

Design and Development (Grades 6-8)

Design and Development

I Design and Development DD

- a Explore the major enterprises of the designed world. DD.01
 - 1 Evaluate the major enterprises of the designed world, in the fields of communications, construction, manufacturing and transportation. DD.01.01
 - 2 Incorporate science concepts and mathematic processes applied through the use of technology. DD.01.02
 - 3 The positive and negative aspects of a design. DD.01.03
 - 4 Plan multiple design solutions to solve a problem. DD.01.04
 - 5 Explain why a design process leads to useful products and processes. DD.01.05
 - 6 Critique designs and products created to solve a problem. DD.01.06
 - 7 Explain that requirements for a design are made up of criteria and constraints. DD.01.07
- b Explore the engineering design. DD.02
 - 1 Demonstrate that evaluating, modeling, modifying and testing can be used to transform ideas into practical solutions. DD.02.01
 - 2 Gather information to gain background knowledge related to a problem. DD.02.02
 - 3 Construct a timeline to solve a problem. DD.02.03
 - 4 Select and use appropriate, materials, tools and machines. DD.02.04
 - 5 Construct tables, charts, databases, spreadsheets, and graphs to display data. DD.02.05
 - 6 Relate the design process beyond the classroom. DD.02.06
 - 7 Create various graphic representations or drawing of the design solution. DD.02.07
 - 8 Evaluate the effectiveness of a model and recommend necessary changes. DD.02.08

- c Explore the four human productive areas of technology: communications, construction, manufacturing, transportation and other related fields. **DD.03**
 - 1 Explain that information and communication systems allow information to be transferred from human to human, human to machine, and machine to human. **DD.03.01**
 - 2 Explain that communication systems are made up of a source, encoder, transmitter, receiver, decoder, and destination. **DD.03.02**
 - 3 Explain that the use of symbols, measurements, and drawings promotes clear communication by providing a common language to express ideas. **DD.03.03**
 - 4 Identify and describe types of land, water air and space transportation systems. **DD.03.04**
 - 5 Investigate and describe the functioning of structural, propulsion, suspension, and guidance control vehicular subsystems. **DD.03.05**
 - 6 Diagram and demonstrate the processes used for operating an efficient transportation system. **DD.03.06**
 - 7 Explain how secondary manufacturing processes are used to change the form of materials. **DD.03.07**
 - 8 Explain that manufactured goods are classified as durable and non-durable. **DD.03.08**
 - 9 Explain the primary manufacturing processes used to extract material. **DD.03.09**
 - 10 Identify the factors used to select the designs for structures based on building laws and codes, style, convenience, cost climate, and function. **DD.03.10**
 - 11 Explain that buildings contain a variety of subsystems. **DD.03.11**