# Exploring Skilled and Technical Science – 8th Grade

## Course Description

## In this course students will explore fundamentals in Skilled and Technical Sciences at the 8th grade level. Code: 100708

| Course Content | CTE Reference Standards | Crosswalk to Nebraska Academic Standards |
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| **Standard 1. Students will understand and accurately apply measurement**. |  | LA.2.1.5.b(1) |
| Benchmark 1.1 Demonstrate linear measurement    Sample performance indicators:   * Read a ruler to an accuracy of 1/16” * Read a ruler to an accuracy of 1 mm * Manipulate fractions accurately | KS – ESS01.03.01-05  KS - ACC01.01.01  KS – ACC01.01.03  KS - MNC10.01.01  STL12.I  STL13.F | MA8.1.3 (1)  MA8.2.5 (1)  CCSS: MA(8.NS.2) (1) |
| **Standard 2. Students will know and model safe lab procedures and techniques.** | KS – TRC06  KS - NMC06.01 | LA.2.1.5.b(1) |
| Benchmark 2.1 The student will know safety requirements.  Sample performance indicators:   * Complete a safety test with 100% accuracy * Sign a safety contract | KS - ESS06.01.01.03-04  KS – TRC10.03  KS - MNC06.05.03  KS – ACC06.01.03  KS – ACC06.01.02  KS – ESS06  KS – SCC06  KS – SCPA10.02.01  KS – SCPA10.02.03  KS – SCPA10.02.04  STL12.H-K | LA.2.1.6.d,f(1) |
| Benchmark 2.2 The student will practice appropriate classroom safety.  Sample performance indicators:   * Demonstrate safe tool operation * Demonstrate proper use of safe personal protection equipment * Operate and maintain a safe working environment * Demonstrate proper storage and handling of materials | KS - ESS06.01.05,07  KS – ACC06.01.03  KS – TRC09  STL12.H-K |  |
| **Standard 3. Students will use technical communication.** |  | LA.2.1.5.b(1) |
| Benchmark 3.1 Read a working drawing  Sample performance indicators:   * Distinguish views * Identify line type * Interpret dimensions * Identify symbols | KS – ESS02.01.02,04  KS – ACC10.01.01  KS - NMC02  STL11.I-J  STL12.I-K |  |
| Benchmark 3.2 Produce a working drawing  Sample performance indicators:   * Complete orthographic sketch(s) * Complete isometric sketch(s) * CAD software – 2D and/or 3D | KS – ESS02.01.05-06  KS – ESS04.02.01  KS – SCPA03.01.03  KS – ACC10.01.02  KS – ACC10.01.04  KS – NMC10.01.01  STL11.H-L  STL12.I-K  STL17.J-K | MA8.2.4 (1)  CCSS: MA(7.G.1) |
| Benchmark 3.3 Technical reading and writing  Sample performance indicators:   * Demonstrate proper use of terminology through journal entries * Use and/or create a plan of procedure * Follow written and verbal instructions | KS – ESS03.01.01-11  KS – SCPA03.01.01  KS - NMC02  STL11.K  STL17.H-I,K | LA.2.1.6.d,f(1)  LA.2.2.a(1) |
| Benchmark 3.4 Design/Problem Solving  Sample performance indicators:   * Proper use of terminology * Recognize design/problem solving steps * Teamwork | KS – ACC03.01  KS – ACC07.01  KS – NMC03  STL11.H-L  STL17.K | MA8.1.4 (1)  LA.2.1.6.d,f(1) |
| **Standard 4.** **Students will recognize material types and properties.** |  | LA.2.1.5.b(1) |
| Benchmark 4.1 The student will identify different types of materials.  Sample performance indicators:   * Identify materials * Identify properties * Identify material applications | KS – SCPA10.01.01-02  KS - ACC10.02.02  STL1.F-H  STL9.G |  |
| **Standard 5. Students will demonstrate material processing.** |  | LA.2.1.5.b(1) |
| Benchmark 5.1 The student will know material processes.  Sample performance indicators:   * Know cutting processes * Know drilling/boring * Know sanding/grinding * Know forming processes * Know finishing processes | KS – SCPA10.01.01-02  KS - MNC10.01.02  KS – ACC10.02.01  STL9.F |  |
| Benchmark 5.2 The student will demonstrate material processes.  Sample performance indicators:   * Demonstrate cutting processes * Demonstrate drilling/boring * Demonstrate sanding/grinding * Demonstrate forming processes * Demonstrate finishing processes | KS – ACC10.02.03  KS – SCPA10.01.01-04  KS – SCPA10.02.03-04  STL9.F,H  STL11.L | MA8.1.3 (1)  MA8.2.5 (1)  CCSS: MA(7.NS.3) |
| **Standard 6**. **Students will select tools for the correct operation.** |  | LA.2.1.5.b(1) |
| Benchmark 6.1 The student will identify tools.  Sample performance indicators:   * Identify the tools * Inspect and report tool conditions * Select and apply the appropriate tool | KS – SCPA10.01-02  KS – SCPA10.02.03-04  KS - ACC10.02.01  STL12.I,K | LA.2.2.a(1) |
| **Standard 7**. **Students will explore career opportunities.** | KS – NMC01 | LA.2.1.5.b(1)  LA.2.1.6.d,f(1)  LA.2.2.a(1)  LA.2.3.1.a(1) |
| Benchmark 7.1 The students will examine and report on the Skilled and Technical Sciences (STS) Career Field.  Sample performance indicators:   * Architecture & Construction * Manufacturing * Science, Technology, Engineering, & Math (STEM) * Transportation, Distribution, & Logistics (TDL) | KS – ESS09.07.01  KS – SCC09.01.01  KS – ACC05.02  KS – NMC04  KS – NMC09  KS – NMC10  STL18.F-G  STL19.H  STL20.F-I |  |
| Benchmark 7.2 The students will explore and report on emerging technologies.  Sample performance indicators:   * Robotics * Nanotechnology * Green Technologies * Space Exploration * Energy | STL14.G  STL15.F, H-I  STL16.E-I  STL17.H-K  STL18.F-I  STL19.F-H,K |  |

### Reference Standards Sources

* KS = Career Clusters Knowledge and Skills Statements. Revised 2008. National Career and Technical Education Foundation, Silver Spring, MD. www.careerclusters.org.
* (additional reference standards listed)

### Contributors

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