DNA Extraction	5-12	1	Life Science Physical Science	<p>Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms. (HS-LS1-4)</p> <p>Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring. (HS-LS3-1)</p> <p><u>Grade Ten</u></p> <p>Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells. (HS-LS1-1)</p> <p>Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms. (HS-LS1-4)</p> <p>Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring. (HS-LS3-1)</p> <p><u>Grade Eleven</u></p> <p>Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells. (HS-LS1-1)</p> <p>Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms. (HS-LS1-4)</p> <p>Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring. (HS-LS3-1)</p> <p><u>Grade Twelve</u></p> <p>Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells. (HS-LS1-1)</p> <p>Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms. (HS-LS1-4)</p> <p>Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring. (HS-LS3-1)</p>

