

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Explore Computer Concepts

Course Code: 034355

COURSE INTRODUCTION:

Computer technology skills are vital to business; they permeate the entire workplace. Familiarity with computer programming is required in a growing number of firms and occupations primarily because of the increasingly widespread use of computerized management information systems.

This course focuses on converting problems into detailed plans, writing code into computer language, testing, monitoring, debugging, documenting and maintaining computer programs. Students will also design programs for specific uses.

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Explore Computer Concepts

Course Code: 034355

UNIT DESCRIPTION: Students will learn about the history of technology and the impact on society.		SUGGESTED UNIT TIMELINE: 2 WEEKS CLASS PERIOD (min.): 50 MINUTES				
ESSENTIAL QUESTIONS: 1. How do the components of a Computer represent a system? 2. What is the impact of operating systems on application programs? 3. How does technology impact society?						
ESSENTIAL MEASURABLE LEARNING OBJECTIVES	CCSS LEARNING GOALS (Anchor Standards/Clusters)	CROSSWALK TO STANDARDS				
		GLEs/CLEs	PS	CCSS	NBEA	DOK
1. Trace the development of computers and their impact on society				RST.11-12.1 RST.11-12.2 RST.11-12.3 RST.11-12.4 RST.11-12.5 RST.11-12.6 RST.11-12.7 RST.11-12.8 RST.11-12.9 RST.11-12.10 WHST.11-12.1 WHST.11-12.2 WHST.11-12.4 WHST.11-12.5 WHST.11-12.6 WHST.11-12.7 WHST.11-12.8 WHST.11-12.9	IT-I.1 IT-I.2 IT-I.3 IT-I.4 IT-VIII.1 IT-VIII.2 IT-VIII.3 IT-IX.1 IT-XVI.1 IT-XVI.2 IT-XVI.3 IT-XVI.4 COMM-I.A.1 COMM-I.A.2 COMM-I.A.3 COMM-I.A.4 COMM-I.B.1 COMM-I.B.2	3

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Explore Computer Concepts

Course Code: 034355

				L.11-12.1 L.11-12.2 L.11-12.3 L.11-12.4 L.11-12.5 L.11-12.6 SL.11-12.1 SL.11-12.2 SL.11-12.3 SL.11-12.4 SL.11-12.5 SL.11-12.6 RI.11-12.1 RI.11-12.2 RI.11-12.3 RI.11-12.4 RI.11-12.5 RI.11-12.6 RI.11-12.7 RI.11-12.10	COMM-I.B.3 COMM-I.B.4 COMM-I.C.1 COMM-I.C.2 COMM-I.C.3 COMM-I.C.4 COMM-I.D.1 COMM-I.D.2 COMM-I.D.3 COMM-I.D.4 COMM-II.B.1 COMM-II.B.2 COMM-IV.1 COMM-IV.2 COMM-IV.3 COMM-IV.4	
2. Describe the categories and evolution of programming languages				RST.11-12.1 RST.11-12.2 RST.11-12.3 RST.11-12.4 RST.11-12.5 RST.11-12.6 RST.11-12.7 RST.11-12.8 RST.11-12.9 RST.11-12.10 WHST.11-12.1 WHST.11-12.2 WHST.11-12.4	IT-I.1 IT-I.2 IT-I.3 IT-I.4 IT-VIII.1 IT-VIII.2 IT-VIII.3 IT-IX.1 IT-X.1 IT-X.2 IT-XVI.1 IT-XVI.2 IT-XVI.3	2

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Explore Computer Concepts

Course Code: 034355

				WHST.11-12.5 WHST.11-12.6 WHST.11-12.7 WHST.11-12.8 WHST.11-12.9 L.11-12.1 L.11-12.2 L.11-12.3 L.11-12.4 L.11-12.5 L.11-12.6 SL.11-12.1 SL.11-12.2 SL.11-12.3 SL.11-12.4 SL.11-12.5 SL.11-12.6 RI.11-12.1 RI.11-12.2 RI.11-12.3 RI.11-12.4 RI.11-12.5 RI.11-12.6 RI.11-12.7 RI.11-12.10	IT-XVI.4 COMM-I.A.1 COMM-I.A.2 COMM-I.A.3 COMM-I.A.4 COMM-I.B.1 COMM-I.B.2 COMM-I.B.3 COMM-I.B.4 COMM-I.C.1 COMM-I.C.2 COMM-I.C.3 COMM-I.C.4 COMM-I.D.1 COMM-I.D.2 COMM-I.D.3 COMM-I.D.4 COMM-II.B.1 COMM-II.B.2 COMM-IV.1 COMM-IV.2 COMM-IV.3 COMM-IV.4	
3. Explain the functions of computer hardware and architecture				RST.11-12.1 RST.11-12.2 RST.11-12.3 RST.11-12.4 RST.11-12.5 RST.11-12.6 RST.11-12.7 RST.11-12.8	IT-II.1 IT-II.2 IT-II.3 IT-II.4 IT-VIII.1 IT-VIII.2 IT-VIII.3 IT.IX.1	1

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Explore Computer Concepts

Course Code: 034355

				RST.11-12.9 RST.11-12.10 WHST.11-12.1 WHST.11-12.2 WHST.11-12.4 WHST.11-12.5 WHST.11-12.6 WHST.11-12.7 WHST.11-12.8 WHST.11-12.9 L.11-12.1 L.11-12.2 L.11-12.3 L.11-12.4 L.11-12.5 L.11-12.6 SL.11-12.1 SL.11-12.2 SL.11-12.3 SL.11-12.4 SL.11-12.5 SL.11-12.6 RI.11-12.1 RI.11-12.2 RI.11-12.3 RI.11-12.4 RI.11-12.5 RI.11-12.6 RI.11-12.7 RI.11-12.10	IT.XII.1 IT.XII.2 IT-XVI.1 IT-XVI.2 IT-XVI.3 IT-XVI.4 COMM-I.A.1 COMM-I.A.2 COMM-I.A.3 COMM-I.A.4 COMM-I.B.1 COMM-I.B.2 COMM-I.B.3 COMM-I.B.4 COMM-I.C.1 COMM-I.C.2 COMM-I.C.3 COMM-I.C.4 COMM-I.D.1 COMM-I.D.2 COMM-I.D.3 COMM-I.D.4 COMM-II.B.1 COMM-II.B.2 COMM-IV.1 COMM-IV.2 COMM-IV.3 COMM-IV.4	
4. Demonstrate an understanding of computer theory (e.g., bits, bytes, binary logic, memory, and storage)				RST.11-12.1 RST.11-12.2 RST.11-12.3	IT-VIII.1 IT-VIII.2 IT-VIII.3	4

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Explore Computer Concepts

Course Code: 034355

				RST.11-12.4	IT-IX.1	
				RST.11-12.5	IT-IX.2	
				RST.11-12.6	IT-X.1	
				RST.11-12.7	IT-X.2	
				RST.11-12.8	IT-XVI.1	
				RST.11-12.9	IT-XVI.2	
				RST.11-12.10	IT-XVI.3	
				WHST.11-12.1	IT-XVI.4	
				WHST.11-12.2	COMM-I.A.1	
				WHST.11-12.4	COMM-I.A.2	
				WHST.11-12.5	COMM-I.A.3	
				WHST.11-12.6	COMM-I.A.4	
				WHST.11-12.7	COMM-I.B.1	
				WHST.11-12.8	COMM-I.B.2	
				WHST.11-12.9	COMM-I.B.3	
				L.11-12.1	COMM-I.B.4	
				L.11-12.2	COMM-I.C.1	
				L.11-12.3	COMM-I.C.2	
				L.11-12.4	COMM-I.C.3	
				L.11-12.5	COMM-I.C.4	
				L.11-12.6	COMM-I.D.1	
				SL.11-12.1	COMM-I.D.2	
				SL.11-12.2	COMM-I.D.3	
				SL.11-12.3	COMM-I.D.4	
				SL.11-12.4	COMM-II.B.1	
				SL.11-12.5	COMM-II.B.2	
				SL.11-12.6	COMM-IV.1	
				RI.11-12.1	COMM-IV.2	
				RI.11-12.2	COMM-IV.3	
				RI.11-12.3	COMM-IV.4	
				RI.11-12.4	MGMT-	
				RI.11-12.5	VIII.A.1	
				RI.11-12.6		

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Explore Computer Concepts

Course Code: 034355

				RI.11-12.7 RI.11-12.10 A-CED.1 A-CED.4 A-REI.1 A-REI.2 A-REI.3 A-REI.4		
5. Compare computer operating systems (e.g., DOS, Windows, Linux, Android)				RST.11-12.1 RST.11-12.2 RST.11-12.3 RST.11-12.4 RST.11-12.5 RST.11-12.6 RST.11-12.7 RST.11-12.8 RST.11-12.9 RST.11-12.10 WHST.11-12.1 WHST.11-12.2 WHST.11-12.4 WHST.11-12.5 WHST.11-12.6 WHST.11-12.7 WHST.11-12.8 WHST.11-12.9 L.11-12.1 L.11-12.2 L.11-12.3 L.11-12.4 L.11-12.5 L.11-12.6 SL.11-12.1	IT-III.1 IT-III.2 IT-III.3 IT-III.4 IT-VIII.1 IT-VIII.2 IT-VIII.3 IT-IX.1 IT-XVI.1 IT-XVI.2 IT-XVI.3 IT-XVI.4 COMM-I.A.1 COMM-I.A.2 COMM-I.A.3 COMM-I.A.4 COMM-I.B.1 COMM-I.B.2 COMM-I.B.3 COMM-I.B.4 COMM-I.C.1 COMM-I.C.2 COMM-I.C.3 COMM-I.C.4 COMM-I.D.1	3

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Explore Computer Concepts

Course Code: 034355

				SL.11-12.2 SL.11-12.3 SL.11-12.4 SL.11-12.5 SL.11-12.6 RI.11-12.1 RI.11-12.2 RI.11-12.3 RI.11-12.4 RI.11-12.5 RI.11-12.6 RI.11-12.7 RI.11-12.10	COMM-I.D.2 COMM-I.D.3 COMM-I.D.4 COMM-II.B.1 COMM-II.B.2 COMM-IV.1 COMM-IV.2 COMM-IV.3 COMM-IV.4	
6. Discuss legal/ethical issues related to computers				RST.11-12.1 RST.11-12.2 RST.11-12.3 RST.11-12.4 RST.11-12.5 RST.11-12.6 RST.11-12.7 RST.11-12.8 RST.11-12.9 RST.11-12.10 WHST.11-12.1 WHST.11-12.2 WHST.11-12.4 WHST.11-12.5 WHST.11-12.6 WHST.11-12.7 WHST.11-12.8 WHST.11-12.9 L.11-12.1 L.11-12.2	IT-VIII.1 IT-VIII.2 IT-VIII.3 IT-XV.1 IT-XV.2 IT.XV.3 IT.XV.4 IT-XVI.1 IT-XVI.2 IT-XVI.3 IT-XVI.4 COMM-I.A.1 COMM-I.A.2 COMM-I.A.3 COMM-I.A.4 COMM-I.B.1 COMM-I.B.2 COMM-I.B.3 COMM-I.B.4 COMM-I.C.1	2

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Explore Computer Concepts

Course Code: 034355

				L.11-12.3 L.11-12.4 L.11-12.5 L11-12.6 SL.11-12.1 SL.11-12.2 SL.11-12.3 SL.11-12.4 SL.11-12.5 SL.11-12.6 RI.11-12.1 RI.11-12.2 RI.11-12.3 RI.11-12.4 RI.11-12.5 RI.11-12.6 RI.11-12.7 RI.11-12.10	COMM-I.C.2 COMM-I.C.3 COMM-I.C.4 COMM-I.D.1 COMM-I.D.2 COMM-I.D.3 COMM-I.D.4 COMM-II.B.1 COMM-II.B.2 COMM-III.E.3 COMM-III.E.4 COMM-IV.1 COMM-IV.2 COMM-IV.3 COMM-IV.4	
7. Identify the application environment/interface for the specific language being covered (e.g., JCreator, BlueJay, and Visual Studio)				RST.11-12.1 RST.11-12.2 RST.11-12.3 RST.11-12.4 RST.11-12.5 RST.11-12.6 RST.11-12.7 RST.11-12.8 RST.11-12.9 RST.11-12.10 WHST.11-12.1 WHST.11-12.2 WHST.11-12.4 WHST.11-12.5 WHST.11-12.6	IT-IV.1 IT-IV.2 IT-IV.3 IT-IV.4 IT-V.1 IT-V.2 IT-V.3 IT-V.4 IT-VI.1 IT-VI.2 IT-VI.3 IT-VI.4 IT-XVI.1 IT-XVI.2 IT-XVI.3	1

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Explore Computer Concepts

Course Code: 034355

				WHST.11-12.7 WHST.11-12.8 WHST.11-12.9 L.11-12.1 L.11-12.2 L.11-12.3 L.11-12.4 L.11-12.5 L.11-12.6 SL.11-12.1 SL.11-12.2 SL.11-12.3 SL.11-12.4 SL.11-12.5 SL.11-12.6 RI.11-12.1 RI.11-12.2 RI.11-12.3 RI.11-12.4 RI.11-12.5 RI.11-12.6 RI.11-12.7 RI.11-12.10	IT-XVI.4 COMM-I.A.1 COMM-I.A.2 COMM-I.A.3 COMM-I.A.4 COMM-I.B.1 COMM-I.B.2 COMM-I.B.3 COMM-I.B.4 COMM-I.C.1 COMM-I.C.2 COMM-I.C.3 COMM-I.C.4 COMM-I.D.1 COMM-I.D.2 COMM-I.D.3 COMM-I.D.4 COMM-II.B.1 COMM-II.B.2 COMM-IV.1 COMM-IV.2 COMM-IV.3 COMM-IV.4	
8. Explain the concept of security and its relationship to programming				RST.11-12.1 RST.11-12.2 RST.11-12.3 RST.11-12.4 RST.11-12.5 RST.11-12.6 RST.11-12.7 RST.11-12.8 RST.11-12.9 RST.11-12.10	IT-VIII.1 IT-VIII.2 IT-VIII.3 IT-XIV.1 IT-XIV.2 IT-XIV.3 IT-XIV.4 IT-XVI.1 IT-XVI.2 IT-XVI.3	2

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Explore Computer Concepts

Course Code: 034355

				WHST.11-12.1 WHST.11-12.2 WHST.11-12.4 WHST.11-12.5 WHST.11-12.6 WHST.11-12.7 WHST.11-12.8 WHST.11-12.9 L.11-12.1 L.11-12.2 L.11-12.3 L.11-12.4 L.11-12.5 L.11-12.6 SL.11-12.1 SL.11-12.2 SL.11-12.3 SL.11-12.4 SL.11-12.5 SL.11-12.6 RI.11-12.1 RI.11-12.2 RI.11-12.3 RI.11-12.4 RI.11-12.5 RI.11-12.6 RI.11-12.7 RI.11-12.10	IT-XVI.4 COMM-I.A.1 COMM-I.A.2 COMM-I.A.3 COMM-I.A.4 COMM-I.B.1 COMM-I.B.2 COMM-I.B.3 COMM-I.B.4 COMM-I.C.1 COMM-I.C.2 COMM-I.C.3 COMM-I.C.4 COMM-I.D.1 COMM-I.D.2 COMM-I.D.3 COMM-I.D.4 COMM-II.B.1 COMM-II.B.2 COMM-IV.1 COMM-IV.2 COMM-IV.3 COMM-IV.4	
9. Identify components of the information system model (input, process, output, storage)				RST.11-12.1 RST.11-12.2 RST.11-12.3 RST.11-12.4 RST.11-12.5	IT-IV.1 IT-IV.2 IT-IV.3 IT-IV.4 IT-VIII.1	1

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Explore Computer Concepts

Course Code: 034355

				RST.11-12.6	IT-VIII.2	
				RST.11-12.7	IT-VIII.3	
				RST.11-12.8	IT-X.3	
				RST.11-12.9	IT-X.4	
				RST.11-12.10	IT-XVI.1	
				WHST.11-12.1	IT-XVI.2	
				WHST.11-12.2	IT-XVI.3	
				WHST.11-12.4	IT-XVI.4	
				WHST.11-12.5	COMM-I.A.1	
				WHST.11-12.6	COMM-I.A.2	
				WHST.11-12.7	COMM-I.A.3	
				WHST.11-12.8	COMM-I.A.4	
				WHST.11-12.9	COMM-I.B.1	
				L.11-12.1	COMM-I.B.2	
				L.11-12.2	COMM-I.B.3	
				L.11-12.3	COMM-I.B.4	
				L.11-12.4	COMM-I.C.1	
				L.11-12.5	COMM-I.C.2	
				L.11-12.6	COMM-I.C.3	
				SL.11-12.1	COMM-I.C.4	
				SL.11-12.2	COMM-I.D.1	
				SL.11-12.3	COMM-I.D.2	
				SL.11-12.4	COMM-I.D.3	
				SL.11-12.5	COMM-I.D.4	
				SL.11-12.6	COMM-II.B.1	
				RI.11-12.1	COMM-II.B.2	
				RI.11-12.2	COMM-IV.1	
				RI.11-12.3	COMM-IV.2	
				RI.11-12.4	COMM-IV.3	
				RI.11-12.5	COMM-IV.4	
				RI.11-12.6		
				RI.11-12.7		
				RI.11-12.10		

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Explore Computer Concepts

Course Code: 034355

10. Identify types of Network (Internet, LANs, and Wireless)				RST.11-12.1	IT-II.1	1
				RST.11-12.2	IT-II.2	
				RST.11-12.3	IT-II.3	
				RST.11-12.4	IT-II.4	
				RST.11-12.5	IT-III.1	
				RST.11-12.6	IT-III.2	
				RST.11-12.7	IT-III.3	
				RST.11-12.8	IT-III.4	
				RST.11-12.9	IT-VIII.1	
				RST.11-12.10	IT-VIII.2	
				WHST.11-12.1	IT-VIII.3	
				WHST.11-12.2	IT-XII.2	
				WHST.11-12.4	IT-XII.3	
				WHST.11-12.5	IT-XVI.1	
				WHST.11-12.6	IT-XVI.2	
				WHST.11-12.7	IT-XVI.3	
				WHST.11-12.8	IT-XVI.4	
				WHST.11-12.9		
				L.11-12.1		
				L.11-12.2		
				L.11-12.3		
				L.11-12.4		
				L.11-12.5		
				L.11-12.6		
				SL.11-12.1		
				SL.11-12.2		
				SL.11-12.3		
				SL.11-12.4		
				SL.11-12.5		
				SL.11-12.6		
				RI.11-12.1		
				RI.11-12.2		
				RI.11-12.3		

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Explore Computer Concepts

Course Code: 034355

				RI.11-12.4 RI.11-12.5 RI.11-12.6 RI.11-12.7 RI.11-12.10		
ASSESSMENT DESCRIPTIONS*: (Write a brief overview here. Identify Formative/Summative. Actual assessments will be accessed by a link to PDF file or Word doc.) Short quizzes in the BinaryHex folder (formative) Hardware Project that is research and presentation (summative) Ethics assignment that is primarily group discussion (formative) *Attach Unit Summative Assessment, including Scoring Guides/Scoring Keys/Alignment Codes and DOK Levels for all items. Label each assessment according to the unit descriptions above (i.e., Grade Level/Course Title/Course Code, Unit #.)						
Obj. #	INSTRUCTIONAL STRATEGIES (research-based): (Teacher Methods)					
2,3,6,7,9,10	1. Lecture					
1	2. Video/movie					
4	3. Independent Learning					
5	4. Demonstration, cooperative learning					
8	5. Lecture, demonstration, discussion, research					
Obj. #	INSTRUCTIONAL ACTIVITIES: (What Students Do)					
2,3,6,7,9,10	1. Lecture using Computer Logic & Logic Operators ppt, Ethics ppt, Parts and types of computers ppt, terminology and types of software ppt and associated notes files.					
1	2. Cambridge Education History of computers video and the teacher resource for the movie					

DESE Model Curriculum

GRADE LEVEL/UNIT TITLE: 11-12/Explore Computer Concepts

Course Code: 034355

4	3. Binary/Hex folder includes power points for practice and explanation and NASA Binary activity and Egg Carton Binary activity
5	4. OS Lesson and Comparing OS lecture/demonstration/activity for the students
8	5. Program Development Security – demonstration/discussion/lecture with a student research activity
UNIT RESOURCES: (include internet addresses for linking)	