Indiana Integrated STEM Content Connectors

High School

Communication and Collaboration CC

1 **Communicate evidence, investigations, analyses, and the solution(s) of a problem in multiple media forms appropriate for the audience.** HS.CC.1

- a Collect and share evidence in multiple media forms to inform an audience about a solution to a problem. HS.CC.1A

2 **Implement roles and responsibilities to collaborate, contribute, and/or lead within and across various group settings (i.e., online, onsite and/or hybrid) and situations.** HS.CC.2

- a Collaborate while carrying out assigned roles and responsibilities. HS.CC.2A

3 **Evaluate competing solutions or arguments in a systematic way based on qualitative and/or quantitative evidence.** HS.CC.3

- a Communicate the best solution(s) or argument(s) for a problem or investigation based on evidence. HS.CC.3A

Data Analysis and Measurement DM

1 **Use multiple systems of measurement (i.e., standard and metric) and data sets (e.g., plots, tables, graphs, charts) defined in course-level content standards to analyze real-world scenarios and the mathematical relationships represented by the data.** HS.DM.1

- a Use two or more provided sources of data (e.g., measurement, data sets, plots, tables, graphs, charts), defined in course-level content standards, to describe real-world scenarios or the mathematical relationships represented by the data. HS.DM.1A

2 **Construct visual representations or conduct statistical analyses defined in course-level content standards.** HS.DM.2

- a Construct visual representations or apply statistical analysis (e.g., range, mode, median) to interpret visual representations defined in course-level content standards (e.g., bar graphs, charts), using digital tools when possible and feasible. HS.DM.2A

3 **Use approximations and evaluate reasonableness of observations, results, and solutions throughout processes.** HS.DM.3

- a Use approximations to categorize observations, results, or solutions throughout processes as reasonable or unreasonable, and justify your selection. HS.DM.3A

Inquiry-Based Approaches and Problem Solving IPS

1 **Conduct or extend an investigation, analyze results, iterate, and revise to improve the design.** HS.IPS.1

- a Conduct or extend an investigation, analyze (e.g., finding relationships between data) the results and suggest one way the design of the investigation could be improved upon, iterate and revise to improve the design. HS.IPS.1A

2 **Determine one or more viable solutions using data and information to resolve a scenario given criteria and constraints.** HS.IPS.2

- a Given both a specific set of criteria and constraints, find one or more viable solutions to solve a problem. HS.IPS.2A

3 **Integrate processes and methodologies across disciplines to incorporate multiple sources of evidence, including data generated by the student, to support defining a solution.** HS.IPS.3

- a Use evidence and/or processes from more than one academic discipline to generate a solution to a proposed problem. HS.IPS.3A

4 **Evaluate data analysis to determine alignment to the construct, validity and/or reliability concerns.** HS.IPS.4

- a Use an appropriate method to analyze or compare a given set(s) of data for reliability or validity. HS.IPS.4A

5 **Design and conduct surveys or experiments minimizing bias and defining limitations of the data set used for analysis (e.g., measurement error, sample selection).** HS.IPS.5

- a Given a data set, design a survey or experiment which explores the limitations of that set of data. HS.IPS.5A

Applications and Modeling AM

1 **Interpret and evaluate relationships among data sets.** HS.AM.1

- a Interpret relationships among data sets. HS.AM.1A

2 **Create advanced models (e.g., mathematical models, computer simulations) to represent and explain natural and designed systems, defined in course-level content standards.** HS.AM.2

- a Create models (e.g., simple mathematical models, simple computer simulations) to represent or explain natural and designed systems, defined in course-level content standards. HS.AM.2A

3 **Use evidence-based models to describe relationships between systems or between components of a single system.** HS.AM.3

- a Identify the relationship between components of a single system from a teacher-provided evidence-based model. HS.AM.3A

4 **Demonstrate the use of computational, graphical, virtual, mathematical, and/or physical modeling to identify conflicting considerations before the entire system or solution is developed.** HS.AM.4

- a Evaluate a simple model (e.g., computational, graphical, virtual, mathematical, physical) for errors or conflicts before the final solution is determined. HS.AM.4A

Information and Digital Literacy IDL

1 **Analyze tradeoffs of using a variety of tools to solve a given problem including technology.** HS.IDL.1

- a Compare the pros and cons of two or more tools, including technology, to solve a given problem. HS.IDL.1A

2 **Review and compile information from multiple sources, including sources generated by the student, to solve a problem.** HS.IDL.2

- a Review and compile information from multiple sources to solve a problem. HS.IDL.2A

3 **Evaluate the potential impact (short and/or long-term) of different technology solutions on society and the environment.** HS.IDL.3

- a Compare how two or more technologies may affect society and the environment, both in the short term and over time. HS.IDL.3A