# 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 – ESS01.03.01-05KS - ACC01.01.01KS – ACC01.01.03KS - MNC10.01.01STL12.ISTL13.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 – TRC06KS - 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 - ESS06.01.01.03-04KS – TRC10.03KS - MNC06.05.03KS – ACC06.01.03KS – ACC06.01.02KS – ESS06KS – SCC06KS – SCPA10.02.01KS – SCPA10.02.03KS – SCPA10.02.04STL12.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 - ESS06.01.05,07KS – ACC06.01.03KS – TRC09STL12.H-K |  |
| **Standard 3. Students will use technical communication.** |  | LA.2.1.5.b(1) |
| Benchmark 3.1 Read a working drawingSample performance indicators:* Distinguish views
* Identify line type
* Interpret dimensions
* Identify symbols
 | KS – ESS02.01.02,04KS – ACC10.01.01KS - NMC02STL11.I-JSTL12.I-K |  |
| Benchmark 3.2 Produce a working drawingSample performance indicators:* Complete orthographic sketch(s)
* Complete isometric sketch(s)
* CAD software – 2D and/or 3D
 | KS – ESS02.01.05-06KS – ESS04.02.01KS – SCPA03.01.03KS – ACC10.01.02KS – ACC10.01.04KS – NMC10.01.01STL11.H-LSTL12.I-KSTL17.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 – ESS03.01.01-11KS – SCPA03.01.01KS - NMC02STL11.KSTL17.H-I,K | LA.2.1.6.d,f(1)LA.2.2.a(1) |
| Benchmark 3.4 Design/Problem SolvingSample performance indicators:* Proper use of terminology
* Recognize design/problem solving steps
* Teamwork
 | KS – ACC03.01KS – ACC07.01KS – NMC03STL11.H-LSTL17.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 – SCPA10.01.01-02KS - ACC10.02.02STL1.F-HSTL9.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 – SCPA10.01.01-02KS - MNC10.01.02KS – ACC10.02.01STL9.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 – ACC10.02.03KS – SCPA10.01.01-04KS – SCPA10.02.03-04STL9.F,HSTL11.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 – SCPA10.01-02KS – SCPA10.02.03-04KS - ACC10.02.01STL12.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 – ESS09.07.01KS – SCC09.01.01KS – ACC05.02KS – NMC04KS – NMC09KS – NMC10STL18.F-GSTL19.HSTL20.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.GSTL15.F, H-ISTL16.E-ISTL17.H-KSTL18.F-ISTL19.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

**Secondary**:Jim Jelkin – Sunrise Middle School (Kearney, Nebraska), Jim Sapp – Southern (Wymore, Nebraska), Randy Stribley – Papillion-LaVista South (Papillion, Nebraska), David Shabram – Westside Middle School (Omaha, Nebraska). Dan Craney – Platteview High School (Springfield, Nebraska)