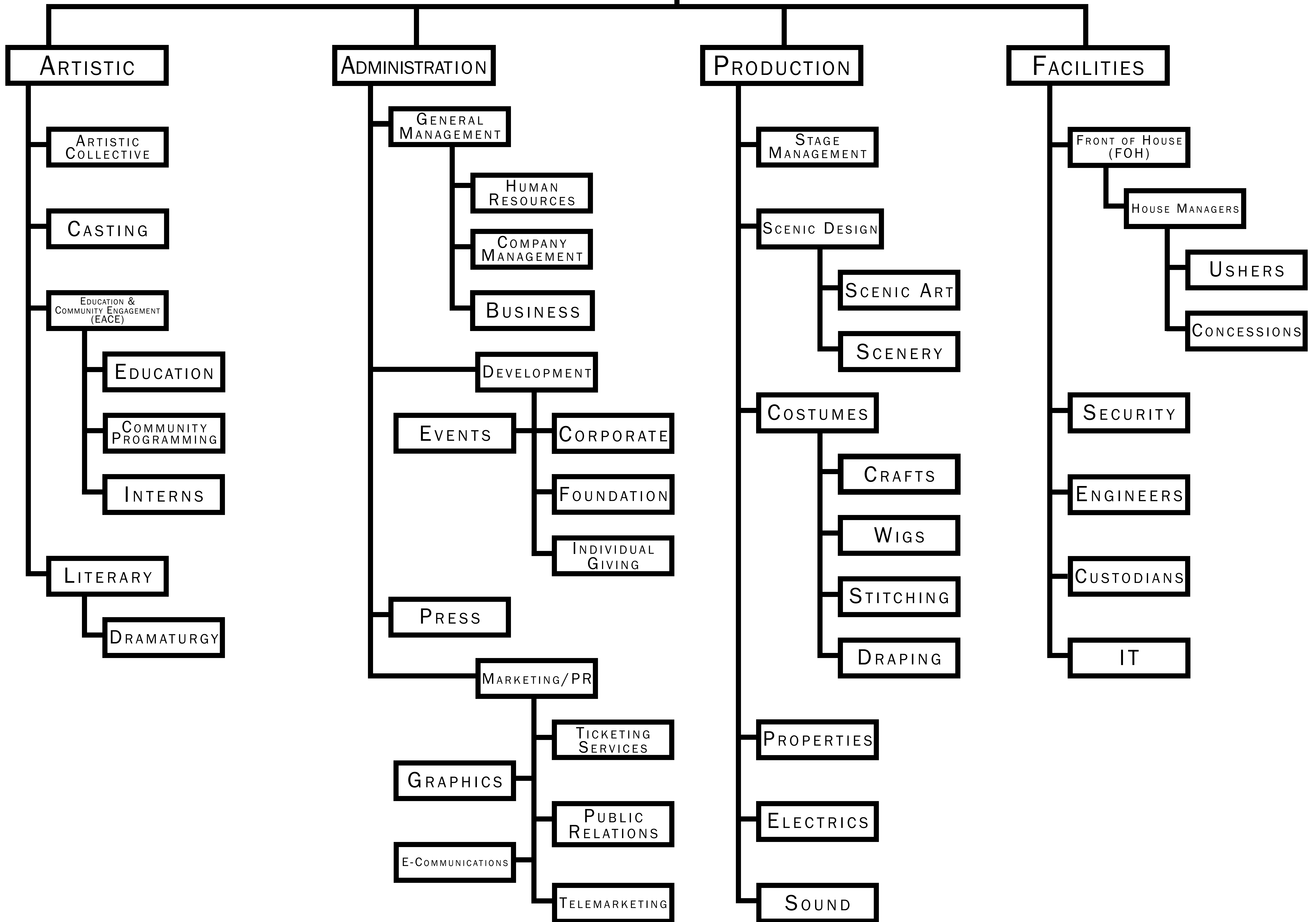
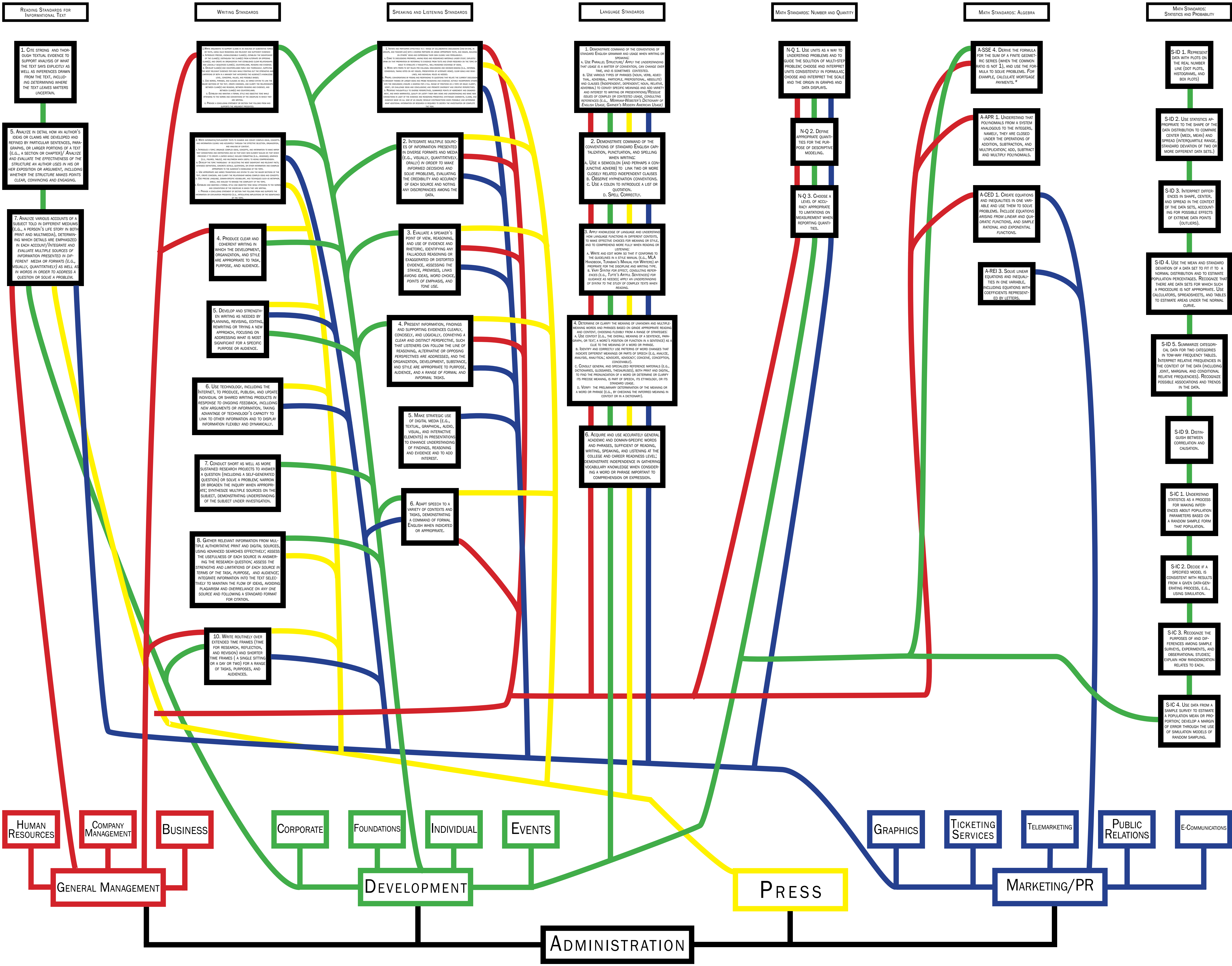


# GOODMAN THEATRE





**READING STANDARDS FOR INFORMATIONAL TEXT**

**1. CITE STRONG AND THOROUGH TEXTUAL EVIDENCE TO SUPPORT ANALYSIS OF WHAT THE TEXT SAYS EXPLICITLY AS WELL AS INFERENCES DRAWN FROM THE TEXT, INCLUDING DETERMINING WHERE THE TEXT LEAVES MATTERS UNCERTAIN.**

**5. ANALYZE IN DETAIL HOW AN AUTHOR'S IDEAS OR CLAIMS ARE DEVELOPED AND REFINED BY PARTICULAR SENTENCES, PARAGRAPHS, OR LARGER PORTIONS OF A TEXT (E.G., A SECTION OR CHAPTER)/ ANALYZE AND EVALUATE THE EFFECTIVENESS OF THE STRUCTURE AN AUTHOR USES IN HIS OR HER EXPOSITION OR ARGUMENT, INCLUDING WHETHER THE STRUCTURE MAKES POINTS CLEAR, CONVINCING AND ENGAGING.**

**7. ANALYZE VARIOUS ACCOUNTS OF A SUBJECT TOLD IN DIFFERENT MEDIUMS (E.G., A PERSON'S LIFE STORY IN BOTH PRINT AND MULTIMEDIA), DETERMINING WHICH DETAILS ARE EMPHASIZED IN EACH ACCOUNT/INTEGRATE AND EVALUATE MULTIPLE SOURCES OF INFORMATION PRESENTED IN DIFFERENT MEDIA OR FORMATS (E.G., VISUALLY, QUANTITATIVELY) AS WELL AS IN WORDS IN ORDER TO ADDRESS A QUESTION OR SOLVE A PROBLEM.**

**WRITING STANDARDS**

**1. WRITE ARGUMENTS TO SUPPORT CLAIMS IN AN ANALYSIS OF SUBSTANTIVE TOPICS OR TEXTS, USING VALID REASONING AND RELEVANT AND SUFFICIENT EVIDENCE.**  
**A. INTRODUCE PRECISE, KNOWLEDGEABLE CLAIM(S), ESTABLISH THE SIGNIFICANCE OF THE CLAIM(S), DISTINGUISH THE CLAIM(S) FROM ALTERNATE OR OPPOSING CLAIM(S), AND CREATE AN ORGANIZATION THAT ESTABLISHES CLEAR RELATIONSHIPS AND LOGICALLY SEQUENCES CLAIM(S), COUNTERCLAIMS, REASONS AND EVIDENCE.**  
**B. DEVELOP CLAIM(S) AND COUNTERCLAIMS FAIRLY AND THOROUGHLY, SUPPLYING THE MOST RELEVANT EVIDENCE FOR EACH WHILE POINTING OUT THE STRENGTHS AND LIMITATIONS OF BOTH IN A MANNER THAT ANTICIPATES THE AUDIENCE'S KNOWLEDGE LEVEL, CONCERNS, VALUES, AND POSSIBLE BIASES.**  
**C. USE WORDS, PHRASES, AND CLAUSES AS WELL AS VARIED SYNTAX TO LINK THE MAJOR SECTIONS OF THE TEXT, CREATE COHESION, AND CLARIFY THE RELATIONSHIPS BETWEEN CLAIM(S) AND REASONS, BETWEEN REASONS AND EVIDENCE, AND BETWEEN CLAIM(S) AND COUNTERCLAIMS.**  
**D. ESTABLISH AND MAINTAIN A FORMAL STYLE AND OBJECTIVE TONE WHILE ATTENDING TO THE NORMS AND CONVENTIONS OF THE DISCIPLINE IN WHICH THEY ARE WRITING.**  
**E. PROVIDE A CONCLUDING STATEMENT OR SECTION THAT FOLLOWS FROM AND SUPPORTS THE ARGUMENT PRESENTED.**

**2. WRITE INFORMATIVE/EXPLANATORY TEXTS TO EXAMINE AND CONVEY COMPLEX IDEAS, CONCEPTS, AND INFORMATION CLEARLY AND ACCURATELY THROUGH THE EFFECTIVE SELECTION, ORGANIZATION, AND ANALYSIS OF CONTENT.**  
**A. INTRODUCE A TOPIC; ORGANIZE COMPLEX IDEAS, CONCEPTS, AND INFORMATION TO MAKE IMPORTANT CONNECTIONS AND DISTINCTIONS AND SO THAT EACH NEW ELEMENT BUILDS ON THAT WHICH PRECEDES IT TO CREATE A UNIFIED WHOLE; INCLUDE FORMATTING (E.G., HEADINGS), GRAPHICS (E.G., FIGURES, TABLES), AND MULTIMEDIA WHEN USEFUL TO AIDING COMPREHENSION.**  
**B. DEVELOP THE TOPIC THOROUGHLY BY SELECTING THE MOST SIGNIFICANT AND RELEVANT FACTS, EXTENDED DEFINITIONS, CONCRETE DETAILS, QUOTATIONS, OR OTHER INFORMATION AND EXAMPLES APPROPRIATE TO THE AUDIENCE'S KNOWLEDGE OF THE TOPIC.**  
**C. USE APPROPRIATE AND VARIED TRANSITIONS AND SYNTAX TO LINK THE MAJOR SECTIONS OF THE TEXT, CREATE COHESION, AND CLARIFY THE RELATIONSHIP AMONG COMPLEX IDEAS AND CONCEPTS.**  
**D. USE PRECISE LANGUAGE, DOMAIN-SPECIFIC VOCABULARY, AND TECHNIQUES SUCH AS METAPHOR, SIMILE, AND ANALOGY TO MANAGE THE COMPLEXITY OF THE TOPIC.**  
**E. ESTABLISH AND MAINTAIN A FORMAL STYLE AND OBJECTIVE TONE WHILE ATTENDING TO THE NORMS AND CONVENTIONS OF THE DISCIPLINE IN WHICH THEY ARE WRITING.**  
**F. PROVIDE A CONCLUDING STATEMENT OR SECTION THAT FOLLOWS FROM AND SUPPORTS THE INFORMATION OR EXPLANATION PRESENTED (E.G., ARTICULATING IMPLICATIONS OR THE SIGNIFICANCE OF THE TOPIC).**

**4. PRODUCE CLEAR AND COHERENT WRITING IN WHICH THE DEVELOPMENT, ORGANIZATION, AND STYLE ARE APPROPRIATE TO TASK, PURPOSE, AND AUDIENCE.**

**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 OR AUDIENCE.**

**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.**

**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; ASSESS THE STRENGTHS AND LIMITATIONS OF EACH SOURCE IN TERMS OF THE TASK, PURPOSE, AND AUDIENCE; INTEGRATE INFORMATION INTO THE TEXT SELECTIVELY TO MAINTAIN THE FLOW OF IDEAS, AVOIDING PLAGIARISM AND OVER-RELIANCE ON ANY ONE SOURCE AND FOLLOWING A STANDARD FORMAT FOR CITATION.**

**10. WRITE ROUTINELY OVER EXTENDED TIME FRAMES (TIME FOR RESEARCH, REFLECTION, AND REVISION) AND SHORTER TIME FRAMES (A SINGLE SITTING OR A DAY OR TWO) FOR A RANGE OF TASKS, PURPOSES, AND AUDIENCES.**

**SPEAKING AND LISTENING STANDARDS**

**1. INITIATE AND PARTICIPATE EFFECTIVELY IN A RANGE OF COLLABORATIVE DISCUSSIONS (ONE-ON-ONE, IN GROUPS, AND TEACHER-LED) WITH A DIVERSE PARTNERS ON GRADE APPROPRIATE TEXTS, AND ISSUES, BUILDING ON OTHERS' IDEAS AND EXPRESSING THEIR OWN CLEARLY AND PERSUASIVELY.**  
**A. COME TO DISCUSSIONS PREPARED, HAVING READ AND RESEARCHED MATERIALS UNDER STUDY, EXPLICITLY DRAW ON THAT PREPARATION BY REFERRING TO EVIDENCE FROM TEXTS AND OTHER RESEARCH ON THE TOPIC OR ISSUE TO STIMULATE A THOUGHTFUL, WELL-REASONED EXCHANGE OF IDEAS.**  
**B. WORK WITH PEERS TO SET RULES FOR COLLEAGUE DISCUSSIONS AND DECISION-MAKING (E.G., INFORMAL CONSENSUS, TAKING VOTES ON KEY ISSUES, PRESENTATION OF ALTERNATE VIEWS), CLEAR GOALS AND DEADLINES, AND INDIVIDUAL ROLES.**  
**C. PROPEL CONVERSATIONS BY POSING AND RESPONDING TO QUESTIONS THAT RELATE THE CURRENT DISCUSSION TO BROADER THEMES OR LARGER IDEAS AND PROBE REASONING AND EVIDENCE, ACTIVELY INCORPORATE OTHERS INTO THE DISCUSSION, ENSURE A HEARING FOR A FULL RANGE OF POSITIONS ON A TOPIC OR ISSUE, CLARIFY, VERIFY, OR CHALLENGE IDEAS AND CONCLUSIONS; AND PROMOTE DIVERGENT AND CREATIVE PERSPECTIVES.**  
**D. RESPOND THOUGHTFULLY TO DIVERSE PERSPECTIVES, SUMMARIZE POINTS OF AGREEMENT AND DISAGREEMENT, AND WHEN WARRANTED, QUALIFY OR JUSTIFY THEIR OWN VIEWS AND UNDERSTANDING AND MAKE NEW CONNECTIONS IN LIGHT OF THE EVIDENCE AND REASONING PRESENTED; SYNTHESIZE COMMENTS, CLAIMS, AND EVIDENCE MADE ON ALL SIDES OF AN ISSUE; RESOLVE CONTRADICTIONS WHEN POSSIBLE; AND DETERMINE WHAT ADDITIONAL INFORMATION OR RESEARCH IS REQUIRED TO DEEPEN THE INVESTIGATION OR COMPLETE THE TASK.**

**2. INTEGRATE MULTIPLE SOURCES OF INFORMATION PRESENTED IN DIVERSE FORMATS AND MEDIA (E.G., VISUALLY, QUANTITATIVELY, ORALLY) IN ORDER TO MAKE INFORMED DECISIONS AND SOLVE PROBLEMS, EVALUATING THE CREDIBILITY AND ACCURACY OF EACH SOURCE AND NOTING ANY DISCREPANCIES AMONG THE DATA.**

**3. EVALUATE A SPEAKER'S POINT OF VIEW, REASONING, AND USE OF EVIDENCE AND RHETORIC, IDENTIFYING ANY FALLACIOUS REASONING OR EXAGGERATED OR DISTORTED EVIDENCE, ASSESSING THE STANCE, PREMISES, LINKS AMONG IDEAS, WORD CHOICE, POINTS OF EMPHASIS, AND TONE USE.**

**4. PRESENT INFORMATION, FINDINGS AND SUPPORTING EVIDENCES CLEARLY, CONCISELY, AND LOGICALLY, CONVEYING A CLEAR AND DISTINCT PERSPECTIVE, SUCH THAT LISTENERS CAN FOLLOW THE LINE OF REASONING, ALTERNATIVE OR OPPOSING PERSPECTIVES ARE ADDRESSED, AND THE ORGANIZATION, DEVELOPMENT, SUBSTANCE, AND STYLE ARE APPROPRIATE TO PURPOSE, AUDIENCE, AND A RANGE OF FORMAL AND INFORMAL TASKS.**

**6. ADAPT SPEECH TO A VARIETY OF CONTEXTS AND TASKS, DEMONSTRATING A COMMAND OF FORMAL ENGLISH WHEN INDICATED OR APPROPRIATE.**

**LANGUAGE STANDARDS**

**1. DEMONSTRATE COMMAND OF THE CONVENTIONS OF STANDARD ENGLISH GRAMMAR AND USAGE WHEN WRITING OR SPEAKING:**  
**A. USE PARALLEL STRUCTURE/ APPLY THE UNDERSTANDING THAT USAGE IS A MATTER OF CONVENTION, CAN CHANGE OVER TIME, AND IS SOMETIMES CONTESTED.**  
**B. USE VARIOUS TYPES OF PHRASES (NOUN, VERB, ADJECTIVAL, ADVERBIAL, PARTICLE, PREPOSITIONAL, ABSOLUTE) AND CLAUSES (INDEPENDENT, DEPENDENT; NOUN, RELATIVE, ADVERBIAL) TO CONVEY SPECIFIC MEANINGS AND ADD VARIETY AND INTEREST TO WRITING OR PRESENTATIONS/RESOLVE ISSUES OF COMPLEX OR CONTESTED USAGE, CONSULTING REFERENCES (E.G., MERRIAM-WEBSTER'S DICTIONARY OF ENGLISH USAGE, GARNER'S MODERN AMERICAN USAGE) AS NEEDED.**

**2. DEMONSTRATE COMMAND OF THE CONVENTIONS OF STANDARD ENGLISH CAPITALIZATION, PUNCTUATION, AND SPELLING WHEN WRITING:**  
**A. USE A SEMICOLON (AND PERHAPS A CONJUNCTIVE ADVERB) TO LINK TWO OR MORE CLOSELY RELATED INDEPENDENT CLAUSES**  
**B. OBSERVE HYPHENATION CONVENTIONS.**  
**C. USE A COLON TO INTRODUCE A LIST OR QUOTATION.**  
**D. SPELL CORRECTLY.**

**3. APPLY KNOWLEDGE OF LANGUAGE AND UNDERSTAND HOW LANGUAGE FUNCTIONS IN DIFFERENT CONTEXTS, TO MAKE EFFECTIVE CHOICES FOR MEANING OR STYLE, AND TO COMPREHEND MORE FULLY WHEN READING OR LISTENING:**  
**A. WRITE AND EDIT WORK SO THAT IT CONFORMS TO THE GUIDELINES IN A STYLE MANUAL (E.G., MLA HANDBOOK, TURABIAN'S MANUAL FOR WRITERS) APPROPRIATE FOR THE DISCIPLINE AND WRITING TYPE.**  
**B. VARY SYNTAX FOR EFFECT, CONSULTING REFERENCES (E.G., TUFTS'S ARTFUL SENTENCES) FOR GUIDANCE AS NEEDED; APPLY AN UNDERSTANDING OF SYNTAX TO THE STUDY OF COMPLEX TEXTS WHEN READING.**

**4. DETERMINE OR CLARIFY THE MEANING OF UNKNOWN AND MULTIPLE-MEANING WORDS AND PHRASES BASED ON GRADE APPROPRIATE READING AND CONTENT, CHOOSING FLEXIBLY FROM A RANGE OF STRATEGIES:**  
**A. USE CONTEXT (E.G., THE OVERALL MEANING OF A SENTENCE, PARAGRAPH, OR TEXT; A WORD'S POSITION OR FUNCTION IN A SENTENCE) AS A CLUE TO THE MEANING OF A WORD OR PHRASE.**  
**B. IDENTIFY AND CORRECTLY USE PATTERNS OF WORD CHANGES THAT INDICATE DIFFERENT MEANINGS OR PARTS OF SPEECH (E.G., ANALYZE, ANALYSIS, ANALYTICAL; ADVOCATE, ADVOCACY; CONCEIVE, CONCEPTION, CONCEIVABLE).**  
**C. CONSULT GENERAL AND SPECIALIZED REFERENCE MATERIALS (E.G., DICTIONARIES, GLOSSARIES, THESAURUSES), BOTH PRINT AND DIGITAL, TO FIND THE PRONUNCIATION OF A WORD OR DETERMINE OR CLARIFY ITS PRECISE MEANING, IS PART OF SPEECH, ITS ETYMOLOGY, OR ITS STANDARD USAGE.**  
**D. VERIFY THE PRELIMINARY DETERMINATION OF THE MEANING OR A WORD OR PHRASE (E.G., BY CHECKING THE INFERRED MEANING IN CONTEXT OR IN A DICTIONARY).**

**6. ACQUIRE AND USE ACCURATELY GENERAL ACADEMIC AND DOMAIN-SPECIFIC WORDS AND PHRASES, SUFFICIENT OF READING, WRITING, SPEAKING, AND LISTENING AT THE COLLEGE AND CAREER READINESS LEVEL; DEMONSTRATE INDEPENDENCE IN GATHERING VOCABULARY KNOWLEDGE WHEN CONSIDERING A WORD OR PHRASE IMPORTANT TO COMPREHENSION OR EXPRESSION.**

**MATH STANDARDS: NUMBER AND QUANTITY**

**N-Q 1. USE UNITS AS A WAY TO UNDERSTAND PROBLEMS AND TO GUIDE THE SOLUTION OF MULTI-STEP PROBLEM; CHOOSE AND INTERPRET UNITS CONSISTENTLY IN FORMULAS; CHOOSE AND INTERPRET THE SCALE AND THE ORIGIN IN GRAPHS AND DATA DISPLAYS.**

**N-Q 2. DEFINE APPROPRIATE QUANTITIES FOR THE PURPOSE OF DESCRIPTIVE MODELING.**

**N-Q 3. CHOOSE A LEVEL OF ACCURACY APPROPRIATE TO LIMITATIONS ON MEASUREMENT WHEN REPORTING QUANTITIES.**

**MATH STANDARDS: ALGEBRA**

**A-SSE 4. DERIVE THE FORMULA FOR THE SUM OF A FINITE GEOMETRIC SERIES (WHEN THE COMMON RATIO IS NOT 1), AND USE THE FORMULA TO SOLVE PROBLEMS. FOR EXAMPLE, CALCULATE MORTGAGE PAYMENTS.\***

**MATH STANDARDS: STATISTICS AND PROBABILITY**

**S-ID 1. REPRESENT DATA WITH PLOTS ON THE REAL NUMBER LINE (DOT PLOTS, HISTOGRAMS, AND BOX PLOTS)**

**S-ID 2. USE STATISTICS APPROPRIATE TO THE SHAPE OF THE DATA DISTRIBUTION TO COMPARE CENTER (MEDI, MEAN) AND SPREAD (INTERQUARTILE RANGE, STANDARD DEVIATION OF TWO OR MORE DIFFERENT DATA SETS.)**

**S-ID 3. INTERPRET DIFFERENCES IN SHAPE, CENTER, AND SPREAD IN THE CONTEXT OF THE DATA SETS, ACCOUNTING FOR POSSIBLE EFFECTS OF EXTREME DATA POINTS (OUTLIERS).**

**S-ID 4. USE THE MEAN AND STANDARD DEVIATION OF A DATA SET TO FIT IT TO A NORMAL DISTRIBUTION AND TO ESTIMATE POPULATION PERCENTAGES. RECOGNIZE THAT THERE ARE DATA SETS FOR WHICH SUCH A PROCEDURE IS NOT APPROPRIATE. USE CALCULATORS, SPREADSHEETS, AND TABLES TO ESTIMATE AREAS UNDER THE NORMAL CURVE.**

**S-ID 5. SUMMARIZE CATEGORICAL DATA FOR TWO CATEGORIES IN TOW-WAY FREQUENCY TABLES. INTERPRET RELATIVE FREQUENCIES IN THE CONTEXT OF THE DATA (INCLUDING JOINT, MARGINAL AND CONDITIONAL RELATIVE FREQUENCIES). RECOGNIZE POSSIBLE ASSOCIATIONS AND TRENDS IN THE DATA.**

**S-ID 9. DISTINGUISH BETWEEN CORRELATION AND CAUSATION.**

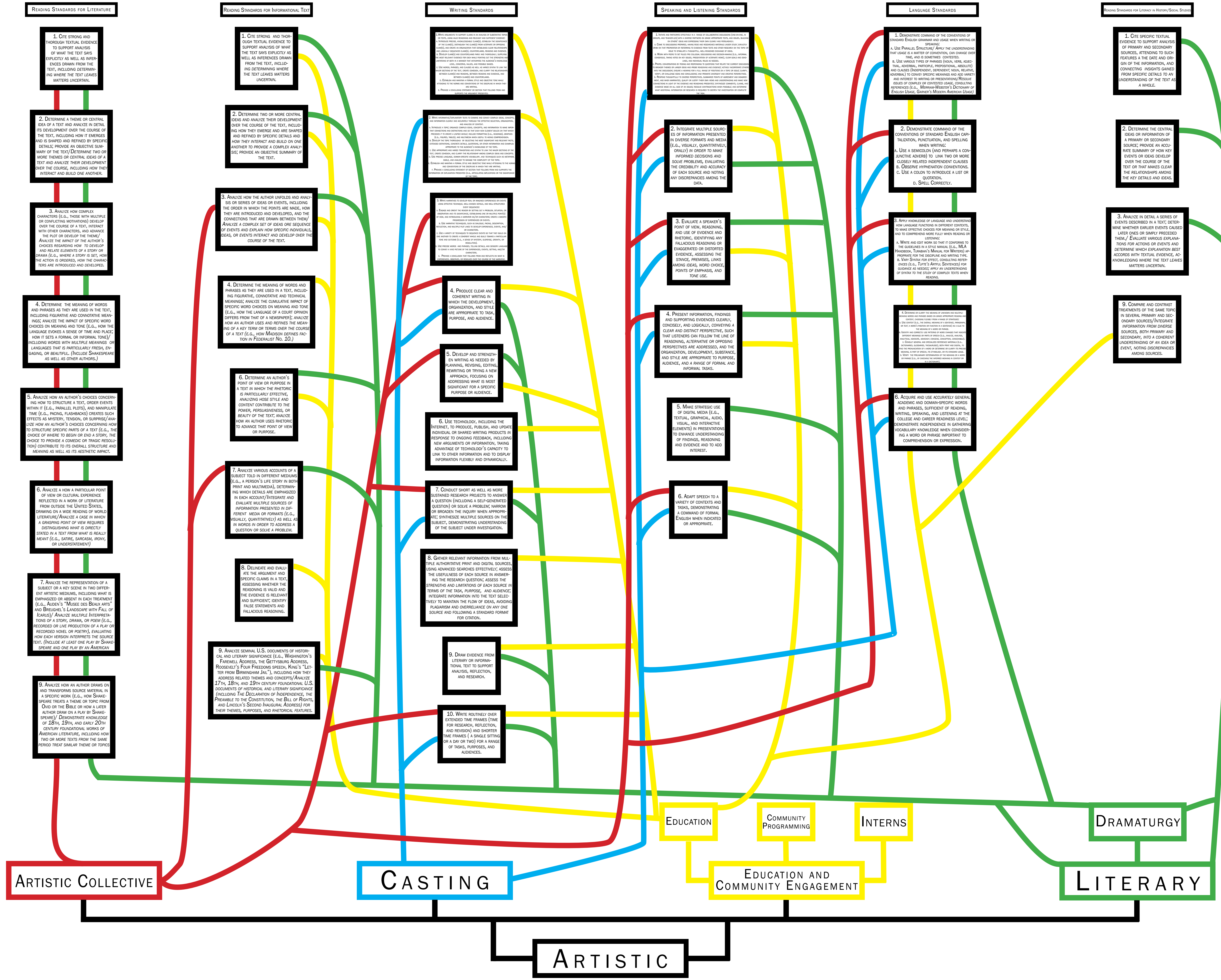
**S-IC 1. UNDERSTAND STATISTICS AS A PROCESS FOR MAKING INFERENCES ABOUT POPULATION PARAMETERS BASED ON A RANDOM SAMPLE FORM THAT POPULATION.**

**S-IC 2. DECIDE IF A SPECIFIED MODEL IS CONSISTENT WITH RESULTS FROM A GIVEN DATA-GENERATING PROCESS, E.G., USING SIMULATION.**

**S-IC 3. RECOGNIZE THE PURPOSES OF AND DIFFERENCES AMONG SAMPLE SURVEYS, EXPERIMENTS, AND OBSERVATIONAL STUDIES; EXPLAIN HOW RANDOMIZATION RELATES TO EACH.**

**S-IC 4. USE DATA FROM A SAMPLE SURVEY TO ESTIMATE A POPULATION MEAN OR PROPORTION; DEVELOP A MARGIN OF ERROR THROUGH THE USE OF SIMULATION MODELS OF RANDOM SAMPLING.**





**READING STANDARDS FOR LITERATURE**

**1. CITE STRONG AND THOROUGH TEXTUAL EVIDENCE TO SUPPORT ANALYSIS OF WHAT THE TEXT SAYS EXPLICITLY AS WELL AS INFERENCES DRAWN FROM THE TEXT, INCLUDING DETERMINING WHERE THE TEXT LEAVES MATTERS UNCERTAIN.**

**2. DETERMINE A THEME OR CENTRAL IDEA OF A TEXT AND ANALYZE IN DETAIL ITS DEVELOPMENT OVER THE COURSE OF THE TEXT, INCLUDING HOW IT EMERGES AND IS SHAPED AND REFINED BY SPECIFIC DETAILS; PROVIDE AN OBJECTIVE SUMMARY OF THE TEXT/ DETERMINE TWO OR MORE THEMES OR CENTRAL IDEAS OF A TEXT AND ANALYZE THEIR DEVELOPMENT OVER THE COURSE, INCLUDING HOW THEY INTERACT AND BUILD ONE ANOTHER.**

**3. ANALYZE HOW COMPLEX CHARACTERS (E.G., THOSE WITH MULTIPLE OR CONFLICTING MOTIVATIONS) DEVELOP OVER THE COURSE OF A TEXT, INTERACT WITH OTHER CHARACTERS, AND ADVANCE THE PLOT OR DEVELOP THE THEME/ ANALYZE THE IMPACT OF THE AUTHOR'S CHOICES REGARDING HOW TO DEVELOP AND RELATE ELEMENTS OF A STORY OR DRAMA (E.G., WHERE A STORY IS SET, HOW THE ACTION IS ORDERED, HOW THE CHARACTERS ARE INTRODUCED AND DEVELOPED.**

**4. DETERMINE THE MEANING OF WORDS AND PHRASES AS THEY ARE USED IN THE TEXT, INCLUDING FIGURATIVE AND CONNOTATIVE MEANINGS; ANALYZE THE IMPACT OF SPECIFIC WORD CHOICES ON MEANING AND TONE (E.G., HOW THE LANGUAGE EVOKES A SENSE OF TIME AND PLACE; HOW IT SETS A FORMAL OR INFORMAL TONE) INCLUDING WORDS WITH MULTIPLE MEANINGS OR LANGUAGES THAT IS PARTICULARLY FRESH, ENGAGING, OR BEAUTIFUL. (INCLUDE SHAKESPEARE AS WELL AS OTHER AUTHORS.)**

**5. ANALYZE HOW AN AUTHOR'S CHOICES CONCERNING HOW TO STRUCTURE A TEXT, ORDER EVENTS WITHIN IT (E.G., PARALLEL PLOTS), AND MANIPULATE TIME (E.G., PACING, FLASHBACKS) CREATES SUCH EFFECTS AS MYSTERY, TENSION, OR SURPRISE/ANALYZE HOW AN AUTHOR'S CHOICES CONCERNING HOW TO STRUCTURE SPECIFIC PARTS OF A TEXT (E.G., THE CHOICE OF WHERE TO BEGIN OR END A STORY, THE CHOICE TO PROVIDE A COMEDIC OR TRAGIC RESOLUTION) CONTRIBUTE TO ITS OVERALL STRUCTURE AND MEANING AS WELL AS ITS AESTHETIC IMPACT.**

**6. ANALYZE HOW A PARTICULAR POINT OF VIEW OR CULTURAL EXPERIENCE REFLECTED IN A WORK OF LITERATURE FROM OUTSIDE THE UNITED STATES, DRAWING ON A WIDE READING OF WORLD LITERATURE/ANALYZE A CASE IN WHICH A GRASPING POINT OF VIEW REQUIRES DISTINGUISHING WHAT IS DIRECTLY STATED IN A TEXT FROM WHAT IS REALLY MEANT (E.G., SATIRE, SARCASM, IRONY, OR UNDERSTATEMENT)**

**7. ANALYZE THE REPRESENTATION OF A SUBJECT OR A KEY SCENE IN TWO DIFFERENT ARTISTIC MEDIUMS, INCLUDING WHAT IS EMPHASIZED OR ABSENT IN EACH TREATMENT (E.G., AUDEN'S "MUSEE DES BEAUX ARTS" AND BRUGHEL'S LANDSCAPE WITH FALL OF ICARUS)/ ANALYZE MULTIPLE INTERPRETATIONS OF A STORY, DRAMA, OR POEM (E.G., RECORDED OR LIVE PRODUCTION OF A PLAY OR RECORDED NOVEL OR POETRY), EVALUATING HOW EACH VERSION INTERPRETS THE SOURCE TEXT. (INCLUDE AT LEAST ONE PLAY BY SHAKESPEARE AND ONE PLAY BY AN AMERICAN DRAMATIST.)**

**9. ANALYZE HOW AN AUTHOR DRAWS ON AND TRANSFORMS SOURCE MATERIAL IN A SPECIFIC WORK (E.G., HOW SHAKESPEARE TREATS A THEME OR TOPIC FROM OVID OR THE BIBLE OR HOW A LATER AUTHOR DRAW ON A PLAY BY SHAKESPEARE)/ DEMONSTRATE KNOWLEDGE OF 18TH, 19TH, AND EARLY 20TH CENTURY FOUNDATIONAL WORKS OF AMERICAN LITERATURE, INCLUDING HOW TWO OR MORE TEXTS FROM THE SAME PERIOD TREAT SIMILAR THEMES OR TOPICS**

**READING STANDARDS FOR INFORMATIONAL TEXT**

**1. CITE STRONG AND THOROUGH TEXTUAL EVIDENCE TO SUPPORT ANALYSIS OF WHAT THE TEXT SAYS EXPLICITLY AS WELL AS INFERENCES DRAWN FROM THE TEXT, INCLUDING DETERMINING WHERE THE TEXT LEAVES MATTERS UNCERTAIN.**

**2. DETERMINE TWO OR MORE CENTRAL IDEAS AND ANALYZE THEIR DEVELOPMENT OVER THE COURSE OF THE TEXT, INCLUDING HOW THEY EMERGE AND ARE SHAPED AND REFINED BY SPECIFIC DETAILS AND HOW THEY INTERACT AND BUILD ON ONE ANOTHER TO PROVIDE A COMPLEX ANALYSIS; PROVIDE AN OBJECTIVE SUMMARY OF THE TEXT.**

**3. ANALYZE HOW THE AUTHOR UNFOLDS AND ANALYSIS OR SERIES OF IDEAS OR EVENTS, INCLUDING THE ORDER IN WHICH THE POINTS ARE MADE, HOW THEY ARE INTRODUCED AND DEVELOPED, AND THE CONNECTIONS THAT ARE DRAWN BETWEEN THEM/ ANALYZE A COMPLEX SET OF IDEAS OR SEQUENCE OF EVENTS AND EXPLAIN HOW SPECIFIC INDIVIDUALS, IDEAS, OR EVENTS INTERACT AND DEVELOP OVER THE COURSE OF THE TEXT.**

**6. DETERMINE AN AUTHOR'S POINT OF VIEW OR PURPOSE IN A TEXT IN WHICH THE RHETORIC IS PARTICULARLY EFFECTIVE, ANALYZING HOW STYLE AND CONTENT CONTRIBUTE TO THE POWER, PERSUASIVENESS, OR BEAUTY OF THE TEXT; ANALYZE HOW AN AUTHOR USES RHETORIC TO ADVANCE THAT POINT OF VIEW OR PURPOSE.**

**7. ANALYZE VARIOUS ACCOUNTS OF A SUBJECT TOLD IN DIFFERENT MEDIUMS (E.G., A PERSON'S LIFE STORY IN BOTH PRINT AND MULTIMEDIA), DETERMINING WHICH DETAILS ARE EMPHASIZED IN EACH ACCOUNT/INTEGRATE AND EVALUATE MULTIPLE SOURCES OF INFORMATION PRESENTED IN DIFFERENT MEDIA OR FORMATS (E.G., VISUALLY, QUANTITATIVELY) AS WELL AS IN WORDS IN ORDER TO ADDRESS A QUESTION OR SOLVE A PROBLEM.**

**9. ANALYZE SEMINAL U.S. DOCUMENTS OF HISTORICAL AND LITERARY SIGNIFICANCE (E.G., WASHINGTON'S FAREWELL ADDRESS, THE GETTYSBURG ADDRESS, ROOSEVELT'S FOUR FREEDOMS SPEECH, KING'S "LETTER FROM BIRMINGHAM JAIL"), INCLUDING HOW THEY ADDRESS RELATED THEMES AND CONCEPTS/ANALYZE 17TH, 18TH, AND 19TH CENTURY FOUNDATIONAL U.S. DOCUMENTS OF HISTORICAL AND LITERARY SIGNIFICANCE (INCLUDING THE DECLARATION OF INDEPENDENCE, THE PREAMBLE TO THE CONSTITUTION, THE BILL OF RIGHTS, AND LINCOLN'S SECOND INAUGURAL ADDRESS) FOR THEIR THEMES, PURPOSES, AND RHETORICAL FEATURES.**

**WRITING STANDARDS**

**4. PRODUCE CLEAR AND COHERENT WRITING IN WHICH THE DEVELOPMENT, ORGANIZATION, AND STYLE ARE APPROPRIATE TO TASK, PURPOSE, AND AUDIENCE.**

**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 OR AUDIENCE.**

**6. USE TECHNOLOGY, INCLUDING THE INTERNET, TO PRODUCE, PUBLISH, AND UPDATE INDIVIDUAL OR SHARED WRITING PRODUCTS IN RESPONSE TO ONGOING FEEDBACK, INCLUDING NEW ARGUMENTS OR INFORMATION, TAKING ADVANTAGE OF TECHNOLOGY'S CAPACITY TO LINK TO OTHER INFORMATION AND TO DISPLAY INFORMATION FLEXIBLY AND DYNAMICALLY.**

**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.**

**9. DRAW EVIDENCE FROM LITERARY OR INFORMATIONAL TEXT TO SUPPORT ANALYSIS, REFLECTION, AND RESEARCH.**

**10. WRITE ROUTINELY OVER EXTENDED TIME FRAMES (TIME FOR RESEARCH, REFLECTION, AND REVISION) AND SHORTER TIME FRAMES (A SINGLE SITTING OR A DAY OR TWO) FOR A RANGE OF TASKS, PURPOSES, AND AUDIENCES.**

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**1. INITIATE AND PARTICIPATE EFFECTIVELY IN A RANGE OF COLLABORATIVE DISCUSSIONS (ONE-ON-ONE, IN GROUPS, AND TEACHER-LED) WITH A DIVERSE PARTNERS ON GRADE APPROPRIATE TEXTS, AND ISSUES, BUILDING ON OTHERS' IDEAS AND EXPRESSING THEIR OWN CLEARLY AND PERSUASIVELY.**  
**A. COME TO DISCUSSIONS PREPARED, HAVING READ AND RESEARCHED MATERIALS UNDER STUDY; EXPLICITLY DRAW ON THAT PREPARATION BY REFERRING TO EVIDENCE FROM TEXTS AND OTHER RESEARCH ON THE TOPIC OR ISSUE TO STIMULATE A THOUGHTFUL, WELL-REASONED EXCHANGE OF IDEAS.**  
**B. WORK WITH PEERS TO SET RULES FOR COLLEGIAL DISCUSSIONS AND DECISION-MAKING (E.G., INFORMAL CONSENSUS, TAKING VOTES ON KEY ISSUES, PRESENTATION OF ALTERNATE VIEWS), CLEAR GOALS AND DEADLINES, AND INDIVIDUAL ROLES AS NEEDED.**  
**C. PROPEL CONVERSATIONS BY POSING AND RESPONDING TO QUESTIONS THAT RELATE TO THE CURRENT DISCUSSION TO BROADER THEMES OR LARGER IDEAS AND PROBE REASONING AND EVIDENCE; ACTIVELY INCORPORATE OTHERS INTO THE DISCUSSION; ENSURE A HEARING FOR A FULL RANGE OF POSITIONS ON A TOPIC OR ISSUE; CLARIFY, VERIFY, OR CHALLENGE IDEAS AND CONCLUSIONS; AND PROMOTE DIVERGENT AND CREATIVE PERSPECTIVES.**  
**D. RESPOND THOUGHTFULLY TO DIVERSE PERSPECTIVES, SUMMARIZE POINTS OF AGREEMENT AND DISAGREEMENT, AND WHEN WARRANTED, QUALIFY OR JUSTIFY THEIR OWN VIEWS AND UNDERSTANDING AND MAKE NEW CONNECTIONS IN LIGHT OF THE EVIDENCE AND REASONING PRESENTED; SYNTHESIZE COMMENTS, CLAIMS, AND EVIDENCE MADE ON ALL SIDES OF AN ISSUE; RESOLVE CONTRADICTIONS WHEN POSSIBLE; AND DETERMINE WHAT ADDITIONAL INFORMATION OR RESEARCH IS REQUIRED TO DEEPEN THE INVESTIGATION OR COMPLETE THE TASK.**

**2. INTEGRATE MULTIPLE SOURCES OF INFORMATION PRESENTED IN DIVERSE FORMATS AND MEDIA (E.G., VISUALLY, QUANTITATIVELY, ORALLY) IN ORDER TO MAKE INFORMED DECISIONS AND SOLVE PROBLEMS, EVALUATING THE CREDIBILITY AND ACCURACY OF EACH SOURCE AND NOTING ANY DISCREPANCIES AMONG THE DATA.**

**3. EVALUATE A SPEAKER'S POINT OF VIEW, REASONING, AND USE OF EVIDENCE AND RHETORIC, IDENTIFYING ANY FALLACIOUS REASONING OR EXAGGERATED OR DISTORTED EVIDENCE, ASSESSING THE STANCE, PREMISES, LINKS AMONG IDEAS, WORD CHOICE, POINTS OF EMPHASIS, AND TONE USE.**

**4. PRESENT INFORMATION, FINDINGS AND SUPPORTING EVIDENCES CLEARLY, CONCISELY, AND LOGICALLY, CONVEYING A CLEAR AND DISTINCT PERSPECTIVE, SUCH THAT LISTENERS CAN FOLLOW THE LINE OF REASONING, ALTERNATIVE OR OPPOSING PERSPECTIVES ARE ADDRESSED, AND THE ORGANIZATION, DEVELOPMENT, SUBSTANCE, AND STYLE ARE APPROPRIATE TO PURPOSE, AUDIENCE, AND A RANGE OF FORMAL AND INFORMAL TASKS.**

**5. MAKE STRATEGIC USE OF DIGITAL MEDIA (E.G., TEXTUAL, GRAPHICAL, AUDIO, VISUAL, AND INTERACTIVE ELEMENTS) IN PRESENTATIONS TO ENHANCE UNDERSTANDING OF FINDINGS, REASONING AND EVIDENCE AND TO ADD INTEREST.**

**6. ADAPT SPEECH TO A VARIETY OF CONTEXTS AND TASKS, DEMONSTRATING A COMMAND OF FORMAL ENGLISH WHEN INDICATED OR APPROPRIATE.**

**LANGUAGE STANDARDS**

**1. DEMONSTRATE COMMAND OF THE CONVENTIONS OF STANDARD ENGLISH GRAMMAR AND USAGE WHEN WRITING OR SPEAKING:**  
**A. USE PARALLEL STRUCTURE/ APPLY THE UNDERSTANDING THAT USAGE IS A MATTER OF CONVENTION, CAN CHANGE OVER TIME, AND IS SOMETIMES CONTESTED.**  
**B. USE VARIOUS TYPES OF PHRASES (NOUN, VERB, ADJECTIVAL, ADVERBIAL, PARTICIPLE, PREPOSITIONAL, ABSOLUTE) AND CLAUSES (INDEPENDENT, DEPENDENT; NOUN, RELATIVE, ADVERBIAL) TO CONVEY SPECIFIC MEANINGS AND ADD VARIETY AND INTEREST TO WRITING OR PRESENTATIONS/RESOLVE ISSUES OF COMPLEX OR CONTESTED USAGE, CONSULTING REFERENCES (E.G., MERRIAM-WEBSTER'S DICTIONARY OF ENGLISH USAGE, GARNER'S MODERN AMERICAN USAGE) AS NEEDED.**

**2. DEMONSTRATE COMMAND OF THE CONVENTIONS OF STANDARD ENGLISH CAPITALIZATION, PUNCTUATION, AND SPELLING WHEN WRITING:**  
**A. USE A SEMICOLON (AND PERHAPS A CONJUNCTIVE ADVERB) TO LINK TWO OR MORE CLOSELY RELATED INDEPENDENT CLAUSES.**  
**B. OBSERVE HYPHENATION CONVENTIONS.**  
**C. USE A COLON TO INTRODUCE A LIST OR QUOTATION.**  
**D. SPELL CORRECTLY.**

**3. APPLY KNOWLEDGE OF LANGUAGE AND UNDERSTAND HOW LANGUAGE FUNCTIONS IN DIFFERENT CONTEXTS, TO MAKE EFFECTIVE CHOICES FOR MEANING OR STYLE, AND TO COMPREHEND MORE FULLY WHEN READING OR LISTENING:**  
**A. WRITE AND EDIT WORK SO THAT IT CONFORMS TO THE GUIDELINES IN A STYLE MANUAL (E.G., MLA HANDBOOK, TURABIAN'S MANUAL FOR WRITERS) APPROPRIATE FOR THE DISCIPLINE AND WRITING TYPE.**  
**B. VARY SYNTAX FOR EFFECT, CONSULTING REFERENCES (E.G., TUFTS'S ARTFUL SENTENCES) FOR GUIDANCE AS NEEDED; APPLY AN UNDERSTANDING OF SYNTAX TO THE STUDY OF COMPLEX TEXTS WHEN READING.**

**4. DETERMINE OR CLARIFY THE MEANING OF UNKNOWN AND MULTIPLE-MEANING WORDS AND PHRASES BASED ON GRADE APPROPRIATE READING AND CONTENT, CHOOSING FLEXIBLY FROM A RANGE OF STRATEGIES:**  
**A. USE CONTEXT (E.G., THE OVERALL MEANING OF A SENTENCE, PARAGRAPH, OR TEXT; A WORD'S POSITION OR FUNCTION IN A SENTENCE) AS A CLUE TO THE MEANING OF A WORD OR PHRASE.**  
**B. IDENTIFY AND CORRECTLY USE PATTERNS OF WORD CHANGES THAT INDICATE DIFFERENT MEANINGS OR PARTS OF SPEECH (E.G., ANALYZE, ANALYSIS, ANALYTICAL; ADVOCATE, ADVOCACY; CONCEIVE, CONCEPTION, CONCEIVABLE).**  
**C. CONSULT GENERAL AND SPECIALIZED REFERENCE MATERIALS (E.G., DICTIONARIES, GLOSSARIES, THESAURUSES), BOTH PRINT AND DIGITAL, TO FIND THE PRONUNCIATION OF A WORD OR DETERMINE OR CLARIFY ITS PRECISE MEANING, IS PART OF SPEECH, ITS ETYMOLOGY, OR ITS STANDARD USAGE.**  
**D. VERIFY THE PRELIMINARY DETERMINATION OF THE MEANING OF A WORD OR PHRASE (E.G., BY CHECKING THE INFERRED MEANING IN CONTEXT OR IN A DICTIONARY).**

**6. ACQUIRE AND USE ACCURATELY GENERAL ACADEMIC AND DOMAIN-SPECIFIC WORDS AND PHRASES, SUFFICIENT OF READING, WRITING, SPEAKING, AND LISTENING AT THE COLLEGE AND CAREER READINESS LEVEL; DEMONSTRATE INDEPENDENCE IN GATHERING VOCABULARY KNOWLEDGE WHEN CONSIDERING A WORD OR PHRASE IMPORTANT TO COMPREHENSION OR EXPRESSION.**

**READING STANDARDS FOR LITERACY IN HISTORY/SOCIAL STUDIES**

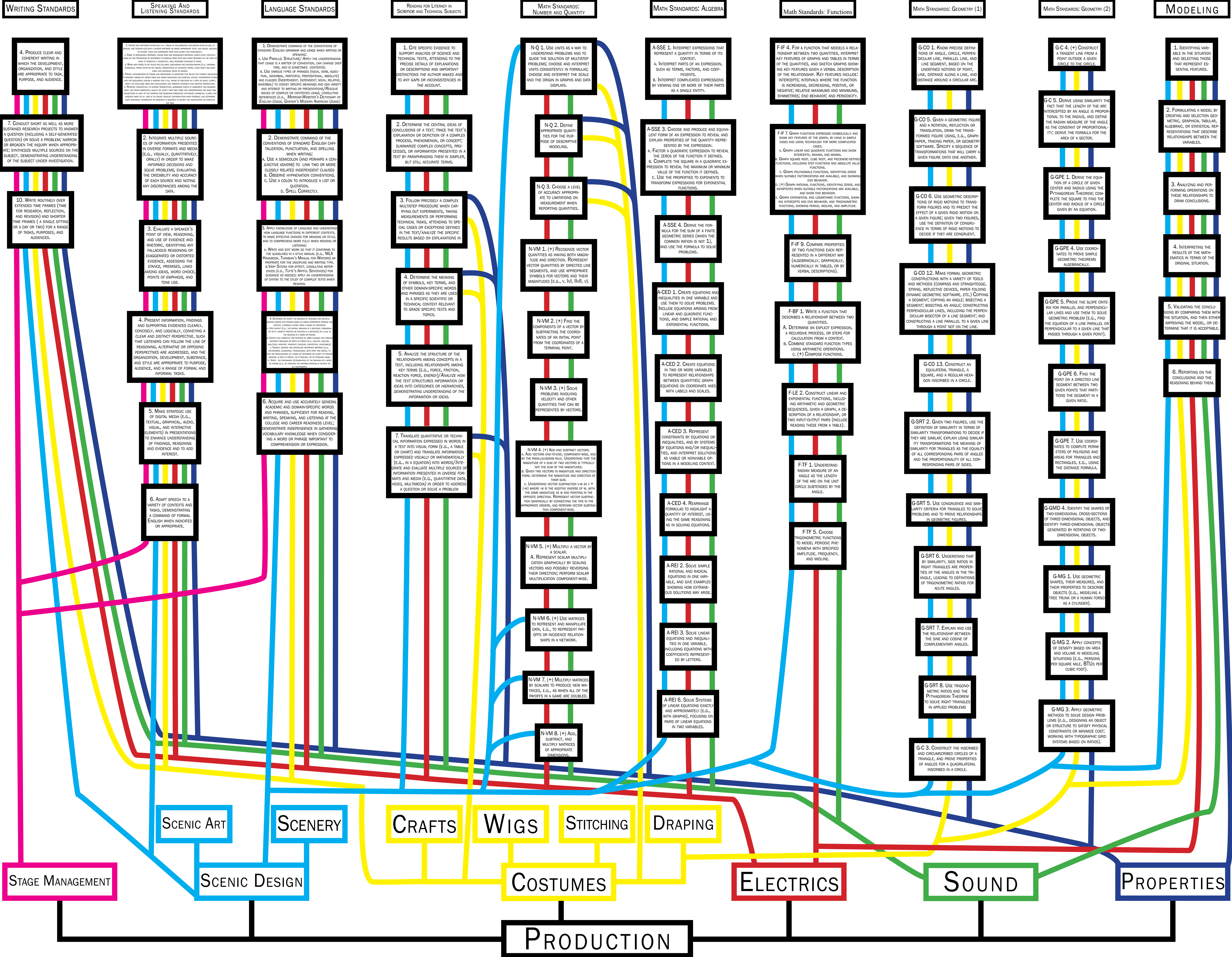
**1. CITE SPECIFIC TEXTUAL EVIDENCE TO SUPPORT ANALYSIS OF PRIMARY AND SECONDARY SOURCES, ATTENDING TO SUCH FEATURES AS THE DATE AND ORIGIN OF THE INFORMATION, AND CONNECTING INSIGHTS GAINED FROM SPECIFIC DETAILS TO AN UNDERSTANDING OF THE TEXT AS A WHOLE.**

**2. DETERMINE THE CENTRAL IDEAS OR INFORMATION OF A PRIMARY OR SECONDARY SOURCE; PROVIDE AN ACCURATE SUMMARY OF HOW KEY EVENTS OR IDEAS DEVELOP OVER THE COURSE OF THE TEXT OR THAT MAKES CLEAR THE RELATIONSHIPS AMONG THE KEY DETAILS AND IDEAS.**

**3. ANALYZE IN DETAIL A SERIES OF EVENTS DESCRIBED IN A TEXT; DETERMINE WHETHER EARLIER EVENTS CAUSED LATER ONES OR SIMPLY PRECEDED THEM/ EVALUATE VARIOUS EXPLANATIONS FOR ACTIONS OR EVENTS AND DETERMINE WHICH EXPLANATION BEST ACCORDS WITH TEXTUAL EVIDENCE, ACKNOWLEDGING WHERE THE TEXT LEAVES MATTERS UNCERTAIN.**

DRAMATURGY

LITERARY



**WRITING STANDARDS**

**SPEAKING AND LISTENING STANDARDS**

**LANGUAGE STANDARDS**

**READING FOR LITERACY IN SCIENCE AND TECHNICAL SUBJECTS**

**MATH STANDARDS: NUMBER AND QUANTITY**

**MATH STANDARDS: ALGEBRA**

**Math Standards: Functions**

**MATH STANDARDS: GEOMETRY (1)**

**MATH STANDARDS: GEOMETRY (2)**

**MODELING**

**STAGE MANAGEMENT**

**SCENIC ART**

**SCENERY**

**SCENIC DESIGN**

**CRAFTS**

**WIGS**

**COSTUMES**

**STITCHING**

**DRAPING**

**ELECTRICS**

**SOUND**

**PROPERTIES**

**PRODUCTION**

4. PRODUCE CLEAR AND COHERENT WRITING IN WHICH THE DEVELOPMENT, ORGANIZATION, AND STYLE ARE APPROPRIATE TO TASK, PURPOSE, AND AUDIENCE.

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.

10. WRITE ROUTINELY OVER EXTENDED TIME FRAMES (TIME FOR RESEARCH, REFLECTION, AND REVISION) AND SHORTER TIME FRAMES (A SINGLE SITTING OR A DAY OR TWO) FOR A RANGE OF TASKS, PURPOSES, AND AUDIENCES.

1. Intend and adapt speech to a range of situations, occasions, audiences, and purposes, including formal and informal speaking events. 2. Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.

2. Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.

3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence, assessing the stance, premises, links among ideas, word choice, points of emphasis, and tone use.

4. Present information, findings and supporting evidences clearly, concisely, and logically, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.

5. Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning and evidence and to add interest.

6. Adapt speech to a variety of contexts and tasks, demonstrating a command of formal English when indicated or appropriate.

1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking. A. Use parallel structure. B. Use various types of phrases (noun, verb, adjectival, adverbial, participial, prepositional, absolute) and clauses (independent, dependent, relative, appositive) to convey specific meanings and add variety and interest to writing or presentation. C. Consult general references (e.g., Merriam-Webster's Dictionary of English Usage, Garner's Modern American Usage) to resolve uncertainties.

2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing. A. Use a semicolon (and perhaps a conjunctive adverb) to link two or more closely related independent clauses. B. Observe hyphenation conventions. C. Use a colon to introduce a list or quotation. D. Spell correctly.

3. Apply knowledge of language and understand how language functions in different contexts, to make effective choices for meaning or style, and to compare more fully when reading or listening. A. Write and edit work so that it conforms to the guidelines in a style manual (e.g., MLA Handbook, Turabian's Manual for Writers). B. Vary syntax for effect, consulting references for guidance as needed. C. Apply an understanding of syntax to the style of complex texts when reading.

4. Present information, findings and supporting evidences clearly, concisely, and logically, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.

5. Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning and evidence and to add interest.

6. Adapt speech to a variety of contexts and tasks, demonstrating a command of formal English when indicated or appropriate.

1. Cite specific evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions and important distinctions the author makes and to any gaps or inconsistencies in the account.

2. Determine the central ideas or conclusions of a text; trace the text's line of reasoning or depiction of a complex process, phenomenon, or concept; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler, but still accurate terms.

3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements or performing technical tasks, attending to special cases or exceptions defined in the text; analyze the specific results based on explanations in the text.

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 grade-specific texts and topics.

5. Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy); analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.

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; 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.

N-Q 1. Use units as a way to understand problems and to guide the solution of multistep problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.

N-Q 2. Define appropriate quantities for the purpose of descriptive modeling.

N-Q 3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

N-VM 1. (+) Recognize vector quantities having both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes (e.g.,  $v$ ,  $|v|$ ,  $|V|$ ,  $v$ ).

N-VM 2. (+) Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point.

N-VM 3. (+) Solve problems involving velocity and other quantities that can be represented by vectors.

N-VM 4. (+) Add and subtract vectors. A. Add vectors end-to-end, component-wise, and by the parallelogram rule. Understand that the magnitude of a sum of two vectors is typically not the sum of the magnitudes. B. Given two vectors in magnitude and direction form, determine the magnitude and direction of their sum. C. Understand vector subtraction  $v-w$  as  $v+(-w)$  where  $-w$  is the additive inverse of  $w$ , with the same magnitude as  $w$  and pointing in the opposite direction. Represent vector subtraction graphically by constructing the tip of  $-w$  in the appropriate direction, and perform vector subtraction component-wise.

N-VM 5. (+) Multiply a vector by a scalar. A. Represent scalar multiplication graphically by scaling vectors and possibly reversing their direction; perform scalar multiplication component-wise.

N-VM 6. (+) Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network.

N-VM 7. (+) Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled.

N-VM 8. (+) Add, subtract, and multiply matrices of appropriate dimensions.

A-SSE 1. Interpret expressions that represent a quantity in terms of its quantity. A. Interpret parts of an expression, such as terms, factors, and coefficients. B. Interpret complicated expressions by viewing one or more of their parts as a single entity.

A-SSE 3. Form and produce and equivalent form of an expression and explain properties of the quantity represented by the expression. A. Factor a quadratic expression to reveal the zeros of the function it defines. B. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines. C. Use the properties to exponents to transform expressions for exponential functions.

A-SSE 4. Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems.

A-CED 1. Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.

A-CED 2. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.

A-CED 3. Represent constraints by equations or inequalities, and by systems of equations and/or inequalities; interpret solutions as viable or nonviable options in a modeling context.

A-CED 4. Rearrange formulas to highlight a quantity of interest, using as in solving equations.

A-REI 2. Solve simple rational and radical equations in one variable, and one examples showing how extraneous solutions may arise.

A-REI 3. Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

A-REI 6. Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.

F-IF 4. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.

F-IF 7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. A. Graph linear and quadratic functions and show intercepts, maxima, and minima. B. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. C. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior. D. (+) Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and show end behavior. E. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing periods, midline, and amplitude.

F-IF 9. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).

F-BF 1. Write a function that describes a relationship between two quantities. A. Determine an explicit expression, a recursive process, or steps for calculation from a context. B. Combine standard function types using arithmetic operations. C. (+) Compose functions.

F-LE 2. Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (including reading these from a table).

F-T 1. Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.

F-TF 5. Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.

G-CO 1. Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on undefined notions of point, line, distance along a line, and distance around a circular arc.

G-CO 5. Given a geometric figure and a rotation, reflection or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.

G-CO 6. Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.

G-CO 12. Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.

G-CO 13. Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.

G-SRT 2. Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.

G-SRT 5. Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.

G-SRT 6. Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.

G-SRT 7. Explain and use the relationship between the sine and cosine of complementary angles.

G-SRT 8. Use trigonometric ratios and the Pythagorean theorem to solve right triangles in applied problems.

G-C 3. Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.

G-G 4. (+) Construct a tangent line from a point outside a given circle to the circle.

G-G 5. Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.

G-GPE 1. Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.

G-GPE 4. Use coordinates to prove simple geometric theorems algebraically.

G-GPE 5. Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).

G-GPE 6. Find the point on a directed line segment between two given points that partitions the segment in a given ratio.

G-GPE 7. Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.

G-GMD 4. Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.

G-MG 1. Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).

G-MG 2. Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).

G-MG 3. Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with trigonometric systems based on ratios).

1. Identifying variable in the situation and selecting those that represent essential features.

2. Formulating a model by creating and selecting geometric, graphical, tabular, algebraic, or statistical representations that describe relationships between the variables.

3. Analyzing and performing operations on these relationships to draw conclusions.

4. Interpreting the results of the mathematics in terms of the original situation.

5. Validating the conclusions by comparing them with the situation, and then either improving the model, or determining that it is acceptable.

6. Reporting on the conclusions and the reasoning behind them.

