Unit 3: Data Collection and Analysis

Content Area: **Business Management and Information**
Course(s):
Time Period: **Marking Period 2**
Length: **3 Weeks**
Status: **Published**

Summary

The Paths to College and Career course is designed to prepare students for post-secondary success by refining the hard and soft skills demanded by the 21st century workplace. Students will learn how to effectively utilize key Google Suite programs to meet professional objectives, such as Google Slides, Sheets, and Forms. Moreover, students will learn to navigate the job search process including researching open positions, developing a resume and cover letter, interviewing with prospective employers, and composing follow up thank you letters. Emphasis is placed on refining communication skills, including speaking and listening skills, written communication, such as composing proper emails, how to self advocate, and the importance of leaving a positive digital footprint. Students will leave the course better prepared to enter the college or career setting giving them an advantage in an increasingly competitive environment.

This unit is part of the larger aforementioned course sequence and specifically focuses on tools and strategies for data analysis in the workplace where students will collect, code, analyze and present data. By the end of this unit, students will be able to formally present their findings in a professional manner using Google Suite and other digital tools.

Students in Business Management and Information Systems classes develop skills that are intended to give them a competitive advantage in the workplace. Through the study of core business topics and current events, this curriculum encourages students to refine their speaking and listening skills, collaborate with their peers, and explore and research potential career paths.

This course fulfills the 2.5 credits in 21st century skills coursework required by both Cranford High School and the state of New Jersey for graduation.

Revised: August 2023

Standards

9.2.12.CAP.3: Investigate how continuing education contributes to one's career and personal growth

9.2.12.CAP.4: Evaluate different careers and develop various plans (e.g., costs of public, private, training schools) and timetables for achieving them, including educational/training requirements, costs, loans, and debt

repayment.

9.2.12.CAP.5: Assess and modify a personal plan to support current interests and postsecondary plans.

9.2.12.CAP.6: Identify transferable skills in career choices and design alternative career plans based on those skills.

9.2.12.CAP.7: Use online resources to examine licensing, certification, and credentialing requirements at the local, state, and national levels to maintain compliance with industry requirements in areas of career interest.

9.2.12.CAP.8: Determine job entrance criteria (e.g., education credentials, math/writing/reading comprehension tests, drug tests) used by employers in various industry sectors.

9.3.12.BM.1 Utilize mathematical concepts, skills and problem solving to obtain necessary information for decision□making in business.

9.3.12.BM.3 Explore, develop and apply strategies for ensuring a successful business career.

9.3.12.BM□ADM.2 Access, evaluate and disseminate information for business decision making.

9.3.12.ED.1 Apply communication skills with students, parents and other groups to enhance learning and a commitment to learning.

9.3.12.ED.2 Demonstrate effective oral, written and multimedia communication in multiple formats and contexts.

9.3.12.ED.3 Use critical thinking to process educational communications, perspectives, policies and/or procedures.

9.3.12.ED.4 Evaluate and manage risks to safety, health and the environment in education and training settings.

9.3.12.ED.5 Demonstrate group collaboration skills to enhance professional education and training practice.

9.3.12.ED.8 Demonstrate ethical and legal behavior within and outside of education and training settings.

9.3.12.ED.10 Apply organizational skills and logic to enhance professional education and training practice.

9.3.12.ED.11 Demonstrate group management skills that enhance professional education and training practice.

9.3.IT.6 Describe trends in emerging and evolving computer technologies and their influence on IT practices.

9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas (e.g., 1.1.12prof.CR3a).

9.4.12.CI.2: Identify career pathways that highlight personal talents, skills, and abilities (e.g., 1.4.12prof.CR2b, 2.2.12.LF.8).

9.4.12.CI.3: Investigate new challenges and opportunities for personal growth, advancement, and transition (e.g., 2.1.12.PGD.1).

9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a).

9.4.12.CT.3: Enlist input from a variety of stakeholders (e.g., community members, experts in the field) to design a service learning activity that addresses a local or global issue (e.g., environmental justice).

9.4.12.CT.4: Participate in online strategy and planning sessions for course-based, school-based, or other project and determine the strategies that contribute to effective outcomes.

9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for

accomplishing a specified task (e.g., W.11-12.6.).

9.4.12.TL.2: Generate data using formula-based calculations in a spreadsheet and draw conclusions about the data.

RST.9-10.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics.

RST.9-10.5. Analyze the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).

RST.9-10.7. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.

RST.11-12.1. Accurately cite strong and thorough evidence from the text to support analysis of science and technical texts, attending to precise details for explanations or descriptions.

RST.11-12.2. Determine the central ideas, themes, or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.

RST.11-12.3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

RST.11-12.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.

RST.11-12.7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

RST.11-12.8. Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.

RST.11-12.9. Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

RH.11-12.4. Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text (e.g., how Madison defines faction in Federalist No. 10).

WHST.9-10.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

WHST.9-10.5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

WHST.9-10.6. Use technology, including the Internet, to produce, share, and update writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

WHST.9-10.7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

WHST.9-10.8. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.

WHST.9-10.10. Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

WHST.11-12.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

WHST.11-12.5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

WHST.11-12.6. Use technology, including the Internet, to produce, share, and update writing products in response to ongoing feedback, including new arguments or information.

WHST.11-12.7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

WHST.11-12.8. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

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In support of the Information Literacy mandate (S588), this unit challenges students to locate, evaluate, and use information effectively. Information literacy includes, but is not limited to digital, visual, media, textual, and technological literacy.

The standards in this unit reflect a developmental progression across grade levels and make interdisciplinary connections across content areas including the humanities, technology, career readiness, cultural awareness, and global citizenship.

This unit is aligned to the English Language Development (ELD) standards for kindergarten through grade 12 since multilingual learners develop content and language concurrently, with academic content in a classroom where the language of instruction is English. As a result, language learning and language as a means for learning academic content are interchangeable. The following ELD standards are relevant for this unit and course of study:

- Standard 1: Language for Social and Instructional Purposes: Eng

Essential Questions and Enduring Understandings

Essential Questions:

- How does digital literacy impact the 21st century workplace expectations?
- What skills are necessary to be successful in identifying and addressing the needs of a workplace?

Enduring Understandings:

- Digital tools can be used to display and analyze data in various ways.
- Data collection and analysis can allow an employer and employee to make informed decisions in the workplace.

Objectives

Students will know:

- Common formulas for navigating Google Sheets.
- Situations in which data analysis and coding are necessary in the postsecondary world.
- Rationale for data collection and use of digital tools.

Students will be skilled at:

- Applying common formulas to analyze data.
- Presenting information in a visually coherent and effective manner.
- Presenting information clearly in a verbal fashion.
- Organizing a presentation which summarizes information in a clear manner.
- Selecting the proper software or tool to communicate information.
- Navigating Google Suite programs.
- Expressing active listening and responses.

Learning Plan

This unit plan includes but is not limited to:

Google Sheet Formula Introduction: Students will receive a formula sheet as they do in math or science class for reference. They will watch a video or read an article to determine the formulas necessary in the workplace. Task cards can "test" student knowledge in a randomized practice setting.

Holiday Google Sheet Practice: Students will put formulas and charts into real-world practice when taking on the role of toy store owner at the end of their busy holiday season. They are given a raw data spreadsheet showing details from their holiday gift sales. They will then analyze the data using their formulas and guided questions to prepare a brief explanation as to which gifts are most profitable for different age groups. ** For Spring Semester this can be replaced with March Madness Statistics or Store sales of Spring items etc. **

Data Analysis Presentation: Students will use Canva and or Google Slides to create visuals and text presentations to display data trends and information in a professional manner.

Note: Other strategies to address the learning objectives may include, but are not limited to direct instruction, self and peer review, think-pair-share activities, creating visual representations film analysis, Socratic seminars, small group discussions, simulations, jigsaw activities, gallery walks, web quests, and/or inquiry or problem based learning projects.

Assessment

When taking a Business course, students demonstrate differentiated proficiency according to their ability to answer the essential questions through formative and summative assessments. Many of the performance tasks below can be implemented as formative and/or summative assessments. As teachers strive for students to demonstrate proficiency, they will need to create additional or alternative assessments based on demonstration or absence of skill.

Formative Assessments:

- Do Nows/ Exit Slips
- Class Activities
- Formula Practice
- Holiday Google Sheet Practice

Summative Assessments:

- Data Analysis Project and Presentation

Alternative Assessment:

- Students can use pre-developed spreadsheets or slide decks to present information on topics of their choosing

Benchmark Assessments:

- NextGen Personal Finance CareerActivities

Materials

The design of this course allows for the integration of a variety of instructional, supplemental, and intervention materials that support student learners at all levels in the school and home environments. Associated web content and media sources are infused into the unit as applicable and available In addition to the materials below, the following link connects to district approved textbooks and resources utilized in this course: Core Book List.

The following are approved resources that teachers can include to further unit related objectives:

Indeed.com: Common Google Sheet Formulas Article

Guided Google Sheets Practice from W3Schools

Videos and Guides Activities for Google Sheets Data Analysis

Any additional resources that are not included in this list will be presented to and reviewed by the supervisor before being included in lesson plans. This ensures resources are reviewed and vetted for relevance and appropriateness prior to implementation.

Suggested Strategies for Modification

This link includes content specific accommodations and modifications for all populations:

https://docs.google.com/spreadsheets/d/1g8M7CZ5VVwvFk2Ay9DZbjdewOYDyNOzpNeEBgSXPvr0/edit?usp=sharing

These additional strategies are helpful when learning Business Management and Information Systems content and skills:

- Highlighter for close reading and annotation strategies
- Bolded terms in directions
- Reading texts aloud for students to assist in comprehension and analysis
- Providing opportunities for text-to-speech for written responses.
- Using visual presentations of all materials and including graphic organizers when possible.