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| **TEXAS CTE LESSON PLAN**  [www.txcte.org](http://www.txcte.org) | |
| **Lesson Identification and TEKS Addressed** | |
| **Career Cluster** | Arts, A/V, Technology & Communications |
| **Course Name** | Printing and Imaging Technology I |
| **Lesson/Unit Title** | History of Printing and Imaging |
| **TEKS Student Expectations** | **§130.94. Knowledge and Skills**  (12) The student researches the history of the printing and imaging field. The student is expected to analyze and summarize the evolution of the printing and imaging field and its historical impact on society. |
| **Basic Direct Teach Lesson**  (Includes Special Education Modifications/Accommodations and  one English Language Proficiency Standards (ELPS) Strategy) | |
| **Instructional Objectives** | Specific Objectives  • Students will be able to explain the origin of printing and imaging.  • Students will describe different printing and imaging processes.  • Students will be able list the elements of a Gutenberg printing press.  • Students will compare and contrast modern printing and imaging processes. |
| **Rationale** | Provide an understanding of the impact of technology and the importance of improving print processes through the years |
| **Duration of Lesson** | 3 days |
| **Word Wall/Key Vocabulary**  *(ELPS c1a,c,f; c2b; c3a,b,d; c4c; c5b) PDAS II(5)* | * Movable Type * Intaglio Printing * Lithography * Typesetting * Offset Printing * Dye-sublimation printing * Laser Printing * 3D Printing |
| **Materials/Specialized Equipment Needed** | Instructional Aids  • Student outline and handouts  • Student Activity sheets  • Butcher paper or poster board as an option for the “It’s About Time” activity  • Students can provide their own materials  Equipment Needed  • Teacher computer |
| **Anticipatory Set**  (May include pre-assessment for prior knowledge) | Learner Preparation  • Ask students to describe the first method of printing or imaging they can imagine.  • Ask students why people might want to print or create an image of something.  • Tell students that Printing and Imaging are, in essence, the capturing and reproduction of imaginations. |
| **Direct Instruction \*** | History of Printing and Imaging   1. Woodblock Printing    1. Seals and Stamping    2. Rubbings    3. Earliest printings from China II. 2. Movable Type    1. Metal Type    2. Quicker, more durable    3. Uniform lettering    4. Johannes Gutenberg AD 1439    5. Most important invention 2nd Millennium    6. Oldest known printed book AD 1377 3. Printing Press A. Pressmen C. 3600 Impressions per workday 4. Printing Houses    1. Master Printers B. Employees 5. Intaglio Printing (Etching and Engraving 6. Lithography    1. Smooth flat stone printing    2. Alois Senefelder AD 1796 7. Color Printing 8. Chromolithography 9. Registering 10. Posters 11. Photography 12. Pinhole Camera Obscura 13. Light sensitive chemicals and plates 14. Lenses replaced pinholes 15. Film replaced plates 16. Typesetting 17. Hot Metal – Linotype ‘Slugs’   B. Cold Type – Office Phototypesetting  C. CRTs lead to DTPs  10. Offset Printing  A. Modern Lithography  B. Plate cylinder  C. Blanket cylinder ‘offsets’ image  D. Impression cylinder; image to paper  11. Screen Printing  A. Silk-screen  B. Woven mesh; ink-blocking stencil  C. Ink pressed through to substrate  12. Dot Matrix Printing  A. Impact printing like old typewriter  B. Tractor-fed paper  C. NLQ – Near Letter Quality  13. Inkjet Printing  A. CIJ – Continuous Inkjet  B. Thermal DOD – Drop on Demand  C. Piezoelectric DOD – Drop on Demand  14. Dye-sublimation Printing  A. Heat transfers dye  B. Dye bonds with fabric  15. Xerography  A. Dry photocopying  B. Scanned image exposed to drum  16. Laser Printing  A. Electrostatic digital printing  B. Saved image written to drum with laser  17. Digital Photography  A. CCD – Charge-Coupled Device sensors  B. Image stored as a file; no more film  18. 3D Printing  A. Additive Manufacturing  B. 3D Modeling  C. Successive layers of material built |
| **Guided Practice \*** | The teacher will explain the progressions made in Printing and Imaging over the course of time. Point out that change was inevitable as needs became greater. This should be a reference tool for the writing assignment in this unit. |
| **Independent Practice/Laboratory Experience/Differentiated Activities \*** | • Create a timeline detailing printing and imaging events and personal events.  • Write an essay comparing and contrasting two different concepts in printing and imaging |
| **Lesson Closure** | Review, Discussion |
| **Summative/End of Lesson Assessment \*** | Rubrics, assessments |
| **References/Resources/Teacher Preparation** | • Student outline, handouts, activities  • Student Activity sheets  • Butcher paper or poster board as an option for the “It’s About Time” activity  • Students can provide their own materials |
| **Additional Required Components** | |
| **English Language Proficiency Standards (ELPS) Strategies** |  |
| **College and Career Readiness Connection[[1]](#footnote-1)** |  |
| **Recommended Strategies** | |
| **Reading Strategies** |  |
| **Quotes** |  |
| **Multimedia/Visual Strategy**  **Presentation Slides + One Additional Technology Connection** |  |
| **Graphic Organizers/ Handout** |  |
| **Writing Strategies**  **Journal Entries + 1 Additional Writing Strategy** |  |
| **Communication**  **90 Second Speech Topics** |  |
| **Other Essential Lesson Components** | |
| **Enrichment Activity**  (e.g., homework assignment) |  |
| **Family/Community Connection** |  |
| **CTSO connection(s)** | SkillsUSA |
| **Service Learning Projects** |  |
| **Lesson Notes** |  |

1. Visit the Texas College and Career Readiness Standards at <http://www.thecb.state.tx.us/collegereadiness/CRS.pdf>, Texas Higher Education Coordinating Board (THECB), 2009. [↑](#footnote-ref-1)